DOCUMENT RESUME

ED 247 081 SE 043 688

AUTHOR Disinger, John, Comp.; Howe, Robert W., Comp.
TITLE Especially for Teachers: Selected Documents on the Teaching of Environmental Education 1966-1982.
INSTITUTION ERIC Clearinghouse for Science, Mathematics, and Environmental Education, Columbus, Ohio.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
PUB DATE Dec 83
CONTRACT 400-83-0011
NOTE 353p.; Document contains several pages of occasional light type.
AVAILABLE FROM SMEAC Information Reference Center, The Ohio State Univ., 1200 Chambers Rd., Rm. 310, Columbus, OH 43212 ($10.00).
PUB TYPE Reference Materials - Bibliographies (131) -- Information Analyses - ERIC Information Analysis Products (071)

EDRS PRICE MF01/PC15 Plus Postage.
DESCRIPTORS Biological Sciences; Curriculum Guides; Ecology; Elementary Secondary Education; Energy; *Environmental Education; *Instructional Materials; *Interdisciplinary Approach; Learning Activities; Outdoor Activities; *Outdoor Education; Physical Sciences; *Resource Materials; Sociocultural Patterns; Teacher Education; *Teaching Methods

ABSTRACT

Designed to supplement the day-to-day planning, teaching, and evaluation activities of environmental education teachers at all educational levels, this compilation contains over 1000 resumes of practitioner-oriented documents announced in "Resources in Education" (RIE) between 1966 and 1982. The resumes are organized by educational level (elementary/middle, middle/secondary, secondary, elementary/middle/secondary) in each of four categories: (1) outdoor emphasis; (2) biophysical emphasis; (3) sociocultural emphasis; and (4) multidisciplinary. A list of documents by ED number, an author index, and a subject index (using terms from the "Thesaurus of ERIC Descriptors") are included. (JN)

ENVIRONMENTAL EDUCATION INFORMATION REPORT

ESPECIALLY FOR TEACHERS:

ERIC

Selected Documents on the Teaching of Environmental Education

1966-1982

THE ERIC SCIENCE, MATHEMATICS AND ENVIRONMENTAL EDUCATION CLEARINGHOUSE
in cooperation with
Center for Science and Mathematics Education
The Ohio State University

ESPECIALLY FOR TEACHERS:

ERIC®

Selected Documents on the Teaching of Environmental Education

1966-1982

December, 1983

Especially for Teachers:

Selected Documents on the Teaching of Environmental Education 1966-82

Compiled by
John Disinger
and
Robert W. Howe

December, 1983

Produced by the ERIC Clearinghouse on Science, Mathematics, and Environmental Education and the SMEAC Information Reference Center (The Ohio State University). The publication is available in paper copy from the SMEAC Information Reference Center for $10.00. Discounts are available on volume purchases.

SMEAC Information Reference Center
The Ohio State University
1200 Chambers Road, Room 310
Columbus, OH 43212

This publication was prepared with funding from the National Institute of Education, U.S. Department of Education under contract no. 400-83-0011. The opinions expressed in this report do not necessarily reflect the positions or policies of NIE or U.S. Department of Education.

Note

If you find this publication helpful, you may also want to order the compilations of environmental education abstracts for Resources in Education (RIE) produced by this Clearinghouse. These compilations provide listings of nearly all publications announced in RIE from 1966-83. Publication lists can be requested from the ERIC Clearinghouse for Science, Mathematics, and Environmental Education or the SMEAC Information Reference Center.

If you have comments on this or any other ERIC/SMEAC publication, please send them to us. We appreciate the past comments we've received.

Robert W. Howe
Director
ERIC/SMEAC

Staff work for this document was completed by
Mrs. Linda Shinn and Ms. Rene' Moore.

TABLE OF CONTENTS

ED NUMBERS BY PAGE

167 409 . . . 33
167 410 . . . 33
167 413 . . . 126
167 421 . . . 33
167 449 . . . 115
167 450 . . . 115
167 451 . . . 126
167 452 . . . 140
167 454 . . . 155
168 725 . . . 115
168 824 . . . 33
168 877 . . . 33
169 256 . . . 116
169 563 . . . 126
169 564 . . . 140
170 101 . . . 21
170 135 . . . 62
170 138 . . . 53
170 139 . . . 155
170 141 . . . 54
170 151 . . . 116
170 152 . . . 116
170 153 . . . 54
170 896 . . . 21
171 456 . . . 5
171 466 . . . 22
171 475 . . . 22
171 597 . . . 91
171 807 . . . 116
173 057 . . . 12
173 062 . . . 22
173 072 . . . 155
173 082 . . . 140
173 086 . . . 116
173 115 . . . 155
173 117 . . . 155
173 158 . . . 54
173 159 . . . 39
173 163 . . . 54
174 364 . . . 10
174 365 . . . 10
174 366 . . . 10
174 367 . . . 11
174 368 . . . 11
174 371 . . . 155
174 407 . . . 141
174 431 . . . 22
174 432 . . . 116
174 435 . . . 54
174 436 . . . 140
174 442 . . . 33
174 479 . . . 116
174 484 . . . 91
175 590 . . . 6
175 591 . . . 6
175 592 . . . 6
175 593 . . . 6
175 594 . . . 6
175 718 . . . 34
175 722 . . . 126
175 723 . . . 54
175 724 . . . 34
175 726 . . . 156
175 728 . . . 54
175 729 . . . 54
175 730 . . . 55
176 905 . . . 22
176 908 . . . 12
176 909 . . . 22
176 910 . . . 6
176 911 . . . 6
176 957 . . . 156
176 960 . . . 62
176 984 . . . 156
177 012 . . . 141
177 013 . . . 116
177 014 . . . 55
177 015 . . . 156
178 231 . . . 7
178 232 . . . 7
178 335 . . . 117
178 350 . . . 126
179 351 . . . 117
179 352 . . . 62
179 353 . . . 62
179 355 . . . 55
179 356 . . . 55
179 374 . . . 127
179 375 . . . 141
179 395 . . . 55
179 411 . . . 55
179 412 . . . 141
179 414 . . . 55
179 415 . . . 141
179 416 . . . 55
179 417 . . . 56
179 421 . . . 156
179 436 . . . 91
179 443 . . . 63
179 484 . . . 91
179 792 . . . 127
179 793 . . . 39
179 794 . . . 39
179 795 . . . 78
179 980 . . . 91
180 757 . . . 56
180 774 . . . 91
180 791 . . . 56
180 794 . . . 156
180 808 . . . 34
180 809 . . . 56

INTRODUCTION

Try as they might, classroom teachers often do not have enough information at their fingertips to revitalize their lesson plans. They feel the urge to stimulate student learning with fresh teaching approaches, but they wonder how and where they can find the information. They need ready references without having to buy all the "how-to" books on the market. The ERIC database has responded to these needs for many years, offering access to the shared secrets of teachers, administrators, and educational researchers. Now, as part of a systemwide effort to provide information analysis products of current interest to particular users, the ERIC Clearinghouse for Science, Mathematics, and Environmental Education offers this compilation of teaching materials for environmental education.

Designed to supplement the day-to-day planning, teaching, and evaluation activities of environmental education teachers at all educational levels, this compilation contains over 1000 citations chosen after careful review of documents that appeared in Resources in Education from 1966 to 1982. Annotations of articles from the Current Index to Journals in Education were not included. Since a document's selection for this bibliography was made on the basis of timeliness, teacher orientation, and nonrepetitiveness in relation to the other 2,500 documents reviewed, the omission of a document is not to be taken as a judgment of its quality. For the purposes of this bibliography, the term "teacher" represents both parents as the teachers of their preschool children and instructors of adults, young adults, children, and adolescents.

The classification scheme reflected in the Table of Contents, developed from staff recommendations and interviews with teachers, indicates the range of the ERIC database and the nature of the materials in the database. An index using terms from the ERIC Thesaurus of Descriptors provides another avenue of approach to the literature.

Knowing the diversity of teaching styles and teachers' wide-ranging interests and activities, we urge satisfied users of this compilation to return to the ERIC database for additional ideas.

AVAILABILITY OF DOCUMENTS

Copies of most documents announced in this index can be read in their entirety on microfiche reader/printers at any one of the 700 libraries or institutions that subscribe to the ERIC Microfiche Collection. If the author or corporate source of the document did not give permission for the document to be included in the ERIC Microfiche Collection, another source of availability will be noted in the citation. A mark (#) appears after ED numbers in the subject index for items that are not in microfiche. For a complete listing of ERIC Microfiche Collections in your area, call or write to the ERIC Clearinghouse for Science, Mathematics, and Environmental Education, 1200 Chambers Road, Rm. 310, Columbus, OH 43212 (614-422-6717).

Documents are also available in both microfiche (MF) and paper copy (PC) or microfiche only from the ERIC Document Reproduction Service (EDRS), Computer Microfilm International Corporation, P.O. Box 190, Arlington, VA 22210. The price per document is based on the number of pages and is subject to change over time. The ERIC Price Code Schedule permits the user to convert all price codes to actual dollar amounts. Orders for 33 or more microfiche (MF) and all orders for paper copies (PC) will be shipped via United Parcel Service unless otherwise instructed. When ordering from EDRS, please specify MF or PC and include the ERIC Document (ED) number and the pagination of the document. Payment or an authorized original purchase order must accompany all orders.

ERIC PRICE CODES

PAPER COPY/HARD COPY

PRICE CODE	PAGINATION	PRICE
PC 01	1 - 25	$ 2.15
PC 02	26 - 50	3.90
PC 03	51 - 75	5.65
PC 04	76 - 100	7.40
PC 05	101 - 125	9.15
PC 06	126 - 150	10.90
PC 07	151 - 175	12.65
PC 08	176 - 200	14.40
PC 09	201 - 225	16.15
PC 10	226 - 250	17.90
PC 11	251 - 275	19.65
PC 12	276 - 300	21.40
PC 13	301 - 325	23.15
PC 14	326 - 350	24.90
PC 15	351 - 375	26.65
PC 15	376 - 400	28.40
PC 17	401 - 425	30.15
PC 18	426 - 450	31.90
PC 19	451 - 475	33.65
PC 20	476 - 500	35.40

ADD $1.75 FOR EACH ADDITIONAL 25 PAGES, OR FRACTION THEREOF

MICROFICHE

PRICE CODE	PAGINATION	NUMBER OF FICHE	PRICE
MF 01	1 - 480	1 - 5	$ .97
MF 02	481 - 576	6	1.17
MF 03	577 - 672	7	1.37
MF 04	673 - 768	8	1.57
MF 05	769 - 864	9	1.77
MF 06	865 - 960	10	1.97

ADD $0.20 FOR EACH ADDITIONAL MICROFICHE (1-96 PAGES)

SAMPLE RESUME

ERIC Accession Number—identification number sequentially assigned to documents as they are processed

Author(s).

Title.

Date Published.

Contract or Grant Number.

Publication Type—broad categories indicating the form or organization of the document, as contrasted to its subject matter. The category name is followed by the category code.

ERIC Document Reproduction Service (EDRS) Availability—"MF" means microfiche, "PC" means reproduced paper copy. When described as "Document Not Available from EDRS," alternate sources are cited above. Prices are subject to change; for latest price code schedule see section on "How to Order ERIC Documents," in the most recent issue of RIE.

ED 174 366 RC 011 195

Fawcett, Kay, Ed. And Others

Outdoor Biology Instructional Strategies Trial Edition, Set II.

California Univ., Berkeley. Lawrence Hall of Science.

Spons Agency—National Science Foundation, Washington, D.C.

Pub Date—Jun 75

Grant—NSF-SED-72-05823

Note—175p.

Available from—Outdoor Biology Instructional Strategies, Lawrence Hall of Science, University of California, Berkeley, California 94720 ($9.00)

Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC07 Plus Postage.

Descriptors—*Activity Units, Animal Behavior, Biology, *Biology Instruction, Construction (Process), Earth Science, Ecology, Educational Games, Elementary Secondary Education, *Environmental Education, *Experiential Learning, Field Instruction, *Group Activities, *Illustrations, Instructional Materials, Learning Modules, *Outdoor Education, Water Resources, Youth Clubs, Youth Programs

Identifiers—*OBIS Program, Outdoor Biology Instructional Series

The 24 activities in the Outdoor Biology Instructional Strategies (OBIS) Trial Edition Set II use living organisms such as crabs, birds, crayfish, lichens, and insects to investigate biological interrelationships, organism behavior, and species density to promote greater environmental and sensory awareness. The activities, designed primarily for groups of children ages 10 to 15, focus on terrestrial, beach, freshwater, marine, woodland, and other habitats. Light and its effect on animal behavior, study of intertidal plant and animal colonies, hibernation site study, comparison of insects in lawn areas and weedy areas, a simulated oil spill, investigation of sea movements and currents, and a series of environmental games are among the specific activities. Each is presented in a folio with an introduction, list of materials, action, discussion, and follow up. There are three additional folios: (1) an introduction to OBIS; (2) a "Leader's Survival Kit", with suggestions for the combination of the Set I and II activities into various learning modules organized by biological or environmental concept, skill, or habitat; and (3) an OBIS Tool Box, containing Equipment and Technique Cards with instructions for the construction and use of inexpensive equipment, such as bird feeders and tide stakes. (SB)

Clearinghouse Accession Number.

Sponsoring Agency—agency responsible for initiating, funding, and managing the research project.

Descriptive Note (pagination) first)

Alternate source for obtaining document.

Descriptors—subject terms which characterize substantive content. Only the major terms, preceded by an asterisk, are printed in the subject index.

Identifiers—additional identifying terms not found in the *Thesaurus of ERIC Descriptors*. Only the major terms, preceded by an asterisk, are printed in the subject index.

Informative Abstract.

Abstractor's Initials.

Outdoor Emphasis

Elementary/Middle

ED 024 484 RC 002 671
Outdoor Education Curriculum Guide, Grade 6.
Jefferson County Public Schools, Lakewood, Colo.
Pub Date 63
Note—188p.
EDRS Price MF-$0.75 HC-$9.30
Descriptors—Art, Astronomy, *Conservation Education, Core Curriculum, *Curriculum Guides, Ecology, Enrichment Activities, Field Trips, *Grade 6, Health, Laboratory Schools, Learning Activities, Natural Resources, *Outdoor Education, Personnel Policy, Program Content, Program Descriptions, *Program Development, Records (Forms), Recreation, Scheduling, Staff Role
As developed for a 6th grade outdoor education program, this curriculum guide is organized around a common core designed to teach conservation and appreciation of natural resources. Program initiation, methods and procedures, information on natural resources, suggested time schedules, learning activities, nature hikes, and field trips are discussed to familiarize the teacher with the program. Maps, charts, and illustrations add detail to the narrative, explaining the outdoor laboratory school. Supporting programs in astronomy, art, health and safety, weather, recreation, and various work projects are designed to add enrichment to the basic core. Rules for students, letters to parents, materials and equipment lists, and various forms utilized are contained in the Appendix. (SW)

ED 027 991 RC 003 275
Fox, Denver C.
Outdoor Education: A Guide to the Instructional Program at the Sixth Grade School Camps.
San Diego City Schools, Calif.
Pub Date 66
Note—261p.
Available from—San Diego City Schools, Education Center, Park and El Cajon Boulevard, San Diego, California 92103 (Stock No. 41-C-1200, $3.00)
EDRS Price MF-$1.00 HC-$13.15
Descriptors—Camping, *Conservation Education, *Curriculum Guides, *Grade 6, Instructional Improvement, Instructional Media, Instructional Programs, Instructional Trips, *Outdoor Education, *Science Education, Summer Programs, Teacher Education, Urban Education
The outdoor education program for sixth graders in San Diego County is described, along with an account of its development and the financial support structure underlying the program. Eleven major outcomes that can be expected from participation in the outdoor education program are enumerated. An intensive pre-camp teacher-training program, carried on at camp is summarized. The instruction guide contains detailed information about all learning activities (democratic living in a camp setting, safety and health practices, outdoor science activities, conservation, and creative expression) in which children of the San Diego district participate during their camp experience. A glossary of technical terms used in the discussion of programs and practices at the camps is included. A related document is RC 003 276. (DA)

ED 034 676 SE 006 771
Busch, Phyllis S.
SPRUCE Discovery Manual, 169 Investigations Indoors and Outdoors.
Ulster County Board of Cooperative Education Services, New Paltz, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Elementary and Secondary Education
Pub Date [69]
Note—60p.
EDRS Price MF-$0.50 HC-$3.10
Descriptors—*Biology, *Conservation Education, Ecology, *Elementary School Science, *Instructional Materials, *Outdoor Education, Science Activities, Teaching Guides
Identifiers—ESEA Title III
Contained are instructional materials developed by the Science Project Related to Upgrading Conservation Education ("SPRUCE"). It is designed for use with the SPRUCE "Discovery Box" and contains twenty-one sets of investigations based on the twenty-one packets of specimens in the box. three sets are recommended for each of Grades K through 6. Each of the twenty-one topics is introduced by a "background" section giving the rationale of the investigations and background information for the teacher. This is followed by four to ten "investigations"—questions and suggested activities which require students to observe and compare, sometimes to do simple experiments, and usually to extend their observations outside the classroom. The early topics emphasize the use of the senses in observing, later ones enable students to make discoveries about the characteristics of organisms and habitats. Themes which run through the investigations are constant change in nature and the interaction between organisms and their environments. The introduction to the manual describes the approach of the materials and makes a plea for improved conservation education. Ways in which this can be fitted into the general curriculum are suggested. The contents of the "Discovery Box" are not listed, but can be inferred from the background sections and investigations. This work was prepared under an ESEA Title III contract. (EB)

ED 035 473 88 RC 003 931
Outdoor Education Primary Resource Guide—A Reprint of the Resource Guide for Teaching In-About-For-the Outdoors, 1967.
Crystal Lake Community School District Number 47, Ill.
Spons Agency—Office of Education (DHEW), Washington, D.C. Div. of Plans and Supplementary Centers.
Report No—DPSC-67-4185
Pub Date 67
Note—60p.
EDRS Price MF-$0.50 HC-$3.40
Descriptors—Art, Curriculum Enrichment, Curriculum Guides, *Environmental Education, Instructional Materials, Language Arts, *Learning Activities, Natural Resources, *Outdoor Education, Physical Education, *Primary Grades, Resource Guides, Sciences, Social Studies, *Teaching Guides
Designed for use with students in the first, second, and third grades, the resource guide is one of a series of 3 booklets (primary, intermediate, and junior high levels) developed by the Crystal Lake, Illinois, school district under a Title III appropriation of the Elementary and Secondary Education Act. Outdoor education activities are suggested for incorporation into language arts, mathematics, art, physical education, music, and social studies. Suggested activities for science and social studies classes are presented by grade level. RC 003 930 is a related document. (TL)

ED 038 207 95 RC 004 232
Outdoor Education Manual.
Nashville - Davidson County Metropolitan Public Schools, Tenn.
Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Research
Pub Date Jul 66
Note—113p.
EDRS Price MF-$0.50 HC-$5.75
Descriptors—*Concept Teaching, Creative Teaching, Curriculum Enrichment, Ecology, Educational Innovation, Educational Programs, *Elementary Grades, *Environmental Education, Evaluation, Instructional Aids, Instructional Materials, Mobile Classrooms, Nature Centers, *Outdoor Education, Sciences, *Teaching Guides, Teaching Skills
Creative ways to use the outdoors as a part of the regular school curriculum are outlined in this teacher's manual for the elementary grades. Presented for consideration are the general objectives of outdoor education, suggestions for evaluating outdoor education experiences, and techniques for teaching outdoor education. The purpose and functions of a mobile unit--designed as a workshop, library, and laboratory to aid teachers--are discussed, and a list of equipment available on the unit (e.g. compasses, maps, and binoculars) is presented. The major portion of the manual lists outdoor education concepts by subject matter and grade level and suggests ways the concepts can be incorporated in the everyday curriculum. (DB)

ED 038 222 RC 004 250
Gilfillan, Warren C. Burgess, Robert A.
The Counselors' Handbook for the Outdoor School.
Multnomah Outdoor Education, Portland, Ore.
Pub Date [69]
Note—51p.
EDRS Price MF-$0.25 HC-$2.65
Descriptors—Administrative Organization, Behavior Standards, *Camp Counselors, *Camping, Counselor Role, *Counselor Training, Ecology, Environmental Education, Evaluation Techniques, Grade 6, *Outdoor Education, *Resident Camp Programs, Student Role, Youth Leaders, Youth Programs
Identifiers—Oregon, Portland
Materials available in this manual are designed to aid camp counselors in working effectively with students and with other camp personnel in making the overall camping experience as meaningful as possible. The manual includes sections on (1) the role of the junior counselor in relation to all other persons at the camp, (2) how the Outdoor School is organized, (3) junior counselor orientation, (4) understanding the sixth-grade student, and (5) specific information for

the junior counselor on camp policies and on clothing and equipment An appendix includes a sample of evaluation forms used and several lists of rules and regulations pertaining to camping activities The Outdoor School program, for this handbook is intended, is operated as a service of the Multnomah County Intermediate Education District in Oregon Sixth-grade classes spend 1 week in residence at camp with their classroom teachers and professionally trained camp counselors and directors Related documents are ED 018 376, RC 004 251, and RC 004 253 (DB)

ED 038 223 RC 004 251

Gilfillan, Warren C., Comp *Burgess, Robert A., Comp*

The Student's Guidebook for the Outdoor School.

Multnomah Outdoor Education, Portland, Ore.

Pub Date 70

Note—55p

EDRS Price MF-$0.25 HC-$2.85

Descriptors—Activities, *Behavior, *Camping, Ecology, Environmental Education, Equipment, Grade 6, Orientation, *Outdoor Education, *Resident Camp Programs, *Student Role, Summer Programs, Youth Programs

Identifiers—Oregon, Portland

To prepare students for attending school out-of-doors, this manual addresses the student directly. Topics covered in the first part of the manual include the Outdoor School site the school staff, living at the Outdoor School, studying in the Outdoor School, fun at the school, and a brief paragraph of initial preparation for the Outdoor School The second and major portion of the manual covers clothing and equipment needed, various activities to be undertaken, general rules and regulations, and special tools for students to make for use at the school Other parts of this section include duty rosters for boys and girls, discussion of camp manners, clean-up procedures, and hints for cabin living and inspection. The Outdoor School is a 1-week residence camping experience designed for all sixth graders and their teachers in the Multnomah County Intermediate Education District, Oregon Related documents are ED 018 376, RC 004 250, and RC 004 253 (DB)

ED 038 224 RC 004 253

Gilfillan, Warren C. *Burgess, Robert A.*

The Teachers' Handbook for the Outdoor School.

Multnomah Outdoor Education Portland, Ore

Pub Date Jul 68

Note—42p.

EDRS Price MF-$0.25 HC-$2.20

Descriptors—Activities, Behavior Standards, *Camping, Ecology, Environmental Education, Equipment, Grade 6, Orientation, *Outdoor Education, *Resident Camp Programs, Student Role, *Teaching Guides, *Youth Leaders, Youth Programs

Identifiers—Oregon, Portland

Built around the role of the teacher in outdoor education, this manual outlines important aspects of an organized Outdoor School program for sixth-grade students in Multnomah County, Oregon The manual describes the Outdoor School, staff responsibilities, and orientation to the Outdoor School Specific information for teachers, suggested follow-up activities, and a checklist of teacher equipment and clothing needs are also presented The prevailing theme of this manual is that the classroom teacher is the most important person in dictating the type of experience the sixth-grade youngsters will have at the Outdoor School Related documents are ED 018 376, RC 004 250, and RC 004 251 (DB)

ED 061 034 SE 012 712

Richeson, Karren *Knodeck, Janey*

Interdisciplinary Outdoor Education, Sea and Shore.

Pub Date [72]

Note—41p.

EDRS Price MF-$0.65 HC-$3.29

Descriptors—Elementary School Science, *Environmental Education, *Marine Biology, *Oceanology, *Outdoor Education, Resource Materials, *Science Activities, Teaching Guides

This teacher's resource guide contains a number of activities for use primarily in kindergarten through third grade Twenty-four classroom activities are described, most of which involve observing and discussing various kinds of sea life found at the seashore Background information is provided in the guide so that the teacher can use this unit without requiring many outside resources. Suggestions for organizing a field trip to the seashore and for creating a "seashore atmosphere" in the classroom are included, as is a list of equipment and supplies needed for the activities (PR)

ED 063 151 SE 013 763

Environmental Center for Our Schools, Curriculum Guide, Grades 4,5,6.

Springfield Public Schools, Mass

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date Sep 71

Note—157p.

EDRS Price MF-$0.65 HC-$6.58

Descriptors—*Curriculum Guides, *Ecology, Environmental Education, *Instructional Materials, *Intermediate Grades, Learning Activities, Natural Resources, Natural Sciences, *Outdoor Education, Teaching Guides

Identifiers—ESEA Title III

Included in this curriculum guide are outdoor and environmental study activities for grades four, five and six The activities are designed to help children appreciate the beauties of the forest, pond, and field, to have them observe the interdependence of living things in each community, and to see the role each member plays in maintaining an ecological balance in the community Both classroom and on-site activities and suggestions are provided to better coordinate the learning experiences Where appropriate each activity defines its objective, materials needed, procedure to follow, and discussion questions. Also included is a list of investigations from the classroom laboratory manual which directly relate to Environmental Center for Our Schools (ECOS) activities for that particular grade level. Facilities at Forest Park, Springfield, Massachusetts are utilized in the ECOS project This work was prepared under an ESEA Title III contract. (BL)

ED 065 345 SE 014 423

Outdoor Education Resource Guide.

Prince George's County Board of Education, Upper Marlboro, Md

Pub Date 70

Note—264p.

EDRS Price MF-$0.65 HC-$9.87

Descriptors—*Elementary Grades, Environmental Education, *Instructional Materials, Learning Activities, Natural Resources, *Outdoor Education, *Teaching Guides

Developed primarily as a source of information for teachers planning outdoor education experiences, the material in this resource book can be used by any teacher in environmental studies Subjects and activities most often taught as part of the outdoor education program are outlined both as resource (basic information) and teaching units. The teaching units suggest pre-camp, camp, and post-camp activities, indicating materials required and procedures to follow for the activities Topics include, insects, woodland community, shoreline ecology, weather, astronomy, stalking and observing, mapping and orienteering, creative arts, nature crafts, survival and campcrafts, water safety and recreation, and campfire programs. A bibliography accompanies each unit together with information specific to the outdoor education program of the Prince George's County public schools (BL)

ED 068 368 SE 015 164

Jacobs, Joel Robert, Ed

Fifth Grade: Winter and Spring Curriculum Guide.

Harrisburg City Schools, Pa Outdoor and Environmental Education Center

Pub Date 72

Note—66p

EDRS Price MF-$0.65 HC-$3.29

Descriptors—*Curriculum Guides, Environmental Education, *Grade 5, Instructional Materials, *Learning Activities, Lesson Plans, *Natural Resources, *Outdoor Education, Units of Study (Subject Fields)

Identifiers—EDLA Title I

Activity plans for fifth grade outdoor education experiences comprise the bulk of this curriculum guide. Many of the outlines have been developed through practical application and experimentation by staff members of the Outdoor and Environmental Education Center (OEEC) of the Harrisburg, Pennsylvania, City Schools Activities and studies for the winter are related to reptiles, composition and germination of seeds, history of living things, rocks and minerals, erosion, ropes and knots, camping equipment and outdoor survival, wood cutting, and observation Spring activities include the study of birds, flowers, simple plants, outdoor cooking, reforestation, and gardening Each plan outlines (1) steps for classroom introduction of the subject and preparation of the students for their outdoor laboratory exercises, (2) information as provided in the OEEC activity, and (3) topics/projects to consider for classroom follow-up and reinforcement Vocabulary words films, and books are listed where appropriate as supplemental aids This work was prepared under an ESEA Title I contract Related documents are SE 015 163 for grade four and SE 014 707 for grade six. (BL)

ED 070 588 SE 014 413

200 Outdoor Science Activities, A Classroom Extension.

Ontario Teachers' Federation, Toronto.

Pub Date 69

Note—30p.

EDRS Price MF-$0.65 HC-$3.29

Descriptors—Ecology, *Elementary Grades, Environmental Education, Field Studies Field Trips, *Natural Resources, *Outdoor Education, *Science Activities, *Teaching Guides

To encourage teachers to use the out of doors in their teaching, this booklet has been prepared by the Ontario Teachers' Federation It reviews basic approaches to out-of-doors instruction types of field trips, teacher training and sources of instructional assistance pre planning and follow-up for a field trip, and points to consider in evaluation Following this are 200 outdoor science activities, each of which allows direct exposure to material things out-of-doors so pupils may gain an appreciation of their environment and an understanding of ecological relationships Animals, birds, geology, insects, meteorology, physical science, plant life, snow, temperature, and trees are the topics of study Each activity is briefly described and coded for unique environment or activity area (stream, marsh, open field, school year, woodlot, all areas) Concluding information lists resource books for both teachers and students in many areas of natural resources. (BL)

ED 071 836 RC 006 743

Orenta, Vivian *Bartley, H. E.*

Relationships through Conservation. Plain Local Schools, Outdoor Education Program.

Stark County Board of Education, Louisville, Ohio

Pub Date 71

Note—110p

EDRS Price MF-$0.65 HC-$6.58

Descriptors—Administrative Organization, Community Responsibility, *Conservation Education, *Grade 6, Hygiene, Instructional Materials, *Manuals, *Outdoor Education, *Resident Camp Programs, Scheduling

The purpose of this Outdoor Education Program was to develop in children a keener insight into the responsibilities of citizenship, as well as a better understanding of man's interrelationship with and dependence on nature. The program was an extension of the school curriculum to the out-of-doors and offered opportunities for developing many of the socially desirable attitudes, skills, habits, and interests needed for later life. This manual is intended as a basic source for both experienced and inexperienced outdoor personnel. Planning for the camp is discussed in terms of the organization of the outdoor education program, the schedule of activities; living in the camp community, getting acquainted with the new environment, the outdoor education routine, evaluating the outdoor education experiences, and the outdoor education teacher and counselor, which includes the classroom teacher's responsibilities in preparing the students to go to camp and suggests pre- and post-outdoor educating activities for the class-

room Specific instructional units include Water and Related Uses, Rocks and Soils, Living Things of the Season, and Forestry For each unit, material for presentation, identification charts, and suggested activities are included (HBC)

ED 071 917 SE 015 556
Roller, Lth
Using the School and Community, An Environmental Study Area, Teachers' Handbook.
Nashville - Davidson County Metropolitan Public Schools, Tenn
Pub Date 72
Note—194p
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Community Study, *Elementary Grades, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Outdoor Education, *Teaching Guides, Trails

Designed to give the elementary teacher some ideas for using the school site and the community as an environmental study area, this guide offers activities and suggestions to explore all aspects of the environment Gaining an understanding of the environment and man's relationship to the environment are emphasized The ultimate goal is to develop citizens with a personal sense of involvement and an attitude that will guide their behavior towards the wise use of all our resources Part 1 discusses selecting a site for environmental study and surveying its educational possibilities Part 2 outlines steps for getting up a nature trail on school grounds together with activities for use of the trail The interdisciplinary approach of environmental education is promoted in Part 3 Work sheets for on-site involvement in language arts, social studies, science, math art and music are given Several pages and ideas adapted from "All Around You, An Environmental Study Guide" (ED 064 131) are reprinted Part 4 deals with environmental problems air, water, noise, waste, and visual pollution, land use, population, and miscellaneous urban problems Each topic provides background material for the teacher, activities for the classroom, and school site and community activities (BL)

ED 073 913 SE 015 650
Learning to Live: A Manual of Environmental Education Activities.
Minnesota State Dept. of Natural Resources, St. Paul. Bureau of Information and Education.
Pub Date [73]
Note—31p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Ecology, Elementary Grades, *Environmental Education, *Guides, Instructional Materials, *Learning Activities, Natural Resources, *Outdoor Education, Secondary Grades

Contributions from a variety of sources are compiled in this manual to provide both students and teachers with environmental study activities Several activities are suggested under each of the following topics Ecology and Esthetics (emphasizing awareness), The Decision-Making Process (resource management problems), A Plea for an Alternative (assessing the impact of snowmobiles on the winter environment), Studying Gray Squirrel Habitat, A Deer Browse Story (indicating intricate plant-animal interrelationships), Snow Hydrology: Inspection of a Logging Project (how logging benefits the forest and wildlife), How to Build a Compost Pile (reducing the volume of solid waste), Environmental Action Activities (action projects), Nature Activities (to do on a hike or field trip), and Going Somewhere? (places to go and things to see outdoors) Appropriate charts, diagrams, and pictures are included (BL)

ED 080 344 SE 016 495
Teacher Resource Guide, Project ECO.
Ames Public Schools, Iowa
Pub Date [73]
Note—193p
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Ecology, Elementary Grades, Environmental Education, *Field Studies, Instructional Materials, *Lesson Plans, *Natural Resources, *Outdoor Education, Science Activities, Secondary Grades, *Teaching Guides

More than 100 outdoor education and field science projects are compiled in this teacher's book Designed for use in grades K-9, the activities cover the areas of field taxonomy, laboratory taxonomy, autecology, synecology, adaptation, economic biology, conservation, museum methods, culturing, zoo keeping, gardening, and woodcraft Each project designates the topic (community relationships, life forms, soils, water, air, fossils, or you in your environment), suggested grade level, locality, activity or problem, background needed, specific objective, anticipated outcomes (concepts), procedure, materials needed, and suggested evaluation Supplemental activities (art, social studies, language arts, mathematics, and science are listed but not explained in detail together with a large booklist Teacher responsibilities for preparing field trips and using facilities are also explained and program evaluation questions are suggested (BL)

ED 081 607 SE 016 624
Roller, Elizabeth
Outdoor and Environmental Education Manual, Grades K-6.
Nashville Davidson County Metropolitan Public Schools, Tenn.
Pub Date [73]
Note—100p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Elementary Grades, Environmental Education, Fundamental Concepts, Instructional Materials, Interdisciplinary Approach, *Learning Activities, *Natural Resources, *Outdoor Education, *Teaching Guides

In an effort to help elementary teachers see how the out-of-doors can be utilized in everyday teaching, this manual lists possible outdoor activities that can be included in the school curriculum Introductory information defines objectives of outdoor education, suggestions for evaluation of outdoor education experiences, and techniques for teaching in the out-of-doors The activities section, divided by grade level (1-2, 3, 4, and 5-6), utilizes a conceptual approach within specific subject areas General objectives are noted for each subject, succeeded by individual concepts and their supporting activities and follow-up Subjects include science, language arts, mathematics, social studies, and arts/crafts/music at each level The final segment suggests health, physical education, and recreation activities appropriate for all grade levels References are listed by section (BL)

ED 081 608 SE 016 625
Use That Campus.
Tennessee Valley Authority, Norris, Tenn Div of Forestry, Fisheries, and Wildlife Development
Pub Date 71
Note—16p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Elementary Grades, Environmental Education, *Natural Resources, *Outdoor Education, *Resource Guides, School Location, *Site Development, Student Projects

The purpose of this publication is two fold to show how the natural features on campuses can be used effectively in environmental education and to plead for preservation of as much of the natural landscape as possible on new school sites Since opportunities for teaching about nature are easily found on the grounds around a school, this booklet outlines briefly some of the ways teachers can make the most of this opportunity, and gives sources for additional material and assistance Campus and program development discusses the outdoor site, classroom preparations, and project ideas built around the history of conservation, plant life, animal life, nonliving elements of the environment, light, water, weather, temperature, soil, minerals, and fire, Trails, signs, amphitheaters, ponds, weather stations, and models that can be built or developed at the outdoor learning facility are enumerated under teaching aids The final section suggests additional projects which can be undertaken with little preparation necessary--leaf identification, snow study, animal food habits, habitats, fireplace construction, cooking, compass skills, insects, clouds, measurement, growing plants, seeds, birds, trees, soil study, moisture and rain gauges, pond life, food manufacturing, decomposition, climbing plants, and woodlands A bibliography is appended. (BL)

ED 087 576 RC 007 633
Larson, Elston F
Orienteering In Camping.
Pub Date [74]
Note—8p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Camping, *Curriculum Guides, *Educational Games, Elementary School Curriculum, *Instructional Materials, Instructional Programs, Map Skills, *Outdoor Education, *Program Descriptions, Program Development, Recreational Activities, Teacher Education Curriculum, Visual Aids

One of the recent developments in camping is "orienteering", a program using a map and compass Orienteering can be developed into an overall camping program and used to point up the entire program, or it can be confined to a single simple game The arrangement depends on the situation The minimum age of the participants should be about 9 or 10 The ideal size group to instruct at one time is 20 The following program suggestions are based on an arrangement that has been used under a variety of conditions divide program into 3 main parts--(1) preliminary instruction to teach the simple use of a compass, (2) compass games, and (3) pointing up the general program--that is, a compass hike combining various outdoor skills into a unified adventure There are no real limitations regarding the area to be used A small back yard or even indoor rooms are usable Instructions are also given for how to teach the Silva Compass, how to measure distance with a compass and how to organize a hike. (FF)

ED 092 388 SE 017 959
Reed, Ronald, Ed
Resident-Outdoor Education, A Planning Guide.
Ohio State Dept of Education, Columbus
Pub Date 73
Note—32p
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Elementary Grades, Elementary School Science, *Environmental Education, *Guidelines, *Guides, Instruction, *Outdoor Education, *Resource Materials

The focus of this booklet is on the mechanics of organizing and operating resident outdoor education programs, the guidelines presented are written mainly for elementary programs of one week's duration Topics covered include a philosophy for outdoor educational experience, laying the groundwork, choosing a site, time of year, financing, resource people, night supervision, transportation, and health, accidents, safety, and insurance A bibliography of 127 references providing sources for ideas for educational activities that can be conducted at a resident site is included along with sample forms (a parent information sheet, equipment list, permission and health information forms, medical permission slips, evaluation forms and guides, and visitor's report) that might be used for a program (DT)

ED 094 912 RC 008 054
Environmental Education, Teacher's Handbook, Grade 5.
Nashville - Davidson County Metropolitan Public Schools, Tenn
Note—153p
EDRS Price MF-$0.75 HC-$7.80 PLUS POSTAGE
Descriptors—American Indians, Conservation Education, Ecology, Enrichment Activities, *Environmental Education, *Grade 5, Natural Resources, *Outdoor Education, Pollution, Resource Materials, *Science Units, *Teaching Guides

Prepared for use in the 5th grade, this teacher's handbook consists of 19 science units dealing with environmental education Topics are ecology, language arts, rocks and fossils, soil, noise pollution, Nashville pioneers and American Indians, conservation, waste and litter, water pollution, compass and mapping, plants and trees, use of the senses, animal homes, air pollution, arts and crafts, insects, mathematics outdoors, plot study, the total environment of an area, and energy Unit objectives, time length concepts, vocabulary, activities, and a list of resource materials are given for each (NO)

ED 096 085 88 RC 008 129
Teacher's Guide to Fifth Grade Environmental Education.
Upper Mississippi River ECO-Center, Thomson.

III.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C Div of Plans and Supplementary Centers
Pub Date 74
Note—153p
EDRS Price MF-$0.75 HC-$7.80 PLUS POSTAGE
Descriptors—Audiovisual Aids, Camping, Curriculum Development, Ecology, *Environmental Education, *Grade 5, *Interdisciplinary Approach, Natural Resources, *Outdoor Education, Perceptual Development, Resource Materials, Science Units, *Teaching Guides
Identifiers—Elementary and Secondary Education Act Title III, ESEA Title III, Illinois, *Urban Mississippi River ECO Center
The Upper Mississippi River ECO-Center is an exemplary Title III, Elementary and Secondary Education Act (ESEA) environmental education project serving the seven school districts of Carroll County, Illinois. The Center has been involved in these aspects of environmental education outdoor education inservice training, curriculum development, reference center development, resource development, and information dissemination. This handbook has been designed for use by fifth grade teachers in Carroll County and as an aid to other schools and teachers developing environmental education programs. The activities which have been used and evaluated in the seven county districts, have been used primarily in fifth grade but most could be adapted to other grade levels. Evaluation of fifth grade students during the first 3 years of operation showed a significant increase in environmental awareness. Topics are implementing environmental education, ECO Center fifth grade environmental education—environmental awareness, man and the river, man and the elements, sewage treatment plants, school camping, school site activities, classroom, instruction, and additional resources (Author/NO)

ED 097 211 SE 018 217
Enjoying the Environment. Environmental Education Curriculum.
Topeka Public Schools, Kans
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C
Pub Date Mar 74
Note—47p., Best copy available, Occasional marginal legibility
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Camping, Curriculum Guides, *Environmental Education, Instruction, Instructional Materials, *Intermediate Grades, Junior High Schools, *Leisure Time, Natural Resources, *Outdoor Education, *Recreational Activities, Recreational Programs
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
Since an increasing number of people today are spending leisure time in the out-of-doors, there is a need to develop society's awareness and understanding of the environment, develop outdoor skills, and stress factors in outdoor activity participation. This unit is designed to provide enough information and skill development to enable educable mentally retarded students at the intermediate and junior high level to successfully participate in some of the popular outdoor activities. Eight topics are included as follows: boating, riflery (BB guns), fire building, fishing, archery, microscope activities focusing on nature studies, tenting and outdoor lab sessions. There is a suggested unit time line for each topic with culminating work involving field experience. Specific schedules are included in each topic area and appendices provide relevant background information, diagrams and appropriate techniques. (MLB)

ED 100 639 SE 016 950
Hyland, Barb
Nature's Alphabet.
Chester Area Schools, S Dak. Interlakes Environmental and Outdoor Education Program
Pub Date [73]
Note—67p.; Best Copy Available
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Conservation Education, *Environment, *Environmental Education, Instructional Materials, Learning Activities, *Natural Resources, *Outdoor Education, *Science Education, Science Units, *Teaching Guides, Unit Plan
The purpose of this collection of environmental education units, written by teachers and environmental educators, is to develop in students a sense of wonder, curiosity, and interest about the environment. The 26 interdisciplinary activity units are designed to be used as pre-activities or follow-up activities to other outdoor studies in the elementary grades. The booklet contains a unit for each letter of the alphabet, such as, A-Ants, B-Buds, C-Compost, D-Dirt. Each activity unit identifies the appropriate grade level, optimal time of year for teaching the unit, the objectives, needed materials, background information, pre-activity questions, the activity, and post activities. The units are for kindergarten through fourth grade, and are designed to utilize the out-of-doors. The activities in the unit include math activities, art activities, sensory awareness skill development, and language arts activities. Predominant throughout the units is the emphasis on inquiry and discovery. (TK)

ED 123 055 SE 020 403
Reilly, Dennie
Correlated Enrichment Environmental Activities for the S.A.P.A. Curriculum Kits A through D. Del Mod System, Dover, Del
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date May 73
Grant—NSF-GW-6703
Note—139p.; Occasional Marginal Legibility
Available from—Mr. John R. Reiher, State Supervisor of Science and Environmental Education, Dept. of Public Instruction, John G. Townsend Building, Dover, Delaware, 19901 (Free while supply lasts)
EDRS Price MF-$0.83 HC-$7.35 Plus Postage
Descriptors—*Elementary School Science, Enrichment Activities, *Environmental Education, *Instructional Materials, Learning Activities, Outdoor Education, *Primary Grades, *Science Activities
Identifiers—Del Mod System, SAPA, Science A Process Approach
These environmental enrichment activities were written by teachers and consultants in workshops and institutes. The activities are appropriate for K-3. For each level the sequence of original activities including the new environmental activities is listed. General objectives for the level are given. The enrichment activities list materials, objectives, trip procedures and questions, and audiovisual materials. The activities were developed for field work as part of outdoor education (MR)

ED 144 433 SE 021 719
Environmental Education Curriculum Guide - K-Grade 5. [Ah-Nei, The Special Classroom Environmental Education Study Area].
Bureau of Land Management (Dept. of Interior), Billings, Mont.
Pub Date Mar 75
Note—236p., Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—Biology, Curriculum, Earth Science, Ecology, *Elementary Education, *Elementary School Science, *Environment, *Environmental Education, Instructional Materials, *Outdoor Education, *Teaching Guides
This is a curriculum guide for environmental education designed for use in grades K-5. While the guide is designed to be used in a Montana environmental education study area, most activities can be used directly in other locations; others can be adapted. Included are: (1) a discussion of ecological terms, (2) a list of vocabulary words, (3) activities, and (4) suggestions for instruction. Most of the activities are detailed with background information for the teacher. The suggestions for instruction include a number of check lists and other practical suggestions for teachers. (RH)

ED 144 824 SE 021 114
Curtis, Hugh And Others
Instructional Guide for Outdoor Education; K-3, Wausau District Public Schools, Wausau, Wisconsin.
Wausau District Public Schools, Wis.
Pub Date [70]
Note—111p., For related document see SE 023 115; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—*Conservation Education, *Elementary School Science, *Environmental Education, Instructional Materials, Learning Activities, *Outdoor Education, Primary Education, Resources, Science Activities, Science Education, *Teaching Guides
This guidebook is designed to assist elementary grade teachers in following an outdoor education curriculum developed in Wausau, Wisconsin, though the activities are applicable to most areas. The book contains outlines of materials and lessons to use and evaluate so that a final guidebook can be produced that will be of the most use for teachers. This outdoor education approach encourages observation and interdisciplinary study. The curriculum stresses observation skills, social behavior, the environment, and the conservation of natural resources. Field trips are encouraged and a schedule of locations and their descriptions is included. Each lesson is divided into a number of components. The grade level, K-3, is given along with the objective, concept, and purpose of the lesson. The teacher is then given guidelines for introducing, developing, extending, and fixing the concept. Where materials are required, they are listed, along with audio-visual materials that supplement the lesson. (MA)

ED 157 662 RC 010 657
Korporaal, Arie R., Ed
Nature's Classroom, A Guide for the Los Angeles County Outdoor School.
Los Angeles County Superintendent of Schools, Calif.
Report No—LACO-75
Pub Date 75
Note—93p., Revised 1975
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—*Activities, Concept Formation, *Conservation (Environment), *Curriculum, Ecology, Educational Objectives, Elementary Education, Environmental Education, Experiential Learning, *Guides, Lesson Plans, Organization, *Outdoor Education, Philosophy, Policy, *Program Descriptions, Residential Programs, Vocabulary Development
Identifiers—*Los Angeles County Outdoor School CA
Promoting understandings in outdoor science and conservation is the primary goal of the Los Angeles County Outdoor School as presented in this guide to its five-day resident program for elementary school pupils. The purpose of various program components is briefly described, including hikes, cabin living, campfires, conservation projects, crafts, dining hall, evaluation and planning, flag ceremony, folk dance and folk singing, library and museum visits, and specialists. A sample daily schedule gives approximate times for a typical day. The 1973-74 curriculum is outlined under four major concepts: (1) an ecosystem consists of natural communities of plants and animals interrelated and interacting with their physical environment, (2) man's attitudes and way of life create an ecological impact on the environment, man's survival depends on his ability to minimize this impact, (3) the earth is in constant motion producing regular predictable changes in the environment to which man adapts, (4) outdoor school is a mini-community in which each pupil can participate as a citizen and creative person. Under each, activities to accomplish objectives are given, with both outdoor school and classroom learning opportunities, many of which provide for multicultural experiences. The appendix has a glossary in both English and Spanish and site information on the outdoor school. (RS)

ED 157 766 SE 024 768
Brainard, Lynn And Others
Westside Outdoor Teacher's Guide, Grades K-6.
Florida State Dept. of Education, Tallahassee. Office of Environment Education

Pub Date 75
Note—64p. Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Elementary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Language Arts, Mathematics, *Outdoor Education, Sciences, Social Studies, *Teaching Guides
This illustrated guide includes activities in Creative Arts, Language Arts, Math, Science, and Social Studies. Activities progress from an animal rhyme quiz for lower grades, to projects for upper level students on soil testing, relative humidity, and solar heat collection. The guide emphasizes activities selected to motivate students to appreciate the outdoors, rather than activities which promote "a conglomeration of facts and figures for this and that." (Author/RH)

ED 160 282 RC 010 779
Mathews, Bruce E. Oakes, David B
Old Time Apple Cider Makin': An Outdoor Education Unit.
Cortland-Madison Board of Cooperative Educational Services, Cortland, N.Y.
Pub Date—Oct 76
Note—33p. Not available in hard copy due to the extensive use of colored paper
Available from—Cortland BOCES Outdoor-Environmental Ed. Program, McEvoy Educational Center, Cortland, New York 13045 ($1.00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, *Cooking Instruction, Elementary Education, Food, Health, Illustrations, *Interdisciplinary Approach, Language Arts, *Lesson Plans, Nutrition Instruction, *Outdoor Education, *Resource Materials, Sciences, Social Studies
Identifiers—*Apple Cider, Making
An illustrated self-contained packet the resource materials contained in this guide are designed for adaptation to K-8. The resources and ideas presented here are designed to encourage utilization of the outdoors as a learning resource. While intrinsically multidisciplinary, the activities are particularly adaptable to social studies, science, and language arts. Activities and narratives included in this guide are as follows: a five page history of apples accompanied by a chart indicating apple variety, flavor and texture and usage (pie, sauce, etc.); pre-trip lesson suggestions aimed at science, social studies, math, health, and language arts activities; the lesson on making apple cider: mood setting, old time uses of apples, modern apple uses, types of apples and uses, storage, cider making activity, cider considerations, and wrap up), post trip follow up suggestions, a narrative on fruit sprays, a narrative on the virtues of an apple a day, "The Health and Nutrition Story of Apples", 15 apple recipes, a narrative on making apple cider, a guide to making dried apple faces and dolls, a crossword puzzle and special tips to the teacher re the mechanics of making cider. (JC)

ED 160 284 RC 010 781
Yaple, Charles, And Others
The Maple Products: An Outdoor Education Unit.
Cortland-Madison Board of Cooperative Educational Services, Cortland, N.Y.
Pub Date—Feb 76
Note—31p. Not available in hard copy due to poor print quality of original document
Available from—Cortland-Madison BOCES Outdoor-Environmental Ed. Program, McEvoy Educational Center, Cortland, New York 13045 ($1.00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, *Cooking Instruction, Elementary Education, Field Trips, Health, History, Illustrations, *Interdisciplinary Approach, Language Arts, *Lesson Plans, Mathematics, *Outdoor Education, *Resource Materials, Sciences, Vocabulary Development
Identifiers—*Maple Syrup
Designed to take advantage of the spring season, this resource packet on maple products centers upon a field lesson in harvesting and making maple syrup. The resources in this packet include a narrative on the origins of maple sugar, an illustrated description of old time maple sugaring, suggestions for pre-trip activities (history of maple sugaring, science of maple sugaring, and a fact sheet on maple syrup), the actual lesson plan on maple syrup (includes tree identification, tapping the tree, collecting and storing the syrup, boiling the syrup, making sugar and using the syrup in recipes), suggestions for post-trip activities (includes lessons on language arts, science and math, and health), a glossary of maple-related terms, a description of how to make a spile from sumac, an illustrated description of how to identify maple trees, a narrative on the sugar maple as New York's state tree, individual narratives with accompanying exercises on the sugar maple, the red maple and the silver maple, a maple tree crossword puzzle, three pages of maple product recipes, and teacher tips on how to eliminate unforeseen problems. (JC)

ED 165 972 RC 011 157
Whitney, Helen, Comp.
101 Environmental Education Activities. Booklet 1—Art and Music Activities.
Upper Mississippi River ECO-Center, Thomson, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date—75
Note—15p., Best copy available
Available from—Upper Mississippi River ECO-Center, Thomson, Illinois 61285 ($1.00)
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Aesthetic Education, *Art Activities, Art Materials, Curriculum Enrichment, *Curriculum Guides, Educational Objectives, Educational Resources, *Elementary Education, *Environmental Education, Evaluation Criteria, Experiential Learning, Instructional Materials, Intermediate Grades, *Music Activities, Musical Instruments, *Outdoor Education, Perception, Sensory Experience
Identifiers—Elementary Secondary Education Act Title III, *Upper Mississippi River ECO-Center
First of a series of 6 publications containing environmental education activities, this booklet by the Upper Mississippi River ECO-Center describes 12 environmentally-based art and music activities for elementary and intermediate grades. Each activity description contains objectives, preparation, materials, directions, student evaluation, and variations where appropriate. Eight art projects teach basic art concepts, the artistic use of natural objects and throw-aways, materials combination, aesthetics, and texture awareness by means of the following outdoor oriented activities: dried material arrangements, sand castings, sand paintings, tracings, observations of nature, drawing with natural objects, and bur sculpture. The four music activities—music in the study of animals, music made from articles found in nature, original songs, and selections pertaining to outdoor activities and sounds—teach the uses and history of various instruments and an awareness of rhythm. (SB)

ED 165 973 RC 011 158
Whitney, Helen, Comp.
101 Environmental Education Activities. Booklet 2—Language Art Activities.
Upper Mississippi River ECO-Center, Thomson, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date—75
Note—38p., Best copy available
Available from—Upper Mississippi River ECO-Center, Thomson, Illinois 61285 ($1.00)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Activities, Curriculum Enrichment, *Curriculum Guides, Drama, Educational Objectives, Educational Resources, *Elementary Education, *Environmental Education, Evaluation Criteria, Experiential Learning, Field Trips, Instructional Materials, Intermediate Grades, *Language Arts, Language Instruction, Language Skills, *Outdoor Education, Poetry, Sensory Experience, Vocabulary, Writing
Identifiers—Elementary Secondary Education Act Title III, *Upper Mississippi River ECO-Center
This booklet containing 20 language arts activities is the second in the series "101 Environmental Education Activities" produced by the Upper Mississippi River ECO-Center. The description of each activity contains learning objectives, directions, and suggested student evaluation standards. Elementary and intermediate level students expand their vocabularies, learn new descriptive terms, practice spelling, and study poetry as they improve their powers of observation and their sensory awareness. The activities, based on environmental observation and the outdoor education process, include studying modifying and descriptive words, verbs, nouns, opposites, and figures of speech, drama and poetry writing, including haiku, writing and following directions, exploring outdoor sensations, studying plants and animals, and taking accurate field notes. The final project is a school site study. (SB)

ED 167 311 RC 011 199
Tarbuth, Lawson, Comp.
Winter Games.
Pub Date—73
Note—16p.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—*Alaska Natives, *Childrens Games, Cultural Awareness, Elementary Education, *Eskimos, Experiential Learning, *Outdoor Education, *Play, *Recreational Activities
Identifiers—*Winter Games
Educators may find activities for indoor and outdoor winter programs in the games of the traditional Eskimo. These games are dominated by few-step operations and low level structural organization. For the most part they are quickly organized, begun, terminated, and ready to be recommenced. All types of games can be found, including quiet ones, individual stunts, cooperative games, and small and large group activities. In "Seal Racing," participants lie on their stomachs and race forward on their hands with legs limp and body trailing. "Arsaarartuq" features pulling contests where two participants lock wrists or fingers or elbows and pull. In "Holman Island Musk Ox Fighting" two young boys go down on all fours, put their heads under the shoulder of the person opposite, and try to uproot the opponent much the same as musk ox do when locking horns. Other animal-influenced activities include "Holman Island Forehead to Forehead Pushing" and the "Dog Team Pull." In the dog team game, rope is tied around the waists of two opponents to serve as a harness. They face away from each other, drop down on hand and knees, and try to pull the opponent over a line drawn between them. Ball games include ice broomball, a number of football related activities, and a baseball-like game. This guide tells how to play some 40 games suitable for a winter environment. (DS)

ED 171 456 RC 011 368
Jones, Heather, Bullock, Rodger
The Sweet Taste of Spring: An Integrated Approach to a Springtime Phenomenon.
Forest Valley Outdoor Education Centre, Willowdale (Ontario)
Spons Agency—North York Board of Education, Willowdale (Ontario)
Pub Date—Jan 79
Note—53p., Not available in hard copy due to publisher's preference
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Art Activities, *Elementary Education, *Experiential Learning, Field Instruction, *Field Trips, Health Education, Home Economics, Interdisciplinary Approach, Language Arts, *Learning Activities, Mathematics Instruction, *Outdoor Education, Science Instruction, Social Studies
Identifiers—*Maple Syrup
A visit to a maple sugar bush has become a traditional springtime ritual for many school classes in northern areas. The sensations and experiences from this early springtime activity can be used for a number of study areas, including science, mathematics, art, social studies, home economics, language arts and health. This document provides learning activities for each of these areas that can grow out of students' study of maple sugar production. A number of specific maple syrup-related activities are also included. Children may learn to identify the different species of trees, measure the circumference of sugar maples to determine the number of holes to be drilled for taps and participate in the actual tapping of a tree. They may also learn how to measure sap flow and record it on

charts for each trees with graphs they record the effects of factors influencing sap flow such as temperature, weather conditions, size and location of trees and heights of the tapholes from the ground. Through the use of the Hydrometer method students learn to measure the sugar content of the sap. A number of recipes for cookies, cakes, and other maple "goodies" are given and work with them would provide practice in the use of metric measurements. In addition to all types of learning activities, this book provides teacher background information in such areas as the historical background of maple sugar production and methods by which sap is collected and syrup and sugar produced. (DS)

ED 175 590 RC 011 396
Gilfillan, Warren C. Burgess, Robert A.
The Teacher's Handbook for the Outdoor School.
Multnomah Outdoor Education, Portland, Ore.
Pub Date—Aug 78
Note—43p.
Pub Type— Guides - Non-Classroom (055)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Coeducation, Educational Environment, Educational Resources, Elementary Education, *Environmental Education, Equipment, Experiential Learning, Followup Studies, *Grade 6, Interdisciplinary Approach, Learning Activities, Lesson Plans, *Outdoor Education, *Resident Camp Programs, School Policy, Staff Role, Student Behavior, *Teacher Orientation, *Teacher Role, Teacher Workshops, Teaching Procedures
Identifiers—*Multnomah County Outdoor School OR

Active preparation, participation, and follow up by the classroom teacher are essential to the success of the Outdoor School, a week-long, resident, coeducational program of outdoor education for all Multnomah County, Oregon, sixth grade classes and their teachers. Teacher orientation to the Outdoor School includes an on-site overnight workshop in which teachers train with specialists in the emphasized resource areas: water, soil, plants, and animals. Prior to the School, the teacher should prepare students and parents adequately using Outdoor School materials and integrating the School curriculum into all subject areas through the use of suggested learning activities. During the School the teacher should plan daily with the Resource Specialists and staff, available to instruct as much as the teacher desires, so that formal outdoor study experiences will be beneficial. The teacher must also help relate the School curriculum to that of the classroom and help maintain proper discipline and student conduct. After the School, the teacher should use suggested classroom follow up activities to cement the Outdoor School experience. This handbook describes staff roles and policies; daily learning sessions; school objectives; necessary equipment; and procedures for administrative duties, arrival, departure, dining, discipline, and ceremonies. (SB)

ED 175 591 RC 011 397
Gilfillan, Warren C., Comp. Burgess, Robert A., Comp.
The Student's Handbook for the Outdoor School.
Multnomah Outdoor Education, Portland, Ore.
Pub Date—78
Note—36p.
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Elementary Education, Environmental Education, Experiential Learning, *Grade 6, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Outdoor Education, Recreational Programs, *Resident Camp Programs, *School Orientation, *School Policy, Student Behavior, *Student Responsibility, Student Role
Identifiers—*Multnomah County Outdoor School OR, Student Handbooks

Directed to the Multnomah County, Oregon, sixth grade students who participate in the Outdoor School program, the reusable handbook serves as an introduction to the week-long, resident outdoor education experience which focuses on four natural resources: soil, water, plants, and animal life. Each week, four sixth grade classes from different schools participate in learning and living activities at the school sites, regular children's camps leased for the purpose. Housed in cabins under the supervision of high school aged Junior Counselors, students share work duties such as serving food, setting tables, hosting meals, cleaning facilities and grounds, carrying firewood, and forecasting weather. Each day, students form small groups to concentrate on one resource area during two lengthy outdoor study sessions. They may participate in archery, bait casting, riflery, knife and axe, hiking, or nature crafts during a daily recreation period. A quiet time, class meeting, and campfire complete the fully scheduled daily routine. There is a heavy emphasis on behavior, especially at mealtime. Complete procedures for registration, identification of possessions, arrival and departure, camp duties, ceremonies, and health and safety are described. Directions for construction of necessary camp equipment (tote bag, hobo stove, plant presses, insect collection boxes) are included. (SB)

ED 175 592 RC 011 398
Gilfillan, Warren C. And Others
The Junior Counselor Handbook for Multnomah County Outdoor School.
Multnomah Outdoor Education, Portland, Ore.
Pub Date—Dec 78
Note—28p.
Pub Type— Guides - Non-Classroom (055)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Camp Counselors, *Counselor Role, Elementary Education, Environmental Education, Equipment, Experiential Learning, *Grade 6, *High School Students, *Outdoor Education, *Resident Camp Programs, School Policy, Student Behavior, Student Volunteers, Transportation, Vocabulary, Workshops
Identifiers—Junior Counselors, *Multnomah County Outdoor School OR, Student Handbooks

Each week of the fall and the spring, 20 to 24 high school students volunteer as Junior Counselors at the Outdoor School which each year provides approximately 7000 Multnomah County, Oregon, sixth grade students with an opportunity to live and study together at one of 5 leased resident camp sites. Recommended by their high school counselors, Junior Counselors are selected by the Outdoor School staff on the basis of their enthusiasm, responsibility, enjoyment of the outdoors, and desire and ability to work with younger students and staff. They must have passing grades and be able to miss a week of school. After a 2-day training workshop, each Junior Counselor is specifically responsible for the health and welfare of a cabin group of 8-10 sixth grade students during their week-long stay. The Junior Counselor also assists as instructor in one of four resource areas (soil, water, plants, animals). The handbook details: Outdoor School policies; insurance considerations; administrative procedure; equipment list; transportation arrangements; daily schedule; and student behavior, standards, and work duties. For each resource area there is a glossary of important words and terms that the Junior Counselor is expected to know and use at the School. (SB)

ED 175 593 RC 011 399
Gilfillan, Warren C., And Others
Student Preparation Workbook for Outdoor School Attendance.
Multnomah Outdoor Education, Portland, Ore.
Pub Date—Dec 78
Note—62p.; Not available in hard copy due to extensive use of colored paper
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Botany, Ecology, Educational Games, Elementary Education, *Environmental Education, *Grade 6, *Interdisciplinary Approach, Land Use, *Learning Activities, *Natural Resources, *Outdoor Education, School Orientation, Soil Conservation, Vocabulary Development, Water Resources, Zoology
Identifiers—*Multnomah County Outdoor School OR

Sixth grade students can prepare for the Multnomah County, Oregon, Outdoor School experience by completing the workbook designed to provide fundamental information about soil, water, plant, and animal resources. The workbook begins with an introduction to environmental manners, after which a section is devoted to each resource area. The glossary of terms and words provided for each area is the basis of many of the learning activities which include charts, matching, drawing, labeling, completing study sheets, and games (bingo, crossword puzzles, word searches, word scrambles). The activities specifically address: the water cycle; crayfish; pH; dissolved oxygen; trees; tree measuring; ecosystems; and land use planning. A Teacher's Guide accompanies the workbook. (SB)

ED 175 594 RC 011 400
Gilfillan, Warren C. And Others
Teacher's Guide for Students Preparation Workbook for Outdoor School Attendance.
Multnomah Outdoor Education, Portland, Ore.
Pub Date—Dec 78
Note—64p., Not available in hard copy due to extensive use of colored paper
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Botany, Ecology, Educational Games, Elementary Education, *Environmental Education, *Grade 6, *Interdisciplinary Approach, *Learning Activities, Lesson Plans, *Natural Resources, *Outdoor Education, School Orientation, Soil Conservation, Water Resources, Zoology
Identifiers—*Multnomah County Outdoor School OR

To be used by sixth grade teachers in preparing their classes for the Multnomah County, Oregon, Outdoor School Program, the guide to the Student Preparation Workbook provides general information, descriptions, game materials, and answers to exercises and puzzles. The guide is divided into four resource areas: soil, water, plants, and animals. Each section consists of introductory information, a glossary, and various learning activities and games. Although the material is not organized into complex lesson plans, there are suggestions for use of the activities. Some general environmental material is included. (SB)

ED 176 910 RC 011 561
Kemp, Peter, Comp. Nemmers, Larry, Comp.
Teacher's Guide to Outdoor Education Grades K-6.
Elgin School District 46, Ill.
Pub Date—71
Note—265p.
Pub Type— Guides - Classroom - Teacher (052) — Guides - Classroom - Learner (051)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Art Activities, Curriculum Development, Educational Objectives, Elementary Education, Elementary School Mathematics, Elementary School Science, Environmental Education, *Experiential Learning, Health Education, Instructional Materials, Integrated Activities, Language Arts, *Learning Activities, Lesson Plans, Music Activities, *Natural Sciences, *Outdoor Education, Physical Education, *Resident Camp Programs, Social Studies, *Units of Study

This teacher's guide for planning the elementary outdoor education curriculum focuses primarily, though not exclusively, on activities for sixth graders who participate in a three-day resident program at Camp Edwards. Over 150 activities are organized under the subject areas of natural science, language arts, social studies, mathematics, and music. Ten topics under natural science include plant and animal study, geology, astronomy, winter survival, marshland ecology and water study, and contour map reading. Subject matter areas are generally integrated into natural science activities and treated as tools for study and reporting of experiences in the natural sciences. Each area of study contains--in addition to a wide variety of learning activities--a statement of major objectives, background information for the teacher, discovery questions for students, and activities to help assess the results of the camping experiences. Pre-camp, in-camp, and post-camp learning activities are described, many in detail. The mathematics section, for example, gives complete instructions for five methods of measuring the height of a tree and complete plans for constructing a clinometer, a trundle wheel, a sighting level, and a surveyor's level. An appendix contains student worksheets and a bibliography of 32 entries in outdoor education. (JH)

ED 176 911 RC 011 562
Haves, Jonathan Deem, Robert
Resident Outdoor Education Program, Instructional Guide.
Elgin School District 46, Ill.
Pub Date—70
Note—128p., Revised in 1976 by Robert Deem
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Art Activities, Community Resources, *Concept Teaching, *Curriculum Deve-

lopment. *Elementary Education. Elementary School Mathematics. Elementary School Science. Field Trips. Health Education. *Integrated Activities. Integrated Curriculum. Language Arts. *Learning Activities. Music Activities. Off Campus Facilities. *Outdoor Education. Parks. Perceptual Motor Learning. Physical Education. Social Development. Social Studies

Identifiers—Illinois (Elgin)

An extensive list of outdoor education activities that can be integrated into the traditional curriculum is presented in this guide. Activities are arranged by grade (from kindergarten through sixth) and by subject areas taught at each grade level. Subjects covered in grades 1-6 are science, social studies, language arts, mathematics, art, music, health and physical education. Kindergarten subjects include motor development, sensory development, and social and emotional growth. Each subject area is divided into units and units into concepts, with various outdoor education activities suggested for developing each concept. Second grade science, for example, covers the concepts "Plants are different in many ways," "Plants need sun, water, and good soil to live and grow," and "Plants are used in many ways." Outdoor education activities listed under these concepts include school site observation of differences in plants, growing seeds under varying conditions, visiting a greenhouse, and making charcoal to use for drawing. Many activities can be carried out in the classroom or on the school site; others use the community and resource facilities beyond the community. The appendices contain a bibliography of 16 titles, detailed information about 17 outdoor educational resource facilities in the Elgin area, a list of area resource people, and maps of 15 nearby parks. (JH)

ED 178 231 RC 011 546

Harris, Jean, Comp. And Others

Outdoor Education—Fifth Grade.

Dixon Public Schools, N.J.

Pub Date—77

Note—113p.; Contains some light print

Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—Art Activities, *Curriculum Development, Elementary School Mathematics, Elementary School Science, *Environmental Education, Experiential Learning, Grade 5, *Intermediate Grades, Language Arts, *Learning Activities, Lesson Plans, *Outdoor Education, Social Studies Units, *Units of Study

Identifiers—*Dixon Public Schools IL

Learning activities, lesson plans, and various resource materials are contained in this guide for the fifth grade outdoor education program in the Dixon Public Schools, Dixon, Illinois. Well over 100 activities are suggested, and many of these are described in detail. Although some information is specific to the Dixon program, which has access to a large camp with wilderness areas, most activities can be adapted to any outdoor environment. Activities for the classroom and the outdoors are organized under the following subject areas: mathematics, social studies, language arts, natural sciences, reading, and the arts. Winter outdoor activities are also listed. The section on the natural sciences lists 22 activities including study of local geology, exploration of streams and ponds, and observation and prediction of weather. In addition to lesson plans, student worksheets, and quizzes a wide variety of background information is provided on plant and animal identification, regional geological history including glaciation, and rock and fossil identification. Math activities use the environment to learn measuring and estimating distances, quantities, and velocity; both metric and standard units are used, and charts and other information for metric conversion are included. (JH)

ED 178 232 RC 011 547

Densmore, Tom, Comp. And Others

Sixth Grade Outdoor Education Program, Outdoor Curriculum Guide.

Dixon Public Schools, N.J.

Pub Date—78

Note—195p.; Contains some light print

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC08 Plus Postage.

Descriptors—Art Activities, Curriculum Development, *Environmental Education, *Experiential Learning, Grade 6, *Group Activities, Group Relations, Instructional Materials, Intermediate Grades, *Learning Activities, *Outdoor Education, Problem Solving, *Recreational Activities, Resident Camp Programs, Resource Materials, Safety, Socialization, Units of Study

Identifiers—*Dixon Public Schools IL

Compiled for teachers whose sixth grade students participate in the resident camping program of the Dixon Public Schools (Dixon, Illinois), this guide offers extensive and detailed information for use in planning the camp curriculum. Activities are suggested for environmental study, group socialization, and recreation. Environmental study units include orienteering, weather study, identification of plants and animals, geology, and astronomy. Background information is included for each unit along with suggested activities, instructions, and lists of materials needed. The geology section, for example, provides information on regional geological history, illustrations of fossils commonly found in the area, and procedures for conducting soil study and gully study units. Socialization activities require group problem solving efforts and facilitate the sharing of experiences. Recreation covers the evening campfire from fire building to songs and skits, art projects using natural materials, 15 types of hikes that develop awareness of natural surroundings, and outdoor cooking including menus and 80 recipes for outdoor meals. The guide lists safety and emergency procedures specific to the program as well as first aid measures for common camping injuries. (JH)

ED 180 811 SE 029 540

Ecology Enrichment, Grades 1-6.

Rocky River Public Schools, Ohio.

Spons Agency—Office of Education (DHEW), Washington, D.C.; Ohio State Dept. of Education, Columbus. Div. of Research, Planning, and Evaluation.

Pub Date—[77]

Note—170p.; For related document, see SE 029 541

Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC07 Plus Postage.

Descriptors—Conservation Education, Ecology, *Elementary Education, Environment, *Environmental Education, Field Trips, Natural Resources, *Outdoor Education, Process Education, *Science Activities, *Science Education

This collection of curriculum materials is arranged by grade level for each elementary grade. Materials are recommended for use in conjunction with trained volunteer instructors and with access to an outdoor education center, a park, or a wooded area near the school. Level K-3 emphasizes basic observational and process skills, while levels 4-6 emphasize process also, but are not as directive as for grade levels K-3. Activities at all levels include a rationale statement, an instructional objective, a pretest, a list of vocabulary words (when appropriate), background information, instructional procedure, and specific activities. (RE)

ED 180 812 SE 029 541

Lañen, Bud; Swartz, Linda

Ecology Enrichment, Grades 7-8.

Rocky River Public Schools, Ohio

Spons Agency—Office of Education (DHEW), Washington, D.C.; Ohio State Dept. of Education, Columbus. Div. of Research, Planning, and Evaluation.

Pub Date—[77]

Note—120p.; For related document, see SE 029 540

Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—*Biology, Conservation Education, Ecology, Environment, *Environmental Education, Field Trips, Junior High School Students, Natural Resources, *Outdoor Education, *Science Activities, *Science Education, Secondary Education

The curriculum materials in this manual are designed to support life science programs at levels seven and eight, and nine and ten, when appropriate. Field activities are focused upon and can be completed with the supervision of teachers, an older student, or an adult volunteer. Each activity contains background information, data pages, and/or discussion questions. The manual is divided into two sections: (1) investigations of the aquatic environment, and (2) the terrestrial environment. (Author-RE)

ED 180 832 SE 029 821

Larson, Robert J.

Elementary Environmental Activities.

Laramie County School District 1, Cheyenne, Wyo.

Pub Date—May 75

Note—268p.

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC11 Plus Postage.

Descriptors—Air Pollution Control, Class Activities, Earth Science, Ecology, *Elementary Education, Environment, *Environmental Education, *Field Trips, Land Use, *Outdoor Education, Pollution, *Science Education, Waste Disposal, Water Pollution Control

This guide presents suggestions for field trips, out-of-doors activities, material for centers, and individualized activities in the teaching of elementary school science and particularly environmental education at the elementary level. The guide includes a section on preparation and procedures for conducting field trips, including sample administrative forms and permission slips. A section on environmental activities presents class activities dealing with the environment. A third section presents activities to be undertaken out-of-doors. A three-part sample environmental education test is provided. (RE)

ED 182 113 SE 029 527

A Learning/Teaching Experience in Ecology for Seventh Year Students at the Bossier Parish Nature Study Center.

Bossier Parish Nature Study Center, Benton, La.

Pub Date—Aug 78

Note—36p.; For related document see SE 029 528

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC02 Plus Postage.

Descriptors—*Ecology, *Environmental Education, *Grade 7, *Instructional Materials, Learning Activities, *Nature Centers, Outdoor Education, Science Education, *Secondary Education

Presented in this guide are learning activities and related materials to assist teachers in preparing seventh-grade students for a visit to a nature study center. Activities are suggested for individuals, small and large groups, and are classified according to whether the activity is to be completed before the visit, during the visit, or as a follow-up activity. A pre- and post-test and a list of expected standards of conduct and safety for students are included. The publication is designed for a specific site, but could be adapted to other sites. (BT)

ED 182 114 SE 029 528

A Learning/Teaching Experience in Ecology for Fifth Year Students at the Bossier Parish Nature Study Center.

New York Univ., Bronx. Dept. of Mechanical Engineering

Pub Date—Aug 78

Note—79p.; For related document, see SE 029 527. Contains occasional light and broken type

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC04 Plus Postage.

Descriptors—*Ecology, *Elementary Education, *Environmental Education, *Grade 5, *Instructional Materials, Learning Activities, *Nature Centers, Outdoor Education, Science Education

Presented in this guide are learning activities and related materials to assist teachers in preparing fifth-grade students for a visit to a nature study center. Activities are classified as to whether they are to be used before visiting the center, while at the center, or as culminating activities upon returning to the classroom. A pre- and posttest and a list of expected standards of conduct and safety for students are included. Materials for making transparencies, ditto sheets, and booklets are found in the supplement. Though this publication is designed for a specific site, it could be adapted for other sites. (BT)

ED 186 246 SE 030 598

A Guide for the Keakealani Outdoor Education Center: A Camp Program.

Hawaii State Dept. of Education, Honolulu.

Report NO—TAC-76-1105

Pub Date—Mar 76

Note—41p.; Not available in hard copy due to copyright restrictions

Pub Type— Guides - Classroom - Teacher (052) — Guides - Non-Classroom (055)

EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Camping, Class Activities, *Conservation Education, *Curriculum Development, Ecology, Elementary Education, Environment, *Environmental Education, Field Trips, *Instructional Materials, Interdisciplinary Approach, Natural Resources, *Nature Centers, *Outdoor Education
This guide is intended to assist teachers in incorporating the resources of an outdoor education center into their existing curricula. The guide describes the camp program and presents the major goals and objectives of the camp experience. Instructional scheme and topical areas are described. Procedures for implementation of the program are explained, and a week's schedule of activities is outlined. Example lessons are suggested in the guide. The guide can serve as an example for others developing similar programs. (Author/RE)

ED 188 868 SE 030 898
Swanson, Richard L.
Stepping Outdoors, Teacher's Guide. Part I: Natural and Social Sciences for Understanding Our World.
California State Dept. of Parks and Recreation, Sacramento
Pub Date—Mar 80
Note—66p. For related documents, see SE 030 894-897
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC03 Plus Postage.
Descriptors—*Class Activities, Conservation Education, Ecology, Elementary Education, Environment, *Environmental Education, *Field Trips, *Interdisciplinary Approach, Natural Resources, *Outdoor Education, Planning, *Science Education, Social Studies
This guide is designed to be used in either of two ways: (1) as a complete interdisciplinary science unit particularly useful in California; and (2) in combination with other documents, as a preparatory guide for field trips. The guide contains planning and teaching concepts generalizeable to most areas. Included are: (1) an introduction, (2) preamp lessons, (3) a field trip, (4) tests and evaluation, and (5) related information and references. (RE)

ED 193 054 SE 032 955
Conservation Awareness Guide.
Santa Rosa County Board of Public Instruction, Milton, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date—77
Note—54p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Conservation (Environment), *Conservation Education, Elementary Education, *Elementary School Curriculum, *Energy, Environmental Education, *Natural Resources, Resource Materials, Science Education, *Science Instruction
Recommendations for incorporating conservation education into the K-5 curriculum comprise this teacher's guide. Examined are eight natural resources: air, energy, forests and plant life, human resources, minerals, soil, water, and wildlife. Each of these topics is considered in two ways: (1) a chart depicts concepts basic to understanding the resource, and (2) a second chart lists related classroom activities. Both concepts and activities are indicated by grade level. Emphasized are local resources and concerns. (WB)

ED 193 055 SE 032 956
Adams, Diane And Others
Environmental Education Curriculum.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education
Pub Date—Jun 77
Note—99p. Contains occasional light and broken type. Guide prepared at the Glen Springs Elementary School, Gainesville, FL
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC04 Plus Postage.
Descriptors—*Biological Sciences, Botany, Elementary Education, *Elementary School Curriculum, *Environmental Education, *Outdoor Education, Resource Materials, Science Education, *Science Instruction, *Soil Science, Wildlife
Identifiers—*School Yards
Described is a K-5 curriculum developed by teachers for use in conjunction with an outdoor learning site adjacent to their school. Curriculum matrix depicts the sequence of organisms, habitats, and soil characteristics that students in each grade level should study. Also included is background information about the site for teachers. Organized by grades, each lesson plan includes objectives, a materials list, suggestions for student evaluation, and a brief outline of the activity. Among the learning strategies described are art projects, habitat studies, playa, and plant and animal identification. (WB)

ED 195 389 SE 031 474
Warren, Mark
Magic From the Woods. A Teacher's Handbook for Environmental Education.
Georgia Conservancy, Atlanta.
Pub Date—79
Note—60p.
Available from—Barbara Smith, Program Director, Georgia Conservancy, 3110 Maple Drive, N.E., Atlanta, GA 30305 ($2.95).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Biological Sciences, *Conservation Education, *Ecology, Elementary Education, *Environmental Education, *Learning Activities, *Outdoor Education, Sciences, Sensory Training
Identifiers—*Forests
This workbook contains suggestions for environmental learning adventures for elementary school children in a forest. The activities are classified under various concepts such as sound, growth, adaptation, forest, variety, water habitat, design time, and conservation. The concept is first defined. Then a preparation exercise to get the students actively involved in the subject is presented. This may be a conversation about familiar things or an inside preparation game. Under the concept heading, the handbook provides a series of games, exercises, and explorations designed to let the child experience that concept. (SB)

ED 196 577 RC 011 858
Banks, Dorothy E.
Outdoors—Nature's Learning Center. A Guide for Implementing an Outdoor Laboratory School Program.
District of Columbia Public Schools, Washington, D.C.
Spons Agency—National Park Service (Dept. of Interior), Washington, D.C. Office of Education (DHEW), Washington, D.C.
Pub Date—Jan 76
Note—33p.
Pub Type— Guides - General (050)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Camping, *Environmental Education, *Experiential Learning, *Grade 6, Interdisciplinary Approach, Intermediate Grades, *Minority Group Children, *Outdoor Education, Program Content, Program Descriptions, Resident Camp Programs, Science Education, *Urban Education
Identifiers—*District of Columbia, Round Meadow Outdoor Learning Laboratory School MD
The Round Meadow Environmental Laboratory School is an exemplary project designed to aid District of Columbia 6th grade children in overcoming the educational disadvantages of urban minority group isolation, both cultural and geographical, through a school-based and camp-based interracial and intercultural environmental awareness program. During the course of a five-day resident camp experience at the Catoctin Mountain Park site in western Maryland, each student participates in approximately 18 hours of both trail and classroom academic investigation of four predominant aspects of the environment: woodland ecology, stream ecology, geology, and customs, traditions and culture of early settlers. The school-based phase consists of intensive pre- and post-site educational experiences through an interdisciplinary approach to environmental education. This guide presents a history of the program, project management goals and objectives, student performance goals and objectives, a description of camp trails and activities; questions and answers about the design of the program, its staff, and activities; a sample weekly camp schedule; and pre- and post-outdoor school questionnaires used to chart student expectations and responses to the outdoor school experience. (NEC)

ED 205 346 RC 012 863
Boules, Allen, Ed.
Outdoor Education: Issues & Investigations, 5-8.
Oklahoma State Dept. of Education, Oklahoma City
Pub Date—81
Note—262p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC11 Plus Postage.
Descriptors—Educational Games, Elementary Education, Energy, *Environmental Education, Geology, *Instructional Materials, *Learning Activities, Natural Resources, *Observational Learning, Outdoor Activities, *Outdoor Education, Program Evaluation, Recreational Activities, Recreational Facilities, *Resource Units, Vocabulary Development, Water Resources
Identifiers—*Oklahoma
Designed to familiarize Oklahoma students with their environment by providing opportunities for exploration, investigation, and evaluation, this outdoor education guide contains suggested activities to be used as a starting point to arouse the interest and curiosity of students through direct observation and investigation. As an additional teaching aid, science-related words which may be new to a student's vocabulary have been underscored and are followed by a guide to pronunciation. Chapter 1 describes the geology and natural history of Oklahoma. Chapter 2 discusses Oklahoma's water resources. Chapter 3 identifies the state's recreational facilities. Chapter 4 discusses energy consumption and conservation. Chapter 5 describes various aspects of environmental health. The activity sections of each chapter state the concept to be taught, the purpose of teaching the concept, instructional materials to be used, teaching procedure, and questions to consider. Appendixes include a glossary of scientific words, teacher aids, an annotated list of films and filmstrips, a list of references and resources, and an evaluation sheet to be completed by teachers. (CM)

ED 206 418 RC 011 553
Sandburg Environmental Education Student Handbook.
Freeport School District 145, Ill.
Pub Date—[76]
Note—17p.; For a related document, see RC 011 554.
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Art Activities, *Curriculum Development, Curriculum Enrichment, Elementary Education, Elementary School Curriculum, Elementary School Mathematics, *Environmental Education, *Instructional Materials, Integrated Curriculum, *Interdisciplinary Approach, Language Arts, Learning Activities, *Outdoor Activities, *Outdoor Education, Science Activities, Social Studies, Teacher Developed Materials
Lesson plans for 21 activities in environmental studies are included in this student handbook, a companion to the Sandburg Environmental Education (SEE) program teacher handbook. The program emphasizes the integration of environmental studies in the existing curriculum, accordingly, the handbook provides five lessons with environmental emphasis for art, four for social studies, one on litter analysis, five for math, four for language arts, and two for science. Plans include objectives of the activity, materials needed, instructions (to student and or teacher), worksheets for some activities, and evaluation suggestions for some. Most activities are carried out on or near the school site, with follow-up activities in the classroom. Many activities are interdisciplinary in nature; a social studies activity, for example, titled "Seeds A Chain of Life" includes collecting, categorizing, measuring, and drawing seeds as well as descriptive and narrative writing about seeds. Math activities include estimating distances in standard and metric units and using a compass to map small areas. Language arts activities focus on careful observation and description of the environment. Suggested science activities are study of plant succession and examination of insect populations. (JH)

ED 206 419 RC 011 554
Sandburg Environmental Education Teacher Handbook.
Freeport School District 145, Ill.

Pub Date—[76]
Note—67p.; For a related document, see RC 011 553.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Art Activities, Conservation Education, Curriculum Development, *Curriculum Enrichment, Elementary Education, Elementary School Mathematics, *Environmental Education, Field Trips, *Instructional Materials, Integrated Curriculum, Language Arts, *Learning Activities, *Outdoor Activities, *Outdoor Education, Science Activities, Social Studies, *Teacher Developed Materials
Learning activities, teaching materials, and lesson plans are contained in this guide, developed by six teachers at the Carl Sandburg Middle School in Freeport, Illinois; it suggests ways to integrate environmental study into the existing curriculum for art, science, English, mathematics, and social studies. Activities for classroom learning and school site exploration are organized by subject area, with the science, mathematics and social studies sections including lists of environmental concepts currently taught. The art section provides a list of supplies, scrap materials and tools and suggests over 50 projects in a variety of media including drawing, painting, sculpture, and collage. The science section includes materials for teaching 45 environmental study vocabulary words and suggestions for using the school site and neighborhood to learn about weathering and erosion and plant and animal identification. Mathematics activities include calculating costs of various types of pollution, checking home energy usage, and estimating heights of trees and buildings. Suggestions for book reports, creative writing, and vocabulary skills are covered in the English section. The social studies section provides student worksheets for exploration and observation of the school site. A list of films, filmstrips, and books available for the Sandburg Environmental Education program is appended. (JH)

ED 206 420 RC 011 920
FitzSimmons, Michael
Outdoor Human Relations Program, 1979-80: Fifth Grade [And] Teacher's Guide.
Mansfield School District, Ohio.
Pub Date—80
Note—53p.
Available from—Mansfield City Schools, 53 West Fourth St., Box 1448, Mansfield, OH 44902 (free: 2 or more copies, $1.00 ea.)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Art Activities, Behavioral Objectives, *Day Camp Programs, *Environmental Education, Experiential Learning, *Field Trips, Grade 5, Group Activities, *Human Relations, Intermediate Grades, *Learning Activities, Learning Modules, Outdoor Activities, *Outdoor Education, Recreational Activities, Science Activities
Identifiers—Ohio
Prepared for an outdoor education program that features day trips to a rural camp in Ohio, this guide stresses environmental education and interpersonal skills. Written for grade five, the guide contains a student handbook for camp activities followed by a brief section for teachers. The introductory section of the student handbook states the program goals and provides a camp map, time schedule and rules, and brief descriptions of local Indian tribes. The remainder of the student section provides background information and instructions for 15 outdoor activities including bird watching, canoeing, using a compass, outdoor cooking, group problem solving, pond life study, a ropes course, cross country skiing, and nature study. The pond life unit includes a simple explanation of pond ecology, drawings to aid in identifying plant and animal life, and a page for student notes and sketches. Illustrations, diagrams, and worksheets are provided for each activity. The teacher's portion of the guide states the classroom teacher's responsibilities in the outdoor program, lists films and games that can be used to prepare for and follow-up camp activities, and provides teaching suggestions and behavioral objectives for two camp activities: pond life study and bird watching. (JH)

ED 206 421 RC 011 921
FitzSimmons, Michael
Outdoor Human Relations Program, 1979-80: Sixth Grade [And] Teacher's Guide.
Mansfield School District, Ohio.
Pub Date—80
Note—61p.
Available from—Mansfield City Schools, 53 West Fourth St., Box 1448, Mansfield, OH 44902 (free: 2 or more copies, $1.00 ea.).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Art Activities, Behavioral Objectives, *Day Camp Programs, *Environmental Education, Experiential Learning, *Field Trips, Grade 6, Group Activities, *Human Relations, Intermediate Grades, *Learning Activities, Learning Modules, Outdoor Activities, *Outdoor Education, Recreational Activities, Science Activities
Identifiers—Ohio
Environmental education and interpersonal skills are stressed in this guide for an outdoor education program that features day trips to a rural camp in Ohio. Written for grade six, the guide contains a student handbook for camp activities followed by a brief section for teachers. The student handbook begins with the program goals, a map of the camp, time schedule and rules, and brief descriptions of local Indian tribes. The remainder of the student section contains background information and instructions for 18 outdoor activities including art, birdwatching, building a camp shelter, canoeing, compass orienteering, outdoor cooking, nature walks, rock identification, cross country skiing, trapping, weather forecasting, and a ropes course. Illustrations, diagrams, and worksheets are provided with each activity. The teacher's portion of the guide states the classroom teacher's responsibilities in the outdoor program, lists films and games, to supplement the camp program, and provides teaching suggestions for three outdoor activities: weather study, an art project using natural pigments, and bird watching. Behavioral objectives are included for each activity along with lists of equipment and supplies and suggestions for preparatory and follow-up work in the classroom. (JH)

ED 209 061 RC 013 027
Sklar, Norman La Mantia, Laura
Activity Approach to Just Beyond the Classroom. Environmental Education Series.
Nassau County Board of Cooperative Educational Services, Westbury, N.Y.
Pub Date—[74]
Note—61p.; For a related document, see RC 013 028.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Animals, Botany, *Discovery Learning, Ecology, Elementary Education, *Environmental Education, *Experiential Learning, Field Studies, Geology, Interdisciplinary Approach, Learning Activities, Lesson Plans, Mathematical Enrichment, *Outdoor Activities, *Outdoor Education, Physical Environment, *Playground Activities
To provide teachers with some of the many activities that can be carried on "just beyond the classroom," the booklet presents plans for more than 40 outdoor education activities, all emphasizing multidisciplinary, inquiry approach to learning. The school grounds offer optimum conditions for initiating studies in the out-of-doors. While every school day of the year should be favorable for some activity, the amount of time spent in the out-of-doors is determined by the particular activity chosen and the individual needs and situations of the student. Students are encouraged to use all of their senses and observe carefully in order to arrive at conclusions. The teacher's role is to direct this inquiry, finding the "teachable moment." The multidisciplinary approach to learning incorporates many academic subjects: mathematics, science, social studies, art, ecology, English, etc. Plans for each activity include a description, list of required materials, step-by-step procedures, discussion topics, and additional follow-up activities. Suggested activities range from sensory nature strolls, scavenger hunts, animal tracks, sand study, earthworms, and root ecology to exploring a sidewalk wilderness, rainfall measurement, curb weed and seed study, bark rubbings, bird watching, shadow study, and air pollution testing. (NEC)

ED 219 286 SE 038 798
Green, Dan And Others
The School Ground Classroom: A Curriculum to Teach K-6 Subjects Outdoors. First Edition.
Environmental Education Association of Oregon, Portland.
Pub Date—80
Note—66p.
Available from—Environmental Education Association of Oregon, P.O. Box 40047, Portland, OR 97240.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Art Activities, Elementary Education, Elementary School Mathematics, Elementary School Science, *Environmental Education, Health Activities, *Interdisciplinary Approach, Language Arts, *Learning Activities, Music Activities, *Outdoor Activities, *Outdoor Education, School Location, Science Activities, Social Studies, Teaching Guides, Teaching Methods
Suggesting that outdoor activities can be positive learning experiences, lesson plans and activities were designed to demonstrate that the outdoors is an interdisciplinary classroom, to be used on virtually any school site, and to teach subject matter taught as part of the standard curriculum. Seventeen interdisciplinary ideas with correlated activities for language arts, social studies, science, health, mathematics, art, and music are provided. Subjects of these ideas focus on insects, shadows, ball park, curbs, birds, parking lot, asphalt, leaves, flagpole, playground, open area, wind vanes, natural area, weedy area, grassy area, telephone poll, and trees. Twenty-eight lesson plans are also provided. Each lesson plan includes title, subject area, grade level, goals, skills fostered, purpose, performance indicators, materials/resources, instructional strategies, and references. Titles include the five senses, differences/similarities, trees, outdoor sets and counting, cloud shapes, litter critters, sunlight/shadows, outdoor shapes, how does it feel, mapping, cracks, hop/skip/jump, riddle-diddle, vehicle adventure, what happens to leaves, cinquain, litter recycling, dichotomous key, fraction fun hunt, echoisms, natural resources, air mail balloons, pacing game, verse-three ways, temperature of school wall, and measuring a shadow. (JN).

Middle/Secondary

ED 044 295 SE 010 040
Conservation Science Fair Projects.
Soil Conservation Society of America, Ankeny, Iowa.
Pub Date Apr 70
Note—38p.
Available from—Soil Conservation Society of America, 7515 Northeast Ankeny Rd., Ankeny, Iowa 50021 ($1.00)
EDRS Price MF-$0.25 HC Not Available from EDRS.
Descriptors—Biology, *Conservation Education, Ecology, *Environment, Environmental Education, *Natural Resources, *Science Fairs, *Science Projects, Soil Science, Water Resources
Included are ideas, suggestions, and examples for selecting and designing conservation science projects. Over 70 possible conservation subject areas are presented with suggested projects. References are cited with each of these subject areas, and a separate list of annotated references is included. The references pertain to general subject materials, information on how to conduct an investigation or experiment, and information on how to organize an exhibit or demonstration. (PR)

ED 085 163 RC 007 514
Outdoor Recreation Activities at Cispus.
Cispus Environmental Center, Randle, Wash.
Note—16p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Course Descriptions, *Curriculum Design, Educational Equipment, High Schools, Junior High Schools, Lumber Industry, *Outdoor Education, Physical Activities, *Physical Development, *Recreational Activities, *School Recreational Programs, Student Centered Curriculum, Teaching Guides
Most of the activities in this booklet have been developed around skills related to the outdoors and, in particular, to the logging industry and forest fire fighting. The activities attempt to develop muscles, coordination skills, and teamwork. They also give the students (junior high school or high school) and staff the opportunity to do something that they have only read about, watched on T V., or heard about. It puts the student in the role of logger or forest fire fighter. These activities are only suggested. There are lists of needed equipment in each of the activity sheets. Various types of equipment companies where they can be obtained, and approximate prices are also listed. (FF)

ED 167 312 RC 011 200
Berezowski, P. E. And Others
Shopping Centers: Their Development and Impact on a Community.
Pub Date—76
Note—60p.; Best copy available
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Activities, Architecture, Commercial Art, *Consumer Economics, Costs, Design, Elementary Education, *Experiential Learning, Interdisciplinary Approach, *Land Use, Methods, Objectives, *Outdoor Education, Proximity, Resource Materials, Transportation
Identifiers—*Community Studies, *Shopping Centers
Presenting extensive background material on the development of shopping centers, this paper includes elementary and junior high school outdoor education activities centering upon shopping center studies. Background material includes analysis of the following: shopping center types (architecture, regional location, etc), land use (guidelines for successful center development, capital costs and services, locational considerations, problems restricting land use, conditions affecting development, and area required for retail stores), transportation and communication (transit system and shopping center parking requirements), consumer behavior (determinants of store choice, store layouts and displays, motives for shopping preference, percentage of sales by retail group, public appeal, and consumer and grocery shopping), how the residential area can affect the growth of shopping centers; advertising related to shopping centers (exterior and interior sign display and printed advertising). The activities section of this paper includes activities directed toward parking lots; people; consumerism and comparative studies, advertising; service, security and design; residence and area can affect capital costs and transportation; and the classroom. Each activity is defined in terms of objective and method. For example, the third activity in the activity section on parking lots is titled "Parking Spaces Available"; objectives include determination of the number of parking stalls available and the number available for customer parking; method involves counting, multiplying (rows), and subtracting skills. (JC)

ED 174 364 RC 011 193
Fairwell, Kay, Ed. And Others
The OBIS Trail Module. Trial Version.
California Univ., Berkeley. Lawrence Hall of Science.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—Jan 76
Grant—NSF-SED-72-05823
Note—25p.
Available from—Outdoor Biology Instructional Strategies, Lawrence Hall of Science, University of California, Berkeley, California 94720 ($2.00)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Activity Units, Biology, *Biology Instruction, Construction (Process), *Ecology, Educational Objectives, Elementary Secondary Education, *Environmental Education, *Experiential Learning, Field Instruction, Group Activities, Illustrations, Instructional Materials, Learning Modules, Material Development, Metric System, *Outdoor Education, *Trails, Youth Clubs, Youth Programs
Identifiers—Environmental Impact Studies, Erosion, *OBIS Program, Outdoor Biology Instructional Strategies
Designed to allow youngsters aged 10 to 15 to experience the challenges and problems environmental investigators might face making an environmental impact study, the trial version of the Outdoor Biology Instructional Strategies (OBIS) Trail Module focuses on aspects of construction-related environment problems. Four activities are included in the Module: (1) "Trail Impact Study", in which participants plan a safe, convenient footpath that will have minimal impact on the site. (2) "Cardiac Hill", in which participants use pulse rates as a guide to finding the maximum steepness for a trail along which hikers can walk comfortably. (3) "Hold a Hill", an activity to determine how steep a trail can be before excessive erosion occurs; and (4) "Trail Construction", finding the best construction technique for the site. The individual, water-proof folio for each activity includes activity explanation, preparation, materials, action, discussion, and follow up. Other materials are an overview of the Module and OBIS, and an equipment card indicating how to make inexpensive metric materials for measuring slope. (SB)

ED 174 365 RC 011 194
Fairwell, Kay, Ed. And Others
Outdoor Biology Instructional Strategies Trial Edition, Set I.
California Univ., Berkeley. Lawrence Hall of Science.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—Jan 75
Grant—NSF-SED-72-05823
Note—219p.
Available from—Outdoor Biology Instructional Strategies, Lawrence Hall of Science, University of California, Berkeley, California 94720 ($8.50)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC09 Plus Postage.
Descriptors—*Activity Units, Animal Behavior, Biology, *Biology Instruction, Construction (Process), Earth Science, Ecology, Educational Games, Educational Objectives, Elementary Secondary Education, *Environmental Education, *Experiential Learning, Field Instruction, *Group Activities, Illustrations, Instructional Materials, Learning Modules, *Outdoor Education, Plant Identification, Simulation, Water Resources, Youth Clubs, Youth Programs
Identifiers—*OBIS Program, Outdoor Biology Instructional Strategies
The Outdoor Biology Instructional Strategies (OBIS) Trial Edition Set I contains 24 varied activities which make use of crafts, simulations, and basic investigative techniques to provide introductory learning experiences in outdoor biology for children aged 10 to 15. The individual water-resistant folio for each activity includes biological definitions and concepts, materials list, preparation, action, discussion, follow-up, and suggested subsequent activities. Among the activities are studies of animal movement in water, leaves, natural recycling in soil and in water, seed dispersal, ponds, natural camouflage, and predator devices. Making sun prints, mapping a study site, plant hunts, and introductory census activities are also included. Set I includes 3 introductory folios. "What is OBIS?" explains the project's governing concepts and goals. The "Leader's Survival Kit" notes good activity sites, sample activity sequences, and safety information. An "OBIS Tool Box" contains Equipment and Technique Cards giving instructions for building and using various inexpensive equipment such as plankton nets and weed grappies. Instructions for each device are complete on one card. Finally, there are 2 booklets, a Pond Guide and a Lawn Guide, designed for quick and easy identification, via pictures, written descriptions, and size scales, of the most commonly encountered organisms in those locations. (SB)

ED 174 366 RC 011 195
Fairwell, Kay, Ed. And Others
Outdoor Biology Instructional Strategies Trial Edition, Set II.
California Univ., Berkeley. Lawrence Hall of Science.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—Jun 75
Grant—NSF-SED-72-05823
Note—175p.
Available from—Outdoor Biology Instructional Strategies, Lawrence Hall of Science, University of California, Berkeley, California 94720 ($9.50)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Activity Units, Animal Behavior, Biology, *Biology Instruction, Construction (Process), Earth Science, Ecology, Educational Games, Elementary Secondary Education, *Environmental Education, *Experiential Learning, Field Instruction, *Group Activities, Illustrations, Instructional Materials, Learning Modules, *Outdoor Education, Water Resources, Youth Clubs, Youth Programs
Identifiers—*OBIS Program, Outdoor Biology Instructional Series
The 24 activities in the Outdoor Biology Instructional Strategies (OBIS) Trial Edition Set II use living organisms such as crabs, birds, crayfish, lichens, and insects to investigate biological interrelationships, organism behavior, and species density to promote greater environmental and sensory awareness. The activities, designed primarily for groups of children ages 10 to 15, focus on terrestrial, beach, freshwater, marine, woodland, and other habitats. Light and its effect on animal behavior, study of intertidal plant and animal colonies, hibernation site study, comparison of insects in lawn areas and weeds areas, a simulated oil spill, investigation of sea movements and currents, and a series of environmental games are among the specific activities. Each is presented in a folio with an introduction, list of materials, action, discussion, and follow up. There are three additional folios: (1) an introduction to OBIS (2) a "Leader's Survival Kit", with suggestions for the combination of the Set I and II activities into various learning modules organized by biological or environmental concept, skill, or habitat, and (3) an OBIS Tool Box, containing Equipment and Technique Cards with instructions for the construction and use of inexpensive equipment, such as bird feeders and tide stakes. (SB)

ED 174 367 RC 011 196
Farwell, Kay, Ed. And Others
Outdoor Biology Instructional Strategies Trial Edition. Set III.
California Univ., Berkeley. Lawrence Hall of Science.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—77
Grant—NSF-SED-72-05823
Note—161p.
Available from—Outdoor Biology Instructional Strategies, Lawrence Hall of Science, University of California, Berkeley, California 94720 ($10.50)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Activity Units, Adjustment (to Environment), Animal Behavior, Biology, *Biology Instruction, *Botany, Construction (Process), Ecology, Educational Games, Educational Objectives, Elementary Secondary Education, *Environmental Education, *Experiential Learning, Experiments, Field Instruction, Group Activities, Illustrations, Instructional Materials, Learning Modules, *Outdoor Education, Youth Clubs, Youth Programs
Identifiers—*OBIS Program, Outdoor Biology Instructional Strategies

The predominant focus of the 24 Outdoor Biology Instructional Strategies (OBIS) Trial Edition Set III activities is on animal behavior, and the adaptations and diversity of both plants and animals. Night time activities, games, investigation, experimentation, and crafts are used to study ants, birds, clams, water snails, water striders, spiders, lizards, pillbugs, sow bugs, jays, and plants. The holding adaptations of water organisms, response of animals to varying light conditions, stalking, food preferences, and pigmentation are also investigated. The activities, organized in 24 separate, water-resistant folios, include introduction, preparation, materials, actions, follow up, and related activities. There are 3 additional folios. An "OBIS Tool Box" provides information for construction and use of simple equipment, such as a clam hoop, lizard rig, night smine flashlight, and sweep net, and explains game variations and craft methods. There is an order form for hard-to-locate materials. A "Survival Kit" for leaders contains sample combinations of activities from Sets I, II, and III to organize concept packages and skill units, as well as tips on safety, conservation, and site selection. "What is OBIS?" explains some major biological and environmental concepts embraced by the activities. (SB)

ED 174 368 RC 011 197
Throgmorton, Larry, Ed. And Others
Outdoor Biology Instructional Strategies Trial Edition, Set IV.
California Univ., Berkeley. Lawrence Hall of Science.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—78
Grant—NSF-SED-72-05823
Note—137p.
Available from—Outdoor Biology Instructional Strategies, Lawrence Hall of Science, University of California, Berkeley, California 94720 ($11.50)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—*Activity Units, Animal Behavior, Biology, *Biology Instruction, Construction (Process), Earth Science, Ecology, Educational Games, Educational Objectives, Elementary Secondary Education, *Experiential Learning, Field Instruction, *Group Activities, Illustrations, Instructional Materials, Learning Modules, *Outdoor Education, Simulation, Water Resources, Youth Clubs, Youth Programs
Identifiers—*OBIS Program, Outdoor Biology Instructional Strategies

Eight games are included in the 24 activities in the Outdoor Biology Instructional Strategies (OBIS) Trial Edition Set IV. There are also simulations, crafts, biological techniques, and organism investigations focusing on animal and plant life in the forest, desert, and snow. Designed for small groups of children ages 10 to 15 from schools and community youth organizations, the activities include the study of animal food-storage strategies, desert plants, vines, damselfly and dragonfly populations, hopping animals, tree growth, soil differences, and plants that can live in the snow. These strategies for outdoor learning experiences are individually packed in folios that include pertinent biological concepts, materials lists, preparation, action, follow up and a list of related activities. Also included in the Set are a guide to OBIS; a "Leader's Survival Kit" with ideas for safety, conservation, and site selection, as well as suggestions for combining activities from Sets I, II, III, and IV into concept and skill modules; and a "Leader's Tool Box", describing certain biological techniques and detailing the building and use of home-made equipment such as thermometer dipsticks, pollen boards, and desert leaf models. (SB)

ED 183 321 RC 011 857
Fielder, Erica Shaffer, Carolyn
Ecology for City Kids.
San Francisco Ecology Center, Calif.
Spons Agency—San Francisco Foundation, Calif.
Pub Date—Apr 76
Note—61p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Ecology, *Environmental Education, Experiential Learning, *Field Trips, *Instructional Materials, Junior High Schools, Learning Activities, *Outdoor Education, Urban Education, *Urban Environment, *Worksheets
Identifiers—San Francisco

This scrapbook provides junior high school teachers with tested activities and ideas that bring ecology to urban students without going far away (just around the block), without taking long hours to prepare, and without spending precious budget money. Awareness of the richly varied, pleasant and not-so-pleasant sights, sounds, and textures of the city is fostered through games and make-believe (Who eats who in the food chain? What does it feel like to be a tree? What if all the cars went away?), adventures exploring new territory (making crayon rubbings of everything from leaves to man-hole covers); discovering wild things (banana slug trails on concrete street embankments or spider webs on brick buildings); and becoming private "eyes" and public investigators (by participating in treasure hunts and conducting "man-on-the-street" interviews). Worksheets, all of which can be duplicated, involve students in an interdisciplinary approach to learning and give structure and focus to the learning experience. The activities can be conducted in any order and, for the most part, in any city neighborhood. (NEC)

Secondary

ED 116 910 88 **SE 019 468**
Camping Skills. Environmental Education Curriculum.
Topeka Public Schools, Kans.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Apr 73
Note—35p.; Contains occasional light type
EDRS Price MF-$0.76 HC-$1.95 Plus Postage
Descriptors—*Camping, Conservation Education, Curriculum Development, Ecology, *Educable Mentally Handicapped, *Environmental Education, Field Trips, Outdoor Education, Recreational Activities, Science Education, *Secondary Grades, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This unit on camping skills is designed for special education students at the high school level. The objective of the unit is to provide students with an adequate camping knowledge and skill development to allow them to participate in camping activities. There is an emphasis on maintaining environmental quality as a part of good camping practices. Topics in this unit include reasons for camping, selecting the camping equipment, clothes for camping, selecting a campsite, and the setting up and taking down of a tent. Each of the 10 topics provides the teacher and student with an overall objective and a number of related activities. To further aid teachers, the appendix includes information on building a campfire, pitching a tent, and cooking campfire meals, plus other topics. Directions for planning the ultimate camping field trip are given in detail for the teacher and other adult participants. (MA)

ED 158 906 RC 010 631
Kline, Jim
Inglemoor High School Curriculum Guide for Outdoor Recreation & Outdoor Education.
Northshore School District 417, Bothell, Wash.
Pub Date Mar 73
Note—57p.
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Agencies, Archery, Conservation Education, *Curriculum Guides, Ecology, Educational Objectives, Educational Resources, Field Experience Programs, Organizations (Groups), Orienteering, *Outdoor Education, *Recreation, Safety Education, *Secondary Education, Units of Study
Identifiers—*Fishing, *Hunting, Survival Skills

Descriptions of 12-week courses in hunting and fishing and in outdoor activities for male and female students at Inglemoor High School in Bothell, Washington, are presented in this curriculum guide for outdoor education and recreation. Offering both classroom and field experience, each of the two courses meets 55 minutes daily, recommended class size is 28. The guide is organized by course units, with each unit listing its specific goals, objectives, activities, materials, and time needed for the unit. Main objectives of the hunting and fishing course are to develop skills and educate students in safety procedures, conservation practices, and ecological relationships. Unit headings include relationship of hunting to ecology, conservation, and man, hunter, boating, firearm, and fishing safety, marksmanship, hunting methods, equipment, hunting and fishing regulations, preparation, care, and use of game meats, fish, governmental agencies, sportsmen clubs; archery; methods, types of game fishing, making rods, lures, fly tying, map and compass; survival education/emergency preparedness. The outdoor activities course has units on outdoor experience and man, backpacking, map and compass, survival education/emergency preparedness, sailing, recreational shooting, and archery. The guide also provides a resource directory and bibliography. (RS)

ED 167 317 RC 011 207
Swan, Malcolm D
Outdoor Education: Community Studies Through Field Experiences.
New Mexico State Univ., University Park. ERIC Clearinghouse on Rural Education and Small Schools.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Feb 78
Contract—400-76-0025
Note—32p.
Available from—National Educational Laboratory Publishers Inc., 813 Airport Blvd., Austin, Texas 78702 (EC-076 56.50)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Community Surveys, Demonstration Programs, Experiential Learning, *Field Experience Programs, Field Instruction, Field Trips, Legal Responsibility, Organization, *Outdoor Education, *Program Descriptions, *Program Development, Program Planning, Recordkeeping, Records (Forms), Secondary Education, Student Experience, *Teaching Guides
Identifiers—*Community Studies, Information Analysis Products

Field experiences in which high school students work away from the classroom to study their own communities are often considered to be the most valuable aspect of an educational program. However, the educator who seeks to provide field experiences for students must plan and organize this program carefully. He must establish clearly defined objectives and communicate them to administrators, peers, and students. Scheduling arrangements to give students more time away from school should be arranged. The teacher must become familiar with potential liability problems associated with field trips and take precautions to assure the safety of his students. He should carry personal professional liability insurance. He must lay groundwork in identifying sites and approaching resource people. Students must be counseled on appropriate behavior, including proper conduct, interviewing techniques, and sensitivity to the rights, feelings and needs of those with whom they come in contact. Follow up activities should continue on the study long after student reports are turned in. This document is intended to encourage and guide teachers interested in community studies. It describes the value of such work, lists potential subject areas, and discusses exemplary community studies. Steps to organize and conduct a study are presented along with samples of questionnaires and data gathering forms. (OS)

ED 173 057 RC 011 555
Acadia: A Working Manual.
Project Adventure, Hamilton, Mass.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C. Div. of Compensatory Education
Pub Date—78
Note—266p.; Best copy available
Available from—Project Adventure, Box 157, Hamilton, Massachusetts 01936 ($6.00)
Pub Type—Guides - Classroom - Learner (053)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Affective Objectives, Biological Sciences, *Ecology, Educational Games, Environmental Education, *Experiential Learning, Field Trips, Grade 10, *High School Students, Interdisciplinary Approach, *Learning Activities, Observation, *Outdoor Education, *Physical Education, Secondary Education, Validated Programs
Identifiers—Acadia National Park, National Diffusion Network Programs, *Project Adventure

The workbook of field ecology is for use by high school science students participating in two and one-half day weekend trips to Acadia National Park, Maine, as part of Project Adventure, an interdisciplinary program aimed at educating the whole student through experienced-based learning in academics and a physical education program in the outdoors. Physical education activities during the weekend include hiking, rappeling, and cliff climbing. Academic activities rely heavily on observation and include the study of water, dams, fallen trees, beaver huts, rock slides, vegetation, ecological relationships, local history, seaweed, sand, animal life, ponds and shoreline. A scavenger hunt is included which encompasses all aspects of the Park. Introductory material includes charts, maps, history of the area, and vocabulary. There is a follow-up exercise concerning student reaction to the weekend. The availability of additional information on Project Adventure is noted on the cover sheet. (SB)

ED 176 908 RC 011 456
Thompson, Doug Rooney, Jim
City Experiences. Guidelines for Urban Adventures.
Pub Date—Nov 77
Note—19p.
Pub Type—Reports - Descriptive (141)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Affective Objectives, Alternative Schools, Architectural Education, Educational Games, *Experiential Learning, Field Trips, Grade 9, *High School Students, Human Resources, *Interdisciplinary Approach, Learning Activities, *Outdoor Education, Perception, Secondary Education, Self Directed Groups, Skill Development, *Suburban Youth, Teacher Responsibility, Teacher Workshops, Traditional Schools, Urban Areas, *Urban Education
Identifiers—*Adventure Education, Colorado (Denver), New York (New York), Outward Bound

The booklet provides guidelines, concrete curriculum plans, and rough ideas on urban adventure programs for suburban high school students. Following an overview that explains a three-phase organizing theory (exploration, focusing, action) for urban programs, there are descriptions of: a student-organized and conducted architectural tour of New York City; a program based on an urban scavenger hunt for ninth graders in traditional schools in the Denver area; an intensive 5-day experience in Denver for an alternative high school; 19 specific urban awareness activities that involve observing, questioning, and synthesizing, ideas for written projects based on urban conditions in New York, how and where to find and interview resource people in a city, and a 3-day urban experience for teachers run by the Colorado Outward Bound School. A list of 15 "process skills" necessary for successful urban adventures is included, as well as a discussion of teacher liability during city experiences. (SB)

ED 180 813 **SE 029 542**
Long, David C. Powell, Nancy A.
Field Ecology, Grades 10-12.
Rocky River Public Schools, Ohio.
Spons Agency—Office of Education (DHEW), Washington, D.C.; Ohio State Dept. of Education, Columbus. Div. of Research, Planning, and Evaluation.
Pub Date—[77]
Note—90p.; Contains occasional light and broken type
Pub Type—Guides - Classroom - Learner (051)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Biology, Conservation (Environment), *Conservation Education, Earth Science, *Ecology, Environment, *Environmental Education, Field Trips, Natural Resources, *Outdoor Education, Pollution, Science Activities, *Science Education, Secondary Education, Teaching Guides, Water Pollution Control, Water Resources

Presented are activities which provide a program of first-hand experiences in field ecology for groups of three to five students under the leadership of a teacher or adult volunteer. Concentration is centered upon study of the effects of environment on living plants and animals and the interdependence of members of ecosystems. Each investigation includes background discussion, objectives, a list of needed materials, procedure, evaluation, recommendations for further investigation, and references. The sequence of investigations is designed for completion in a one-semester program. (RE)

ED 180 814 SE 029 543
Jennings, Frederick. Metro, Peter W.
Ecology for the Exceptional Child, Grades 7-12 EMR.
Rocky River Public Schools, Ohio
Spons Agency—Office of Education (DHEW), Washington, D.C.; Ohio State Dept. of Education, Columbus. Div. of Research, Planning, and Evaluation.
Pub Date—[77]
Note—158p.; Contains occasional light and broken type
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—Conservation Education, *Ecology, Environment, *Environmental Education, *Exceptional Child Education, *Mental Retardation, Natural Resources, *Outdoor Education, Science Activities, Science Education, Secondary Education, *Special Education, Teaching Guides
This guide presents a student-centered program of outdoor education for students of differing exceptionalities. The role of the teacher is intended to be one of support and guidance with student involvement being essential. The manual contains activities for large groups, small groups, and individuals. Activities direct students toward learning related to their environment, and toward increased sensitivity and awareness of the aesthetics of their surroundings. Each activity includes a rationale a terminal objective statement, an instructional objective and suggested activities. Sufficient curriculum materials are provided for a continuous three-year program. (Author/RE)

ED 183 297 RC 011 573
Myers, Ray
Recreante Arts Outdoor Education.
Dallas Independent School District, Tex.
Pub Date—76
Note—137p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—Activities, Archery, Camping, Course Content, *Experiential Learning, *Field Experience Programs, Field Instruction, First Aid, Geographic Regions, Instructional Materials, *Interdisciplinary Approach, *Outdoor Education, Recreational Programs, Resource Materials, Safety Education, Science Education, *Secondary Education, *Units of Study
Identifiers—Boating Safety, Dallas Independent School District, Fishing, Horseshoe Pitching, Hunter Safety, Survival Skills, *Texas
Emphasizing an interdisciplinary, experiential learning approach, this curriculum guide is designed for a one year recreative arts-outdoor education course for high school students in the Dallas (Texas) Independent School District. The course objective is to develop the skills and knowledge necessary for fostering responsible behavior in an outdoor setting; study of the environment is basic to the course. The nine four-week units include identification of all Texas fish and wildlife, the American Red Cross Standard First Aid Course, the Texas Hunter Safety Program, archery, survival, camping, boating safety (Texas Skippers Course), casting and angling in Texas, and horseshoe pitching. Each topic in a unit is described in terms of goals, projects, and activities. Resources and supporting materials for both teachers and students are detailed and include films, filmstrips, maps, periodicals, pamphlets and books. The units devoted to first aid and hunter and boating safety can result in student certification by the appropriate organization upon successful completion and testing. (NEC)

ED 196 731 SE 034 032
On Campus Activity Guide. Environmental Education.
Pinellas County School Board, Clearwater, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date—79
Note—47p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Biology, Earth Science, *Ecology, *Environmental Education, Mathematics Education, *Outdoor Education, *Science Activities, Science Education, Science Instruction, Secondary Education, *Secondary School Science
Identifiers—Plants (Botany), *School Yards
Descriptions of about 100 secondary-level activities that can be done on the school grounds are presented. Among the lessons included are a study of life in sidewalk cracks, methods of estimating animal populations, soil testing, constructing and using triangulation instruments to map the school area, and creative writing exercises. Although most activities are science-oriented, many involve mathematics and language arts skills. (W B)

ED 197 924 RC 012 519
Copen, Peter. And Others
Walkabout: An Educational Experience.
Putnam and Northern Westchester Counties Board of Cooperative Educational Services, Yorktown Heights, N.Y.
Pub Date—4 Jan 80
Note—15p.; For a related document, see ED 183 301.
Pub Type— Reports - Descriptive (141)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Academic Achievement, Communication (Thought Transfer), Counselor Role, Educational Environment, Educational Innovation, *Elective Courses, Experiential Learning, *Grade 12, Learning Experience, *Outdoor Education, Parent Attitudes, School Community Programs, Secondary Education, Self Concept, *Self Esteem, Speech Skills, Student Attitudes, *Work Experience Programs
Identifiers—New York, *Walkabout, Wilderness Education Programs
The Walkabout program is an optional senior-year educational experience in which New York high school students can acquire the basic skills and confidence to take charge of their lives and contribute to the world. The year-long program is divided into 5 "challenge environments": wilderness (5 weeks), applied academics (18 weeks of health and personal awareness, language arts, social studies, and environmental science), career internship (9 weeks); community service (3 weeks), and final presentation (1 week). These provide students with the opportunity to learn basic and relevant skills, go beyond their self-perceived limitations, recognize their option to change how they deal with others, make meaningful accomplishments, begin to clarify career options, and earn credit toward a high school diploma. Grading is based on an "honors," "credit," or "no-credit" system. The state-approved program is most applicable for average to bright students, either male or female. Interested high school juniors apply and participants are selected for the program from among the applicants. The Walkabout staff serve not only as teachers but also as friends and advisors to the students. Parent, student, and staff reactions to the program are positive. (SB)

ED 200 381 RC 012 625
Ehrhorn, Susan. Harris, Buck
The Adventure Book—A Curriculum Guide to School Based Adventuring with Troubled Adolescents.
Wilderness School, Goshen, Conn.
Spons Agency—Connecticut State Dept. of Education, Hartford. Bureau of Pupil Personnel and Special Education Services.
Pub Date—[80]
Note—111p.; Paper copy not available due to publisher's choice
Available from—Wilderness School, Alternative Education Project, Box 2243, Goshen, CT 06756 ($6.50)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Adolescent Development, *Adventure Education, *Behavioral Objectives, Behavior Change, Behavior Problems, *Delinquent Rehabilitation, Enrichment Activities, Experiential Learning, Nontraditional Education, *Outdoor Activities, Outdoor Education, Program Design, Secondary Education, Self Concept, *Special Programs
Designed to provide information for teachers wanting to use adventure activities with students and to help teachers in developing programs with clear objectives, solid logistic support, and safe policies and procedures, this teaching guide focuses on the goal of having a permanent impact on the self-concepts, behaviors, and attitudes of troubled adolescents. Two introductory chapters give an overview of the Wilderness School and the field of outdoor education, its history, purposes, processes and theories, and emphasize that the intent of the book is to present outdoor activities as small, manageable lessons that can be taught 1) in the classroom or schoolyard and 2) outdoors. In Section I the guide presents discussions, activities, and lessons, and instructions on how to use them, in the following areas: (1) initiative problems, (2) prerequisite skills, (3) backpacking and hiking, (4) paddling, (5) rock climbing, (6) outdoors in winter, (7) encounter activities, and (8) debriefings. Section II, written for program organizers, includes a sample one-year calendar of activities, information on scheduling, logistics, safety policies and procedures, program evaluation, and checklists of equipment. Appendixes provide a sample contract from the Wilderness School program, brief reviews of the school's research, and a bibliography. (JD)

ED 201 422 RC 012 634
Foster, Allan
Kortright Centre for Conservation: Water Theme.
Metropolitan Toronto and Region Conservation Authority, Downsview (Ontario).
Pub Date—Sep 79
Note—29p., For related documents, see RC 012 633 and RC 012 635.636.
Pub Type— Guides - Classroom - Teacher (052) — Reports - Descriptive (141)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Audience Participation, Audiovisual Aids, Conservation (Environment), *Conservation Education, Demonstration Programs, Group Instruction, *Information Dissemination, Information Sources, Land Use, *Management Systems, Natural Resources, Objectives, Observational Learning, *Outdoor Education, *Resource Centers, Soil Conservation, Thematic Approach, *Water Resources
Identifiers—Canada, *Kortright Centre for Conservation ON, Ontario (Toronto)
One of a series of four reports on specific conservation themes, this report (on water) is intended to consolidate techniques which will best communicate the legislation, role, objectives, and practices of the Metropolitan Toronto and Region Conservation Authority in land and water management, to retain the physical characteristics of the land in order to preserve the natural flow of watercourses and prevent flooding, and to maintain areas for wildlife habitats and for public access and recreation. Methods used by the Kortright Centre for Conservation to give visitors an understanding of and appreciation for water, its use and management as a renewable natural resource are described. Key elements of a successful interpretive program are listed as positive messages, relevance, entertaining presentation and active participation. Components used to develop the Water Theme are detailed, including audio-visual presentations, indoor exhibits, outdoor demonstrations and exhibits, and sale of publications and merchandise. The final section describes the Centre's programs at three levels: structured (for organized groups such as classes or special interest clubs), unstructured (for the public and groups with no specific program request), and passive (for groups using the Centre's facilities for meetings, but which may not have conservation as a primary interest). (CM/MH)

ED 201 423 RC 012 635
Foster, Allan
Kortright Centre for Conservation: Forestry Theme.
Metropolitan Toronto and Region Conservation Authority, Downsview (Ontario).
Pub Date—Nov 78
Note—31p.; For related documents, see RC 012 633.634 and RC 012 636.
Pub Type— Guides - Classroom - Teacher (052) — Reports - Descriptive (141)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Audience Participation, Audiovisual Aids, Conservation (Environment), *Conservation Education, Demonstration Programs, *Forestry, Group Instruction, *Information Dissemination, Information Sources, Land Use, Legislation, *Management Systems, Natural Resources, Objectives, Observational Learning, *Outdoor Education, *Resource Centers, Soil Conservation, Thematic Approach
Identifiers—Canada, *Kortright Centre for Conservation ON, Ontario (Toronto)
One of a series of four reports on specific conservation themes, this report on forestry is intended to consolidate techniques which will best communicate the legislation, role, objectives and practices of

the Metropolitan Toronto and Region Conservation Authority in retaining forest cover and extending it over additional areas. Facilities and programs used by the Kortright Centre for Conservation to give visitors an understanding and appreciation of the forest, its use, and its management as a renewable natural resource are described. Key elements of a successful program are listed as positive messages, relevance, entertaining presentation, and active participation. The components used to develop the Forestry Theme are described, and include audio/visual presentations, indoor exhibits, outdoor demonstrations and exhibits, and sale of related publications, merchandise, and food (i.e. maple syrup). The final section outlines programs offered at the Centre for organized groups, such as classes or special interest clubs; for the general public; and for groups that use the Centre's facilities for meetings. (CM)

ED 201 424 RC 012 636
Foster, Allan
Kortright Centre for Conservation: Fish and Wildlife Theme.
Metropolitan Toronto and Region Conservation Authority, Downsview (Ontario).
Pub Date—Jan 80
Note—38p.; For related documents, see RC 012 633-635.
Pub Type— Guides - Classroom - Teacher (052) — Reports - Descriptive (141)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Audience Participation, Conservation (Environment), *Conservation Education, Demonstration Programs, Group Instruction, *Information Dissemination, Information Sources, *Land Use, Legislation, Management Systems, Natural Resources, Objectives, Observational Learning, *Outdoor Education, *Resource Centers, Thematic Approach, Wildlife, *Wildlife Management
Identifiers—Canada, *Kortright Centre for Conservation ON, Ontario (Toronto)
One of a series of four reports on specific conservation themes, this report on fish and wildlife is intended to consolidate techniques which will best communicate the legislation, role, objectives, and practices of the Metropolitan Toronto and Region Conservation Authority in enhancing habitats for fish and wildlife throughout the watersheds. Methods used by the Kortright Centre for Conservation to give visitors a better understanding of and appreciation for fish and wildlife, their use and their management as renewable natural resources are described. Key elements of a successful interpretive program are listed as positive messages, relevance, entertaining presentation, and active participation. Components used to develop the Fish and Wildlife Theme are detailed, including audio/visual presentations, indoor exhibits, outdoor demonstrations and exhibits, and sale of relevant publications and merchandise (i.e. wildlife art, bird feeder kits). The final section describes the Centre's programs at three levels: structured (for organized groups such as classes and special interest clubs), unstructured (for the public and groups with no specific program request), and passive (for groups using the Centre's facilities for meetings, but which may not have conservation as a primary interest). (CM/MH)

ED 216 828 RC 013 388
Linton, Louise
Outdoor Unified Studies.
Pub Date—82
Note—13p.
Pub Type— Reports - Descriptive (141)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—American Indian Culture, *Camping, *Experiential Learning, Games, Geology, High Schools, High School Students, Human Resources, Interpersonal Competence, Interpersonal Relationship, Learning Experience, *Outdoor Education, Plant Identification, Retention (Psychology), Skill Development, *Student Motivation, *Student Participation, Student Responsibility
Identifiers—Anasazi (Anthropological Label), Deserts, Hiking, Survival Skills, *Utah, Utah (Escalante)
Escalante (Utah) High School's outdoor unified studies field trip is a learning experience to be remembered. The four-day camping experience begins with pre-trip plans, pretests, and lecture/introductions to the Anasazi culture and to geologic formations to be visited. Horses (and equipment, packs) take the students into the desert to set up camp, then on to follow the Mountain Bench Trail to study photography, geology, native plant life and Indian ruins. On returning to camp, the horses are cared for, supper is fixed, and journals are kept before bed. The next day is filled with learning survival skills in the desert, riding horses to view ancient Anasazi petroglyphs, and sharing stories researched by the students on early Escalante history. The students feel a special togetherness; they learn to express their feelings in a Social Awareness unit taught by the District Community Education Director. Games are played, there is a difficult hike through Hole in the Rock to Lake Powell for a swim, and everyone experiences "going over the edge" to rapel down a rock wall. Trip testimonies are positive; it is an experience to remember. The trip agendas for 1980-81 are included along with goals and objectives, materials needed, and evaluation methods. (LC)

Elementary/Middle/Secondary

ED 033 784 88 RC 003 788
Local Education Agency Guidebook for Resident Environmental Education Programs.
Conservation and Environmental Science Center for Southern New Jersey, Browns Mills.
Spons Agency—Office of Education (DHEW), Washington, D.C. Div. of Plans and Supplementary Centers.
Report No—DPSC-68-5679
Pub Date [69]
Note—70p
Available from—Conservation and Environmental Science Center for Southern New Jersey, Post Office Box 2230, Browns Mills, New Jersey 08015 ($1.50).
EDRS Price MF-$0.50 HC-$3.60
Descriptors—*Administrator Guides, Administrator Role, Conservation Education, *Environmental Education, Evaluation Methods, Guidelines, *Outdoor Education, Parent Role, *Program Guides, *Resident Camp Programs, Resident Students, Supplementary Educational Centers, Teacher Role
Identifiers—*Conservation and Environmental Science Center

The Conservation and Environmental Science Center for Southern New Jersey (CESC), as part of a project sponsored under Title III of the Elementary and Secondary Education Act of 1965, has developed this booklet for administrators and teachers to aid them in the development of a resident environmental education program. This booklet contains topics on past, present, and future history of CESC, the role of the administrator and parents; guide to the resident center, the teacher's role in making environmental literacy a part of the on-going curriculum, and evaluating effectiveness. Program objectives, procedures for informing parents, sample letters to be utilized, information forms to be utilized, suggestions for new releases, suggested activities, typical schedules and assignments, sample menues, and techniques for evaluating behavioral objectives are presented. Related documents are RC 003 789, RC 003 790, RC 003 792. (SW)

ED 033 788 88 RC 003 792
Conservation and Environmental Science Center for Southern New Jersey: Teacher's Workshop Handbook for Resident Programs.
Conservation and Environmental Science Center for Southern New Jersey, Brown Mills
Spons Agency—Office of Education (DHEW), Washington, D.C. Div. of Plans and Supplementary Centers
Report No—DPSC-68-5679
Pub Date [68]
Note—66p.
Available from—Conservation and Environmental Science Center for Southern New Jersey, Post Office Box 2230, Browns Mills, New Jersey 08015 ($1.50)
EDRS Price MF-$0.50 HC-$3.40
Descriptors—Conservation Education, Curriculum Planning, *Environmental Education, Guidelines, Instructional Materials, Learning Activities, *Outdoor Education, *Program Development, Program Evaluation, Program Planning, *Resident Camp Programs, Supplementary Educational Centers, *Teaching Guides

The handbook is designed to assist teachers to obtain an clear picture of many kinds of activities and programs used in a resident program for environmental education. Information and guidelines are included on such items as: (1) role of the teacher who brings a class to a resident program; (2) preparation and planning programs; (3) use of the outdoors as a learning environment; (4) skills and knowledges in environmental sciences and related topics in environmental education; (5) evaluation of environmental education, and (6) role of the staff of the Conservation and Environmental Science Center (CESC) in providing services for each participating school. Related documents are RC 003 788, RC 003 789, RC 003 790, and RC 003 791 (SW)

ED 033 812 RC 003 840
Richards, Donald J. And Others
[How the Outdoor Laboratory Can Be Used As An Instructional Aid.]
Michigan State Dept. of Natural Resources, Lansing.
Pub Date 68
Note—16p.
EDRS Price MF-$0.25 HC-$0.90
Descriptors—*Camping, Class Activities, Conservation Education, Elementary Grades, *Environmental Education, Instructional Innovation, *Lesson Plans, Natural Resources, *Outdoor Education, Physical Education, Resource Guides, Science Education, Secondary Grades

The outdoor lab was planned to serve all grade levels and incorporate all aspects of outdoor education. Ideas for lab and classroom activities are presented for the following subject areas: physical education, elementary grades, physics, chemistry, mathematics, English, industrial arts, home economics, biology, social studies, conservation, art and language. Further discussion and ideas are presented concerning outdoor education through school camping, correlating conservation and outdoor education with specific content areas and skills, and the utilization of natural resources. (DK)

ED 041 767 SE 009 321
Teaching Conservation Through Outdoor Education Areas.
Department of Agriculture, Washington, D.C. Forest Service
Pub Date Jul 68
Note—26p
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Cat. No. 0-307-977, $0.20)
EDRS Price MF-$0.25 HC Not Available from EDRS.
Descriptors—*Conservation Education, Elementary School Science, *Environmental Education, Natural Resources, *Outdoor Education, *Science Facilities, Secondary School Science, Site Selection, Trails

This guide is for teachers (K-12) interested in developing and using outdoor education areas. Student participation is presented as the key to a successful program. A discussion of what can be done by outdoor education programs is presented. The guide suggests sites to be chosen in terms of accessability, size, attractiveness, safety, drinking water, and sanitary facilities. Trails are to be developed on these sites with zones for distinctive site features or special areas. Station signs developed on these trails are separated into three types: (1) identification writeups, (2) station writeups, (3) special area writeups. Each type of station writeup is explained and illustrated with examples. A special bibliography is included on the development and use of outdoor education areas. (BB)

ED 061 059 SE 013 379
Hon, Will. Yeater, Larry W.
Creating Effective Field Experiences for Coastal Schools.
Carteret County Public Schools, Beaufort, N.C.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Aug 70
Note—18p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Curriculum Development, *Ecology, Environmental Education, Field Studies, *Field Trips, *Organization, Program Effectiveness, *Teaching Guides
Identifiers—ESEA Title III

This publication is part of a curriculum series developed by the Regional Marine Science Project for use by teachers and administrators. Field work and field trips, being advocated as an integral part of the curriculum, are explained at length. The rationale and techniques of field ecology are offered relating them to the need for field trips and how to plan field experiences. A sample outdoor class is outlined together with a discussion of how to put a field trip program in the school system. This last part considers the design of an integrated program, implementation of the program, the nature of a field trip, and a field trip center. This work was prepared under an ESEA Title III contract. (BL)

ED 065 309 SE 014 227
Outdoor Classrooms and School Sites.
Soil Conservation Service (USDA), Washington, D.C.
Report No—PA-975
Pub Date Jan 72
Note—24p
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock No. 0100-1458 - $0.25)
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Classroom Design, Educational Facilities, Environmental Education, Guidelines, *Outdoor Education, Resource Materials, *School Space, *Site Development

Out-of-doors instruction and the use of outdoor classrooms to allow children to learn directly from the natural environment, as well as about it, are encompassed in this pamphlet. It is intended as a source of ideas for developing and using outdoor classrooms on school sites of any size wherever they are located. Included is an explanation of how to start development of an outdoor classroom, how to prepare a plan for the most comprehensive use of the school site, and where to get professional help in applying conservation practices that will improve learning opportunities. In addition, numerous pictures and brief descriptions suggest ideas for actual studies in the outdoor classrooms. (BL)

ED 067 202 RC 006 464
Rosenstein, Irwin, Comp. Donaldson, George W., Comp.
Outdoor Education: A Guide for Planning Resident Programs.
New York State Education Dept., Albany. Bureau of Elementary Curriculum Development.
Pub Date 72
Note—65p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Educational Programs, *Evaluation, Financial Support, Learning Experience, *Outdoor Education, *Personnel, Program Budgeting, *Program Planning, *Resident Camp Programs, Resources, Site Selection, Teacher Role
Identifiers—*New York State

The purpose of this guide is to provide school district administrators and teachers with guidance and direction in the planning and conduct of resident programs of outdoor education. Methods for planning and financing the program, selecting the site and personnel, determining the role of the classroom teacher, and identifying resources are described. Activities to be used in the program are listed along with suggested evaluative techniques. Additional material presented includes the New York State Education Law, the New York State Sanitary Code, evaluation forms, and a list of resident outdoor education centers in New York State. (PS)

ED 069 468 SE 014 422
A Field Guide to Outdoor Learning in Powell County, Biome Descriptions, Field Activities, Field Sites.
Powell County High School, Deer Lodge, Mont.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Aug 71
Note—182p.
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Environmental Education, *Field Studies, Learning Activities, *Natural Resources, *Outdoor Education, Resource Materials, Site Analysis, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

Serving as a guide to the outdoor areas of Powell County, Montana and the surrounding area, this resource book is useful for teachers who wish to explore the out-of-doors with their

students, particularly those interested in nature studies. Its aim is to produce a citizenry that is knowledgeable concerning the biophysical environment and its related problems. Three major sections constitute the guide. Section 1, Biome Descriptions, gives a general and detailed description of plant communities in Powell County followed by their associated soil profiles. Section 2 offers a summary of field sites. Underdeveloped sites throughout the county are suggested which allow for study of water environments, biomes, soil areas, fire burns, clear cuts, pollution areas, animals, range management and geology. Established outdoor environmental areas in six communities are then covered in detail. This includes a general description of the area, choice of location, pictures and maps, and a site analysis chart of biotic and abiotic features. Sixty field activities which can be completed at the outdoor sites are enumerated in Section 3. Each activity gives topic of study, grade level, site(s) in which it may be undertaken, procedures, and related information. This work was prepared under an ESEA Title III contract. (BL)

ED 074 038 SP 006 214

Cooperative Programming of Learning Experiences Through Outdoor-Environmental Education.

Milwaukee Public Schools, Wis.; Wisconsin Univ., Whitewater

Pub Date [71]

Note—18p

EDRS Price MF-$0.65 HC-$3.29

Descriptors—Educational Innovation, *Environmental Education, Learning Activities, *Learning Experience, *Outdoor Education, *Student Teaching, *Teacher Education

Identifiers—*Distinguished Achievement Award Entry

The College of Education at the University of Wisconsin-Whitewater and the Milwaukee Public Schools collaborated on a series of 2 1/2-day resident camp outdoor education programs. Three to five university students were assigned to a camp period and received pre-camp orientation by the program directors. The students taught, counseled, and supervised as the program required. Post-camp activities included class discussion regarding the merit of teaching methods observed and utilized, the characteristics and capabilities of children, expectations of cultural groups, outcomes of learning experiences, and camp organization and administration. (Evaluation materials are included.) (MJM)

ED 082 919 RC 007 393

Rillo, Thomas J.

Exploring the Outdoor Classroom with a Hand Lens.

Pub Date 70

Note—6p

EDRS Price MF-$0.65 HC-$3.29

Descriptors—*Curriculum Enrichment, *Learning Activities, *Natural Sciences, *Optics, *Outdoor Education, Physical Environment

Information about hand lenses and their use in the classroom and out-of-doors for curriculum enrichment is presented in this paper. Some basic attributes of the hand lens, including shape, focal length, and magnification power, are described. Directions for making holders for the lenses in the classroom are given. Two classroom activities and 14 activities which may be carried out on school grounds are suggested as representative of the many kinds of observations that can be made with a hand lens. It was noted that, to the classroom teacher, the world of the hand lens can open up unlimited opportunities for curriculum enrichment. (PS)

ED 089 899 RC 007 801

Rollit, Lib

Baggage Tags for Learning Out of Doors.

Nashville - Davidson County Metropolitan Public Schools, Tenn.

Pub Date 74

Note—33p

EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE

Descriptors—Audiovisual Aids, Classroom Games, *Curriculum Enrichment, Environmental Education, Individualized Instruction, Language Arts, Mathematics, *Merchandise Information, Natural Sciences, *Outdoor Education, Science Education, Signs, Social Studies, *Teacher Aides, Trails, *Visual Learning

The manual provides teachers with not only educational outdoor activities, but also with activities that can be provided on an individual level. The only equipment needed for most of these activities is a bought or homemade "baggage tag". These tags are used for a variety of purposes such as plant and animal identification, nature quiz games, and rockhunts. One of the best attributes of this method is that students can make up their own activities. In addition to general learning activities, the baggage tags can be used as a review or test. Suggested activities are grouped by subject area and level of difficulty. These are arbitrary, however, since any of them can be graded up or down to suit the students involved. There are 25 activities given for science, 15 for language arts, 10 for social studies, and 10 for math. (KM)

ED 100 644 SE 017 359

Classroom Activities for the Interlakes Environmental and Outdoor Education Program.

Chester Area Schools, S. Dak. Interlakes Environmental and Outdoor Education Program.

Pub Date [73]

Note—463p; Best copy available; occasional marginal legibility

EDRS Price MF-$0.75 HC-$22.20 PLUS POSTAGE

Descriptors—*Conservation Education, *Elementary Education, Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Mathematics, Natural Resources, *Outdoor Education, *Science Education, Secondary Education, Social Studies, *Teaching Guides

This teaching guide is a collection of environmental education activities written by various educators and environmentalists. The activities are designed for use in grades K-12, each activity being identified by grade level. The guide contains over 80 activities that are listed in a short introductory guide that precedes the actual activities. The activities in the introductory guide are identified by grade level and are annotated to help the teacher identify appropriate activities for the group or situation. Activity topics such as dandelions, shadows, rain, mathematics, food chains, erosion, creative writing, and values are included in the guide. All of the activity topics include appropriate grade level for activity use, objectives, background information, a pre-activity, a field trip, a procedure or experiment, and follow-up activities. Some of the activities also contain tables, diagrams, illustrations, sample stories, or resource people. (TK)

ED 103 244 SE 018 525

Outdoor Fun for Students, An Environmental Investigation.

Minnesota Environmental Sciences Foundation, Inc., Minneapolis; National Wildlife Federation, Washington, D. C.

Pub Date 72

Note—25p.; Related documents are SE 018 514-534

Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79230, $1.50)

EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE

Descriptors—*Ecology, Elementary Grades, Elementary Secondary Education, *Environmental Education, Instructional Materials, Investigations, *Learning Activities, Natural Resources, Outdoor Education, *Science Education, Secondary Grades, Teaching Guides

Identifiers—Plants, Soil

This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires little teacher preparation. The philosophy of the units is based on an experience-oriented process that encourages self-paced independent student work. The purpose of this unit is to provide educational and enjoyable outdoor activities for students of all ages. The unit is divided into four sections, the first of which being concerned with seed dispersal. In the second section, students investigate goldenrod galls and the environmental influences on the wasps that hatch from them. In the next section, students study the succession of plant decomposition, and finally, they observe soil organisms and study the environmental factors that affect those organisms. The activities can be modified for use with students in all grades. Information provided includes a list of materials needed, directions, and student worksheets. (MA)

ED 106 054 SE 016 957

Suggested Activities Using the School and Its Surroundings as a Resource for Environmental Education.

Group for Environmental Education, Philadelphia, Pa.

Pub Date [72]

Note—12p.

EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE

Descriptors—Conservation Education, *Curriculum Guides, Elementary Secondary Education, Environment, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Metropolitan Areas, Natural Resources, *Outdoor Education, *School Location, Teaching Guides, *Urban Environment

This collection of environmental education activities focuses on the school and its surroundings. The activities reinforce the concept that the immediate school environment contains elements that are common to the structure of the whole man-made environment. The activities provide ideas for using the school building, school grounds, and surrounding community for exploring, understanding, and communicating the various components of the man-made environment. The guide contains eight topics such as Getting to School, People, Materials and Products I and II, and Room Use, School Building, Schoolyard, Surrounding Community, Life Support Systems, and Parallels Between the Natural and Man-Made Environment. Under each topic is listed a number of corresponding activities. The activities represent an interdisciplinary approach to environmental education and include problem solving, discussion, photography, inquiry, and measurement. (TK)

ED 106 213 SO 008 361

Allen, Rodney F., Ed.; And Others

Ways to Environmental Education; Volume III.

Florida State Univ., Tallahassee. Coll. of Education.; Tallahassee Junior Museum, Fla.

Pub Date May 75

Note—150p.; For related documents see ED 100 734 and SO 008 187; Pages 8 of Developing Reading Competency section and 15 through 18 of Energy and Environment section of the original document are copyrighted and therefore not available

EDRS Price MF-$0.76 HC-$6.97 PLUS POSTAGE

Descriptors—Animal Facilities, Community Involvement, *Community Resources, Creativity, *Ecology, Elementary Secondary Education, Energy, *Environmental Education, Learning Activities, *Museums, *Outdoor Education, Reading Improvement, Short Courses, Social Sciences

Ten environmental education booklets presented in this document are the third volume of the environmental series developed by community groups around the Tallahassee Junior Museum and its Pioneer Farm. The first three booklets present an overview of the museum and of the various education programs and activities offered for students at the museum and farm. Animals are discussed in detail in the next unit, developed by the Florida Audubon Chapter. Another unit fosters creativity in environmental education while also developing human behavior. Other units present helpful hints for growing plants and herbs, and include information on environmental excursions, developing reading competency in environmental education, environmental and behavioral feelings, and energy and environment learning activities for camp and home. These materials augment those found in Volumes I and II (ED 100 734 and SO 008 187). (JR)

ED 108 874 SE 019 041

Hendren, Travis E.; Bryant, C. Douglas

Suggestions and Procedures for Developing Teaching-Learning Stations, Revised.

North Carolina State Dept. of Public Instruction.

Raleigh
Pub Date Jul 74
Note—68p ; Listed as Appendix F of SE 019 043. For related documents see, SE 019 042 and 043
EDRS Price MF-$0.76 HC-$3.32 PLUS POSTAGE
Descriptors—Conservation Education, *Educational Programs, Elementary Secondary Education, Environment, *Environmental Education, *Field Instruction, *Instructional Materials, Natural Resources, *Outdoor Education, Program Planning, Recreation, Sciences, Teaching Guides
Identifiers—Learning Stations, Teaching Stations
This booklet is a collection of outlines for various teaching learning stations which were developed by 21 teachers during a three-week institute held in 1972 at Barnardsville, North Carolina The purposes for such stations, which can be developed inexpensively by students and teachers on school property, are (1) to create outdoor and environmental awareness, (2) to create outdoor recreation and environmental sensitivity, (3) to provide occupational exploration, and (4) to provide occupational training Twenty-nine stations are included in the booklet. Each station outline includes (1) title of the teaching-learning station (2) description of the station, (3) rationale, (4) requirements for land, equipment, facilities, and time for development, (5) resources, and (6) Future Farmer of America and Supervised Occupational Experience uses. Stations such as a nature trail, soil profile, weather station, fish pond, and plant and insect display are included. Completing the booklet are various lists, including lists of related books, magazines and booklets, slide sources, film sources, and resource agencies (TK)

ED 108 875 SE 019 042
Hendren, Travis E Lenk, Alan
Suggestions and Procedures in Developing Nature Trails. Revised.
North Carolina State Dept. of Public Instruction, Raleigh
Pub Date Sep 74
Note—34p ; Listed as Appendix E of SE 019 043. For related documents see, SE 019 041 and 043
EDRS Price MF-$0.76 HC-$1.95 PLUS POSTAGE
Descriptors—Art, Conservation Education, *Educational Programs, Elementary Secondary Education, Environment, *Field Instruction, Instructional Materials, *Interdisciplinary Approach, Language Arts, Natural Resources, Outdoor Education, Sciences, Social Studies, *Teaching Guides, *Trails
Identifiers—*North Carolina
Though public nature trails have been in use since the late 1800's, their use on school grounds for educational purposes is a relatively new concept The nature trail is an important tool for teaching environmental awareness and appreciation It provides experiences for observing nature firsthand with all senses employed. It is a resource that is available to the entire school and is applicable to all curriculum areas The purpose of this booklet is to provide information for teachers, administrators and students on how they may plan and develop a nature trail at their school Locating the trail, trail construction, trail interpretation, and maintenance are covered in section 1 Section 2 focuses on art, science-math, language arts, and social studies activities which could evolve from classroom use of the nature trail Section 3 provides ideas and examples of trail topics such as a marsh trail, historical trail, wood trail, and geology trail Examples of outdoor demonstrations and charts are also included in this section Section 4 is a list of environmental education sources and aids including associations, books, magazines, films, and resource people. The booklet concludes with a list of outstanding nature trails located in North Carolina. (Author/TK)

ED 108 876 SE 019 043
Hendren, Travis E And Others
Outdoor Recreation and Applied Ecology. Revised.
North Carolina State Dept. of Public Instruction, Raleigh.
Pub Date Oct 74
Note—297p. See SE 019 041 and 042 for a separate listing of Appendix E and F
EDRS Price MF-$0.76 HC-$14.59 PLUS POSTAGE
Descriptors—*Career Choice, *Career Education, Conservation Education, Curriculum Guides, Environmental Education, *Instructional Materials, Natural Resources, Outdoor Education, Recreation, Science Education, Secondary Education, *Teaching Guides, Wildlife Management
This curriculum guide offers guidelines for structuring a course which exposes the students to various environmental careers The guide is divided into three sections The first section offers information about such a course course description, purpose, credits, special or unique aspects, physical facilities, equipment, major materials, teacher certification, and evaluation Section two includes 26 teaching units such as ecological systems, construction for outdoor recreation, camp management operation, and air in the environment Each unit contains a work sheet with unit title, unit objectives, teaching sequence, unit length, prerequisites, evaluation, instruction materials, and general comments. The unit guidelines include the title of the unit, teaching objectives, content, suggested teaching-learning experiences, suggested evaluation methods, and suggested resource materials The third section contains six appendices Sources of Additional Reference Materials, Regional Listing of Natural and Man-Made Environmental Locations in North Carolina, Films and Visual Materials, Environmental Yearbooks, Suggestions and Procedures in Developing Nature Trails, and Suggestions and Procedures for Developing Teaching-Learning Stations (TK)

ED 118 360 SE 019 784
Zubler, John R Hoover, Norman K
Guidelines for Planning, Developing, Utilizing and Maintaining Outdoor Environmental Education Laboratories.
Pennsylvania State Dept of Education, Harrisburg Bureau of Vocational, Technical, and Continuing Education; Pennsylvania State Univ., University Park. Coll. of Agriculture.
Pub Date 75
Note—46p ; Teacher Education Research Series, v16 n2 1975
EDRS Price MF-$0.83 HC-$2.06 Plus Postage
Descriptors—Educational Facilities, *Environmental Education, *Facilities, *Facility Guidelines, Guidelines, Nature Centers, *Outdoor Education, *Program Development, Resource Centers
This publication is designed to provide assistance in the acquisition of facilities and program development in environmental education The descriptive material is grouped under three headings planning the program, developing the facility, and utilizing and maintaining the outdoor laboratory Appendices include sources of environmental education materials, educational laboratories, and conservation organizations (BP)

ED 125 852 SE 019 196
Hart, Jonathan M
Developing Environmental Study Areas.
Tennessee Valley Authority, Knoxville.
Pub Date Aug 74
Note—19p
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—*Curriculum Development, Curriculum Guides, *Educational Resources, *Environmental Education, Environmental Influences, Natural Resources, Outdoor Education, *Reference Materials, Resource Materials, *Study Centers
This publication is designed to help the teacher in developing environmental study areas Numerous examples of study areas, including airports, lakes, shopping centers, and zoos, are listed A current definition of environmental study areas is given and guidelines for their development and identification are included The appendix, which comprises most of the pages of the booklet, contains an outdoor environmental study area inventory and evaluation form, and a selected bibliography of materials for planning school sites or outdoor laboratories (MA)

ED 125 855 SE 019 199
Crider, Tom, Ed
The Strands Walk.
National Park Service (Dept of Interior), Washington, D C
Pub Date [72]
Note—18p.
Available from—Muir Woods-Point Reyes Natural History Association, Point Reyes National Seashore, Point Reyes California 94956
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Curriculum Design, Ecology *Educational Resources, Elementary Secondary Education, *Environmental Education *Instructional Materials, *Learning Activities, Natural Resources, *Outdoor Education, Science Education
The Strands Walk is a simple field trip activity designed to acquaint students with an unfamiliar area and with each other The teacher's role in this activity is to help the students express what they observe, experience, and question Methods of study and concepts for emphasis are included in this publication A major portion of the booklet is devoted to the student task forms Each task is based on one of the Strands concepts of the National Park Service's Environmental Education Program variety and similarity, patterns, interaction and interdependence, continuity and change, and evolution and adaptation Three additional tasks concern problem focus In a final section to the teacher there are behavior objectives associated with the activity and an illustration of the data-theory excite (MA)

ED 129 535 RC 009 504
Cooperative Programs in Residential Outdoor Environmental Education Teacher's Materials Packet.
Marin County Superintendent of Schools, Corte Madera, Calif
Note—28p Not available in hard copy due to use of colored paper in original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Elementary Secondary Education, *Environmental Education, *Outdoor Education, Program Descriptions, Records (Forms), *Residential Programs, Teacher Responsibility, Teacher Role, *Teaching Guides
Identifiers—*California (Marin County), *Redwood Glen Resident Outdoor School
Serving as teacher orientation materials for the cooperative programs in residential outdoor education located in Marin County, California, this guide includes the following (1) "This I Believe" (a philosophical statement on outdoor environmental education) (2) "Outdoor Science and Conservation Education Report" (a brief history of outdoor education the legality of outdoor environmental education a description of the objectives, study areas and activities included in the Marin County program and the historical development of the Marin program). (3) "Roles and Responsibilities of the Classroom Teacher" (specifics re class preparation, cabin grouping, pre-outdoor activities, curriculum planning, teacher participation, and classroom follow-up). (4) "Outdoor Education Activity A One-Week Sequence" (exemplifies the way in which the outdoors may be used as a learning environment and includes educational objectives re stream, meadow, chaparral, tide pool, ocean, forest, and marsh environments). (5) "Along the Way A Route to Marin County's Resident Outdoor School" (includes a map of the San Francisco Bay Area and a narrative describing major points of interest in terms of their environmental histories) (6) the parental permission and health forms used by the Marin County Schools Outdoor Science and Conservation Education Program (JC)

ED 130 820 SE 019 454
Out To Learn, Guidelines and Standards Manual for Outdoor Environmental Education.
Saskatchewan Dept of Education, Regina.
Pub Date Oct 74
Note—60p
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Camping, *Elementary Secondary Education, *Environmental Education, *Guidelines, *Outdoor Education, Program Development, Resource Materials, *Teaching Guides

Identifiers—*Saskatchewan
This standards and guidelines manual, developed by the Saskatchewan Department of Education for use in the Saskatchewan schools, is designed to help teachers and school districts develop a safe and well-organized outdoor environmental education program. The topics covered include Outdoor Environmental Education Implications for Students, Teacher, School Board and Community, Environmental Protection, Guidelines for Program planning, Health and Safety, and Legal Implications. Seven appendices provide information on the following: Student-Teacher Resource Material Saskatchewan Regulations, Checklists, Sample Forms and Formats, Menus and Food Supply Lists, First Aid and Accident Procedures, and General Information. A bibliography is included. (BT)

ED 133 140 SE 020 874
Outdoor Education - A Guide to Site Planning and Implementation of Programs.
Texas Education Agency, Austin. Div. of Curriculum Development
Report No—TEA-BULL-763
Pub Date 76
Note—72p.
Available from—Texas Education Agency, Division of Curriculum Development, 201 East Eleventh Street, Austin, Texas 78701 ($2.00)
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Elementary Secondary Education, *Environmental Education, *Facilities, Instruction, *Objectives, *Outdoor Education, *Program Development
This booklet presents guidelines for initiating outdoor instructional programs. Initially, the guide lists the objectives of outdoor education: survival, recreation, development of personal health and well-being, career opportunities, and social adjustment. A discussion follows on the three phases of site planning. The first phase is site analysis which involves research in topography, ecology, and land uses and control. The second phase encompasses program development which includes the statement of purpose and objectives, the role of the school site, and analysis of these roles for program development. The final phase concerns site design or a graphic representation combining site analysis and program development. The booklet also contains examples of school sites, a checklist for developing a program, guidelines for planning activities in all curricular areas, suggested learning experiences in each discipline, and resource and reference lists. (MR)

ED 134 408 SE 021 392
Schwartz, Jonathan R.
Nature Trails for the Visually Impaired.
Syracuse Univ., N.Y. Environmental Studies Inst.
Pub Date 76
Note—47p.; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Educational Facilities, *Educational Research, *Handicapped, *Nature Centers, *Outdoor Education, *Visually Handicapped
Identifiers—Nature Trails
Many interpretive nature trails have been established for the visually impaired in recent years. The objectives of the investigation were to (a) identify what has been done in the past in the way of nature trail design for the visually impaired, (b) compare this with what professional workers for the visually impaired consider important in the design of the facilities, and (c) to provide guidelines for the design of future trails for the visually impaired. It was determined that the "typical" nature center was over five miles from the nearest urban center, not on public transportation lines, and provided a single special trail for the visually impaired with guide ropes and braille signs. As a result of the literature search, the informal interviews with visually impaired students, and the survey of Orientation and Mobility Instructors, the following suggestions are made for the design of future nature trails: (1) No special trails should be established, as these tend to isolate the visually impaired from the rest of the visitors; (2) all trails should be clearly differentiated from the surrounding environment so that the visually impaired can use residual sight or proper mobility techniques for travel, ropes are unnecessary and often vandalized, (3) special pavement is not needed, (4) railings should be provided at hazardous areas, and (5) interpretation should be offered through the use of portable cassette tape players, and booklets for the hard of hearing. (Author/RH)

ED 141 953 EA 009 770
Tully, Randolph R., Jr.
School Sites: Development and Utilization for Environmental Studies. Project KARE: A National Model for Strengthening Environmental Studies in Local Schools.
Montgomery County Intermediate Unit 23, Blue Bell, Pa., Research and Information Services for Education, King of Prussia, Pa.
Pub Date [75]
Note—39p.; For a related document, see ED 087 692
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Activity Learning, Bibliographies, Curriculum Development, Curriculum Guides, Educational Innovation, Elementary Secondary Education, *Environmental Education, Interdisciplinary Approach, Landscaping, Needs Assessment, *Outdoor Education, *Resource Guides, *Site Analysis, *Site Development, Student Participation, Trails
Some directions and avenues of thought are suggested to help school personnel develop sites for environmental education. In approaching the use or development of a site, important steps are (1) involving students, teachers, administrators, parents, and community representatives, (2) determining educational goals on the basis of students' needs; and (3) developing a resource list. Suggestions are made of ways different disciplines can be involved with the site, emphasizing that action-oriented activities are the ones most successful with students. Three site analyses prepared for schools considering development of their properties are included to provide more detailed use and development instructions, to give an idea of the variety of usable natural sites, to suggest possible planning formats, and to illustrate what a completed inventory and plan might look like. A bibliography, a list of relevant organizations, and a site analysis inventory checklist conclude the report. (Author/MLF)

ED 144 825 SE 023 115
Curtis, Hugh
Wausau District Public Schools Outdoor Education Camp Director's Manual.
Wausau District Public Schools, Wis.
Pub Date [71]
Note—66p.; For related document, see SE 023 114; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Camping, *Conservation Education, Elementary Education, *Environmental Education, *Instructional Materials, Learning Activities, Nature Centers, *Outdoor Education, Science Education, *Teaching Guides
This manual is a camp director's or teacher's guide to utilizing an outdoor education facility. Specifically, it details an area being studied in Wausau, Wisconsin, gives principles, objectives, and philosophy of that outdoor education program, and lists responsibilities of this program coordinator and committee. The remainder of the manual includes activities that can be modified for most locations. There is a detailed discussion of teacher responsibilities including organizational and planning activities. A sample parental permission form is included in this section. Lists of equipment needed by teachers and students are also given. Activities for the elementary grade students are interdisciplinary in approach and include bird games, tree lists, crossword puzzles, and story problems. Students are taught woods etiquette and camping responsibilities. (MA)

ED 151 123 RC 010 385
Rosenstreet, Irwin; Donaldson, George W.
Outdoor Education: A Guide for Planning Resident Programs. (Revision September 1977.)
New York State Education Dept., Albany. Bureau of General Education Curriculum Development
Pub Date Sep 77
Note—82p.; For related document, see ED 067 262
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—Educational Legislation, Educational Programs, Evaluation Methods, Financial Support, Learning Activities, Organizations (Groups), *Outdoor Education, Personnel, Physical Design Needs, *Program Development, Program Evaluation, *Program Guides, *Program Planning, Questionnaires, *Resident Camp Programs, Resource Materials, Sanitation, Site Selection, Teacher Role
Identifiers—*New York
The culmination of educational experiences in the outdoors is the resident outdoor education program involving teachers and pupils living and learning in the natural environment, the program emphasizes the development of human values and provides students with learning opportunities that focus on direct, real, and relevant experiences. Intended to provide school district administrators and teachers with guidance and direction in planning and conducting resident programs, this guide presents basic policies and procedures essential to the success of resident outdoor education experiences. The guide discusses methods for planning and financing the program, selection of the site and facilities, program personnel--resident director, program specialist, instructional personnel, cook, doctor, nurse, maintenance staff, and secretary, the classroom teacher's role; and resources and materials--community leaders, national, state and local organizations, printed resources, audiovisual aids, and program equipment. Activities to be used in the program are listed along with suggested evaluative techniques. Appended are the New York State Education Law, the New York State Sanitary Code, evaluation forms, and a list of 21 resident outdoor education centers in New York State. (NO)

ED 152 498 SE 023 777
Environmental Education in Action: An SCS Environmental Quality Aid.
Soil Conservation Service (DOA), Washington, D.C.
Pub Date 73
Note—24p., Reprinted from "Soil Conservation Magazine." For related document, see SE 023 778. Photographs may not reproduce well
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—*Conservation Education, Curriculum Development, Educational Parks, *Educational Programs, *Elementary Secondary Education, Environmental Education, *Outdoor Education, *Program Development, School Location, Teacher Certification
Identifiers—*Soil Conservation Service
This first of a series of reprints from "Soil Conservation Magazine" presents ideas and ways of incorporating environmental and outdoor education into school programs at all levels. This publication contains 10 such reprints. The titles of the articles are: (1) Conservation Education - It Lasts a Lifetime, (2) Through an Open Door, (3) Environmental Education Homebrew Style, (4) Conservation Campus, (5) Selecting Suitable Sites for Schools, (6) Outdoor Classroom Helps Revive Indian Traditions, (7) Conservation - A Plan for All Seasons, (8) Walk-Up-and-Kick-Um, (9) Experiences Unlimited, and (10) Education that Cannot Wait. Many of these articles are summaries of existing outdoor education programs and how they were developed. One article in particular discusses teacher certification in conservation-outdoor education as proposed in Indiana. (MR)

ED 152 499 SE 023 778
Environmental Education in Action, II: An SCS Environmental Quality Aid.
Soil Conservation Service (DOA), Washington, D.C.
Pub Date 75
Note—25p.; Reprinted from "Soil Conservation Magazine". For related document, see SE 023 777. Photographs may not reproduce well
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Adult Education, *Conservation Education, Curriculum Development, *Educational Programs, Elementary Secondary Education, Environmental Education, Experiential Learning, Higher Education, *Outdoor Education, *Program Development, *School Location
Identifiers—*Soil Conservation Service
This second of a series of reprints from "Soil Conservation Magazine" presents ideas and ways of incorporating environmental and outdoor education into school programs at all levels. This

publication contains 11 such reprints. The titles which indicate the contents are (1) Jordan River - Utah's Newest Environmental Study Area, (2) Education Majors Tackle Environmental Studies at Grambling University, (3) Dividends for the Future, (4) Credits for an Outdoor Classroom, (5) Project PREPARE and the Presumpscot River, (6) Wyoming Students Delve into "Energy and Us", (7) How a Pond Turned into a Classroom, (8) Conservation Education Interest Sparked by Iowa's County Committees, (9) Reading and the Environment, (10) Mother Nature Cooperates to the Fullest in RC&D Conservation Education in NH, and (11) SCS Workshop Sparks University Course on Outdoor Classrooms (MR)

ED 156 529 SE 024 568
Baldi, Mary Lou
Environmental Living Program. Book 1: What's Happening.
National Park Service (Dept of Interior), Washington, D C
Pub Date [77]
Note—28p. For related documents, see SE 024 569-571. Not available in hard copy due to marginal legibility of original document
Available from—Superintendent of Documents, U S Government Printing Office, Washington, D C. 20402 (Stock Number 024-005-00617-6; No price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Educational Parks, *Elementary Secondary Education, *Environmental Education, *Field Trips, *History, Outdoor Education, Parks, *Program Descriptions, Science Education, Social Sciences
Identifiers—Arizona, California, *National Parks
This booklet documents, in words and pictures, the Environmental Living Program This program, which has been in operation since 1969, provides overnight living experiences for elementary and secondary school students at cultural, historic, or prehistoric sites The sites are National and State parks and private sites in California and Arizona Some examples of the activities shown in this booklet are a second grade class baking bread, making costumes, and studying daily tasks in an 1885 log cabin in Utah; eighth grade students recreating a day in a nineteenth century school house in Arizona, and a sixth grade class spending the night aboard a lumber schooner on San Francisco Bay (BB)

ED 156 530 SE 024 569
Baldi, Mary Lou
Environmental Living Program. Book 2: Getting There.
National Park Service (Dept of Interior), Washington, D C
Pub Date [77]
Note—33p. For related documents, see SE 024 568-571. Not available in hard copy due to marginal legibility of original document
Available from—Superintendent of Documents, U S Government Printing Office, Washington, D C 20402 (Stock Number 024-005-00617-6, No price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Educational Parks, *Elementary Secondary Education, *Environmental Education, *Field Trips, History, Outdoor Education, Parks, *Program Descriptions, Science Education, Social Sciences
This is the second of four booklets describing the Environmental Living Program This program, which has been in operation since 1969, provides overnight living experiences for elementary and secondary school students at cultural, historic, or prehistoric sites throughout the West This booklet describes, in the words of the teachers and students, the activities and preparations that precede the actual live-in These activities include exploration, research, role-playing, and building motivation and responsibility (BB)

ED 156 531 SE 024 570
Baldi, Mary Lou
Environmental Living Program, Book 3: Who's In Charge?
National Park Service (Dept of Interior), Washington, D C
Pub Date [77]
Note—28p. For related documents, see SE 024 568-571. Photographs may not reproduce well
Available from—Superintendent of Documents, U S Government Printing Office, Washington, D C 20402 (Stock Number 024-005-00617-6, Nor price quoted)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Educational Parks, *Elementary Secondary Education, *Environmental Education, *Field Trips, History, Outdoor Education, Parks, *Program Descriptions, Science Education, Social Sciences, *Teaching Guides
Identifiers—*National Parks
This is the third of four booklets describing the Environmental Living Program This program, which has been in operation since 1969, provides overnight living experiences for elementary and secondary school students at cultural, historic, or prehistoric sites throughout the West This booklet discusses such questions as How do the teachers prepare for the live-in experiences? What practical or organizational concerns must be taken care of? What age level or subjects is the program appropriate for? And who will provide cultural and environmental data, loan items, or help with supervision? (BB)

ED 156 532 SE 024 571
Baldi, Mary Lou
Environmental Living Program. Book 4: Have We Forgotten Anything?
National Park Service (Dept of Interior), Washington, D C
Pub Date [77]
Note—20p. For related documents, see SE 024 568-571. Photographs may not reproduce well
Available from—Superintendent of Documents, U S. Government Printing Office, Washington, D C 20402 (Stock Number 024-005-00617-6, No price quoted)
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Educational Parks, *Elementary Secondary Education, *Environmental Education, *Field Trips, History, Outdoor Education, Parks, *Program Descriptions, Science Education, Social Sciences
Identifiers—*National Parks
This is the fourth of four booklets describing the Environmental Living Program This program, which has been in operation since 1969, provides overnight living experiences (or elementary and secondary school students at cultural, historic, or prehistoric sites in California and Arizona. This booklet addresses practical matters such as cost, equipment needs, how to evaluate the program, transportation, liability, and emergency needs In addition, a sample list of sites that have programs, a bibliography, and a check list are given (BB)

ED 157 666 RC 010 642
Chapman, E. Wayne, Comp. *Waters, Robert E., Comp*
A Teacher's Manual for Outdoor Classrooms - How to Plan, Develop, and Use Them.
Soil Conservation Service (DOA), Auburn, Ala
Pub Date [73]
Note—65p. Not available in paper copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Agency Role, Art, Community Cooperation, *Conservation Education, Curriculum Development, *Educational Resources, *Elementary Secondary Education, Health Education, Illustrations, Instructional Materials, Journalism, Language Arts, Mathematics, Music, *Outdoor Education, Physical Education, Planning, Safety Education, Science Education, Social Studies, *Teaching Guides
Identifiers—Soil Conservation Service
Using experience gained while helping elementary, junior high, and high school teachers plan, develop, and use thousands of outdoor classrooms, the Alabama Soil Conservation Service (SCS) produced this teacher's manual for outdoor classrooms Emphasis is on conservation education and the environment and man's relationship to it Rationale for developing an outdoor classroom, preferably as an integral part of the school site, includes training in environmental responsibility, expanded learning opportunities for all students, real learning experiences, effective means of teaching conservation The manual suggests how SCS can help the teacher and outlines steps for beginning an outdoor classroom (including community cooperation, common pitfalls, and 46 specific features that could be incorporated) Activities listed describe how an outdoor classroom may be used in science (animals, aquatic studies, chemistry, ecology, home economics, geology and soils, plants, vocational agriculture, weather), mathematics, social studies, language arts, art, music, shop, P E, health and safety, journalism, clubs The appendix contains a glossary, a list of basic visual and written references and organizations providing free or inexpensive materials, and illustrated teaching aids on the tree, roots and rings, grass and grasshoppers, monarch butterfly, use of the microscope, and bird feeders. (RS)

ED 157 770 SE 024 772
Interpreter's Guide to Blackbird Marsh Nature Trail.
Environmental Studies Center, Pensacola, Fla.
Spons Agency—Florida State Dept of Education, Tallahassee. Office of Environment Education.
Pub Date 74
Note—27p.
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Biological Sciences, Ecology, *Elementary Secondary Education, *Environmental Education, Field Trips, *Instructional Materials, Oceanology, *Outdoor Education, Science Education, *Teaching Guides
This booklet was prepared to help the user interpret the natural history of Blackbird Marsh Nature Trail in Escambia County, Florida, and serves as a guide to the animal and plant life The publication is part of a series of illustrated guides designed for use by teachers and students of all levels in conjunction with field trips to the 1200-acre Gulf Islands National Seashore, site of the nature trail, as well as other foci of environmental interest. (Author/RH)

ED 158 930 RC 010 687
Guidelines for Out-of-School Experiences.
Queen's Univ., Kingston (Ontario) Science Resource Centre
Pub Date [73]
Note—23p
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Athletics, *Elementary Secondary Education, Field Experience Programs, *Field Trips, Financial Support, *Guidelines, *Outdoor Education, Publicize, Safety, *School Policy, Student Transportation, Supervision, Swimming, *Teacher Responsibility
As a mechanism by which policy for out-of-school experiences is carried out, these guidelines developed for Bruce County Schools, Canada, in 1972-73 are intended to insure pupil safety and set forth teacher responsibility during educational outings and excursions for students of all levels. Included are administrative procedures for obtaining school approval for a variety of experiences, from walking trips in the neighborhood to overnight trips, and teacher responsibility for supervision and safety, encompassing planning, parent notification, first aid, minimum supervision ratios for different ages and kinds of trips, and requirements for water safety, canoeing, use of boats for field studies in science or geography, and other special skills or safety precautions. Under transportation, guidelines cover use of regular school vehicles, watercraft and aircraft, and automobiles Responsibilities of volunteer drivers are briefly outlined, along with how out-of-school programs should be financed and what public relations efforts can be made both toward parents and the community at large Appendices contain some direction for emergency situations, accident procedures, excerpts from the 1972 Public Health Act dealing with lifeguards, aquatic instructors, and water safety assistants, and the following forms: information letter to parents, permission letters, medical treatment consents (RS)

ED 160 281 RC 010 777
Matthews, Bruce And Others
Winter Outdoor Education Activities: Animal Track Identification.
Cortland-Madison Board of Cooperative Educational Services, Cortland, N Y
Pub Date 19 Dec 75
Note—24p. Best copy available
Available from Cortland BOCES Outdoor Environmental Ed Program McGraw Educational Center, Cortland New York 13045 ($1.00)

EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—*Activities, *Animal Behavior, Art, Elementary Secondary Education, Health, *Interdisciplinary Approach, Language Arts, *Lesson Plans, Mathematics, *Outdoor Education, *Resource Materials, Sciences, Social Studies

Designed for elementary and perhaps junior high school students, this activities-animal-tracks packet is a multi-disciplinary educational lesson which provides students with an opportunity for learning through "self discovery." Comprised of narrative and illustrative directions and suggestions, the activities described here include the following suggested pre-trip activities for social studies, physical education, health, mathematics, science, language arts, and art: a metric measurement sheet, a modified key to common winter animal tracks in Cortland County, New York (includes 12 illustrations and descriptions) a pre-trip orientation plan (includes a discussion of animal tracks in terms of where the animal was going, what he was feeding on, whether he was frightened running, or walking, etc.), a survey form for recording animal tracks, and a discussion of proper clothing) a lesson involving orientation-acclimatization activities and the actual survey of animal tracks, post-trip activities in social studies, mathematics, language arts, science, and art. (JC)

ED 160 283 RC 010 780
Matthews, Bruce; Smith, Joseph
The Cemetery: An Outdoor Education Unit.
Cortland-Madison Board of Cooperative Educational Services, Cortland, N.Y.
Pub Date—13 Nov 75
Note—22p.; Not available in hard copy due to marginal legibility of original document
Available from—Cortland-Madison BOCES Outdoor-Environmental Ed Program, McEvoy Educational Center, Cortland, New York 13045 ($1.00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Art, Community Resources, Elementary Secondary Education, *Interdisciplinary Approach, Language Arts, *Lesson Plans, *Local History, Mathematics, *Outdoor Education, *Resource Materials, Sciences, Social Studies, Surveys
Identifiers—*Cemeteries

Utilizing the local cemetery as a resource for the study of local history, this outdoor education resource packet is multidisciplinary and is designed to be adapted to different age and class groups. The resource materials presented in this packet include the following suggestions for pre-trip activities (social studies and history discussions, language arts and vocabulary development, science and decomposition discussion, health and burial requirements, art and stone sculpture, mathematics and birth and death figures) an outline describing activity orientation procedures (definition of a cemetery, discussion of what information can be found there, orientation to the use of a survey form for recording inscriptions, dates, etc., and discussion of rubbing procedures), the actual cemetery lesson (presented in outline form this includes sections on arrival and instructions, the survey and rubbing) a sample survey form a sample tally sheet designed to tally the survey forms and thus identify community historical patterns (nationality, sex, marriage, death and birth dates, age at death, cause of death, veteran, occupation, and type of stone in tombstone), suggestions for post-trip lesson activities (activities derived from examining the tally sheet and activities in social studies, mathematics, language arts, science and art) and teacher tips and time distribution suggestions. (JC)

ED 160 285 RC 010 782
Matthews, Bruce And Others
A Guide for Conducting Outdoor Field Experiences.
Cortland-Madison Board of Cooperative Educational Services, Cortland, N.Y.
Pub Date—Feb 78
Note—30p.
Available from—Cortland-Madison BOCES Outdoor-Environmental Ed Program, McEvoy Educational Center, Cortland, New York 13045 ($1.00)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Activities, Discovery Learning, Educational Philosophy, Environmental Education, Experiential Learning, *Field Instruction, Field Trips, Games, Interdisciplinary Approach, *Outdoor Education, Planning, *Resource Materials, Sensory Experience, Teacher Improvement, *Teaching Guides, *Teaching Techniques
Identifiers—*Strand Approach to Environmental Education

Since research indicates teachers generally lack confidence in their ability to conduct lessons in the outdoors and feel inadequate regarding knowledge of the natural world, this guide has been developed to build teacher confidence in utilizing the outdoors. Designed to be used in conjunction with a practicum workshop, this guide presents techniques which can be demonstrated and practiced in a workshop situation. The following are addressed: philosophical background of outdoor education, educational assumptions (learning by doing, use of all senses, individual and unique ways of learning, learning by association, the importance of needing to learn, self discovery learning, group dynamics emphasis), the strand approach to environmental education (interdisciplinary learning incorporating variety, similarities, patterns, interaction interdependence, continuity change, and adaptation-evolution), sensory approach (use of all senses), planning field trips (pre-trip preparation, post-trip evaluation, check lists, etc.), activities (strand approach illustrated via activities for each of the five strands listed above, sensory approach activities, discovery approach activities, acclimatizing activities, and miscellaneous activities) Among the many activities listed are the following: empathizing with natural phenomena-role playing a tree, prickly-tickly (find something that prickles and something that tickles); the food chain game, a bug's eye view (how the world looks to a bug) (JC)

ED 160 286 RC 010 783
Matthews, Bruce And Others
Plant Galls and Ecological Concepts: A Multidisciplinary Outdoor Education Teaching Resource Packet.
Cortland-Madison Board of Cooperative Educational Services, Cortland, N.Y.
Pub Date—Dec 77
Note—37p.; Best copy available
Available from—Cortland B.O.C.E.S. Outdoor-Environmental Ed Program, McEvoy Educational Center, Cortland, New York 13045 ($1.00)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Activities, *Botany, Concept Formation, Definitions, *Ecology, Elementary Secondary Education, Illustrations, Interdisciplinary Approach, Language Arts, *Lesson Plans, *Outdoor Education, Plant Identification, *Resource Materials, Sciences, Social Studies

Designed for adaptation in primary through high school classes, the lessons in this resource packet use the development of plant galls (plant growths caused by irritation of the plant tissue) as a focus for outdoor education studies and activities. Emphasis is on science and ecology, though other disciplines are represented. Illustrations and narratives present the following: a definitive statement on galls (historical considerations, function, importance, etc.), an illustrated narrative discussing the different types of galls, a narrative on ecological relationships (addresses the following concepts as demonstrated by study of galls: ecosystems operate as a whole unit and all things are interrelated, interconnected and interact with other living and non-living things, all living things need air, sunlight, water, and nutrients, all living things need and use energy, and energy is constantly produced and lost through organism maintenance and trophic exchanges, movement of matter provides connections and exchanges of materials between ecosystems), pre-trip lesson ideas for science, language arts, and social studies (the lesson plan for studying galls (presented in outline form, this includes objectives, what is a gall, cutting a gall open, discussing the benefits of a gall for man, gall maker, etc.), interrelatedness and interdependence as illustrated by the gall story, energy flow concepts and the gall story, etc., post-trip follow-up suggestions, gall crafts (mobiles, jewelry, etc.), cross-word puzzle: a fact sheet, and a glossary. (JC)

ED 164 192 RC 011 016
Hurst, Donald L.
A Cemetery Study.
Pub Date—77
Note—15p.; Study guide prepared by Norfolk County Outdoor Education, Langton (Ontario)
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—*Activities, Art, *Curriculum Guides, Elementary Secondary Education, Geology, *Interdisciplinary Approach, Language Arts, Local History, Mathematics, *Outdoor Education, Values, *Worksheets
Identifiers—*Cemeteries

Employing an interdisciplinary approach, this outdoor education guide to the study of cemeteries is designed for older elementary and younger secondary students. Suggestions are provided for activities involving the study of history, geology, mathematics, art, language arts, and values. For example, the cemetery markers lend themselves to art activities involving the study of lettering styles, stone sculpture, and shape and design. Likewise, the shapes of the various tombstones can inspire mathematical measurement activities. Specific projects for outdoor cemetery activities are outlined via worksheets. Among the worksheets provided are the following: making a map worksheet of the cemetery, a local history documentation worksheet (name of deceased, country, year of death, year of birth, age at death, etc.), a geology worksheet (examination of the materials used for markers and the date at which a given material was most popular), a math measurement worksheet, requiring diagrams explaining how a given marker was measured, a second math measurement worksheet focusing on the size of the total cemetery and the cost of plots, an art worksheet focusing on the designs found on tombstones and requiring sketches of such designs; a language arts worksheet focusing upon the language inscribed upon the tombstones and its present equivalent. Supplementary resources are suggested. (JC)

ED 165 970 RC 011 155
Environmental Education Inservice Training Packet for the Intermediate Level.
Upper Mississippi River ECO-Center, Thomson, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Illinois State Dept. of Education, Springfield.
Pub Date—75
Note—126p.; Not available in hard copy due to marginal legibility
Available from—Upper Mississippi River ECO-Center, Thomson, Illinois 61285 ($3.50)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Class Activities, Curriculum Development, Educational Games, Educational Objectives, *Environmental Education, *Experiential Learning, Faculty Development, Field Trips, Group Experience, Inservice Programs, *Inservice Teacher Education, Inservice Teaching, Instructional Materials, Interdisciplinary Approach, Intermediate Grades, *Outdoor Education, Perception, Staff Improvement, *Teaching Guides, Values
Identifiers—Elementary Secondary Education Act Title III, *Upper Mississippi River ECO Center

The inservice teacher training packet, developed with help from the environmental education program of the Upper Mississippi River ECO-Center, is designed to help intermediate-level teachers develop teaching skills which will enable them to introduce environmental or outdoor education to their students and develop those concepts, attitudes, and behavioral skills which lead to environmental responsibility. Reflecting the need for environmentalization on many instructional levels, the flexible one or two day program includes sections which focus on environmental awareness, classroom activities, school site activities, field trips, and community resources. The many activities in these sections can be adapted for class use with little or no change, and the activity descriptions usually include objectives, instructional levels, and materials lists. The interdisciplinary approach involves group and individual activities such as role playing, values clarification, games, home and school environmental surveys, career visits, art projects, science projects, and environmental observation. The packet also includes a sample inservice program schedule, a section on developing an environmental education program, references, equipment lists, field trip materials, resources, and an awareness test. (SB)

ED 165 974 RC 011 159
Schaljo, Roger, Comp.
101 Environmental Education Activities. Booklet 3-Mathematics Activities.
Upper Mississippi River ECO-Center, Thomson, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date—77
Note—34p.; Best copy available
Available from—Upper Mississippi River ECO-

Center, Thomson, Illinois 61285 ($1.00)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Activities, Cartography, Curriculum Enrichment, *Curriculum Guides, Educational Games, Educational Objectives, *Elementary Secondary Education, *Environmental Education, Evaluation Criteria, Experiential Learning, Instructional Materials, Maps, Mathematical Applications, Mathematical Concepts, Mathematics Education, *Mathematics Instruction, Mathematics Materials, Metric System, *Outdoor Education
Identifiers—Compass Activities, Elementary Secondary Education Act Title III, *Upper Mississippi River ECO Center
Each of the 14 environment-related mathematics activities included in this publication by the Upper Mississippi River ECO-Center includes objectives, materials needed, preparation, and activity description. Occasionally, variations and helpful hints are added. Because the student can gain experience to help him with the practical application of abstract concepts by studying mathematics outdoors, special emphasis is given to the experiential study of metrics and the magnetic compass. The overall focus of the activities is on the use of mathematics in real life situations. Metrics activities include body measurements, pacing and measuring distances, and estimating heights. Compass activities include an introduction to the use of the magnetic compass, geometric figures, an introduction to mapping, constructing/teaching mapping courses, and games. In addition there are pollution, energy, and nature studies. The activities are designed to enhance elementary and junior high school students' awareness of mathematics found in nature, such as geometric shapes, and to teach metrics, the compass, and applied mathematics. This is the third in the series of environmental activities booklets by the ECO-Center, and is also related to their inservice Teaching Manual for environmental education. (SB)

ED 165 975 RC 011 160
Whitney, Helen, Comp.
101 Environmental Education Activities. Booklet 4-Science Activities.
Upper Mississippi River ECO-Center, Thomson, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date—75
Note—89p.; Best copy available
Available from—Upper Mississippi River ECO-Center, Thomson, Illinois 61285 ($1.50)
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—Climatic Factors, Conservation (Environment), Curriculum Enrichment, *Curriculum Guides, Ecology, Educational Objectives, *Elementary Secondary Education, Energy, *Environmental Education, Evaluation Criteria, *Experiential Learning, Field Trips, *Instructional Materials, *Outdoor Education, Plant Identification, *Science Activities, Science Course Improvement Project, Science Experiments, *Science Instruction, Sensory Experience, Soil Science
Identifiers—Elementary Secondary Education Act Title III, *Upper Mississippi River ECO Center
Fourth in the series "101 Environmental Education Activities" by the Upper Mississippi River ECO-Center, the booklet contains 39 environment-based science activities directed to students in primary, intermediate, and junior high classes. Organization of the activities usually includes grade level, objectives, procedures, and materials, evaluation criteria, and sometimes includes hints and follow-up activities as well. In general, emphasis is placed on learning about soils; weather; various life forms; ecological and environmental relationships; conservation; natural phenomena; and on enhancing the students' powers of observation, sensory awareness, and awareness of environmental problems. Activities include science and energy surveys, weather observations and predictions, soil study and analysis, tree study, plant and animal observations, and specimen collection. Field trips to forest, timber, marsh, and river areas, as well as new housing developments and waste disposal plants help students examine many aspects of their environment from the point of view of various sciences. (SB)

ED 165 976 RC 011 161
Whitney, Helen, Comp.
101 Environmental Education Activities, Booklet 5-Science & Social Studies (Interdisciplinary) Activities.
Upper Mississippi River ECO-Center, Thomson, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date—75
Note—23p.; Best copy available
Available from—Upper Mississippi River ECO-Center, Thomson, Illinois 61285 ($1.00)
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Curriculum Enrichment, *Curriculum Guides, Educational Objectives, Elementary Secondary Education, *Environmental Education, Evaluation Criteria, Experiential Learning, Field Trips, *Forestry, Instructional Materials, Interdisciplinary Approach, Intermediate Grades, *Outdoor Education, Plant Identification, *Science Activities, Science Instruction, Sensory Experience, *Social Studies, Writing
Identifiers—Cemeteries, Elementary Secondary Education Act Title III, *Upper Mississippi River ECO Center
Forestry is the main focus of this fifth booklet in the series "101 Environmental Education Activities" by the Upper Mississippi River ECO-Center. Designed for students in the intermediate grades and junior high school, the booklet contains 9 science and social studies activities and 5 interdisciplinary activities. Most activity descriptions include the objectives, preparation, description, evaluation, materials, follow-up, re-plans, and reference sources when appropriate for the activities. Eight science and social studies activities are directed to the study of forests: the kinds and location; the national forests and parks system; fire causes, prevention, and fighting; tree identification; growth and uses; forest products and the lumber industry; wildlife; and tree ring time lines and the relation to the weather. There is also an activity which examines the relationship of the farm to the area economy. The 5 interdisciplinary activities include 4 field trips or hikes, 1 of which teaches the historical and resource value of cemeteries. These activities are designed to increase the students' powers of observation, sensory awareness, sense of aesthetics, and writing ability. (SB)

ED 165 977 RC 011 162
Whitney, Helen, Comp.
101 Environmental Education Activities. Booklet 6-Social Studies Activities.
Upper Mississippi River ECO-Center, Thomson, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date—75
Note—27p.; Best copy available
Available from—Upper Mississippi River ECO-Center, Thomson, Illinois 61285 ($1.00)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Activities, *Community Study, Curriculum Enrichment, *Curriculum Guides, Educational Objectives, Elementary Secondary Education, *Environmental Education, Evaluation Criteria, Experiential Learning, Field Trips, Instructional Materials, Intermediate Grades, Interviews, Local History, *Outdoor Education, *Social Studies, Surveys
Identifiers—Elementary Secondary Education Act Title III, *Upper Mississippi River ECO Center
Based on the environment and directed at elementary and intermediate level students, 5 field trips are a significant part of the 12 social studies activities in the sixth booklet by the Upper Mississippi River ECO-Center outlining environmental and outdoor education activities. Most of the activities include objectives, activity description, evaluation, grade level, and one activity provides a resource list and bibliography. Guide sheets are provided for survey activities based upon visits with city businesses, a school site, recreational areas, community citizens and a field trip site. Activities are designed to help students learn the difference between man-made and natural areas, the effect of recreational areas on the environment, techniques of observation, and the attitudes of their fellow students and themselves regarding the environment. Also included are writing activities based on the history of a field trip area and on pioneer living; these activities are designed to promote learning about the early settlers and their daily lives, the use of reference books, report writing, note taking, summarizing, and the value of local historical records. (SB)

ED 170 101 RC 011 328
Snyder, Glenn And Others
Environmental Education: River Policy and Procedures.
Spons Agency—Jefferson County School District R-1, Lakewood, Colo
Pub Date—Nov 75
Note—77p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Elementary Secondary Education, *Environmental Education, Equipment Maintenance, Equipment Standards, Experiential Learning, Facility Inventory, Field Instruction, *Field Trips, Learning Activities, Objectives, *Outdoor Education, *Policy, *Responsibility, Safety, Sanitation, Secondary School Teachers, *Teaching Procedures
Identifiers—Colorado (Jefferson County), *River Rafting
Accurate as of October 1975, the guidebook establishes detailed procedures and policies to be used by all persons engaged in white water rafting trips involving students from Jefferson County (Colorado) Public Schools, and provides a general guide and set of instructions for anyone planning and carrying out such a trip. The guidelines are drawn from the latest state and federal information available, from the Colorado Outward Bound School, and from the knowledge of many experienced river rafting supervisors. The guidebook provides secondary school staff members who sponsor river rafting activities with minimum safety and sanitation standards (safety restrictions, first aid treatment, emergency procedures, hand and dish washing, food and drinking water preparation and storage, waste disposal) information and checklists regarding the kind, use, and care of all required equipment are included. The book presents full instructions for five suggested environmental activities, a sample activity timetable for a 5-day trip, and instructional sequences for teaching rafting skills. Organizational material includes a preparatory checklist and time schedule, staff criteria, sample menus, a reading and reference list, and detailed information about the condition of several Colorado rivers and their environments. (SB)

ED 170 896 EA 011 657
Douglas, Randi McCann, Karen, Comp.
Project Ranger Adopter's Guide, 1979.
Portland Public Schools, Oreg
Spons Agency—Office of Education (DHEW), Washington, D.C., Oregon State Dept. of Education, Salem.
Pub Date—79
Note—113p.; Chart A-11 may be marginally legible due to small print
Pub Type— Guides - Non-Classroom (055) — Tests/Questionnaires (160) — Reports - Descriptive (141)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—*Behavior Problems, Classroom Guidance Programs, *Counseling Instructional Programs, Elementary School Students, Elementary Secondary Education, Environmental Education, *Intervention, *Outdoor Education
Identifiers—Portland Public Schools OR, *Project Ranger
Project Ranger is a program providing a combination of classroom study, outdoor survival, and environmental education to students having difficulty adapting to structured learning. The program has three unique features: it tries to reach younger children than most programs for "reluctant learners", it provides affective counseling organized around strenuous physical activity, and it operates as a supplement to classroom instruction, involving the classroom teacher and avoiding the stigma often associated with removal of the student from the classroom. Goals of Project Ranger include improving negative student behavior, improving student self concept, providing students with skills to enhance adult and peer relationships, motivating academic improvements, and providing students opportunities to develop leadership skills. Having served 120 students per year for four years at the elementary level, the program is now being considered for older students as well. This document addresses those considering adoption of the Program, and covers planning (process objectives and tasks, management structure design, budgeting, and facility and transportation requirements); implementation (process objectives and tasks, and orientation materials), staffing (hiring procedures, staff qualifications, and inservice materials), student selection; and project evaluation methods. Appen-

dices include job descriptions, sample curriculum outlines, student referral and selection forms, and project evaluation forms (Author/PGD)

ED 171 466 RC 011 380
Jones, Ornille E., Ed Swan, Malcolm D., Ed.
A Model for Introducing Environmental Quality Education into a School Curriculum. Taft Campus Occasional Paper No. VII.
Northern Illinois U. . Oregon. Laredo Taft Field Campus. Dept. o outdoor Teacher Education.
Pub Date—72
Note—45p.
Pub Type— Reports - Descriptive (1a1) — Opinion Papers (120)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Citizen Participation, Community Cooperation, Community Support, *Curriculum Development, Educational Quality, Elementary Secondary Education, *Environmental Education, Higher Education, *Instructional Programs, *Outdoor Education, Parent Participation, Parent Teacher Cooperation, Public Schools, Recycling, *Relevance (Education), Student Participation, Student Projects
Identifiers—Glencoe Environmental Education Curriculum *Illinois (DuPage County), Parent Teacher Association
At a meeting in DuPage County, Illinois, in April 1972, speakers representing the PTA, students, school teachers and administrators, outdoor education, the Illinois School Boards Association, and the Open Lands Project voiced enthusiastic support for introducing environmental education into the school curriculum One of the County's several college, secondary and elementary level environmental programs described in the meeting, the Glencoe (Illinois) Environmental Education Curriculum was designed to develop environmental consciousness and social responsibility through an integrated curriculum approach for grades K-8 The program's initial success was partly due to the fact that it involved all sectors of the community in its activities which included the establishment and maintenance of a glass recycling center largely the work of students and the PTA Speakers advocated such citizen participation in environmental education as well as the reassessment of educational priorities to make education accountable to an environmentally responsible society (SB)

ED 171 475 RC 011 395
Vandenhazel, Bessel J.
Urban Studies Workshop. Shopping Centre Study. Rockfort, Illinois.
Nipissing Coll., North Bay, Ontario.; Northern Illinois Univ., De Kalb
Pub Date—Apr 77
Note—12p
Pub Type— Guides - Non-Classroom (055)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Concept Formation, Educational Objectives, Educational Strategies, Elementary Secondary Education, *Environmental Education, Experiential Learning, *Field Instruction, Field Trips, Instructional Trips, *Interdisciplinary Approach, *Learning Activities, *Outdoor Education, Science Instruction, Site Selection, Urban Areas, *Urban Studies
Identifiers—*Shopping Centers
The urban environment itself can be a laboratory for learning, and the learning activities in this workbook utilize the shopping center as a study site. General objectives of this unit of study are (1) to investigate how shopping centers serve the community, (2) to integrate a number of curriculum skills and concepts, and (3) to investigate the environmental impact of large shopping centers and malls Suggested exercises for elementary and secondary school students include work in mapping and sketching, graphing and tabulating, interviewing and recording and photography The plan calls for students to first visit a shopping center. Stores may be classified according to type and a graph drawn showing the results Another activity calls for students to visit a store and compare prices and sizes of articles and determine which are the better buys. At a clothing store they may note the type of materials used for clothing, and hardware stores provide the opportunity to study countries of origin of products and raw materials and transportation methods Other activities look at various building materials, car movement patterns in parking lots, and landscaping design. Children may also visit travel bureaus and plan trips, learn how to open a savings account at a bank, and choose a nutritious lunch from a restaurant menu. A number of urban study activities are also listed for science teachers, including investigation of urban climates, environmental impacts and sewage treatment processes. (DS)

ED 173 062 RC 011 568
Rattan, Esther P. Ed Rattan, Edward, Ed.
Hawaii: Lava or Leave It.
California State Univ., Hayward.
Pub Date—76
Note—75p.; Not available in hard copy due to poor print quality Developed for a teacher education course, Field Study in Environmental Education, at California State University
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Astronomy, Camping, Cultural Awareness Earth Science, *Ecology, Elementary Secondary Education, *Environmental Education Experiential Learning, Handicrafts, *Learning Activities Objectives, *Outdoor Education, Plant Identification, Resident Camp Programs, Solar Radiation, *Teaching Methods, *Water Resources
Identifiers—Experiential Education, *Hawaii, Hawaii Outdoor Education Center
In cooperation with the Hawaii 2000 Outdoor Education Center, a summer ecology course for teachers on the Island of Hawaii developed and conducted an environmental school in Hawaiian outdoor education for 18 children between the ages of 9 and 13 Thirteen teachers enrolled in a California State University field course in environmental education worked with the Hawaii 2000 group in setting up the course conducting it and at its conclusion, in compiling a curriculum guide for Hawaiian outdoor education The course outline and requirements, teacher preparation directions for class projects timetable, evaluation methods, and supply and equipment lists were all included in the guide The resident camping experience featured projects centered around three major topic areas, sun and sky, water, and land. The sun and sky classes included construction of a solar oven and sun clock stencil printing, and pinhole photography In the water segment of the course, students learned how to snorkel, aquatic safety rules, adaptation techniques of marine animals to the rocky shore, and how to collect and press algae. The land activities included hiking, first aid, sing-alongs, non-utensil outdoor cooking, sand casting, sand painting, Japanese fish printing, and tie-dying. Although projects outlined in this guide are geared toward an Hawaiian setting, use of this document could carry over to Mainland outdoor education classes as well. (DS)

ED 174 431 SE 028 239
Jantzen, Paul G. And Others
The Prairie—A Resource for Environmental Study. Modules, Scripts and Study Sheets.
Bethel Coll., North Newton, Kans. South Central Kansas Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—[74]
Grant—OEG-0-74-7405
Note—423p.; Not available in hard copy due to marginal legibility of original document
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Conservation (Environment), Conservation Education, Curriculum Guides, *Ecology, Elementary Secondary Education, *Environment, *Environmental Education, Field Trips, *Interdisciplinary Approach, *Outdoor Education
This collection of activities uses outdoor education and field trips to teach concepts of multi-disciplinary interest along with lessons in ecology and environment. Teaching modules usually include information on grade level, main subject being addressed, theme, objectives, and other useful information in addition to instructions for the activity. (RE)

ED 176 905 RC [illegible] 291
Huck, Albert R. Decker, Eugene
Environmental Respect: A New Approach to Outdoor Education.
Safari Club International Conservation Fund, Tucson, Ariz.
Spons Agency—Colorado State Univ., Ft. Collins. Dept. of Education., Colorado State Univ., Ft. Collins. Dept. of Fishery and Wildlife Biology
Pub Date—Jan 76
Note—173p
Available from—Safari Club International Conservation Fund, 5151 E. Broadway, Suite 1680, Tucson, Arizona 85711 ($3.50)
Pub Type— Guides - Classroom - Teacher (052) — Guides - Non-Classroom (055)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Activities, Animal Behavior, Camping, *Conduct, *Curriculum Development, Curriculum Enrichment, Curriculum Planning, Educational Objectives, Educational Philosophy, Educational Resources, *Environmental Education, *Ethical Instruction, Ethics, Experiential Learning, Instructional Materials, Interdisciplinary Approach, Lesson Plans, *Outdoor Education, *Program Development
Identifiers—Fishing, Hunting
Most outdoor education programs do not include the teaching of correct outdoor behavior The purpose of this manual is to assist educators and concerned lay persons in establishing an outdoor education program with an instructional strategy that will manipulate students into becoming responsible, ethical, respectful outdoor citizens. Both lay persons and educators can use the detailed manual explanations, directions, and hints to guide them through the entire process of designing an Environmental Respect curriculum package, from program inception through approval and implementation to evaluation and modification Five sample Curriculum Lesson Ideas (Investigating Wildlife, Investigating Hunting, Investigating Fishing, Investigating Hiking and Camping, and Survival) attempt to bring out the unique qualities of this outdoor education philosophy which emphasizes developing environmental respect by utilizing the outdoor sports. Respectful behavior is the essence of the units which begin with an introduction and a topic outline. For each topic there is an overview, a basic approach, and behavioral objectives with activities for achieving them. A resource section lists sources of appropriate teaching materials for each unit. Additional resource material sources such as federal and state agencies, associations, and companies are listed in an appendix. (SB)

ED 176 909 RC 011 552
Lathrop, David M. And Others
Wondering Outdoors. Adventures and Experiences in Earth's Oldest Classroom.
Freeport School District 145, Ill.
Pub Date—Mar 78
Note—30p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Art, Community Resources, Curriculum Development, *Curriculum Enrichment, Educational Objectives, *Elementary Secondary Education, Experiential Learning, Integrated Curriculum, Language Arts, *Learning Activities, Mathematics, *Outdoor Education, Program Evaluation, Social Studies, Units of Study
An aid for planning outdoor education for elementary and high school students in the Freeport Public Schools, Freeport, Illinois, this guide is designed to help teachers expand the existing curriculum by integrating outdoor activities in all areas of study. Activities for grades K-6 are organized by location (school ground, neighborhood, community, and educational and recreational facilities beyond the community), activities for grades 7-12 are organized by subject area (art, social studies, language arts, health and physical education, home economics, mathematics, science, and drama and music). The suggested activities are diverse, traditional, as well as non-traditional activities are listed At the kindergarten level suggestions include a walk on the school grounds to gather leaves, a neighborhood walk to practice pedestrian safety rules, and a visit to a construction site At the seventh grade level suggestions include art projects using natural materials, study of local history and Indian relics, [illegible]ing skills for campfire entertainment, and constructing a regional map A separate section lists

study units such as geology, weather, and local history and the outdoor activities appropriate to the [illegible]. The guide includes an enumeration of the goals of the outdoor education program and the methods used to program evaluation. (JH)

ED 182 144 SE 029 862
Tomahawk School Forest Curriculum.
Tomahawk School District, Wis.
Pub Date—79
Note—137p.; Contains occasional light and broken type
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—Curriculum Development *Elementary Secondary Education *Environmental Education, *Field Trips, *Forestry *Interdisciplinary Approach, *Learning Activities, Outdoor Education, Science Curriculum, Science Education
Identifiers—Project Learning Tree
Presented in this curriculum guide are the teacher instructions and student materials for field trips to the school forest. Learning activities, utilizing the philosophy, materials, and procedures of Project Learning Tree (PLT), are included for grades K-12. Each activity includes the subject area, learning objective, grade level, procedure corresponding Project Learning Tree activity, and extensions. Student and teacher evaluation forms are included. (BT)

ED 183 368 SE 029 825
We Can Help. Environmental Education Teaching Resources. Teacher's Guide and 2a Outdoor Classroom Environmental Education Guides.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis.
Spons Agency—Fish and Wildlife Service (Dept. of Interior), Washington, D.C.
Pub Date—75
Note—198p.; Not available in hard copy due to copyright restrictions. Contains occasional colored pages which may not reproduce well
Available from—Jenny Publishing Co., 57 Queen Ave., South, Minneapolis, MN 55405 ($15.00)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Botany, Career Planning, Earth Science, *Ecology, *Elementary Secondary Education, *Environment, *Environmental Education, Interdisciplinary Approach, Land Use, Language Arts, Meteorology, Outdoor Education, Photography, Population Growth, Public Policy, Science Education, Sciences, *Social Studies, Surveys, Water Pollution Control, Water Resources, Wildlife Management
This teacher's guide, and accompanying set of 24 activity packets, is designed to direct outdoor learning experiences by students. Information is collected and then shared in large group classroom discussion. The 24 activity packets are divided into levels, Level I is recommended for grades 4-6 and Level II for grades 7-12. Each guide is a complete description of an investigation involving an environmental topic or issue. Each activity guide includes a synopsis, environmental goals, background, purpose, objectives, materials needed, introduction, and activity description. (RE)

ED 184 734 RC 011 656
Sommer, Bonnie
Resident Program Guide: Hillside Outdoor Education Center.
Edwin Gould Outdoor Education Centers, Brewster, N.Y.
Spons Agency—Gould Foundation for Children, New York, N.Y.
Pub Date—78
Note—41p.
Available from—Edwin Gould Outdoor Education Centers, Gage Road, Brewster, NY 10509 ($3.00)
Pub Type— Guides - General (050)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Camping, *Check Lists, Educational Assessment, Educational Objectives, Elementary Secondary Education, *Experiential Learning, Facilities, Field Instruction, Learning Experience, *Outdoor Education, Postsecondary Education, *Program Development, Program Guides, Recreational Programs, *Resident Camp Programs, Teaching Guides
Identifiers—*Hillside Outdoor Education Center NY
Founded in 1972 as part of the private, non-profit [illegible]ld Outdoor Education Centers, the Hillside Outdoor Education Center offers services to various educational groups by providing residential experiences for students and faculty, day-visit programs, school-site outdoor education programs, teacher workshops, college courses in outdoor education, and conferences. The Center is situated on a 50 acre site typical of an upland, glaciated, northeastern deciduous forest area and includes a lodge, log cabin and homestead area, 2 dormitories each capable of accommodating 32 students and 4 staff, a tenting area, and several staff residences. This guide provides information for center users: descriptions of facilities, a statement of purpose, health and safety tips, emergency procedures, sample menus, a typical daily schedule, program offerings, teacher guidelines, procedures for dorm supervisors, pre- and post-trip activities, sample bus games, songs, possible teacher-led evening activities, and references in outdoor education. Sample forms, records, and checklists for participating teachers, students, and parents include pre-planning teacher checklist, table chart for meals, dorm assignments, instructional group assignments, what to bring, health record, publicity release, permission slip, and evaluation forms. Maps of Hillside and its surrounding trails as well as directions for reaching the Center are also provided. (NEC)

ED 184 735 RC 011 657
Johnson, Patricia And Others
In and Out 101 Activities to Enrich the Learning Experience.
Edwin Gould Outdoor Education Centers, Brewster, N.Y.
Spons Agency—Gould Foundation for Children, New York, N.Y.
Pub Date—Aug 79
Note—161p.
Available from—Edwin Gould Outdoor Education Centers, Gage Road, Brewster, NY 10509 ($8.00)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—Activity Units, Conservation Education, *Educational Games, Educational Media, Elementary Secondary Education, Environmental Education, *Experiential Learning, Games, *Handicrafts, *Learning Activities, *Natural Sciences, *Outdoor Education, Programs, Recreational Activities, Science Education
Identifiers—*Edwin Gould Outdoor Education Centers NY
Activities developed and used with children and adults participating in the program offerings of the Edwin Gould Outdoor Education Centers are presented. Information describing most activities includes name, description of the activity, objectives, supervision or help required, procedures, time involved, size of area required, materials, suggestions and comments, suggested student level, and observation and evaluation criteria. Projects are grouped under five major categories. Fourteen outdoor academic activities include compass activities, mapping and map symbol practice, snow science, stalking the wild poem, and survival shelters. Seventeen natural history projects range from a scavenger hunt, camouflage, egg carton explorations, and plot studies to sun flecks, water in spring, and web of life. Thirty-three outdoor crafts and projects describe broom-making, city trail making, Coke bottle craft, hobo stoves, igloo construction, bird feeders, leaf prints, totem poles, wind chimes, and other activities. Thirty-one indoor craft projects include burlap weaving, candle dipping, crystal garden, Indian beadwork, milk carton puppets, shrunken head, and pudding paint. Six outdoor games and recreation activities are A-MAZE-ING, I Love New York Marathoners Club, Pirate Treasure Hunt, Predator, Prey Game, Trash Can Scoop Ball, and Winter Games - Snow Snake. (NEC)

ED 186 156 RC 011 572
Handbook for Students, Teachers and Parents. BOCES/SCOPE Outdoor Learning Laboratory at Sunken Meadow.
Long Island State Park and Recreation Commission, N.Y., New York State Office of Parks and Recreation, Albany., SCOPE Outdoor Learning Laboratories, Kings Park, N.Y.
Spons Agency—Suffolk County Board of Cooperative Educational Services 3, Dix Hills, N.Y.
Note—31p.
Available from—SCOPE Outdoor Learning Laboratories, Sunken Meadow State Park, PO Box 186, Kings Park, NY 11784 ($1.50 plus postage).
Pub Type— Guides - General (050) — Reports - Descriptive (141)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Activities, Elementary Secondary Education, Environmental Education, Equipment, *Experiential Learning, *Field Experience Programs, Field Instruction, Field Trips, Interdisciplinary Approach, *Learning Laboratories, *Liberal Arts, *Nature Centers, *Outdoor Education, Program Guides
Identifiers—*New York (Suffolk County), Outdoor Learning Laboratory NY, Sunken Meadow State Park NY
Since 1971 a fully equipped learning laboratory building and the open fields, woodlands, salt water marshes, and beaches of Sunken Meadow State Park have been available for year round day use by students and educators in New York's Suffolk and Nassau counties. Funded by the New York Office of Parks and Recreation and local Boards of Cooperative Educational Service, the Outdoor Education Program has been designed as a multidisciplinary approach to utilizing the outdoor environment to supplement, strengthen, and give new dimensions to the existing school curriculum. Participants have found that these environments are not only appropriate for study of the natural sciences, but that art, music, mathematics, Long Island history, and the language arts can be learned more effectively in such surroundings. The handbook contains: teacher procedures for participation in the program; hours of operation; a map and directions for reaching the laboratory; transportation and parking procedures; radio stations to monitor for possible laboratory closing during inclement weather; appropriate dress; fire regulations; safety, first aid, and emergency procedures; instructions for using the mobile radio network while in the field; security measures; conservation practices; a map of the park; and a student registration and health blank. In the original, 28 blank pages are provided for students to maintain a log of their learning experience. (NEC)

ED 187 485 RC 011 459
Fox, Carla And Others
Project Ranger Curriculum Guide.
Portland Public Schools, Oreg. Area I Office
Spons Agency—Office of Education (DHEW), Washington, D.C.; Oregon State Dept. of Education, Salem.
Pub Date—Jun 78
Note—433p.; May not reproduce due to colored paper.
Available from—Portland Public Schools, 5103 N. Wills Boulevard, Portland, OR 97203 ($15.00, $2.50 postage and handling)
Pub Type— Guides - Classroom - Teacher (052) — Guides - Non-Classroom (055)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Adventure Education, *Affective Behavior, Behavior Change, *Behavior Problems, Change Strategies, Counseling, Curriculum Guides, Discipline, Educational Philosophy, Elementary Secondary Education, *Environmental Education, Experiential Learning, Field Trips, Group Activities, *Humanistic Education, Individual Development, *Learning Activities, *Outdoor Education, Resource Materials, Student Teacher Relationship, Teacher Role, Work Study Programs
Identifiers—Initiative Tests, *Oregon, Rope Courses
The objective of Project Ranger is to improve school behavior and academic performance of selected, primarily 'disruptive,' students who are failing in the traditional school program. The Ranger curriculum uses the outdoor environment as the medium for improving student self-concept and relations with peers and adults and for providing skills which will help the student overcome his problems in the regular classroom. Published at the end of four years of program development, the Ranger Curriculum Guide is designed to be a manual for school districts and other organizations interested in implementing a similar program. The guide, focusing on program activities and student counseling techniques, presents thorough descriptions of goals, materials, and procedures in nine curriculum-activity areas: affective learning, ropes courses and initiative tests, conservation-community service work projects, field trips, and environmental studies. Topics for environmental study are community adventure, energy, food, and recycling, the Oregon Coast, Oregon geology and ecology; and winter survival. The guide includes a discussion of the program philosophy and the application of that

philosophy in establishing student discipline and conducting activities. A bibliography lists 150 resource materials for teachers and students. (JH)

ED 187 579 SE 031 009
Finkelstein, Robert J.
The Central Park Workbook. Activities for an Urban Park.
Central Park Task Force, New York, N.Y.
Spons Agency—National Endowment for the Humanities (NFAH), Washington, D.C.
Pub Date—80
Note—55p.; Not available in hard copy due to copyright restrictions.
Available from—C.C.F. for The Central Park Task Force, The Arsenal, Room 10a, 830 Fifth Avenue, New York, NY 10021 ($3.95 plus tax and shipping. Discounts on quantity orders).
Pub Type— Guides - General (050) — Guides - Classroom - Learner (051)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Architecture, Community Resources, *Environmental Education, Landscaping, Natural Resources, *Outdoor Education, Park Design, *Parks, Recreational Facilities, *School Activities, *Urban Environment, *Workbooks
This workbook contains many outdoor activities which were developed in New York's Central Park to help children explore and understand their city parks. Involvement in the activities is intended to increase appreciation and awareness of the role of parks in the urban environment. The publication can serve as an example of what others can do with similar facilities. (SB)

ED 194 261 RC 012 328
Guidelines for Outdoor Education.
Leeds and Grenville County Board of Education, Brockville (Ontario).
Pub Date—Nov 70
Note—140p.; Colored background may not reproduce well.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—*Educational Objectives, *Elementary Secondary Education, Environmental Education, *Experiential Learning, Instructional Materials, Interpersonal Competence, *Learning Activities, Lesson Plans, *Outdoor Education, *Resource Units, Self Esteem, Skill Development
Identifiers—Ontario
The outdoor education program detailed in this document is envisaged as permeating the total elementary/secondary curriculum to study natural topics in natural settings and to promote respect for and appreciation of the natural environment, perception of total environment as a learning area, perception of the interrelationship of all living things, awareness of the wise use of the environment for recreation, awareness of the need for conservation in all aspects of the out-of-doors, and development of the child's ability to enjoy himself thoroughly and to function efficiently in a democratic society. To achieve the above goals, stress is placed on the development of skills rather than on content-oriented curriculum and both school and community environment are included in the activities. Suggested divisions of outdoor subject matter and some alternatives for beginning studies in each area are outlined. The material is suggested for use as a starting point only, for the teacher's professional knowledge and experience with students, along with imagination, will make possible the integration of other activities into the outdoor program. Activities are repeated at several levels so that the maturing student may investigate the area in greater depth in keeping with increasing levels of competence. Specific topics addressed include school, transportation, hills, old cemeteries, wooded areas, pond and stream, grassy areas, marshy areas, rocks and minerals, atmosphere, community helpers, map and compass, farm study, urban study, and "outers". (Author/AN)

ED 195 544 SP 017 178
Ezersky, Eugene M.
Outdoor Education in the 80's—The Urban Challenge.
Pub Date—6 Nov 80
Note—9p.; Paper presented at the Annual Recreation Conference of the State University College at Cortland (30th, Cortland, NY, November 6, 1980).
Pub Type— Speeches/Meeting Papers (150) — Opinion Papers (120)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Curriculum Development, Elementary Secondary Education, Field Trips, Futures (of Society), *Outdoor Education, Quality of Life, *Recreational Programs, Rural Urban Differences, *Student Needs, *Urban Culture
Outdoor education is a "process of education, a way of teaching which uses the outdoors as the major education facility and which actively involves students in the real world situations where learning takes place." Population shifts now place more than 85 per cent of the population in an urban society. If children from these environments are to develop a sense of understanding of the natural environment which sustains their lives in the man-made environment of the city, they should be able to appreciate and participate in recreational opportunities that abound in the outdoor environment. Resources and facilities for outdoor education for this largely neglected audience must be within their experiential background and should focus on all aspects of urban life. Experiences in the natural environment and in the man-made environment should be made available to all children. Urban outdoor education camps, exchange programs among rural and urban children, and professional education for outdoor educators can be developed to improve the quality of education and life for all students. Recreation skills and facilities which can flourish in the inner city must also be developed. Effective outdoor education will help children and citizens to realize that they must improve their cities and create a type of urban beauty to match the beauty of nature. (CJ)

ED 198 980 RC 012 539
Cornell, Joseph Bharat
Sharing Nature with Children: A Parents' and Teachers' Nature-awareness Guidebook.
Report No.—ISBN-0-916124-14-2
Pub Date—79
Note—139p.
Available from—Ananda Publications, 14618 Tyler Foote Road, Nevada City, CA 95959 ($8.95)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—*Childrens Games, *Educational Games, Elementary Secondary Education, Environmental Education, *Experiential Learning, Learning Activities, *Observation, *Outdoor Education, Perception, Preschool Education, Sensory Training, Teacher Role, *Teaching Methods
The guidebook presents 42 educational games designed for people of all temperaments and intended to open up nature to children (ages 3 and up) and adults. The games are organized in seven major sections according to the type of activity: Close Up with Nature, How Much Can You See, Nature's Balance, Learning Is Fun Play and Discovery, Spotting and Attracting Animals, and Adventures. To help the teacher choose the right game for the time and place, each game description includes a quick reference guide indicating the concepts, attitudes, and qualities it teaches, when and where to play; the number of players; the best age range; the specific materials required, and the game's basic mood (calm and reflective, active and observational, or energetic and playful). Among the activities included are a scavenger hunt, animal identification games, bird calls, predator-prey games, camouflage, and observation games. A short introduction explains five rules of outdoor teaching: teach less and share more, be receptive, focus the child's attention rapidly, look and experience first, then talk, and let the experience be joyful. Each game is indexed in four ways according to its mood, its environment, the concepts it teaches, and the attitudes and qualities it encourages. (Author/SB)

ED 201 421 RC 012 633
Snell, Blanche E.
Pre-Planning Guide: Conservation Field Centres. Residential Programs - General Information.
Metropolitan Toronto and Region Conservation Authority, Downsview (Ontario).
Pub Date—76
Note—26p.; Original guide prepared 1963, revised and reprinted 1966, 1969, 1971, 1976. For related documents, see RC 012 628-636.
Pub Type— Guides - Non-Classroom (055)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Adolescents, *Conservation Education, *Educational Environment, Educational Philosophy, Elementary Secondary Education, Group Experience, *Outdoor Education, *Program Design, *Residential Programs, Safety, Social Environment, Staff Role, Student Attitudes, Student Teacher Relationship, *Teacher Role
Identifiers—Canada, *Conservation Field Centres (Canada), Ontario (Toronto)
Designed to assist teachers whose classes will participate in a residential experience at one of the Conservation Field Centres sponsored by the Metropolitan Toronto and Region Conservation Authority, this pre-planning guide provides necessary details about the underlying philosophy of the program and the roles and responsibilities of the visiting teacher, the school board and the Centre staff. The objectives of the residence program at the Centres are stated, to widen the concept and broaden the understanding of intelligent use of our natural resources, to illustrate conservation as an attitude involving social as well as material processes; to allow practical outdoor application of theory and principles learned in the classroom; and to provide a more intensive experience in group living for student and teacher. Suggestions are offered for determining the tone of the experience, based on the teacher's expectations for the class, and for classroom preparation for the visit. Details are included regarding a pre-planning visit by the teacher to the Field Centre, obtaining parental cooperation and permission, health and safety suggestions, academic preparation, evening recreation time, and procedures to be followed for a guest night during the stay at the Centre. (CM/MH)

ED 204 084 RC 012 800
Babcock, William
Day Camp Manual: Program. Book IV.
Ontario Ministry of Culture and Recreation, Toronto.
Pub Date—74
Note—68p.
Pub Type— Guides - Non-Classroom (055)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Camping, Children, *Day Camp Programs, Drama, Food, Foreign Countries, Handicrafts, *Learning Activities, Orienteering, *Outdoor Activities, *Outdoor Education, *Program Administration, *Program Development, Safety, Skill Development, Summer Programs
Identifiers—Nature Study, Ontario, Water Sports
Book IV in a 5-book day camp manual discusses the camp program. Section I describes the organization, definition, and elements essential to successful day camp programs. Section II, which addresses the benefits and special considerations of mass programs, includes many day contingencies, materials to have on hand, and activity suggestions. Section III discusses the organization of specific programs such as nature, campcraft, outdoor cooking, orienteering, archery, and treasure drama. Section IV describes water programs, paying special attention to staff qualifications, safety and emergency procedures, canoeing, and sailing, and includes several case studies of waterfront programs. Special events such as "out trips," hikes, overnights, overdays, parent nights, and camp staff development sessions are described in Section V. A reading list is divided into 18 sections: arts and crafts, books to read to children, camping and campcraft, cookery and wild foods, drama, Indian lore, music, orienteering, outdoor education, outdoor life, program, references, science and nature lore, and sports, games and aquatics. (SB)

ED 209 062 RC 013 028
Sklar, Norman And Others
Activity Approach to Seashore Ecology. Environmental Education Series.
Nassau County Board of Cooperative Educational Services, Westbury, N.Y.
Note—49p.; For a related document, see RC 013 027. Photographs may not reproduce well.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Animals, Botany, *Discovery Learning, *Ecology, Elementary Secondary Education, Enrichment Activities, *Environmental Education, Experiential Learning, Field Studies, Field Trips, Interdisciplinary Approach, *Learning Activities, Outdoor Activities, *Outdoor Education, Physical Environment, Plant Identification
Identifiers—*New York (Long Island), *Seashore Ecology
Hoping that exploration, research, and study experiences at the seashore will provide a deeper and more meaningful insight and understanding into the

relationship between man and his total environment, the booklet describes the seashore environment of Long Island (New York) and suggests learning activities that can occur at the seashore. Part I introduces Long Island's many habitats (wave-washed sandy beaches, rocky shores, shallow bays, busy harbors, grassy marshes, tidal flats), common plants (plankton, seaweed, marram, false heather, seaside goldenrod, Japanese pine, phragmites) and animals (mole crabs, sandhoppers, barnacles, oysters, snails, gulls, plovers, terns). Part II suggests activities for small groups of students working together, indicating the type of site required for the activity, materials needed, procedures, worksheets, charts, and discussion questions. Activities include: beach combing at high and low tide; beach profiles; animal work sheets; and study of general climate, tides, plankton, seine nets, sand, dunes, hermit crabs, tidal pools, cord grass, tidal flats, barnacles, barnacle succession, and birds. Ideas for expressing thoughts, feelings, and impressions and interdisciplinary activities in science, art, social studies, English, math, home economics, shop, photography, and music are listed. (NEC)

ED 213 163 EC 141 114

Robb, Gary M. And Others

Special Education in the Natural Environment: A Training Manual in Providing Outdoor Education, Recreation and Camping for Children with Disabilities.

Camp Allen, Inc., Bedford, NH.; Indiana Univ., Bloomington. School of Health, Physical Education and Recreation.

Spons Agency—Office of Special Education (ED), Washington, D.C. Div. of Personnel Preparation.

Pub Date—81

Grant—G007801693

Note—184p.; For related document, see EC 141 115.

Available from—Bradford Woods Outdoor Education, Recreation and Camping Center, Department of Recreation and Park Administration, School of Health, Physical Education and Recreation, Indiana University, Bloomington, IN 47402.

Pub Type— Guides - Non-Classroom (055) — Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC08 Plus Postage.

Descriptors—Camping, Case Studies, *Disabilities, Elementary Secondary Education, Inservice Education, *Outdoor Activities, *Outdoor Education, *Program Development, Recreation

The training manual for use with personnel concerned with outdoor education for the handicapped provides a guide to program development in the areas of background knowledge, skills and methods of outdoor education, individualized planning, and program evaluation. The five units are titled: "Defining," "Introducing," "Individualizing," "Implementing," and "Evaluating." Each unit is organized into: "Critical Question(s)" (questions concerned with major unit components); "Toward an Answer" (overview of needed learning); "Case Study" (example of an experience of an individual or agency); "Enabling Objectives and Learning Activities" (specific objectives and experiences); "Self-Test" (ensuring that learning is completed); and "Learning Resources" (materials, activities, and readings). Some of the critical questions considered by the program include: what is outdoor education; how can outdoor programs benefit my students; how can the needs of individuals in my class/program be met using outdoor experiences; and how can the effectiveness of the outdoor education program be measured? (DB)

ED 213 164 EC 141 115

Robb, Gary M. And Others

Special Education in the Natural Environment: A Resource Guide in Providing Outdoor Education, Recreation and Camping for Children with Disabilities.

Camp Allen, Inc., Bedford, NH.; Indiana Univ., Bloomington. School of Health, Physical Education and Recreation.

Spons Agency—Office of Special Education (ED), Washington, D.C. Div. of Personnel Preparation.

Pub Date—81

Grant—G007801693

Note—177p.; For related document, see EC 141 114.

Available from—Bradford Woods Outdoor Education, Recreation and Camping Center, Department of Recreation and Park Administration, School of Health, Physical Education and Recreation, Indiana University, Bloomington, IN 47402.

Pub Type— Guides - Classroom - Teacher (052) — Guides - Non-Classroom (055)

EDRS Price - MF01/PC08 Plus Postage.

Descriptors—Annotated Bibliographies, Camping, *Disabilities, Elementary Secondary Education, *Equipment, Group Activities, Inservice Education, *Outdoor Activities, *Outdoor Education, *Program Development, Recreation, *Teaching Methods

The resource guide for use with personnel concerned with outdoor education for handicapped children provides a guide to activities, techniques, resources, and equipment. The first section consists of analyzed activities as they relate to individual education plans and treatment plan objectives. Provided for each activity is a description of the activity process, goals, subgoals, and activity components. Examples of the theme approach to outdoor education are also included. The second section focuses on activities with suggestions for hikes, awareness activities, nature arts, songs, stories, dramatics, special events, evening programs, and adventure activities. The third section, on resources, provides annotated references on the philosophy/rationale of outdoor education, program administration, programing techniques, nature identification, and films and records. Instructions and diagrams for making an insect net, a waterscope, and a soil sifter are given in the final section. (DB)

Biophysical Emphasis

Elementary/Middle

ED 032 220 SE 007 478
Busch, Phyllis
The Use of the "Indoor-Outdoor-Indoor" Approach to Teaching Science Conservation with Concentration on Methods of Inquiry and Emphasis on Processes of Science. Grades K-3.
Ulster County Board of Cooperative Education Services, New Platz, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Elementary and Secondary Education.
Pub Date 69
Note—27p.
EDRS Price MF-$0.25 HC-$1.45
Descriptors—Biology, *Conservation Education, Discovery Learning, Earth Science, *Elementary School Science, Instructional Materials, *Outdoor Education, Science Activities, Science Course Improvement Project, Teaching Guides
Identifiers—ESEA Title III
Contained are instructional materials developed by the Science Project Related to Upgrading Conservation Education. The lesson plans given are intended to demonstrate the "indoor-outdoor-indoor" approach to teaching science conservation with concentration on methods of inquiry and emphasis on processes of science. Four subject areas are treated: Air, Water, and Weather; Living Things; The Earth and Its Composition; and Our Growing Bodies. One plan is given for each area for each of grades K-3. The plans list materials required, set problem questions, then describe indoor and outdoor activities to help students discover answers to the questions. Relevant science concepts and conservation concepts are listed. The manual also lists the objectives of "Outdoor Discovery Guides," and gives an example guide. There is a summary of the goals of the program, together with general guidelines for teaching and selected references for the teachers. This work was prepared under an ESEA Title III contract. (EB)

ED 033 844 SE 006 769
Busch, Phyllis S.
Urban Discovery Manual. 75 Stimulating Ideas for Investigating Some Common Urban Resources Indoors and Outdoors, Grades K-6.
Ulster County Board of Cooperative Education Services, New Platz, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Elementary and Secondary Education.
Pub Date 69
Note—32p.
EDRS Price MF-$0.25 HC-$1.70
Descriptors—Biology, *Conservation Education, Earth Science, *Elementary School Science, *Instructional Materials, Pollution, Resource Materials, Science Activities, *Teaching Guides, *Urban Education
Identifiers—Elementary and Secondary Education Act Title III
Presented are 75 suggestions for investigating in grades K-6 such common urban resources as trees, seeds, polluted air, rocks, and insects. The manual is designed for use with the Urban Discovery Box which contains samples collected from eight urban resources along with some objects helpful in investigating these. A section in the manual for each of the eight resources provides teachers with needed information for helping the pupils carry out their investigations. Many potential problems for investigation are directed at the development of such science processes as hypothesis formation, observation, data collection, the making of inferences, classification, and formulation of problems. Numerous discussion questions are also included. A complete list of resource materials is provided for the development of a "discovery box." This work was prepared under an ESEA Title III contract. (RSI

ED 035 540 SE 006 766
Busch, Phyllis S.
Some Guides to Discovery About Elm Trees, Owls, Cockroaches, Earthworms, Cement and Concrete.
Ulster County Board of Cooperative Education Services, New Platz, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Elementary and Secondary Education.
Pub Date 69
Note—18p.
EDRS Price MF-$0.25 HC-$1.00
Descriptors—Biology, *Conservation Education, Discovery Learning, *Elementary School Science, General Science, *Instructional Materials, Resource Guides, *Science Activities, *Teaching Guides
Identifiers—ESEA Title III, Project SPRLCE
The introduction emphasizes the need for environmental and conservation education, and advocates an inquiry approach. Outdoor resources available to every school are listed. Detailed suggestions are made for investigating cement and concrete, cockroaches, earthworms, elm trees, and owls. In each case general background information and a list of references is followed by suggested student activities. Identification keys and instructions for constructing simple apparatus are given where needed. This work was prepared under an ESEA Title III contract. (EB)

ED 051 993 SE 007 639
Ware, George McCollum, Howard P.
A Guide for Teaching Conservation and Resource-Use Education in the Schools of Louisiana, Forest Section.
North Louisiana Supplementary Education Center, Natchitoches.
Pub Date 67
Note—49p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Biology, *Conservation Education, *Elementary School Science, Forestry, Junior High Schools, *Science Activities, *Secondary School Science, *Teaching Guides
Identifiers—Louisiana
These guides for teaching conservation and resource-use education give a sequential treatment of conservation concepts from primary through junior high school grades. There are four sections, each sequential; this guide covers the "Forest" section (others are "Soil and Water," "Minerals" and "Wildlife"). Ten major concepts are arranged in a sequence which is repeated at three levels: primary, intermediate, and junior high. The concepts are "identity," "parts," "life needs," "reproduction," "community," "enemies," "recreation," "wildlife," "conservation," and "utilization." For each level the concept is stated as it applies at that level, then a paragraph of discussion of the concept directed to the teacher is followed by suggested activities for students and a statement of possible outcomes. A glossary of terms is given, and appendices give instructions for making paper by hand, building, stocking and caring for terrariums, and constructing a pegboard model of a forest. (EB)

ED 059 950 SO 002 616
Sargo, Herbert J.
An Environmental Approach to Eighth Grade Science.
Western Washington State Coll., Bellingham. Huxley Coll of Environmental Studies.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Report No—SW-PR-3
Bureau No—BR-0-0848
Pub Date Oct 71
Grant—OEG-0-70-5039
Note—109p.
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Community Resources, Concept Teaching, Conservation Education, *Ecology, *Environmental Education, *Field Experience Programs, Grade 8, *Interdisciplinary Approach, Junior High Schools, Natural Resources, Pollution, Population Education, Problem Solving, Program Descriptions, Resource Guides, *Science Curriculum, Secondary Grades, Small Group Instruction, Teaching Guides
Identifiers—Ecosystems, *Sedro Woolley Project
This report outlines a method of teaching eighth-grade science with an environmental perspective. Areas of study normally found in junior high science curriculum are integrated with environmental concepts. This particular approach to 8th grade science is intended to be process oriented, field oriented, problem oriented, and relevant to the local community. The class is divided into three or four heterogeneous groups simulating a community situation. Students choose from a list of environmental topics and are given a "group plan" comprised of a list of general questions unique to the subject area to guide their research. The role of the instructor is one of facilitator; students do all they can by themselves. Students are encouraged to expand their learning sources and gain actual environmental experience within the community through letters to organizations. Block scheduling is suggested. Provided are: readings, information and community sources; group plans; and a list of environmental educational concepts. Over one half of the book consists of appendices: Student Correspondence; Student-Oriented Information for Distribution; Resource Bibliographical Information; Student Papers on Speakers, Filmstrips and Movies, and Excerpts from Group Plan Research. Related documents are: SO 002 611, SO 002 612, and SO 002 615. (Author/SJM)

ED 065 351 88 SE 014 433
Grass, Iva Helen
Ecology, Elementary Teaching Guide.
Madison Public Schools, Wis. Dept of Curriculum Development.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date [72]
Note—265p
EDRS Price MF-$0.65 HC-$9.87
Descriptors—*Ecology, Environmental Education, *Instructional Materials, *Intermediate Grades, Learning Activities, Natural Resources, *Teaching Guides
Identifiers—ESEA Title III

In an effort to provide background information and encourage incorporation of ecological understandings into the curriculum, this teacher's guide has been devised for fourth and fifth grade teachers. It utilizes an activity-oriented approach to discovery and inquiry, outlining behavioral objectives, learning activities, teaching suggestions, and bibliographic resources for each unit of study. Fourth grade units cover arthropods, soil, rocks, chemistry, sun, air, water, and the forest. Fifth grade units include pond, marsh, meadow, and forest biomes, pollution, and E-Day activities. This work was prepared under an ESEA Title III contract. (BL)

ED 068 366 24 SE 015 161
Heal, Fred A And Others
Cattails of Concrete?
Wisconsin Univ., Madison. Research and Development Center for Cognitive Learning
Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Research
Bureau No—BR-5-0216
Pub Date 72
Contract—OEC-5-10-54
Note—294p
EDRS Price MF-$0.65 HC-$9.87
Descriptors—*Elementary Grades, *Environmental Education, Instructional Materials, *Learning Activities, Natural Resources, Outdoor Education, Student Projects, *Study Guides

Developed for elementary science studies, this unit on man and environment requires student involvement in discovery, observation, gathering and recording data, and problem solving. A series of 19 booklets, each designed as an activity which can be completed out-of-doors, comprise this student packet of materials. Topics studied in the activities include adaptation, communities, consumers, decomposers and decomposition, food chains, habitat, hearing, land use, marshes, nutrients, producers, profit (land values), and wetlands. Each booklet tells the student what he will study, what he should be able to do, what he needs to know, what materials he needs and how to do the activity. Questions to answer and questions to think about as well as other ways to do the activity are listed. To summarize all the topics of study a story is written about community concern and planning for an environmental issue. This set of materials was field tested in the spring of 1972 by the Wisconsin Research and Development Center for Cognitive Learning. (BL)

ED 079 048 SE 015 481
Swan, Gary D
The Oxygen Cycle.
Powell County Environmental Center, Deer Lodge, Mont
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 72
Note—28p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Chemical Reactions, *Childrens Books, *Environmental Education, *Instructional Materials, Multimedia Instruction, Natural Resources, *Oxidation, *Primary Grades
Identifiers—ESEA Title III

Produced for primary grades, this booklet provides study of the oxygen-carbon dioxide cycle in nature. Line drawings, a minimum amount of narrative, and a glossary of terms make up its content. The booklet is designed to be used as reading material, a coloring book, or for dramatic arts with students acting out parts of the cycle. This work was prepared under an ESEA Title III contract. (BL)

ED 080 368 SE 016 622
Elementary Environmental Education
Noble Parker Environmental Education Center, Reading, Pa
Pub Date [73]
Note—91p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Curriculum Guides, *Ecology, *Elementary Grades, *Environmental education, Fundamental Concepts, Instructional Materials, Learning Activities, Natural Resources, *Sciences

The concept that society must possess an ecological conscience which can relate to economic, social, political, and other disciplines of culture to meet the challenge of maintaining a quality environment, represents the basic philosophical rationale for these instructional materials. They are designed to give specific emphasis to the ecological implications of man's activities as generally explored in the science curricula for grades one through six. The outdoor laboratory approach is employed to encourage students to become more aware of their responsibilities as citizens in conserving and preserving man's natural resources. Six generalizations about man's relationship to his environment serve as a base around which concepts, questions, and activities are built. Three concepts are identified for each generalization at both the primary and intermediate levels, and individual concepts detail open-ended questions, discovery activities, follow-up activities, and instructional materials. (Multimedia) Performance objectives, suggestions for evaluation, and a bibliography of books and field guides are also provided in this curriculum guide. (BL)

ED 093 633 SE 017 209
Science 4-6, Kentucky's Environmental Education Program.
Kentucky State Dept. of Education, Frankfort. Div of Program Development.
Pub Date [73]
Note—119p; See SE 017 210 for another unit in this series
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—Behavioral Objectives, *Elementary School Science, *Environmental Education, Instruction, Instructional Materials, Science Education, Teaching Guides, Units of Study (Subject Fields)
Identifiers—KEEP, *Kentucky Environmental Education Program

This unit of instruction for grades 4-6 is one of a series of curriculum units referred to as the Interdisciplinary Unit. Its purpose is to allow the individual teacher to expose the students to many experiences, ideas, and applications based on their environment (Kentucky). Each lesson is built on two basic concepts, each to balance the other. One concept is a positive statement and the other, its opposite. Each lesson has behavioral objectives and is developed in a three part sequence--showing, discussing, and applying the ideas and concepts of that lesson. The unit is considered as a model on which to build and expand, both for teachers and students. The basic concepts presented in this unit include air, water, land use, noise, and population. (EB)

ED 100 652 88 SE 018 343
Kindergarten, Environmental Education Guide.
Project I-C-E, Green Bay, Wis
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept of Education, Madison.
Pub Date [74]
Note—87p
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Conservation Education, Early Childhood Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, *Kindergarten, Learning Activities, *Natural Resources, Outdoor Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, *Project I C E, Title III

This kindergarten level environmental education guide is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design. It is the teacher's decision when the concepts, objectives, activities, and resources may best be integrated into the existing classroom curriculum. This guide contains a series of 12 episodes (minilesson plans), each having a number of suggested in- and out-of-class learning activities. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels. The kindergarten guide focuses on aspects such as weather, temperature, population, water pollution, transportation, the seasons, litter, and a conservation of resources. Each of the 12 concepts is covered in one of the 12 episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 653 88 SE 018 344
Grade One, Environmental Education Guide.
Project I-C-E, Green Bay, Wis
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—111p
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—*Conservation Education, *Elementary Education, *Environmental Education, Grade 1, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Natural Resources, Outdoor Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E

This first grade environmental education guide is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design. It is the teacher's decision when the concepts, objectives, activities, and resources may best be integrated into the existing classroom curriculum. This guide contains a series of 12 episodes (minilessons), each having a number of suggested in- and out-of-class learning activities. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels. The first grade guide focuses on aspects such as planets and seasons, living and nonliving organisms, overpopulation, water uses, and animal adaptation. Each of the 12 concepts is covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 676 SE 018 446
Environmental Education Curriculum Development, Grades K-1, For St. Martin Parish.
Saint Martin Parish School Board, St. Martinville, La
Pub Date [74]
Note—241p.
EDRS Price MF-$0.75 HC-$11.40 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, Ecology, *Elementary Education, Environment, *Environmental Education, Grade 1, Instructional Materials, *Kindergarten, Natural Resources, Primary Education, *Science Education
Identifiers—Air, Soil

This environmental education curriculum guide is designed for teacher-use in kindergarten and first grade. It contains six units, which aim to develop environmental concepts related to the bio-physical environment. Each unit, which is based on several concepts, includes behavioral objectives, activities, student worksheets, dia-

grams, illustrations, discussion questions, vocabulary words, resource materials, and teacher evaluation forms The techniques of discussion, observation, classification discovery, inquiry, and field work are employed throughout Unit 1, Ecology, deals with the interdependence between living and non-living things in the environment. The study of soil, what it is, its importance, and conservation is the focus of Unit 2 Unit 3 examines air as a substance which has weight and occupies space but has no color, odor, or shape. Unit 4 looks at water and the vital role it plays in the environment Noise, Unit 5, is a study of sounds, how they originate, their variety, and their effects on man Unit 6, Wildlife, looks at both plants and animals Bird flash cards and animal flash cards, plus instructions for their use, are also included in this unit (TK)

ED 100 712 SE 018 657

Environmental Education Curriculum Development, Grade 6, For St. Martin Parish.

Saint Martin Parish School Board, St Martinville, La

Pub Date [74]

Note—242p.

EDRS Price MF-$0.75 HC-$11.40 PLUS POSTAGE

Descriptors—*Conservation Education, *Curriculum Guides, Ecology, *Elementary Education, Environment, *Environmental Education, Grade 6, Instructional Materials, Natural Resources, Pesticides, Pollution, *Science Education, Teaching Guides

Identifiers—Air, Minerals, Soil, Wildlife

This environmental education curriculum guide is designed for teacher use in the sixth grade It contains seven units that aim to help the students acquire basic understanding of environmental relationships, environmental problems, environmental quality and to help the students develop skills to solve current environmental problems. Each unit, based on several concepts, includes objectives, activities, student work sheets, discussion questions, resource materials and vocabulary words The techniques of discussion, observation, classification, discovery, inquiry, and field work are employed. The guide includes the following units Unit 1, environmental relationships, Unit 2, soil conservation, Unit 3, air pollution, Unit 4, the hydrosphere, Unit 5, wildlife and related problems, Unit 6, mineral resources, and Unit 7, pesticide problems. (TK)

ED 101 940 95 SE 018 113

[East Syracuse-Minoa Schools Environmental Education Materials, Elementary Package, Grade 1-Grade 5.]

East Syracuse - Minoa Central Schools, East Syracuse, N Y.

Spons Agency—Office of Education (DHEW), Washington, D C Office of Environmental Education.

Pub Date [73]

Grant—OEG-0-71-4621

Note—170p, Best copy available, occasional marginal legibility

EDRS Price MF-$0.76 HC-$8.24 PLUS POSTAGE

Descriptors—*Conservation Education, *Curriculum Guides, *Elementary Education, Environment, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Recycling, *Science Education, Student Attitudes, Teaching Guides, Units of Study (Subject Fields), Values

This series of five environmental education units is designed for use in grades 1-5 The units are designed around the concepts of survival, interdependence, scarcity, reevelement, rights vs responsibility, planning, valuing, social forces, and optimism Each unit is further developed around environmental generalizations (subconcepts), objectives, activities and strategies, materials, and expected outcomes The grade 1 unit is designed to give the child a variety of sensory and intellectual experiences The purpose of the grade 2 unit is to expand the student's idea of his environment The grade 3 unit focuses on air and the use of the senses to explore air The grade 4 unit utilizes an interdisciplinary approach to explore water and the water environments The grade 5 unit is concerned with the wisest multiple use of renewable resources and encourages the child into a commitment and involvement Appendixes are included for each unit. (TK)

ED 101 942 95 SE 018 115

[East Syracuse-Minoa Schools Environmental Education Materials, Middle School Package, Grade 7-Science.]

East Syracuse - Minoa Central Schools, East Syracuse, N Y.

Spons Agency—Office of Education (DHEW), Washington, D C. Office of Environmental Education

Pub Date [73]

Grant—OEG-0-71-4621

Note—336p, Best copy available, occasional marginal legibility

EDRS Price MF-$0.76 HC-$17.13 PLUS POSTAGE

Descriptors—Botany, Conservation Education, *Curriculum Guides, *Ecology, *Environmental Education, Grade 7, Instructional Materials, Interdisciplinary Approach, Natural Resources, Outdoor Education, Science Activities, *Science Education, *Secondary School Science, Teaching Guides, Units of Study (Subject Fields), Zoology

These five environmental education science units are designed for use in the seventh grade. Skills such as note taking, organizing information, critical thinking, analysis of data, and scientific skills, and the correlation between skills and content area are emphasized throughout the units to develop in the student a greater understanding of his role in the environment, and the interdependencies between all living things and the environment. Each unit is developed around long range objectives which reflect and reinforce the objectives of the other four units Objectives, activities and strategies, materials, and evaluation techniques are identified for each of the five science units The first unit is basically an introduction to the series, emphasizing skills as well as introducing the student to his environment with an ecology project Unit 2 discusses the process of photosynthesis and the importance of green plants Unit 3 centers on animals and their relation to others of the same and different species Unit 4 stresses the importance of interactions between plants and animals Human ecology is discussed in Unit 5 in light of pollution and possible solutions Appendixes and supplementary materials are included (Author/TK)

ED 103 213 SE 017 355

Fun with the Environment.

Environmental Protection Agency, Washington, D C.

Pub Date 73

Note—20p

Available from—Superintendent of Documents, U S Government Printing Office, Washington, D.C. 20402 (Stock No 5500-00087, $0 75, domestic postpaid, $0 65, GPO Bookstore)

EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE

Descriptors—Conservation Education, *Elementary Grades, Energy Conservation, *Environmental Education, Independent Study, *Learning Activities, Natural Resources, Pollution, Science Education

This self-contained activity booklet is designed to teach young elementary students about their environment Information about the environment and people's interaction with it are presented in cartoon and coloring book form Drawings and simple vocabulary explain how the environment is polluted and natural resources wasted, as well as ways that these situations can be corrected Activities include an environmental crossword puzzle, coloring and write-in pages, and an environmental checklist. (MA)

ED 103 233 SE 018 514

Brine Shrimp and Their Habitat, An Environmental Investigation.

Minnesota Environmental Sciences Foundation, Inc, Minneapolis, National Wildlife Federation, Washington, D C.

Pub Date 72

Note—21p, Related documents are SE 018 515-534

Available from—National Wildlife Federation, 1412 16th Street, N W, Washington, D.C 20036 (Order No 79169, $1 50)

EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE

Descriptors—Elementary Education, *Elementary School Science, Environmental Education, *Instructional Materials, Investigations, Learning Activities, Natural Resources, *Science Activities, *Science Education

Identifiers—*Brine Shrimp

This environmental unit is one of a series designed for integration within the existing curriculum. The unit is self-contained and students are encouraged to work at their own speed. The philosophy of the unit is based on an experience, oriented process that encourages independent student work This unit explores the life cycle of brine shrimp and the effects of the environment on that cycle. The unit contains a series of related activities that illustrate basic ecological principles of interrelationships Teacher information such as materials needed, background information, and additional topics is given The unit is designed for students, grades 1-5 More sophisticated investigations are given at the end of the unit A bibliography is included. (MA)

ED 103 235 SE 018 516

Color and Change, An Environmental Investigation.

Minnesota Environmental Sciences Foundation, Inc, Minneapolis, National Wildlife Federation, Washington, D C.

Pub Date 72

Note—17p, Related documents are SE 018 514-534

Available from—National Wildlife Federation, 1412 16th Street, N W, Washington, D.C 20036 (Order No 79221, $1 00)

EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE

Descriptors—Art Education, Color, Elementary Education, Elementary Grades, *Environmental Education, Instructional Materials, *Learning Activities, *Observation, *Process Education, *Science Education, Teaching Guides

Identifiers—MINNEMAST, Minnesota Mathematics and Science Teaching Project, SAPA, Science A Process Approach

This environmental unit is one of a series designed for integration within an existing curriculum The unit is self-contained and requires very little teacher preparation The philosophy of the series is based on an experience-oriented process that encourages students to work independently and at their own speeds This particular unit is designed to develop the skill of observation in young children The activities have been drawn from Science - A Process Approach and the MINNEMAST Elementary Science and Mathematics project Students are asked to make observations of color and color changes in natural objects, particularly plants Some work is done with extracted plant pigments Teacher information concerning materials, background information, and additional topics is given. A short bibliography is included (MA)

ED 103 237 SE 018 518

Differences in Living Things, An Environmental Investigation.

Minnesota Environmental Sciences Foundation, Inc, Minneapolis, National Wildlife Federation, Washington, D. C.

Pub Date 71

Note—16p, Related documents are SE 018-534

Available from—National Wildlife Federation, 1412 16th Street, N W, Washington, D C 20036 (Order No 79025, $1 00)

EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE

Descriptors—Elementary Grades, *Environmental Education, *Genetics, Instructional Materials, Intermediate Grades, Investigations, Junior High Schools, *Learning Activities, *Science Education, *Teaching Guides

This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires minimal teacher preparation The philosophy of this series is based on an experience-oriented process that encourages self-paced independent student work The purpose of this particular unit

is to prove that variation does exist within populations. Skills employed in the unit's activities include collection techniques, quantitative measurement methods, record-keeping, and the use of graphs. Materials for study can be collected at a preliminary field trip or from classroom potted plants. Activities are geared for students in grades 4-8. Teacher information such as materials, background information, and additional, more sophisticated topics is given (MA)

ED 103 241 SE 018 522
Nature Hunt. An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis., National Wildlife Federation, Washington, D.C.
Pub Date 72
Note—17p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No 79105, $1.00)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—Ecology, Elementary Grades, *Environment, *Environmental Education, Instructional Materials, Investigations, *Learning Activities, *Natural Resources, Outdoor Education, Primary Education, *Science Education, Teaching Guides
This environmental unit is one of a series designed for integration within the existing curriculum. The unit is self-contained and requires little teacher preparation. The philosophy of the unit is based on an experience-oriented process that encourages self-paced independent student work. In this unit, young primary school children are encouraged to explore a natural area through outdoor activities. They work in small groups to observe, compare, arrange, and communicate their discoveries. This investigation is set up as a game. Students are given containers with natural items collected from the area and with photographs of representative sites in the area. Their goal is to identify and collect items similar to those in the containers and to identify the areas in the photographs. All items are to be brought back to the classroom for study and exchange. Information for teachers includes a list of materials needed, directions for the activities, and field trip preparations (MA)

ED 103 243 SE 018 524
Oaks, Acorns, Climate and Squirrels. An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis., National Wildlife Federation, Washington, D.C.
Pub Date 71
Note—25p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No 79089, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—Elementary Grades, *Environmental Education, Instructional Materials, Investigations, *Learning Activities, Natural Resources, Outdoor Education, *Plant Growth, Primary Education, *Science Education, Teaching Guides
Identifiers—Oak Trees, *Plants
This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires minimal teacher preparation. The philosophy of the units is based on an experience-oriented process that encourages self-paced independent student work. In this particular unit, oaks and acorns are the vehicle by which primary school children discover the interrelationships of organisms in their environment. The unit is divided into four parts. In the first part, students work outside to collect and plant acorns and to observe their development into seedlings. Next, the students determine when acorns fall from the trees and discover the larvae living inside them. In the third part, the role of squirrels is studied in relation to the acorns. Lastly, the effect of climate on acorn germination is determined. These activities provide background information, materials needed, directions, and additional topics for teachers (MA)

ED 103 245 SE 018 526
Plant Puzzles. An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis., National Wildlife Federation, Washington, D.C.
Pub Date 72
Note—21p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No 79150, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—*Botany, Elementary Education, Elementary Grades, *Environmental Education, Instructional Materials, Investigations, *Learning Activities, Natural Resources, Outdoor Education, *Plant Identification, *Science Education, Teaching Guides
Identifiers—*Plants
This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires minimal teacher preparation. The philosophy of the units is based on an experience-oriented process that encourages self-paced independent student work. The purpose of this unit is to familiarize students with the structural organization, or pattern, of natural objects. Specifically, the students study the structure of tree or shrub branches that they have collected. Students exchange branches and keep their data recorded in a branch booklet. The duplicating masters for the booklet are included in the materials. After the students have studied a variety of branches, they try to reconstruct a branch that has been divided into the parts of a plant puzzle. Additional activities include counting annual rings of trees, observing buds, and rooting branches. The activities are geared for students in grades 1-6. A list of materials needed, directions, and background information are included for the teacher (MA)

ED 103 246 SE 018 527
Plants in the Classroom. An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis; National Wildlife Federation, Washington, D.C.
Pub Date 71
Note—25p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79007, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—Botany, Elementary Grades, *Environmental Education, Instructional Materials, Investigations, *Learning Activities, Natural Resources, *Plant Science, Primary Education, *Science Education, Teaching Guides
Identifiers—*Plants
This environmental unit is one of a series designed for integration within the existing curriculum. The unit is self-contained and requires minimal teacher preparation. The philosophy of this series is based on an experience-oriented process that encourages self-paced independent student work. This particular unit, designed for the primary grades, is an introduction to ecology. Using plants that are easily grown in the classroom, students learn about the environmental factors, such as light, water, and soil, that affect plant growth. Through the activities included in this unit, students experiment with controlling these variables, while making observations and keeping accurate data. The plants needed for the investigation include cuttings from house plants, potatoes, bulbs, and seeds. A list of materials, directions, background information, and student worksheets that can be duplicated are included for the teacher. (MA)

ED 103 247 SE 018 528
Sampling Button Populations. An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis., National Wildlife Federation, Washington, D.C.
Pub Date 72
Note—21p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No 79098, $1.00)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—*Ecology, Elementary Education, Elementary Grades, *Environmental Education, Instructional Materials, Intermediate Grades, Investigations, Junior High Schools, *Learning Activities, Natural Resources, *Sampling, *Science, Education, Secondary Grades, Teaching Guides
This environmental unit is one of a series designed for integration within an existing curriculum. The units are self-contained and require minimal teacher preparation. The philosophy behind the units is based on an experience-oriented process that encourages self-paced independent student work. This particular unit is an introduction to the techniques of sampling. Using button and bean populations, students learn various ways of sampling. Next, they learn to use this data by constructing simple graphs based on their statistical analysis of the samples. At the end of the unit are eight additional activities designed for independent study. Students can investigate variations within human and plant populations and statistically study their frequency through random sampling techniques. This unit is designed for students in grades 3-9. Each activity contains a list of materials, directions, and discussion questions to aid the teacher (MA)

ED 103 248 SE 018 529
Shadows. An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis., National Wildlife Federation, Washington, D.C.
Pub Date 71
Note—17p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No 79034, $1.00)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—*Ecology, Elementary Education, Elementary Grades, *Environmental Education, Instructional Materials, Investigations, *Learning Activities, *Light, Natural Resources, *Science Education, Teaching Guides
Identifiers—*Shadows
This environmental unit is one of a series designed for integration within an existing curriculum. The units are self-contained and require minimal teacher preparation. The philosophy behind the units is based on an experience-oriented process that encourages self-paced independent work. This unit on shadows is designed for all elementary levels, grades 1-8. The activities become progressively more sophisticated, making some more suitable at different levels. In the first section, the goal is for students to explore the concept of spatial relationships through play activities with shadows. The games include shadow tag and keep away, shadow plays, and mystery shadows. The activities of the second section are concerned with shadows caused by sun and earth movements, and with the effects of shade on the life of plants and animals. Activities include studying the passage of time as indicated by shadows, determining the height of a pole by shadow calculations, and investigating the effects of shade on green plants. Each activity in the unit includes a list of materials needed, directions, and questions for discussion (MA)

ED 103 249 SE 018 530
Snow and Ice. An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis., National Wildlife Federation, Washington, D.C.
Pub Date 71
Note—25p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No 79052, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—*Ecology, Elementary Education, Elementary Grades, *Environmental Education, Instructional Materials, Investigations, *Learning Activities, Natural Resources, Outdoor

Education. *Science Education, Teaching Guides
Identifiers—Ice, Snow, *Weather
This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires minimal teacher preparation. The philosophy behind the series is based on an experience-oriented process that encourages self-paced independent student work. In this unit, students study the physical properties of snow and ice in relation to water, heat, the environment, and themselves. It is a goal of this unit that, by learning more about the behavior of water and its environmental influences, the students will become involved enough to recognize water as a vital source of life and want to protect it. Activities, designed for the elementary grades, are generally done outside. Students observe snowflakes, make cross-sections of snow banks, study snow density and make snow paintings. Besides these, there are numerous other snow activities that guide students to the goal of this unit. Each includes a list of materials, background information, and directions for the teacher. (MA)

ED 103 252 SE 018 533
Tile Patterns and Graphs, An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis; National Wildlife Federation, Washington, D.C.
Pub Date 72
Note—17p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79141, $1.00)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—Elementary Grades, *Environmental Education, Graphs, Instructional Materials, Investigations, *Learning Activities, *Mathematics Education, Natural Resources, Primary Education, *Sampling, *Science Education, Teaching Guides
This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires minimal teacher preparation. The philosophy of the series is based on an experience-oriented process that encourages self-paced independent student work. This unit is an introduction to sampling for young primary school students. Using different colored tiles, students learn to create patterns that will eventually be specific enough to form graphs. In this way the children will be able to make a graphic representation of their random samples. Also included in the activities are elementary discussions on the validity of using samples to represent the whole. A list of materials needed, directions, and graph paper for duplication are a part of the unit. (MA)

ED 116 904 SE 019 194
Miniature Environments, An Environmental Education Guidebook, Revised Edition.
Bureau of Outdoor Recreation (Dept. of Interior), Washington, D.C.
Pub Date [74]
Note—32p.; For an earlier edition, see ED 046 739
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock No. 2416-00069, $0.80)
EDRS Price MF-$0.76 HC-$1.95 Plus Postage
Descriptors—Ecology, Elementary Grades, Environment, *Environmental Education, *Instructional Materials, *Learning Activities, Natural Resources, *Science, Projects, *Teaching Guides
The purpose of this booklet is to bring into the classroom the ecological processes and principles that underlie nature. Students get the opportunity to work with natural objects and to learn about the principles that regulate them. In this revised edition, a number of publications have been compiled and printed under one title. The booklet is designed to help the teacher by supplementing existing programs with these student-oriented activities. The information includes simple directions on how to build a number of different terrestrial and aquatic microenvironments, as well as the ecological principles behind their construction and maintenance. All materials are common and easily purchased, including the contents of the terrariums and turtle ponds. There are a number of diagrams and photographs to illustrate the procedures and principles being discussed. (MA)

ED 119 960 88 SE 020 012
Elementary Environmental Learning Packet K-3, Second Revised Edition [Primary CEL Blocks, Teacher's Guide].
Brevard County School Board, Cocoa, Fla.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [75]
Note—133p.; For the related Intermediate Learning Packet see SE 020 013
EDRS Price MF-$0.83 HC-$7.35 Plus Postage
Descriptors—*Elementary Grades, *Environmental Education, *Instructional Materials, Learning Activities, Outdoor Education, *Primary Grades, Science Activities, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This environmental education program consists of two levels, primary and intermediate. The material in this publication encompasses the primary level. The learning materials are activity-based and incorporate process and subject area skills with knowledge and concern for the environment. The program is also interdisciplinary including activities and skills from art, language arts, mathematics, music, science, and social studies. The activities in this primary set center on sensory awareness, basic ecological concepts, and developing positive attitudes toward the environment. The materials consist of student activity cards, student information cards, and the teacher's guide. Each activity card introduces the environmental concept and lists activities and an informal evaluation. The cards are non-graded and non-sequential. The teacher's guide contains overall teaching suggestions and suggestions by card. It also includes references for each card and four indexes on subject, subject area and process skills, information cards, and outdoor activities. (Author/MR)

ED 119 961 88 SE 020 013
Elementary Environmental Learning Packet Grades 4-6, Second Revised Edition. [Intermediate CEL Blocks, Teacher's Guide].
Brevard County School Board, Cocoa, Fla.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [75]
Note—163p.; For the related Primary Learning Packet, see SE 020 012
EDRS Price MF-$0.83 HC-$8.69 Plus Postage
Descriptors—*Elementary Grades, *Environmental Education, *Instructional Materials, *Intermediate Grades, Learning Activities, Outdoor Education, Science Activities, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This environmental education program consists of two levels, primary and intermediate. The material in this publication encompasses the intermediate level. The learning materials are activity based and incorporate process and subject area skills with knowledge and concern for the environment. The program is also interdisciplinary including activities and skills from art, language arts, mathematics, music, science, and social studies. The activities in this intermediate set center on exploration of the environment, identifying and solving environmental problems, and developing positive attitudes toward the environment. The materials consist of student activity cards, student information cards, and the teacher's guide. Each activity card lists the environmental problem, suggestions for investigating the problem, and an informal evaluation. The cards are non-graded and non-sequential. The teacher's guide contains overall teaching suggestions and suggestions by card. It also includes references for each card and four indexes on subject, subject area and process skills, information cards, and outdoor activities. (Author/MR)

ED 121 566 88 SE 019 333
Bennett, Dean B. *Wilfink, Wesley H.*
Environmental Education Teacher's Guide, Junior High School, A Core Experience Study of the Natural Environment.
Maine Environmental Education Project, Yarmouth.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 75
Note—75p.; For related documents, see SE 019 332-335
Available from—Maine Environmental Education Project, Intermediate School, Yarmouth, Maine 04096 (free)
EDRS Price MF-$0.83 HC-$3.50 Plus Postage
Descriptors—Curriculum Guides, *Environment, *Environmental Education, Field Trips, Junior High Schools, Learning Activities, *Secondary Education, Skill Development, *Teaching Guides, *Water Resources
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This Environmental Education Teacher's Guide, developed for use in the junior high school, is designed to familiarize teachers with how an environmental education program can help in their teaching and in achieving the goals of the school. The suggested core activities in this guide are designed to be a motivating way of introducing junior high school students to a practical understanding of the natural environment. The activities focus on those factors important in evaluating the stability of natural ecosystems and thereby identify areas sensitive to human development. The practicality of the unit is enhanced by the application of stability concepts in the content of a watershed. The activities have been devised to develop specific understandings, feelings and skills. Basic concepts, attitudes, objectives and skills are identified and a pre-post test is included to help the teacher assess educational outcomes. (BT)

ED 127 160 SE 021 180
A Teacher's Introduction to Energy and Energy Conservation: Elementary.
Battelle Memorial Inst., Columbus, Ohio. Center for Improved Education, Ohio State Dept. of Education, Columbus
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 75
Note—93p.; For related document, see SE021181. Photographs may not reproduce well
Available from—Division of Education Redesign and Renewal, Ohio Dept. of Education, 65 South Front St., Columbus, Ohio 43215 (no price quoted)
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—Curriculum, Elementary Education, *Elementary School Science, *Energy, *Energy Conservation, General Science, *Instructional Materials, Science Education, *Teaching Guides
Identifiers—*Ohio
This document is intended to give the elementary school teacher background information and general suggestions for teaching units and correlated learning activities related to energy and energy conservation. Sections are directed to A Problem Shared by All, Causes, What is Energy?, Energy Sources, Searching for Solutions, Conservation, An Ethic for Everyone, a glossary, and an extensive bibliography. (MH)

ED 128 081 PS 008 759
Camp, Janet *Wilkerson, Peggy*
Winter: Unit Manual Five, Curriculum Guide.
George Peabody Coll. for Teachers, Nashville, Tenn. Demonstration and Research Center for Early Education
Spons Agency—National Coordination Center for Early Childhood Education, St. Ann, Mo.; National Institutes of Health (DHEW), Bethesda, Md. Bureau of Health Professions Education and Manpower Training, National Inst. of Education (DHEW), Washington, D.C.
Pub Date 72
Contract—NPECE-70-006
Grant—OEO-CG-9995
Note—135p.; For other manuals in this series, see

PS 008 758.763
Available from—CEMREL, 3120 59th Street, St Louis, Missouri 63139 (Paper, $2 50)
EDRS Price MF-$0.83 HC-$7.35 Plus Postage.
Descriptors—*Basic Skills, *Cognitive Development, Concept Teaching, *Curriculum Guides, *Early Childhood Education, *Environmental Education, *Instructional Materials, Learning Activities, Natural Sciences, Perceptual Motor Learning, *Resource Guides, Science Units, Skill Development, Teaching Techniques, Thought Processes
Identifiers—*DARCEE, Holidays, Winter
This is number five in a series of resource manuals consisting of 11 sequenced curriculum guides developed by the Demonstration and Research Center for Early Education (DARCEE) for use in early childhood education programs Emphasis is placed on the development of sensory, abstracting and mediating, and response skills The projected order of the units is (1) All About Me, (2) Plants, (3) Autumn, (4) Home and Family, (5) Winter, (6) Forest Animals, (7) Neighborhood and Community, (8) Farm Animals, (9) Spring, (10) Transportation, (11) Farm Crops Each unit is intended to build upon skills developed in preceding ones The fifth unit, "Winter," is primarily a science unit. The major content objectives are to expand the child's understanding of people and plants and to increase awareness of environmental changes The suggested time for the unit is three weeks Instructional activities are presented side by side with basic skills to be developed A list of instructional materials and their sources is given Appendix includes patterns for teacher-made materials (MS)

ED 128 163 SE 020 720
Schlenker, Richard M.
An Introduction to the Marine Environment: A Mini-Unit.
Pub Date [76]
Note—20p; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Biological Sciences, Curriculum, Ecology, *Elementary School Science, Environment, *Instructional Materials, *Marine Biology, *Oceanology, Science Education, *Teacher Education
This unit is designed to introduce the marine environment to those with little or no previous related background. Students define the marine environment, participate in group discussions, view movies, investigate oil spills, and write environmental impact statements The first three sessions are designed to take three hours with the composition of the remainder of the unit left to the needs of the individual instructors. Included are activities and suggested alternatives, selected references, vocabulary, and suggestions for further study. This unit is especially intended for the instruction of future and practicing teachers. (Author)

ED 133 144 SE 021 459
Lorain Stec Backman, Judi
Ecological Smorgasbord: A Balanced Reading Diet. [Project ECOlogy ELE Pak, Lorain & Backman Pak].
Highline Public Schools, Seattle, Wash
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date [76]
Note—40p. For related documents, see SE 021 438-478 Contains occasional light type
Available from—Highline Public Schools, Instructional Division, Project ECOlogy ESEA Title III, Bill Guise, Director, 15675 Ambaum Blvd., S W., Seattle, WA 98166 ($2 50)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Ecology, *Elementary Education, *Elementary School Science, *Environment, Environmental Education, *Instructional Materials, *Reading, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This is one of a series of units for environmental education developed by the Highline Public Schools This material was basically designed to be used as an individualized reading kit for the intermediate grade student The books in this kit (eadily lend themselves to a supplementary reading program as part of a science unit Depending on a teacher's needs, this kit can be used for a whole class or for selected individuals. For each of approximately 20 books there is a short summary of the book, some possible conference questions for the teacher, and some student activities (RH)

ED 133 150 SE 021 465
Wright, Jan
...About This Problem of Air Pollution... . (Project ECOLogy ELE Pak, Wright Pak].
Highline Public Schools, Seattle, Wash
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date [76]
Note—23p. For related documents, see SE 021 438-478. Contains occasional broken type
Available from—Highline Public Schools, Instructional Division, Project ECOLogy ESEA Title III, Bill Guise, Director, 15675 Ambaum Blvd., S W., Seattle, W A 98166 ($2 50)
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Air Pollution Control, *Elementary Education, *Elementary School Science, *Environment, Environmental Education, *Instructional Materials, *Pollution, *Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This is one of a series of units for environmental education developed by the Highline Public Schools The lessons in this unit are designed to help students discover causes, effects, and results of air pollution through involvement in various activities, it is recommended for intermediate grade elementary school pupils The unit can be used independently, but it is recommended for use with or following the unit entitled "It's All in the Air" The materials were tried and evaluated, evaluation data may be obtained from the Highline Public Schools (RH)

ED 137 063 SE 021 301
Marine Activity Dynamics (M.A.D.), Unit 5.
Rhode Island State Dept of Education, Providence. Education Information Center.
Pub Date [76]
Note—29p., Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Biological Sciences, *Curriculum Development, *Curriculum Guides, *Elementary Grades, Environmental Education, Grade 5, Instructional Materials, *Learning Activities, *Oceanology, Science Education
Identifiers—*Rhode Island
This curriculum guide describes an activity-oriented marine study program, designed for use with middle school children (grade 5) The content focuses primarily upon the life sciences, with some emphasis on chemistry and geology Following the development of a rationale for the inclusion of marine sciences in the school curriculum, a middle school/marine science educational philosophy is presented. The basis for the selection of marine science education topics is detailed. Lesson topics include, marine biology, fish adaptations, studies in unusual fish, commercial and soft-bone fish, marine geophysics, reptiles and mammals of the sea, waterfowl, conchology, algae, cephalopods, and crustaceans. Objectives are specified and concepts identified for each topic. Several individualized student learning packets are described. Sections on water pollution and chemical ocean studies conclude this guide. (BT)

ED 138 461 SE 022 416
Callaghan, Sara S
Down Where the Water Is: A Coastal Awareness Activity Book. Marine Bulletin No. 22.
Rhode Island Coastal Resources Management Council, Providence
Spons Agency—National Oceanic and Atmosphere Administration (DOC), Rockville, Md
Report No—MB-22
Pub Date [77]
Grant—FRC-IGA-01-07
Note—26p; For related Teacher's Guide, see SE 022 417
Available from—Rhode Island Coastal Resources Management Council, 83 Park Street, Providence, Rhode Island 02903 (no price quoted)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Elementary Education, *Elementary School Science, *Instructional Materials, Marine Biology, *Natural Resources, Science Education, *Science Materials, *Water Resources, Workbooks
Identifiers—*Rhode Island
This activity booklet was prepared as part of the Rhode Island Coastal Resources Management Council's public education program It was designed to inform youngsters about the importance and use of coastal resources. Line-drawn pictures of coastal activities may be employed in a variety of ways to promote discussion and an awareness of the coastal environment. The last two pages of the activity booklet contain cut-out sentences that may be pasted below their corresponding pictures (CS)

ED 138 462 SE 022 417
Callaghan, Sara S
Teacher's Activity Guide to Coastal Awareness. Marine Bulletin No. 23.
Rhode Island Coastal Resources Management Council, Providence
Spons Agency—National Oceanic and Atmosphere Administration (DOC), Rockville, Md.
Report No—MB-23
Pub Date 77
Grant—FRC-IGA-01-07
Note—90p., For related Student Activity Book, see SE 022 416; Page 57 removed due to copyright restrictions; Contains occasional light and broken type
Available from—Rhode Island Coastal Resources Management Council, 83 Park St., Providence, Rhode Island 02903 (no price quoted)
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—*Elementary Education, *Elementary School Science, Marine Biology, *Natural Resources, *Oceanology, Science Education, *Teaching Guides, Water Resources
Identifiers—*Rhode Island
This teacher's guide was prepared for use with "Down Where the Water Is, A Coastal Awareness Activity Book," as part of the Rhode Island Coastal Resources Management Council's public education program Contained are instructions on the use of the Activity Book page-by-page, with glossaries, activity ideas, resources, places to visit, and notes identified where relevant Activity ideas are multi-disciplinary in nature, with four general subject areas specified (1) language arts, (2) science and mathematics, (3) social studies, and (4) art and music Pictures in the Activity Book are designed to promote discussion in the elementary school classroom of people, places, and things relating to the coastal environment (CS)

ED 142 433 SE 022 821
Environmental Studies Center Teacher Books. 6th Grade - River Investigation.
Martin County Schools, Jensen Beach, Fla. Environmental Studies Center
Pub Date 76
Note—90p; For related documents, see SE 022 815-823, Not available in hard copy due to marginal legibility of original document
Available from—Environmental Studies Center, 2900 NE Indian River Dr., Jensen Beach, Florida 33457 153 00, all 9 books $20 00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Curriculum Development, *Ecology, Elementary Education, *Elementary Grades, *Environmental Education, Grade 6, Instructional Materials, Learning Activities, Nature Centers, *Oceanology, Outdoor Education, *Teaching Guides
Identifiers—*Estuaries, Florida
This teacher's guide, one of nine teacher packages developed for use in the sequential, hands-on, field-oriented, K-8 environmental education program of the Martin County Schools in Florida, was developed for use with elementary children in grade six prior to and after a visit to an environmental studies center located near an estuarine area The grade six program centers

around the theme "River Investigations" and includes the use of a survey boat to investigate the siltation of a river bottom, changes in salinity, and other factors of the estuarine ecosystem This guide contains teacher instructions, scripts, tests with keys, and a copy of all student materials. Three slide/tape programs are not included General and specific program objectives are stated and a program outline, including learning activities to be completed at the school and environmental studies center, is detailed (BT)

ED 145 845 IR 005 301
Hamilton, Ruth H And Others
Staff Development Study: Seattle Public Library.
Washington Univ., Seattle School of Librarianship
Pub Date 76
Note—48p., Appendix B may be marginally legible due to print quality
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Inservice Education, *Library Education, Library Planning, Personnel Evaluation, *Public Libraries, *Staff Improvement
Through an agreement between the School of Librarianship of the University of Washington and the Seattle Public Library (SPL), an on-going system for staff development at SPL was implemented The study contains four parts (1) the research methodology used to identify staff developmental needs, (2) the needs identified, (3) the elements of a staff developmental system, and (4) how to implement that system at SPL. The developmental needs were identified through individual interviews, a written questionnaire, and group discussions Needs common to all staff cluster around training that will enhance communication, management, professional expertise, and personal relations with staff and clients Assessment of staff needs will be accomplished by comparing present staff capabilities with established staff goals and plans for achieving these goals such as (1) position descriptions, (2) position specifications, (3) selection of personnel, (4) performance review, (5) formal assessment, and (6) the Annual and Long-Range plans. A Staff Development Planning Group will be established to refine library goals through consultation with staff and in conjunction with the administration and Board of Trustees. Appendices tabulate the staff development needs in categories for group discussion. (Author/JAB)

ED 146 044 SE 023 262
Bakke, Ruth
Energy Conservation Activity Packet, K-2.
Iowa State Dept. of Public Instruction, Des Moines.; Iowa State Energy Policy Council, Des Moines
Pub Date 77
Note—83p.; For related documents, see SE 023 263-266, Energy Activities, Primary K-2 Gameboard 1 and Posters 1 and 2 removed
Available from—Iowa Energy Policy Council, State Capital Complex, Des Moines, Iowa 50319 ($10.00 a set)
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—*Elementary Education, Energy, *Energy Conservation, Environmental Education, *Instructional Materials, *Natural Resources, Primary Grades, Resource Materials, Science Education, *Teaching Guides, Values
This book was developed in response to the concern for energy conservation It contains activities that stress an energy conservation ethic and includes many values clarification activities for grades K-2 The teacher is provided with some background information on energy, an extensive teacher's annotated bibliography, and a list of resources The topic of energy is divided into concepts and objectives, with activities interspersed where appropriate There are over 40 pages of ditto and transparency masters, two posters, and a game for the teacher's use Also included is an evaluation sheet for the teacher to assess the activity packet (MA)

ED 146 048 SE 023 266
Bakke, Ruth
Energy Conservation Activity Packet, Grade 6.
Iowa State Dept. of Public Instruction, Des Moines.; Iowa State Energy Policy Council, Des Moines.
Pub Date 77
Note—102p.; For related documents, see SE 023 262-265
Available from—Iowa Energy Policy Council, State Capital Complex, Des Moines, Iowa 50319 ($10.00 a set)
EDRS Price MF-$0.83 HC-$6.01 Plus Postage.
Descriptors—*Elementary Education, Energy, *Energy Conservation, Environmental Education, Grade 6, *Instructional Materials, *Natural Resources, Resource Materials, Science Education, *Teaching Guides, Values
This activity packet for grade 6 is one of a series developed in response to the concern for energy conservation. It contains activities that stress an energy conservation ethic and includes many values clarification activities for grade six. The packet is divided into two parts and provides the teacher with background information, concepts and objectives, and activities for each part. Part one is concerned with the limits of energy sources and part two with alternative energy sources. Two annotated bibliographies, one for teachers and the other for students, are also included. The teacher is provided with ditto and transparency master pages for duplication. An evaluation sheet and a listing of resources are also a part of this activity packet. (MA)

ED 148 581 SE 023 384
Spencer, Richard Mac Onie, Eleanor
The Good Bugs and the Bad Bugs.
Environmental Protection Agency, Washington, D.C.
Pub Date 77
Note—6op
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Elementary Education, *Environmental Education, Field Trips, *Instructional Materials, Learning Activities, Outdoor Education, Resource Materials, Science Education, *Science Experiments, *Teaching Guides
Identifiers—Environmental Protection Agency
This activity package is designed as a resource for the classroom teacher It contains numerous activities, experiments, and demonstrations in environmental education for the elementary grades Numerous field trips are described Each activity includes objectives, suggested materials, suggested methods, and a description of the activity Where indicated, illustrations are given. Resource information, such as appropriate films, filmstrips, books, and periodicals, is included for the classroom teacher (MA)

ED 149 986 SE 023 455
Environmental Education, Values for the Future: Ecosystems, Grades 6-8.
Illinois State Office of Education, Springfield.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—OE-551-2-75
Note—44p. For related documents, see SE 023 448-452 and SE 023 459-465. Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Conservation (Environment), *Ecology, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Middle Schools, *Natural Resources, *Science Education, Teaching Guides
Identifiers—Elementary Secondary Education Act Title III
This booklet on ecosystems is one of a series in environmental education for grades K-12. Activities in this booklet are concerned with the components of ecosystems, energy forms and transfer in ecosystems, and stress capacity of ecosystems Six basic concepts are listed along with behavioral objectives, subject areas, key words, and definitions for each Three activity options develop the basic concepts Information for these activities includes materials and resources, procedures, discussion questions, further activities, and sample worksheets. The activities are interdisciplinary and designed for students in grades 6-8 (MA)

ED 150 783 EC 103 891
Demaray, Brian
PROJECT SUCCESS: Marine Science. [Introductory Packet, Rubic Marine Science Laboratory Techniques, Oceanographic Instruments, Individual Projects, Bibliography].
North Kitsap School District 400, Poulsbo Wash
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Note—165p. Print on some pages is marginal and may not reproduce well in hard copy For related information see EC 103 889-893 and EC 103 997
Available from—North Kitsap School District 400, 150 High School Road South, Poulsbo Washington 98370 ($3.00)
EDRS Price MF-$0.83 HC-$8.69 Plus Postage.
Descriptors—Academically Gifted Class Activities, Curriculum Guides, Elementary Education, *Enrichment Programs, *Gifted Learning Activities, *Marine Biology, *Science Activities, Science Instruction Teaching Methods
Five packets comprise the marine science component of an enrichment program for gifted elementary students Considered in the introductory section are identification (pre post measures) procedures Remaining packets address the following topics (subtopics in parentheses): base marine science laboratory techniques (microscope techniques and metric usage), collection and observation techniques (classification of marine animals and plants), oceanographic instrumente (water quality sampling and hydrographic studies), and ideas for individual student projects A bibliography lists approximately 25 books and 100 films/filmstrips (CL)

ED 152 531 SE 024 007
Science Activities in Energy: Conservation.
California Univ., Berkeley Lawrence Hall of Science; Oak Ridge Associated Universities, Tenn
Spons Agency—Department of Energy, Washington, D.C.
Report No—EDM-1049
Pub Date 77
Note—32p.; For related documents, see SE 024 005-008
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Conservation (Environment), Elementary Education, *Elementary School Science, *Energy, *Environmental Education, Instructional Materials, Laboratory Experiments, *Science Activities, Science Education, *Science Units
Presented is a science activities in energy package which includes 14 activities relating to energy conservation. Activities are simple, concrete experiments for fourth, fifth and sixth grades, which illustrate principles and problems relating to energy Each activity is outlined on a simple card which is introduced by a question A teacher's supplement is included (SL)

ED 154 999 SE 024 223
Beaver, David And Others
Energy Activities for Junior High Science.
Minnesota State Dept. of Education St. Paul, Minnesota State Energy Agency, St. Paul.
Pub Date Apr 77
Note—24p., Not available in hard copy due to colored pages throughout entire document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Cognitive Processes, Energy, *Energy Conservation, *Environmental Education, *Inquiry Training, *Junior High School Students, *Science Activities, Science Education, Secondary Education, Skill Development
This document is a collection of six energy education activities for junior high school science Its purpose is to help promote knowledge about energy, provide laboratory experiences, provoke inquiry, and relate energy to society through the science curriculum The six activities are designed to take one to three class periods Two of the activities have activity options included Each activity provides some background information, an activity description including a materials list, evaluation questions, and a resources list Several activities also include student worksheets Activity titles are (1) Star Power, (2) Energy What(t) Is It?, (3) Rube's Innovation, (4) Killerwatts, (5) Scavenging Energy, and (6) What If ? The skills that the activities are intended to teach include hypothesis formation, collecting and analyzing data, observation and inference, decision making, chart and

table reading, and the application of science to other areas of life (MR)

ED 156 478 SE 024 439
Hoffman, Lou Rutrovato, Lou
Kids, Wildlife and Their Environment: An Elementary Teachers' Guide to Wildlife Activities.
Pub Date [78]
Note—84p
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—Changing Attitudes, Discovery Learning, Elementary Education, *Environmental Education, *Experiential Learning, Instructional Materials, Interdisciplinary Approach, *Outdoor Education, Science Activities, *Teaching Guides, *Wildlife Management
This teachers' guide was written in an effort to get elementary school students to "turn on" to nature and to develop positive attitudes toward the environment. The materials are divided into three sections. Section one consists of activities revolving around the Environment, Wildlife, Man and the Environment. Concepts, objectives, needed materials and approximate length of time for the activities are given. Many of the activities are discovery-oriented, often requiring students to use their senses to complete the activities. The second section contains less detailed activities that can be used to supplement the activities in the first section. In this second section the activities have been categorized by discipline. The third section is a collection of teaching resources including publications, periodicals and films to supplement the activities. The authors encourage teachers to modify and adapt the materials in this publication to fit their own needs and imagination. (MR)

ED 157 680 SE 022 813
Schmiess, Elmer
Capturing Solar Energy in the Classroom with Plants.
North Dakota Univ. Grand Forks. Center for Teaching and Learning.
Pub Date May 77
Note—15p. For related document, see ED 153 236. Not available in hard copy due to marginal legibility of original document
Available from—Insights, Center for Teaching and Learning, Corwin Hall, University of North Dakota, Grand Forks, North Dakota 58202 (annual subscription $3.50)
Journal Cit—Insights Into Open Education, v9 n8 May77
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Botany, Elementary Education, *Elementary School Science, Environmental Education, *Instructional Materials, Natural Resources, *Open Education, *Resource Materials, *Science Activities, *Science Education, Soil Science
This newsletter is published eight times during the academic year for teachers in an open educational setting. This issue is concerned with the plant and its environment. Activities explore different types of soils and their implications for indoor gardening, plant propagation techniques, and preparation of potting soils. Each activity provides an introduction, materials list, procedures, and vocabulary word list. Further pages in the newsletter list numerous sources for plants and materials, giving names and addresses for each. This source list also includes books and book series for students and teachers. (MA)

ED 157 771 SE 024 773
Columbia County Kindergarten Center Environmental Study Area Guide.
Florida State Dept. of Education, Tallahassee. Office of Environment Education
Pub Date 78
Note—36p.
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Acoustics, Biological Sciences, *Curriculum Guides, Elementary Education, *Environmental Education, *Instructional Materials, *Kindergarten, *Natural Resources, Soil Science, *Teaching Guides, Zoology
The guide lists seven program objectives and 15 activities guides for meeting the objectives. Included in each activity is an introduction, outdoor activity, classroom activity, and evaluation. Sample activities are Animals Use Natural Materials to Provide Food and Shelter, Differences in Soil, Decomposition, Man-made or Natural Objects, Food Chains, and Natural Sounds. The guide is illustrated with drawings. (Author/RH)

ED 167 409 SE 026 798
Prema, Joe And Others
Energy Education in Elementary Science: Elementary Science Study.
Minnesota State Energy Agency, St. Paul.
Pub Date—Oct 78
Note—68p. For related document, see SE 026 799
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Curriculum Enrichment, Elementary Education, *Elementary School Science, *Energy, Heat, *Instructional Materials, Light, *Science Activities, Science Course Improvement Project, Science Education
Identifiers—*Elementary Science Study, *Energy Education, Minnesota
Elementary Science Study (ESS) units were examined by elementary teachers on a science writing team to identify energy education concepts within the existing curriculum in Minnesota. The outline of energy education concepts is given here along with some energy education science activities for elementary students. The activities are structured into a three-level sequence of lessons, exploration, labeling, and application. While some activities were written by team members, other activities have been adopted from ESS materials. (MR)

ED 167 410 SE 026 799
Lind, Jackie Prema, Joe
Energy Education in Elementary Science: Science Curriculum Improvement Study.
Minnesota State Energy Agency, St. Paul
Pub Date—Oct 78
Note—93p; For related document, see SE 026 798
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—Biological Sciences, *Concept Teaching, *Curriculum Enrichment, *Elementary Education, *Energy, Physical Sciences, *Science Course Improvement Project, Science Education, Scientific Concepts
Identifiers—*Energy Education, Minnesota
This looseleaf teacher's manual is designed to facilitate using Science Curriculum Improvement Study (SCIS) for energy education in elementary schools. It is intended to be used with the SCIS Teacher's Guide as a supplement. The format of this manual matches a main SCIS concept with a closely related energy concept. Matrices show matched concepts for each unit. Short elaborative paragraphs are given for each matched concept for the life science and physical science units to serve as teacher preparation. (Author/MR)

ED 167 421 SE 026 844
Odell-Fisher, Ellen Giese, Ronald N.
Sensing the Sea: A Curriculum Guide in Marine Education for Grades Two and Three.
Virginia Inst. of Marine Science, Gloucester Point, Va.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—78
Note—157p
Available from—Marine Education Center, Virginia Institute of Marine Science, Gloucester Point, Virginia 23062 ($2.00)
Pub Type— Guides - Classroom - Teacher (052) — Guides - Classroom - Learner (051)
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Biology, Elementary Education, *Elementary School Science, *Environmental Education, *Marine Biology, *Oceanology, Primary Education, *Science Activities, Science Education, Zoology
This is a curriculum guide in marine education for grades two and three. It gives information for the setup and maintenance of marine aquariums, as well as information on the care and feeding of marine animals. The unit should take about three or four weeks. A calendar is given showing the amount of time needed for each part. The guide is divided into seven parts entitled (1) Setting Up, (2) Observing Marine Animals, (3) Inferring About Marine Animals, (4) Classifying Beings n Things, (5) Inferring About Parts of Living Things, (6) Problem Solving, and (7) Evaluation. Each section contains two to four student activities. A list of related books and films are also given for each section. (BB)

ED 168 824 SE 026 870
Flick, George J.
Discover the Atlantic Ocean: An Exciting Coloring Book of Fish and Shellfish.
Virginia Polytechnic Inst. and State Univ., Blacksburg. Sea Grant Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Report No.—VPI-SG-76-05
Pub Date—Sep 77
Grant—NOAA-04-4-1S8-40
Note—80p.
Available from—Sea Grant, Extension Division, Virginia Polytechnic Inst. and State University, Blacksburg, Virginia 24061 ($1.50)
Pub Type— Books (010) — Creative Works (030) — Guides - Classroom - Learner (051)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Art Activities, *Childrens Art, Elementary Education, *Environmental Education, *Marine Biology, *Science Activities, Science Education, Zoology
This coloring book contains pictures of more than 79 fish and shellfish found on the Atlantic Coast. Captions give information on habitats, behavior, or commercial uses of the species pictured. Indexes of both common and scientific names are given. (BB)

ED 168 877 SE 026 997
Gillespie, Judith A.
Lessons from An Energy Curriculum for the Elementary Grades.
Indiana State Dept. of Commerce, Indianapolis. Energy Group; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Pub Date—Oct 78
Note—112p.; Contains light and broken type
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—*Activity Units, *Conservation Education, Elementary Education, *Elementary School Science, Energy, *Energy Conservation, Environmental Education, *Instructional Materials, Science Activities, Science Education
This curriculum guide is composed of three units. Each unit has three chapters, and each chapter has six lessons. The objectives of the course are to develop an awareness of and information about energy conservation, as well as to improve inquiry skills and participation habits. Each set of lessons covers the full range of objectives in the course. The first unit is for grades K-1. The second unit is primarily for second and third graders, and includes lessons about physical and human resources involved in the energy problem. The third unit, for grades 4-6, explores ways in which people are facing the energy problem and actions they are taking. This unit requires the students to undertake a major project of their own about the conservation and use of energy. (BB)

ED 174 442 SE 028 431
Odell-Fisher, Ellen Giese, Ronald N.
Sensing the Sea: A Curriculum Guide in Marine Education for Grades Kindergarten and First. Educational Series Number 23.
Virginia Inst. of Marine Science, Gloucester Point, Va.
Spons Agency—National Oceanic and Atmosphere Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—79
Note—148p; For related document, see ED 167 421
Available from—Marine Education Center, Virginia Institute of Marine Science, Gloucester Point, Virginia 23062 ($3.00)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—Biology, *Elementary Education, Elementary School Science, Environment, Environmental Education, Grade 1, *Marine Biology, *Natural Resources, *Oceanology, *Science Curriculum, Science Education, Water Resources, Zoology
This curriculum unit deals with the establishment and maintenance of a saltwater aquarium in the classroom. The unit seeks to arouse the student's curiosity and interest in the aquatic environment by

involvement in the sequence of activities relating to the marine aquarium. Detailed instructions are provided in preparing and stocking the aquarium. Teaching suggestions are included along with technical instructions. Appendices include: (1) a list of aquarium supplies; (2) marine life suppliers, (3) book publishers; and (4) a story relating concepts of the marine environment. (RE)

ED 175 718 SE 028 756
Williams, Lavora
An Energy Encounter (An Energy Awareness Program).
Mississippi State Univ., State College. Cooperative Extension Service.
Spons Agency—Department of Energy, Washington, D.C.
Report No.—MEEC-39
Pub Date—78
Grant—DOE-EL-78-G-05-5873
Note—29p.; For related documents, see SE 028 747-757
Available from—Mississippi Energy Extension Center, P.O. Box 5406, Mississippi State, MS 39762 (no price quoted)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Curriculum Planning, *Energy, *Energy Conservation, Interdisciplinary Approach, Junior High Schools, Nonformal Education, *Science Education, *Secondary Education
Identifiers—*Energy Education, Mississippi
This guide presents instructions for five class sessions on the preparation of an energy education program by students to the community. The energy education program is designed around a series of booths or activity centers devised and operated by seventh-grade students and set up within the classroom. A list of sources for free or inexpensive materials is provided. (RE)

ED 175 724 SE 028 807
King, Marion W.
Endangered Species of Florida Coloring Book.
Florida Audubon Society, Maitland
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Pub Date—75
Grant—GOO7407881
Note—34p.; For related documents, see SE 028 808-810
Pub Type—Guides - Classroom - Learner (051)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Art Education, Botany, *Conservation (Environment), Conservation Education, Ecology, *Environment, *Environmental Education, *Natural Resources, *Plant Identification, Science Education, *Wildlife Management, Zoology
Identifiers—*Endangered Species, Florida
This coloring book portrays endangered animal and plant species of Florida in their natural environment. Each picture is to be colored by the student. On the back of each page bearing the picture to be colored is a description of the animal or plant, its preferred habitat, and the reason the animal or plant is endangered. (RE)

ED 180 808 SE 029 537
Conner, Shirley
The Pond Community. Primary Level. Teacher's Manual.
Rocky River Public Schools, Ohio
Spons Agency—Office of Education (DHEW), Washington, D.C. Ohio State Dept. of Education, Columbus. Div. of Research, Planning, and Evaluation
Pub Date—Mar 77
Note—25p.; For related document, see SE 029 538
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Biology, *Conservation Education, *Ecology, Elementary Education, Elementary School Science, *Environment, *Environmental Education, Natural Resources, Science Education, Teaching Guides, *Water Resources
This teacher's guide includes four lessons dealing with animals and plants associated with ponds. Species discussed are selected because of their unusual means of adaptation to the pond environment. Each lesson includes suggestions on introducing the unit, discussion suggestions, blackboard activities, and activities with pictures and a magnetic board. Master activity sheets are provided. (RE)

ED 183 357 SE 027 843
Handy, Roberta M.
Man and His Environment: A Suggested Curriculum for Second-Grade Students.
Pub Date—May 79
Note—20p.; Contains occasional marginal legibility
Pub Type—Guides - Classroom - Teacher (052) — Reports - Descriptive (141)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Curriculum Development, Ecology, Educational Objectives, *Elementary Education, Environment, *Environmental Education, *Grade 2, Instructional Materials, Learning Activities, Natural Resources, *Pollution, Science Curriculum, *Science Education
This guide presents a discussion on how constant new discoveries cause science to endure, which necessitates successive alterations in industry and methodology. The curriculum was formulated based on the author's perception of child development levels. The cognitive, social and physical characteristics of second-grade students are listed. The main objectives pertaining to the study of science are listed and discussed. In the second half of the guide, the actual science curriculum is presented. The objectives, major goals, specific goals, supporting content and learning activities are also included. (Author/SB)

ED 183 374 SE 029 960
McCormack, Alan J., Comp.
Outdoor Areas as Learning Laboratories. CESI Sourcebook, An Occasional Sourcebook of The Council for Elementary Science, International.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Dec 79
Contract—400-78-0004
Note—219p.
Available from—Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, OH 43212 ($6.50)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC09 Plus Postage.
Descriptors—Class Activities, *Earth Science, Ecology, Elementary Secondary Education, *Environment, *Environmental Education, Interdisciplinary Approach, Natural Resources, *Outdoor Education, Pollution, *Science Education, Solar Radiation, Water Resources
This guide is intended to be a source of ideas for outdoor learning activities appropriate for youngsters in elementary, middle, and junior high schools. It may also be useful for those who work with children primarily in outdoor settings. Decisions as to which activities are appropriate for particular age levels are left to the teacher. Each activity includes title, focus, challenges, materials and equipment, instructions, further challenges, and references; appropriate to the activity. Activities are designed to assist the teacher in using outdoor areas surrounding the school as a laboratory for effective instruction. (Author/RE)

ED 183 392 SE 030 295
Mason, Jack L., Cantrell, Joseph S.
Solar Energy: A Middle School Unit. Environmental Education Occasional Paper No. 2.
Ohio State Dept. of Education, Columbus.
Pub Date—Feb 79
Note—28p.; For related documents, see SE 030 294-296. Contains occasional light type
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Class Activities, Electricity, *Energy, Energy Conservation, Environmental Education, Heat, Interdisciplinary Approach, *Middle Schools, Natural Resources, *Science Education, Secondary Education, *Solar Radiation
Identifiers—*Energy Education
This collection of teaching activities was developed to provide teachers with guidance in presenting solar energy education to students of middle school age. The unit provides activities presenting learning opportunities involving: (1) passive solar collectors, (2) active solar collectors, (3) concentrating collectors, and (4) photovoltaic cell collectors. The guide is presented in the sequence: (1) introducing the unit (2 lessons), (2) characteristics of solar energy (3 lessons); (3) capturing solar energy (5-10 lessons), (4) complete solar systems (1-2 lessons), and (5) a summary. (RE)

ED 184 875 SE 030 543
Schatz, Dennis, And Others
Marine Science Activities for Visually Impaired.
Pacific Science Center, Seattle, Wash.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date—[79]
Note—97p.
Available from—Pacific Science Center, 200 Second Ave. N., Seattle, WA 98109 (free while supply lasts)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Class Activities, Disabilities, Elementary Education, Elementary School Science, *Environment, *Environmental Education, *Marine Biology, Natural Resources, *Oceanography, Outdoor Education, Science Activities, *Science Education, *Visual Impairments
These marine education materials are based on the approach that students learn best when given a multisensory experience. The activities are intended to develop such experiences for the visually impaired child. Activities are intended to supplement an upper-elementary science curriculum or be the basis of a unit on marine biology. The guide is organized into two sections: (1) the activity sets and (2) background information for the sets. (RE)

ED 186 231 SE 030 499
Allen, Rodney F., Ed.
Exemplary Energy Education Lessons for Elementary School Students, K-6.
Tri-County Teacher Education Center, Sebring, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education; Governor's Energy Office, Tallahassee, Fla.
Pub Date—80
Note—58p.
Pub Type—Guides - Classroom - Teacher (052) — Non-Print Media (100)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Class Activities, Conservation Education, *Elementary Education, *Energy, *Energy Conservation, Environmental Education, *Science Education
Identifiers—*Energy Education
This collection of energy lessons is assembled from teacher-written units. The collection is prefaced by background information on the issues associated with current energy problems. Each lesson contains a statement of objectives and a description of the activity. Additional information on variations and materials is provided where appropriate. (RE)

ED 186 281 SE 030 760
How We Make Energy Work: Grades 4, 5, 6 Science.
National Science Teachers Association, Washington, D.C.
Spons Agency—Department of Energy, Washington, D.C. Office of Consumer Affairs.
Report No.—DOE/CA/06083-02
Pub Date—Apr 80
Contract—EC-77-C-01-6083
Note—80p.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Class Activities, Conservation Education, *Curriculum Guides, *Economics, Electricity, *Elementary Education, Elementary School Science, Energy, *Energy Conservation, Environmental Education, Fuel Consumption, *Fuels, Instructional Materials, Natural Resources, Nuclear Physics, Petroleum Industry, *Science Education, Solar Radiation, Utilities
Identifiers—*Energy Education
This packet of units is designed to focus on the technological aspects of energy. Four units are presented, with from 1-8 lessons included in each unit. Units include (1) basic concepts and applications of energy, (2) steps and processes of energy production and transmission, (3) fuel acquisition, and (4) energy futures and application of non-fossil fuel energy sources. Twenty activity masters are included in this teacher's guide. (RE)

ED 191 743 SE 032 874
Schmidt, Joan S. And Others
Conservation Activities Related to Energy: Energy Activities for Urban Elementary Students, K-6.
Beaver Coll. Glenside, Pa. Office of Education (DHEW), Washington, D.C. Teacher Corps.; Philadelphia School District, Pa.
Spons Agency—Department of Energy, Washington, D.C. Office of Education, Business and Labor Affairs
Pub Date—80
Grant—DE-FG05-80IR10958
Note—161p.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Class Activities, *Curriculum Development, Decision Making, Elementary Education, *Energy, *Energy Conservation, Fuel Consumption, Home Economics, Interdisciplinary Approach, Natural Resources, Public Policy, *Science Education, *Urban Education
Identifiers—*Energy Education
Presented are simple activities, experiments, and demonstrations relating to energy conservation in the home. Activities are divided into four areas: (1) kitchen, (2) house, (3) transportation, and (4) heating and cooling. The material has been designed to require a minimum of preparation. Activity and game masters are provided. Activities may be adapted to meet individual skill levels of students. Theory is presented to lead logically to practical applications. (Author/RE)

ED 197 996 SE 034 177
What Is Energy? Easy Energy Reader, Book I.
Information Planning Associates, Inc., Rockville, Md.
Spons Agency—Department of Energy, Washington, D.C. Office of Consumer Affairs.
Report No—EDAI-1137
Pub Date—May 80
Contract—EC-78-C-01-6497
Note—86p. For related documents, see SE 034 176-180. Photographs may not reproduce well.
Available from—Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830 (free).
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Content Area Reading, *Energy, Environmental Education, *Interdisciplinary Approach, Junior High Schools, *Reading Materials, *Science Education, *Scientific Concepts
Presented is the first in a series of four books on energy designed for the junior high school language arts curriculum. Each of the 10 articles included is scored for readability according to the Gunning Fog Index. By referring to these ratings, a teacher can provide students with increasingly more challenging reading material. Among these articles, all of which deal with basic energy concepts, are: (1) Carrying Energy from Place to Place, (2) How Energy is Lost, and (3) Energy Circulates. Also contained are a glossary and list of related readings. (WB)

ED 200 445 SE 034 598
Montgomery, Herbert H.; Peterson, Mary
Minnesota Energy Activities for Elementary Students. Level A (Ages 4-6), Level B (Ages 5-7), Level C (Ages 6-8), Level D (Ages 7-9), Level E (Ages 8-10), Level F (Ages 9-11), Level G (Ages 10-13).
Minnesota State Dept. of Administration, St. Paul. Documents Section; Minnesota State Energy Agency, St. Paul
Pub Date—[81]
Note—168p. Contains occasional colored print and photographs which may not reproduce well.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC07 Plus Postage.
Descriptors—Elementary Education, *Elementary School Science, *Energy, *Environmental Education, Interdisciplinary Approach, *Science Activities, Science Education, Science Instruction, *Social Studies
Presented are seven folios of energy activities for elementary school students. Each folio is devoted to different energy related themes: (1) What is energy? What does energy do? Where does energy come from? (2) We find energy in many places. (3) Energy does all the work in the world. (4) The Earth's energy sources are limited. (5) Energy changes from one form to another. (6) The energy situation affects Minnesotans today, and (7) The energy situation will affect the future. The folios separated by age levels contain a total of 60 cards with three learning activities per card. The paragraph or drawing that illustrates each card serves to focus attention and stimulate discussion about the activities. (WB)

ED 200 453 SE 034 668
Rasmussen, Frederick J.
Coastal Awareness: A Resource Guide for Teachers in Elementary Science.
National Oceanic and Atmospheric Administration (DOC), Rockville, Md. Office of Coastal Zone Management
Pub Date—Sep 78
Note—85p. For related documents, see SE 034 669 and ED 164 334.
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 (Stock No. 003-019-00041-1; no price quoted)
Pub Type—Guides - Classroom - Teacher (052) — Reference Materials - Bibliographies (131)
EDRS Price - MF01 PC04 Plus Postage.
Descriptors—Earth Science, *Ecology, *Elementary Education, *Elementary School Science, Environmental Education, *Marine Biology, *Oceanography, Outdoor Education, Resource Materials, *Science Education, Science Instruction
Identifiers—*Coastal Zones
Intended to encourage elementary teachers to explore coastal ecology with their students, this guide presents background material, activity suggestions, and recommended resource materials that could be used in designing a week-long unit on Coastal Awareness. Discussed is how various physical processes such as waves, tides, and currents affect sandy beaches, estuaries, rocky shores, and marshes. About 30 related activities are described. Included in the resource materials section are an annotated bibliography and film list, information sources, and Sea Grant institutions. (WB)

ED 200 454 SE 034 669
Rasmussen, Frederick J.
Coastal Awareness: A Resource Guide for Teachers in Junior High Science.
National Oceanic and Atmospheric Administration (DOC), Rockville, Md. Office of Coastal Zone Management
Pub Date—Sep 78
Note—93p. For related documents, see SE 034 668 and ED 164 334.
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 (Stock No. 003-019-00042-0; no price quoted)
Pub Type—Guides - Classroom - Teacher (052) — Reference Materials - Bibliographies (131)
EDRS Price - MF01 PC04 Plus Postage.
Descriptors—Earth Science, *Ecology, Environmental Education, Junior High Schools, *Marine Biology, *Oceanography, Outdoor Education, *Science Education, Science Instruction, *Secondary Education, *Secondary School Science
Identifiers—*Coastal Zones
Background information, activity suggestions, and recommended resource materials comprise this guide for designing a week-long ecology unit for junior high school students on Coastal Awareness. Discussed is how various physical processes such as waves, currents, and tides affect rocky shores, marshes, sandy beaches, and estuaries. To encourage teachers to study coastal ecology with their students, about 30 related indoor and outdoor activities are briefly described. In addition to an annotated bibliography of 160 publications, the resource materials section also lists recommended films, data sources, and Sea Grant institutions. (WB)

ED 201 509 SE 034 854
Dickman, Donna McCord
Sounds Alive: A Noise Workbook.
Metropolitan Washington Council of Governments, Washington, D.C.
Spons Agency—Environmental Protection Agency, Washington, D.C. Office of Noise Abatement and Control
Pub Date—Dec 79
Note—40p.; For related documents, see SE 034 853-855.
Pub Type—Guides - Classroom - Learner (051)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Acoustical Environment, *Acoustics, Community Problems, Elementary Education, *Environmental Education, *Health Education, Physics, *Pollution, Science Education, Social Studies
Identifiers—*Noise (Sound)
Sarah Screech, Danny Decibel, Sweetie Sound and Neil Noisy describe their experiences in the world of sound and noise to elementary students. Presented are their reports, games and charts which address sound measurement, the effects of noise on people, methods of noise control, and related areas. The workbook is intended to stimulate students' interest in and awareness of noise and noise pollution control. (Author/WB)

ED 201 510 SE 034 855
Dickman, Donna McCord
Sounds Alive: A Noise Workbook. Teacher's Guide.
Metropolitan Washington Council of Governments, Washington, D.C.
Spons Agency—Environmental Protection Agency, Washington, D.C. Office of Noise Abatement and Control.
Pub Date—Dec 79
Note—27p.; For related documents, see SE 034 853-854. Contains occasional faint and broken type.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Acoustical Environment, *Activities, Community Problems, Elementary Education, *Environmental Education, *Health Education, Physics, *Pollution, Science Education, Social Studies
Identifiers—*Noise (Sound)
Designed to assist elementary science teachers in stimulating students' interest in noise pollution, this manual provides information which supplements the 'Sounds Alive Student Workbook,' developed for each section of the workbook are discussion questions, experiments, projects and readings. The guide is intended to provide teachers with maximum flexibility in terms of the time they wish to devote to a unit on noise pollution. (Author/WB)

ED 204 182 SE 035 448
Pohlman, Betty And Others
Energy Conservation Activity Packet, K-2. Revised Edition.
Iowa Energy Extension Service, Des Moines; Iowa State Dept. of Public Instruction, Des Moines; Iowa State Energy Policy Council, Des Moines.
Pub Date—80
Note—85p. For related documents, see SE 035 449-452 and ED 146 044-048.
Available from—Iowa Energy Policy Council, State Capital Complex, Des Moines, IA 50319 ($10.00).
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC04 Plus Postage.
Descriptors—*Elementary Education, Energy, *Energy Conservation, Environmental Education, *Instructional Materials, *Natural Resources, Primary Education, Resource Materials, Science Education, Values
This notebook was developed in response to the concern for energy conservation. It contains activities that stress an energy conservation ethic and includes many values clarification activities for grades K-2. The teacher is provided with some background information on energy, an extensive revised teacher's annotated bibliography, and a list of resources. The topic of energy is divided into concepts and objectives, with activities interspersed where appropriate. There are over 40 pages of ditto and transparency masters, two posters, and a game for the teacher's use. Also included is an examination sheet for the teacher to assess the activity packet. (Author)

ED 204 183 SE 035 449
Pohlman, Betty And Others
Energy Conservation Activity Packet, Grade 3. Revised Edition.
Iowa Energy Extension Service, Des Moines; Iowa State Dept. of Public Instruction, Des Moines; Iowa State Energy Policy Council, Des Moines.
Pub Date—80

Note—86p. For related documents, see SE 035 448-452 and ED 146 044-048
Available from—Iowa Energy Policy Council, State Capital Complex, Des Moines, IA 50319 ($10.00 a set)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC04 Plus Postage.
Descriptors—*Elementary Education, Energy, *Energy Conservation, Environmental Education, Grade 3, *Instructional Materials, *Natural Resources, Resource Materials, Science Education, Values

This notebook for grade 3 is one of a series developed in response to the concern for energy conservation. It contains activities that stress an energy conservation ethic and includes many values clarification activities for grade three. The packet is divided into two parts and provides the teacher with background information, concepts and objectives, and activities for each part. Basic goals for the activities involve energy's affect on our lives, available energy sources, and energy conservation. Two annotated bibliographies, one for teachers and the other for students, are also included. The teacher is provided with ditto and transparency master pages to use in the classroom. An evaluation sheet and a list of resources are also a part of this activity packet. Revisions include updated statistics, revised background information, two additional solar activities and a revised bibliography. (Author)

ED 204 184 SE 035 450
Pohlman, Betty And Others
Energy Conservation Activity Packet, Grade 4, Revised Edition.
Iowa Energy Extension Service, Des Moines. Iowa State Dept. of Public Instruction, Des Moines. Iowa State Energy Policy Council, Des Moines.
Pub Date—80
Note—102p. For related documents, see SE 035 448-452 and ED 146 044-048
Available from—Iowa Energy Policy Council, State Capital Complex, Des Moines, IA 50319 ($10.00 a set).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC05 Plus Postage.
Descriptors—*Elementary Education, Energy, *Energy Conservation, Environmental Education, Grade 4, *Instructional Materials, *Natural Resources, Resource Materials, Science Education, Values

This activity notebook for grade 4 is one in a series developed in response to the concern for energy conservation. It contains activities that stress an energy conservation ethic and includes many values clarification activities for grade four. The packet is divided into two parts and provides the teacher with background information, concepts and objectives, and activities for each part. Part one is concerned with energy conservation activities. Two annotated bibliographies, one for teachers and the other for students, are also included. The teacher is provided with pages for duplication. An evaluation form and a list of resources are also a part of this activity packet. Revisions include updated background information, three additional activities involving solar energy and consumption, plus a revised bibliography. (Author)

ED 204 185 SE 035 451
Pohlman, Betty And Others
Energy Conservation Activity Packet, Grade 5, Revised Edition.
Iowa Energy Extension Service, Des Moines. Iowa State Dept. of Public Instruction, Des Moines. Iowa State Energy Policy Council, Des Moines.
Pub Date—80
Note—95p. For related documents, see SE 035 448-452 and ED 146 044-048
Available from—Iowa Energy Policy Council, State Capital Complex, Des Moines, IA 50319 ($10.00 a set).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC04 Plus Postage.
Descriptors—*Elementary Education, Energy, *Energy Conservation, Environmental Education, Grade 5, *Instructional Materials, *Natural Resources, Resource Materials, Science Education, Values

This activity notebook for grade 5 is one of a series developed in response to energy conservation. It contains activities that stress an energy conservation ethic and includes many values clarification activities for grade five. The packet is divided into two parts and provides the teacher with background information, concepts and objectives, and activities for each part. Part one is concerned with fossil fuels and part two with the basics of energy in Iowa. Both sections include energy conservation activities. Two annotated bibliographies, one for teachers and the other for students, are also included. The teacher is provided with ditto and transparency master pages to use in the classroom. An evaluation sheet and a listing of resources are also a part of this activity packet. Revisions include updated background information and statistics, five additional activities involving solar energy and energy in general, plus a revised bibliography. (Author)

ED 204 186 SE 035 452
Pohlman, Betty And Others
Energy Conservation Activity Packet, Grade 6, Revised Edition.
Iowa Energy Extension Service, Des Moines. Iowa State Dept. of Public Instruction, Des Moines. Iowa State Energy Policy Council, Des Moines.
Pub Date—80
Note—99p. For related documents, see SE 035 448-452 and ED 146 044-048
Available from—Iowa Energy Policy Council, State Capital Complex, Des Moines, IA 50319 ($10.00 a set)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Elementary Education, Energy, *Energy Conservation, Environmental Education, Grade 6, *Instructional Materials, *Natural Resources, Resource Materials, Science Education, Values

This activity notebook for grade 6 is one of a series developed in response to the concern for energy conservation. It contains activities that stress an energy conservation ethic and includes many values clarification activities for grade six. The packet is divided into two parts and provides the teacher with background information, concepts and objectives, and activities for each part. Part one is concerned with the limits of energy sources and part two with alternative energy sources. Both sections include energy conservation activities. Two annotated bibliographies, one for teachers and the other for students, are also included. The teacher is provided with ditto and transparency master pages for duplication. An evaluation sheet and a listing of resources are also a part of this activity packet. Revisions include updated background information and statistics, three additional solar and conservation activities plus a revised bibliography. (Author)

ED 206 466 SE 035 507
Barr, Nancy
Sea Animals: A Study Guide for the First Grade. Alaska Sea Week Curriculum Series. Draft.
Alaska Univ., Fairbanks. Alaska Sea Grant Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—Jun 80
Grant—NOAA-NA79AA-D-00138
Note—118p. For related documents, see SE 035 506-512. Contains occasional light and broken type.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—*Animals, Ecology, Elementary Education, *Elementary School Science, *Environmental Education, Field Trips, Grade 1, *Marine Biology, Oceanography, *Outdoor Education, Science Education

Over 40 activities dealing with marine animals comprise this guide for first-grade teachers. By combining meaningful time at the beach with appropriate classroom work, first graders should be able to learn about the habitats, lives, characteristics, and names of some common ocean invertebrates, fish, and mammals. In addition to the lesson plans for indoor and outdoor studies, the manual includes 32 student worksheets which may be duplicated. Also provided are tips on organizing and conducting a field trip, and a bibliography of helpful references. (Author/WB)

ED 206 467 SE 035 508
Kelsey, Claudia Parsons, Mary Beth
Shells: A Study Guide for the Second Grade. Alaska Sea Week Curriculum Series.
Alaska Univ., Fairbanks. Alaska Sea Grant Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—Jun 80
Grant—NOAA-NA79AA-D-00138
Note—125p. For related documents, see SE 035 506-512. Contains occasional light and broken type.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—*Animals, Biology, Ecology, Elementary Education, *Elementary School Science, *Environmental Education, Grade 2, Language Arts, *Marine Biology, Outdoor Education, *Science Education
Identifiers—*Invertebrates

Presented are several elementary school lessons dealing with marine shell-bearing animals. Among the aspects of mollusk biology investigated are anatomy, diversity of form, adaptations, and classification. Learning strategies used include field trips, creative writing exercises, art activities, poetry, and scientific observation. A set of 40 student worksheets is provided, along with tips for organizing a field trip and a list of resource materials. (WB)

ED 206 468 SE 035 509
Hobson, Dan And Others
Glacial and Intertidal Ecology: A Study Guide for the Third Grade. Alaska Sea Week Curriculum Series. Draft.
Alaska Univ., Fairbanks. Alaska Sea Grant Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—Jun 80
Grant—NOAA-NA79AA-D-00138
Note—103p. For related documents, see SE 035 506-512. Contains occasional light and broken type.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—Earth Science, *Ecology, Elementary Education, *Elementary School Science, *Environmental Education, *Geology, Grade 3, *Marine Biology, Oceanography, Outdoor Education, Reading Skills, *Science Education
Identifiers—*Coastal Zones

Two marine science units comprise this manual for teachers of elementary school students. Unit 1, "Shore Communities," involves mapping exercises and other investigations of the ecology of the intertidal zone. Unit 2, "The Glacier," focuses on glacial geology and the relationship of glaciers to the marine environment. Each unit contains several field and classroom activities, and a list of references is provided. Also included are tips for conducting field trips and a set of student worksheets which stress reading skills and vocabulary. (WB)

ED 206 469 SE 035 510
King, James G. King, Mary Lou
Birds: A Study Guide for the Fourth Grade. Alaska Sea Week Curriculum Series. Draft.
Alaska Univ., Fairbanks. Alaska Sea Grant Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—Jun 80
Grant—NOAA-NA79AA-D-00138
Note—152p. For related documents, see SE 035 506-512. Contains occasional light and broken type.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—Animals, *Ecology, Elementary Education, *Elementary School Science, *Environmental Education, Grade 4, *Marine Biology, Outdoor Education, *Science Education, *Vocabulary Skills, Water Resources
Identifiers—*Birds, Estuaries

Southeast Alaska's birds and wetlands are the subject of this elementary school teacher's guide and student workbook. Included are classroom activities and field investigations which address (1) bird iden-

tification, habitats, adaptation, and conservation; and (2) the inhabitants ecology and value of estuaries. Workbook activities involve the development of vocabulary and reading skills using birds and wetlands as subject matter. A list of resource materials and a guide for organizing field trips are included. (WB)

ED 211 358 SE 036 030
Cowal, Michael And Others
Coastal Ecosystems: Project CAPE Teaching Module [with Student Materials].
Dare County Board of Education, Manteo, N.C.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date—Jul 81
Note—119p. Not available in paper copy due to copyright restrictions. Contains colored print in student materials which may not reproduce well.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Activity Units, Biological Sciences, *Ecology, *Elementary School Science, Environmental Education, *Field Trips, Instructional Materials, *Marine Biology, Primary Education, Science Education, Teaching Guides, Water Resources
Identifiers—Coastal Zones, *Marine Education
Intended for grades K-2 this science unit on coastal ecosystems aids teachers in helping students to: (1) identify marine organisms, (2) learn their basic characteristics, and (3) understand the web of interdependence among organisms of the same habitat. The teacher's guide is divided into four sections. The first section gives background information about ecosystems. The second section provides detailed directions on how to collect specific marine plants and animals and includes an application for a permit to collect organisms. The third section explains how to set up and maintain a salt water aquarium, and provides a feeding schedule and list of supply houses, as well as a supplementary booklet for student use. The last section identifies various considerations related to conducting field trips. These include, among others, site selection, scheduling, permission slips, emergency information, clothing, parent volunteers, and equipment. It then outlines specific information for four field sites, including pre- and post-trip activities, investigation procedures, and discussion questions. Student work booklets for each of the trips (pier and jetty, sandy beach, mud flat, and salt marsh) contain pictures of organisms they will collect and questions to answer. (DC)

ED 211 378 SE 036 060
Frost, Karen Stearns, Ed. And Others
K-E-E-P - Kentucky's Energy Education Program activities for the Classroom, K-6.
Kentucky State Dept. of Education, Frankfort, Kentucky State Dept. of Energy), Frankfort
Pub Date—[82]
Note—164p. For related document, see SE 036 061. Funds provided through the Kentucky Energy Conservation Plan.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Conservation Education, Elementary Education, Elementary School Science, *Energy, *Energy Conservation, *Environmental Education, Instructional Materials, *Interdisciplinary Approach, Learning Activities, *Science Activities, Science Education, State Programs
Identifiers—*Energy Education
Seventy-seven multidisciplinary activities for grades K-6 are contained in this revised edition of energy education lessons for Kentucky students. Section I introduces students to the topic of energy by emphasizing human interaction with the environment. It focuses on personal energy, food as the source of human energy, food chains, and the sun as the ultimate source of energy. Section II explores various types of energy sources available for human use and emphasizes renewable sources of energy. Students are encouraged to build and make workable models for demonstration. The last section focuses on ways in which people waste energy and the need to conserve and share limited natural resources. Each activity identifies the concept being taught, subject areas, materials, and procedure. Many indicate adaptations for other disciplines. The booklet is illustrated and contains student worksheets and a bibliography. (Author/DC)

ED 216 906 SE 037 890
Caldwell, Nadine May, Charlaron
Navigation - Project CAPE Teaching Module.
Dare County Board of Education, Manteo, N.C.
Pub Date—Mar 82
Note—88p.
Available from—Project CAPE, Dare County School Board, P.O. Box 640, Manteo, NC 27954.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Elementary Education, *Elementary School Science, Environmental Education, Interdisciplinary Approach, *Learning Activities, *Navigation, Oceanography, Resource Units, *Science Activities, *Science Curriculum, Science Education, Seafarers, *Social Studies, Units of Study
Identifiers—*Marine Education
Ten lessons are included in this interdisciplinary unit on navigation, designed to supplement fifth and sixth grade social studies and science curricula. Each lesson includes: (1) lesson concepts; (2) competency goals; (3) objectives; (4) materials; (5) list of key vocabulary words; (6) background information; (7) teacher preparation; (8) list of student activities; (9) questions for students to answer, and (10) a short bibliography. Activities are designed to foster inquiry, manipulative, creative organizational, communicative, and measurement skills and to enable students to develop a better understanding of: (1) their maritime heritage; (2) some problems navigators faced in the 16th and 17th centuries; (3) the history and development of navigational instruments; and (4) the importance of celestial navigation. A packet of materials to be duplicated for student use is included. (JN)

ED 216 907 SE 037 892
Longe, Karen M. McClelland, Michael J
Solar Spots - Activities to Introduce Solar Energy into the K-8 Curricula.
Michigan State Dept. of Commerce, Lansing.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—[82]
Grant—DE-FG45-76CS60204
Note—104p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—*Elementary School Science, Elementary Secondary Education, Environmental Education, *Learning Activities, *Power Technology, *Science Activities, Science Education, Secondary School Science, *Solar Radiation, *Wind (Meteorology), Wind Energy
Identifiers—*Energy Education
Following an introduction to solar technology which reviews solar heating and cooling, passive solar systems (direct gain systems, thermal storage walls, sun spaces, roof ponds, and convection loops), active solar systems, solar electricity (photovoltaic and solar thermal conversion systems), wind energy, and biomass, activities to introduce solar energy into the elementary school curriculum are presented in four sections: (1) sun and seasons - an introduction to properties of sunlight and relationship of sun and earth; (2) role of solar energy and conservation, how solar energy fits into the energy mix, and importance of conservation; (3) solar experiments, designed to foster an understanding of solar energy, its collection, and use; and (4) wind experiments. Each activity includes context (grade level and subject area), time required, overview, materials needed, advanced preparation, student outcomes, and extension activities. A selected list of resources, glossary of key vocabulary words, and student questionnaire for evaluating the activities are included. (JN)

ED 219 234 SE 038 269
Sparrow, Mary E. And Others
Fishy Activities for Your Small Fry. A Unit Plan in Fish Biology for Grades Kindergarten through Sixth. Educational Series Number 28.
Virginia Inst. of Marine Science, Gloucester Point, Va.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—[82]
Grant—NA-80AA-D-00021
Note—42p.
Available from—Sea Grant Marine Advisory Services, Marine Education Center, Virginia Institute of Marine Science, Gloucester Point, VA 23062 ($2.00).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Biological Sciences, Elementary Education, *Elementary School Science, Environmental Education, *Ichthyology, *Learning Activities, Marine Biology, *Science Activities, Science Curriculum, Science Education, Teaching Guides, Units of Study
Identifiers—*Marine Education
This unit in fish biology is suitable for kindergarten through sixth grade. Provided in the unit are: (1) behavioral objectives for grades K-3 and 4-6, (2) an overview of activities and instructional strategies, (3) background information on fishes, (4) diagrams of internal/external fish structure; (5) list of key vocabulary words, (6) discussion of skill building (observing and inferring); (7) 4 worksheets for grades 4-6; (8) description of 22 supplementary activities, (9) seek-and-find puzzle, (10) crossword puzzles (one for grades 2-3 and one for grades 4-6); (11) post-tests for grades 2-3 and 4-6, (12) sources and materials (student references and teacher references/references used in preparing this packet, including publications, audio-visual materials, aquarium equipment suppliers, marine life suppliers, and local resources such as seafood restaurants, local fishermen, and bait/tackle shops); and (13) answers to seek-and-find puzzle, crossword puzzles, and post-tests. (JN)

Middle/Secondary

ED 046 781 SE 010 745
Junior Biology) Populations.
Hamilton City Board of Edueation (Ontario)
Pub Date [70]
Note—51p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Biology, Ecology, Environmental Education, *Instructional Materials, *Learning Activities, Population Distribution, *Population Growth, *Secondary School Science, Student Research
Twenty-one studies related to populations are included in this student manual for a junior high school biology course Each activity or study provides questions, diagrams, experiments, and or descriptive material to which the student must respond Population studies pertain to individual plants and animals, their physical environments, reactions between species, and their interrelationships. (BL)

ED 082 978 SE 016 651
Nurnberger, Robert G
An Air Pollution Resource Manual for Junior High School and High School Teachers.
State Univ of New York Albany Research Foundation
Spons Agency—National Science Foundation, Washington, D C
Pub Date Aug 71
Note—360p
EDRS Price MF-$0.65 HC-$13.16
Descriptors—*Air Pollution Control, *Environmental Education, Humannies, Instructional Materials, Lesson Plans, Manuals, Resource Units, Sciences, *Secondary Grades, Social Sciences, *Teaching Guides
This manual was conceived and developed by a team of teachers and subject matter experts from diverse areas and planned as a resource for teachers at the middle school and high school levels who are concerned with air pollution. Not intended as a syllabus or student text, it offers information and sample exercises which may be incorporated into a variety of subject areas together with data, charts, and illustrations which may be useful in classroom situations. The manual is essentially in four sections (1) basic background in the scientific and societal origins of the problem of air pollution (scientific—composition and structure of the atmosphere, thermal energy and its effects, physical processes, local topographic effects, effects of cities, and interacting atmospheric subsystems, societal-historical perspectives system of relations among individuals, long range consequences, change and adaptation and impetus for solutions), (2) treatment of the nature and scope of man's activities which contribute to air pollution, including primary industries process industries, transportation, service industries governmental activities, community activities, and recreational activities, (3) sample exercises in the sciences, social sciences, and humanities, and (4) bibliography Each section is treated comprehensively. (BL)

ED 099 214 95 SE 018 277
Edwards, William C Larson, Robert J
Environmental Activities, Junior High School.
Laramie County School District 1, Cheyenne, Wyo
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date 73
Note—94p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, Ecology, Educational Programs, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Junior High Schools, *Learning Activities, Lesson Plans, Natural Resources, Outdoor Education, Program Development, Science Education
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This guide, for use at the junior high level, is aimed at helping our youth become more knowledgeable concerning the environment and associated problems, thus making them aware of how to solve these problems and motivating them to work toward their solution. Among the subjects discussed are art in nature, erosion, body pollution, water pollution, finding edible plants for food, outdoor cooking, noise pollution, television and the ecology image, cemeteries, watersheds, recycling, natural dyes, and aesthetics Each learning activity includes behavioral objectives, directions to the teacher and students, materials needed, references, and a listing of related audiovisual materials This guide is designed to help teachers effectively implement environmental education into the classroom. (BT)

ED 099 229 88 SE 018 432
Junglas, Mary R And Others
Environmental Learning Experiences: Bio-Physical, Junior High School.
Willoughby-Eastlake School District, Willoughby, Ohio
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C.
Pub Date 74
Note—97p
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, Environment, *Environmental Education Instructional Materials, Junior High School Students, Learning Activities, Natural Resources, *Sciences, *Secondary Education, *Secondary School Science, Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This environmental education curriculum guide was developed for teacher use at the junior high school level Although the guide deals with the bio-physical aspects of the environment, it is designed to encourage an integration of the disciplines into an inter-disciplinary approach. The volume consists of a set of ideas, activities, and opinions which will help teachers and students generate a positive approach to the environment The guide is divided into the following six units Earth Thoughts, which deals with value clarification, Quality of Life, which examines the quality of environmental components, Environmental Inventory, which presents methods for conducting an environmental inventory and analysis, Environmental Management, which identifies procedures used to monitor, control, and change the environment, Community Problems, which suggests steps for investigating community environmental problems, and Futurism, an activity oriented unit, which involves students in creative thinking and problem solving Each unit contains an introduction, stating the purpose and background, instructional objectives, experiences, and references The experiences of each unit are based on objectives which relate to the subject of the unit Several activities, which reflect and reinforce the objective, are included in each experience (TK)

ED 099 231 88 SE 018 434
Junglas, Mary R. And Others
Environmental Learning Experiences: Socio-Cultural, Junior High School.
Willoughby-Eastlake School District, Willoughby, Ohio
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 74
Note—74p
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, Environment, *Environmental Education, *Instructional Materials, Junior High School Students, Learning Activities, Natural Resources, *Secondary Education, *Sociocultural Patterns, Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This environmental education curriculum guide was developed for teacher use at the junior high school level Although the guide deals with the socio-cultural aspects of the environment, it is designed to encourage an integration of the disciplines into an inter-disciplinary approach The volume consists of a set of ideas, activities, and opinions which will help teachers and students generate a positive approach to the environment. The guide is divided into the following seven units: Earth Thoughts, which examines various viewpoints of man's relationship to the environment, Quality of Life, which encourages the student to examine and evaluate his life goals, Environmental Inventory, which deals with the processes of research, observation, evaluation and organization; Environmental Management, which examines how one's community deals with concerns related to environmental management, Environmental Politics, which looks at environmental realities, Community Problems, which examines the functions of a community and its problems; and Futurism, which considers the stress of technological change Each unit contains an introduction, stating the purpose and background, instructional objectives, experiences and references The experiences of each unit are based on an objective which relates to the subject of the unit. Several activities are included in each experience. (TK)

ED 103 238 SE 018 519
Fish and Water Temperature, An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis, National Wildlife Federation, Washington, D C
Pub Date 71
Note—24p., Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79070, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—Elementary Grades, *Environmental Education, Instructional Materials, Intermediate Grades, Investigations, Junior High Schools, *Learning Activities, Natural Resources, *Physiology, *Science Education, Secondary Grades, *Teaching Guides, Temperature
Identifiers—Fish
This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires minimal teacher preparation. The philosophy of this series is based on an experience-oriented process that encourages self-paced independent student work. This particular unit illustrates the interrelationship between living things and their environment. The activities are concerned with the effects of water temperature on fish Students learn to make observations, collect data, and use graphs to interpret information The unit is designed for students in grades 4-9 Additional, more sophisticated investigations are included at the end of the materials Materials, directions, and background information are included for the teacher's convenience. A short bibliography for students and teachers is provided. (MA)

ED 103 239 SE 018 520
Genetic Variation, An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc, Minneapolis; National Wildlife Federation, Washington, D C
Pub Date 72
Note—25p., Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No 79123, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—Elementary Grades, *Environmental Education, Instructional Materials, Intermediate Grades, Investigations, Junior High

Schools. *Learning Activities. Natural Resources. Population Education. *Science Education. *Secondary Grades. *Teaching Guides

This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires very little teacher preparation. The philosophy of this series is based on an experience-oriented process that encourages self-paced independent student work. In this unit, students explore possible explanations for diversity within populations. The activities are divided into two sections, the first being concerned with the human populations, and the second with seed populations. Students are asked to make observations of variability in physical characteristics of classmates and to develop hereditary patterns by constructing a family tree. Observations of physical characteristics of seeds and their distribution are also included. This unit is designed for students in grades 4-9. It includes a list of materials needed, background teacher information, directions, additional topics, and short teacher and student bibliographies. (MA)

ED 103 251 SE 018 532

Stream Profiles. An Environmental Investigation.

Minnesota Environmental Sciences Foundation, Inc., Minneapolis; National Wildlife Federation, Washington, D.C.

Pub Date 72

Note—16p.; Related documents are SE 018 514-534

Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79203, $1.00)

EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE

Descriptors—*Ecology, Elementary Grades, *Environmental Education, *Field Studies, Instructional Materials, Intermediate Grades, Investigations, Junior High Schools, *Learning Activities, Natural Resources, Outdoor Education, *Science Education, Secondary Grades, Teaching Guides

Identifiers—*Streams

This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires minimal teacher preparation. The philosophy of the units is based on an experience-oriented process that encourages self-paced independent student work. In this unit, students construct a stream profile based on information collected at a portion of a local stream. Teams of three, working ten feet apart, are responsible for recording data on temperature, elevation, type of stream bottom, and plants and animals in the section. The data are then combined with the rest of the class and the profile drawn. Students are prompted to note patterns described by the stream profile and to relate that information to other similar streams. For teachers, the unit includes directions for building the equipment needed, ways of organizing a field trip to the stream area, methods of collecting and recording data, and questions for discussion. The activities can be used with students in grades 4-9. (MA)

ED 106 088 SE 018 507

Marine Ecology Research Resource Units, Grades 7-9, Draft.

Contra Costa County Dept. of Education, Pleasant Hill, Calif.

Pub Date Sep 74

Note—178p.

EDRS Price MF-$0.76 HC-$9.51 PLUS POSTAGE

Descriptors—Earth Science, *Ecology, Environmental Education, *Learning Activities, *Oceanology, Outdoor Education, *Science Education, *Secondary Education, Teacher Developed Materials

Identifiers—California, Elementary Secondary Education Act Title III, ESEA Title III

Project Marine Ecology Research (MER) is an ecological unit designed to involve secondary students in the study of the marine biome. The teachers are also involved with MER through in-service participation and materials preparation. The unit is designed to be investigated within the existing science curriculum. Specifically, the activities concern the study of the San Francisco Bay area--its geology, geography, climate and weather, wave and tide action, and currents. Each of the four activity sections are arranged similarly. The introduction includes background information for the teacher and a list of educational objectives. The appendix contains the activities as well as charts, maps, statistics, and other pertinent information. Each section ends with a bibliography. (MA)

ED 127 161 SE 021 181

A Teacher's Introduction to Energy and Energy Conservation: Secondary.

Battelle Memorial Inst., Columbus, Ohio. Center for Improved Education; Ohio State Dept. of Education, Columbus.

Spons Agency—Office of Education (DHEW), Washington, D.C.

Pub Date 75

Note—97p.; For related document, see SE 021 180. Photographs may not reproduce well

Available from—Division of Education Redesign and Renewal, Ohio Dept. of Education, 65 South Front St., Columbus, Ohio 43215 (no price quoted)

EDRS Price MF-$0.83 HC-$4.67 Plus Postage.

Descriptors—Curriculum, *Energy, *Energy Conservation, Instructional Materials, *Physics, Science Education, Secondary Education, *Secondary School Science, *Teaching Guides

Identifiers—*Ohio

This document is intended to give the secondary school teacher background information and general suggestions for teaching units and correlated learning activities related to energy and energy conservation. Sections are directed to A Problem Shared by All, Causes, What is Energy?, Energy Sources, Searching for Solutions, Conservation: An Ethic for Everyone, a glossary, and an extensive bibliography. (MH)

ED 128 185 SE 020 976

Ferreira, Rosemary C.

ECOLOGY (Earth's Cycle of Life: Operational Geosphere Study).

Pub Date [Apr 76]

Note—80p.; Not available in hard copy due to marginal legibility (light and broken type) throughout original document

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Curriculum, *Ecology, *Environmental Education, Interdisciplinary Approach, *Program Descriptions, Science Education, Science Materials, Secondary Education, *Secondary School Science, *Units of Study (Subject Fields)

Presented is an environmental science interdisciplinary learning program designed for use on the junior high or senior high school level. It includes learning activities coordinated with behavioral objectives as well as an Ecology Game. The program is composed of seven modules, each of which deals with an element of the science of ecology. The modules are subdivided into sequences and units, each addressing specific ecological concepts. The instructional approach employed is founded on the use of process oriented learning activities built around cognitive, psychomotor and affective behavioral objectives. The learning activities include laboratory investigations, role playing, literature research, class field trips, as well as games. (Author/EB)

ED 141 145 SE 022 667

Where Have All the Menhaden Gone? A Learning Experience for Coastal and Oceanic Awareness Studies, No. 209. [Project COAST].

Delaware Univ., Newark. Coll. of Education

Spons Agency—Office of Education (DHEW), Washington, D.C.

Pub Date 74

Note—27p.; For related documents, see SE 022 662-687. Contains occasional light type

EDRS Price MF-$0.83 HC-$2.06 Plus Postage.

Descriptors—Elementary School Science, *Elementary Secondary Education, *Instructional Materials, *Marine Biology, *Oceanology, *Population Trends, Secondary School Science, *Teaching Guides, Units of Study

Identifiers—*Fish, Project COAST

This unit focuses on the concept that populations of marine organisms are unevenly distributed. It is designed for upper elementary and secondary school students and will take 6-10 class periods. Students become involved in identifying various causes of the uneven distribution of marine populations, especially that of the menhaden population. Because no conclusive evidence is given that supports any one cause of the decline, the students are faced with the dilemma that there are no actual answers to the problems. Included in the unit are student materials, teaching suggestions, transparency masters, evaluation materials, and selected references. (RH)

ED 173 159 SE 028 402

Tullock, Bruce, Ed. And Others

Solar Energy Project. Activities: Junior High Science.

Department of Energy, Washington, D.C.; New York State Education Dept., Albany. Bureau of Science Education.; State Univ. of New York, Albany. Atmospheric Science Research Center

Report No.—DOE/ES-0062

Pub Date—Jan 79

Note—114p.; For related documents, see SE 028 406-413

Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock Number 061-000-00228-6, $2.75)

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—Class Activities, *Energy, Environmental Education, Junior High Schools, *Lesson Plans, *Science Curriculum, *Science Education, Science Experiments, *Secondary Education, *Solar Radiation, Technological Advancement, Technology

Identifiers—Energy Education, *Solar Energy

This guide contains lesson plans and outlines of science activities which present concepts of solar energy in the context of the junior high science curriculum. Each unit presents an introduction, objectives, skills and knowledge needed, materials, methods, questions, recommendations for further work, and a teacher information sheet. The teacher information sheet presents the target grade levels, the areas of science involved in the lesson, background information, hints on gathering materials, suggested time allotment, suggested approach, typical results, precautions, modifications and evaluation. (RE)

ED 179 793 CE 023 548

O'Brien, Alexander

Collecting Solar Energy. Solar Energy Education Project.

Howell Township Board of Education, N.J.

Spons Agency—New Jersey State Dept. of Education, Trenton. Div. of Vocational Education.

Pub Date—[79]

Note—15p.; Diagrams in this document may not reproduce well. For related documents see CE 023 547-550

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC01 Plus Postage.

Descriptors—Career Awareness, *Energy, Junior High Schools, Learning Activities, Learning Modules, Scientific Concepts, *Solar Radiation

This solar energy learning module for use with junior high school students offers a list of activities, a pre-post test, 100 titles, basic solar energy vocabulary, and diagrams of solar energy collectors and installations. The purpose is to familiarize students with applications of solar energy and titles of jobs where this knowledge could be applied. (CP)

ED 179 794 CE 023 549

Conover, Mary Ann

Solar Energy and Reference Skills. Solar Energy Education Project.

Howell Township Board of Education, N.J.

Spons Agency—New Jersey State Dept. of Education, Trenton. Div. of Vocational Education.

Pub Date—[79]

Note—10p.; For related documents see CE 023 547-550

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC01 Plus Postage.

Descriptors—Class Activities, *Energy, *Group Activities, Junior High Schools, *Language Arts, Learning Modules, Library Skills, Scientific Concepts, *Solar Radiation, *Student Research

This language arts learning module offers a struc-

ture to teachers for leading junior high school class activities to investigate solar energy, its origin, and effect. The module furnishes a pre-post test, a schedule for library and research work, a basic vocabulary list, and a bibliography. (CP)

ED 182 110 SE 029 397
Bernstein, Leonard, Ed.
Environmental Science, Grade 9, Experimental Curriculum Bulletin.
New York City Board of Education, Brooklyn, N Y Div. of Curriculum and Instruction
Pub Date—79
Note—385p; Not available in hard copy due to copyright restrictions. Contains numerous light and broken type. Best copy available
Available from—Board of Education of the City of New York, Publication Sales Office, 110 Livingston St., Brooklyn, NY 11201 ($6.50, make checks payable to Auditor Board of Education)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Curriculum, *Environmental Education, *Grade 9, *Instructional Materials, Interdisciplinary Approach, Junior High Schools, Learning Activities, Science Curriculum, Science Education, Science Instruction, *Secondary Education, *Urban Schools
This is the teacher's guide for the required, interdisciplinary, ninth-year environmental science course for the New York City Schools. One hundred twenty lesson plans, divided into nine units, are presented. Areas of study include the living and non-living environment, ecosystems, population, urban ecology, energy and technology, pollution, and environmental analysis. Individual lessons are conceptualized and process oriented. Each lesson contains enrichment material for investigating areas of interest. Student laboratory worksheets and data sheets are included. The appendices contain suggested field trip sites, student projects, selected student and teacher references, resource organizations, career information, and sources of audio-visual materials. (BT)

ED 182 132 SE 029 773
Hunt, Pete And Others
Idaho Energy Conservation Resource Guide for Health Education, Grades 7-12.
Idaho State Dept. of Education, Boise., Idaho State Office of Energy, Boise
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Feb 79
Note—29p.; For related documents, see SE 029 772-778. Printed on colored background
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Depleted Resources, *Energy Conservation, Environment, *Environmental Education, *Health Education, Natural Resources, *Resource Guides, *Secondary Education, Social Values, *Teaching Guides
This manual is a resource guide on energy conservation for the teaching of health education. It contains 12 student activities which are grouped into four goal oriented units. The main objectives of the project are to increase the student's understanding that: (1) Natural laws limit energy availability, (2) Energy consumption affects both man and his environment, (3) Human values and attitudes affect energy usage; and (4) Energy consumption is necessary to maintain our life style. (SB)

ED 182 133 SE 029 774
Briggs, John And Others
Idaho Energy Conservation Resource Guide for Mathematics, Grades 7-12.
Idaho State Dept. of Education, Boise., Idaho State Office of Energy, Boise
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Feb 79
Note—35p.; For related documents, see SE 029 772-778. Printed on colored background
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Depleted Resources, *Energy Conservation, Environment, *Environmental Education, *Mathematics, Mathematics Education, Natural Resources, *Resource Guides, *Secondary Education, Social Values, *Teaching Guides
This manual is a resource guide on energy conservation for teaching mathematics from grades seven to twelve. It contains 25 student activities which are grouped into four goal oriented units. The main objectives of the project are to increase the student's understanding that: (1) Natural laws limit energy availability, (2) Energy consumption affects both man and his environment, (3) Human values and attitudes affect energy usage, and (4) Energy consumption is necessary to maintain our life style. (SB)

ED 182 135 SE 029 776
Higdem, Mary And Others
Idaho Energy Conservation Resource Guide for Science, Grades 7-12.
Idaho State Dept. of Education, Boise., Idaho State Office of Energy, Boise.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Feb 79
Note—31p.; For related documents, see SE 029 772-778. Printed on colored background.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Depleted Resources, *Energy Conservation, Environment, *Environmental Education, Natural Resources, *Resource Guides, *Science Activities, Sciences, *Secondary Education, Social Values, *Teaching Guides
This manual is a resource guide on energy conservation for teachers of science students from grades seven to twelve. It contains 12 student activities which are grouped into four goal oriented units. The main objectives of the project are to increase the student's understanding that: (1) Natural laws limit energy availability, (2) Energy consumption affects both man and his environment; (3) Human values and attitudes affect energy usage, and (4) Energy consumption is necessary to maintain our lifestyle. (SB)

ED 182 137 SE 029 778
Carter, Lee And Others
Idaho Energy Conservation Resource Guide for Industrial Arts Education.
Idaho State Dept. of Education, Boise.; Idaho State Office of Energy, Boise.; Idaho Univ., Moscow.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—79
Note—145p.; For related documents, see SE 029 772-777. Contains light and broken type.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC06 Plus Postage.
Descriptors—*Class Activities, *Energy, *Energy Conservation, Fuel Consumption, Fuels, Heating, *Industrial Arts, Interdisciplinary Approach, Mathematics Education, *Science Education, Secondary Education, Solar Radiation
This resource guide was prepared to assist teachers in incorporating energy concerns within the school curriculum. It is intended to provide a basic framework of objectives for different subject areas and to provide examples of activities for teaching towards the stated objectives. Resources are listed to aid the teacher in developing additional activities. The resource guide is based on the assumption that its contents will provide a starting point and that teachers will go further in devising lessons in energy instruction. (Author)

ED 186 282 SE 030 761
Energy Systems - Present, Future: Extra Terrestrials, Grades 7, 8, 9./Science.
National Science Teachers Association, Washington, D.C.
Spons Agency—Department of Energy, Washington, D.C. Office of Consumer Affairs.
Report NO.—DOE/CA/06083-03
Pub Date—Apr 80
Contract—EC-77-C-01-6083
Note—139p.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—*Curriculum Development, *Energy, Energy Conservation, Fuel Consumption, Instructional Materials, Nuclear Physics, *Science Curriculum, *Science Education, Secondary Education, Secondary School Science, Solar Radiation, *Systems Approach, *Technological Advancement
Identifiers—*Energy Education
The 12 lessons presented in this guide are structured so that they may be integrated into science lessons in 7th-, 8th-, or 9th-grades. Suggestions are made for extension of study. Lessons are approached through classroom role-playing of outer space visitors who seek to understand energy conversion principles used on Earth. Major emphasis is placed on energy flow-through systems. Energy alternatives for the future are also examined. (Author/RE)

ED 190 360 SE 031 304
Bonar, John R., Ed. Hathway, James A., Ed.
Probing the Natural World, Level III, Student Guide: Environmental Science, Intermediate Science Curriculum Study.
Florida State Univ., Tallahassee. Dept. of Science Education.
Spons Agency—National Science Foundation, Washington, D.C.; Office of Education (DHEW), Washington, D.C.
Pub Date—72
Note—160p. For related documents, see SE 031 300-330, ED 035 559-560, ED 049 032, and ED 052 940. Contains photographs and colored and shaded drawings and print which may not reproduce well
Pub Type—Guides - Classroom - Learner (051)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—Environmental Education, Grade 9, *Individualized Instruction, Industry, Instructional Materials, Junior High Schools, *Laboratory Manuals, Laboratory Procedures, Natural Resources, *Science Activities, Science Course Improvement Projects, Science Education, Secondary Education, Secondary School Science, *Water Pollution
Identifiers—*Intermediate Science Curriculum Study
This is the student's edition of one of the Intermediate Science Curriculum Study (ISCS) units for level III students (grade 9). The chapters contain basic information about environmental pollution and hazards, activities related to the subject, and optional excursions. A section on introductory notes to the student discusses how to use the book and how the class will be organized. Data tables and empty spaces within the workbook format indicate where responses are expected. Illustrations accompany all instructions and the students are encouraged to select the proper equipment based on the illustrations. (SA)

ED 190 361 SE 031 305
Bonar, John R., Ed. Hathway, James A., Ed.
Probing the Natural World, Level III, Teacher's Edition, Environmental Science, Intermediate Science Curriculum Study.
Florida State Univ., Tallahassee. Dept. of Science Education.
Spons Agency—National Science Foundation, Washington, D.C.; Office of Education (DHEW), Washington, D.C.
Pub Date—72
Note—168p. For related documents, see SE 031 300-330, ED 035 559-560, ED 049 032, and ED 052 940. Contains photographs and colored and shaded drawings and print which may not reproduce well
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—Environmental Education, Grade 9, *Individualized Instruction, Industry, Instructional Materials, Junior High Schools, Laboratory Manuals, Laboratory Procedures, Natural Resources, *Science Activities, Science Course Improvement Projects, Science Education, Secondary Education, Secondary School Science, *Water Pollution
Identifiers—*Intermediate Science Curriculum Study
This is the teacher's edition of one of the eight units of the Intermediate Science Curriculum Study (ISCS) for level III students (grade 9). This unit and its activities focuses on environmental pollution and hazards. Optional excursions are suggested for students who wish to study an area in greater depth. An introduction describes the problem of air pollution, pesticides, water pollution, and population increases. Illustrations accompany the text. (SA)

ED 190 362 SE 031 306
Bonat, John R., Ed Hathway, James A., Ed.
Probing the Natural World, Level III, Record Book, Student Guide: Environmental Science. Intermediate Science Curriculum Study.
Florida State Univ., Tallahassee. Dept. of Science Education.
Spons Agency—National Science Foundation, Washington, D.C., Office of Education (DHEW), Washington, D.C.
Pub Date—72
Note—78p., For related documents, see SE 031 300-330, ED 035 559-560, ED 049 032, and ED 052 940
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Environmental Education, Grade 9, *Individualized Instruction, Industry, Instructional Materials, Junior High Schools, *Laboratory Manuals, Laboratory Procedures, Natural Resources, Records (Forms), *Science Activities, Science Course Improvement Projects, Science Education, Secondary Education, Secondary School Science, Worksheets
Identifiers—*Intermediate Science Curriculum Study
This is the student's edition of the Record Book which accompanies the unit "Environmental Science" of the Intermediate Science Curriculum Study (ISCS) for level III students (grade 9). Space is provided for answers to the questions from the student's text as well as for the optional excursions and the self evaluation. An introductory note to the student explains how to use the book. (SA)

ED 190 363 SE 031 307
Bonat, John R., Ed Hathway, James A., Ed.
Probing the Natural World, Level III, Record Book, Teacher's Edition: Environmental Science. Intermediate Science Curriculum Study.
Florida State Univ., Tallahassee. Dept. of Science Education
Spons Agency—National Science Foundation, Washington, D.C., Office of Education (DHEW), Washington, D.C.
Pub Date—72
Note—79p., For related documents, see SE 031 300-330, ED 035 559-560, ED 049 032, and ED 052 940. Contains colored print which may not reproduce well.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Answer Sheets, Environmental Education, Grade 9, Individualized Instruction, Industry, Instructional Materials, Junior High Schools, *Laboratory Manuals, Laboratory Procedures, *Natural Resources, Records (Forms), *Science Activities, Science Course Improvement Projects, Science Education, Secondary Education, Secondary School Science
Identifiers—*Intermediate Science Curriculum Study
This is the teacher's edition of the Record Book for the unit "Environmental Science" of the Intermediate Science Curriculum Study (ISCS) for level III students (grade 9). The correct answers to the questions from the student text are recorded. An introductory note to the teacher explains how to use the book. Answers are included for the activities and excursions. A self evaluation section is followed by its answer key. (SA)

ED 194 306 SE 032 958
Hunt, John D., Ed.
Marine Organisms in Science Teaching.
Texas A and M Univ., College Station. Sea Grant Coll. Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Report No—TAMU-SG-80-403
Pub Date—Sep 80
Grant—NA79AA-D-00127
Note—198p.
Available from—Marine Information Service, Sea Grant College Program, Texas A&M University, College Station, TX 77843 (Order No. TAMU-SO-80-403; $4.00)
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01/PC08 Plus Postage.
Descriptors—Biology, Elementary Secondary Education, *Inquiry, *Laboratory Experiments, *Marine Biology, Oceanography, *Science Activities, Science Curriculum, Science Education
This collection of student activities for grades four through twelve presents action-oriented experiences with hardy aquatic organisms as the foundation for a laboratory-oriented science program. The format is characterized by pre-lab, post-lab, and student sections. Pre-lab topics include level, concepts, facts, suggested prerequisite skills, student performance objectives, materials, time, cautions, and definition of terms. The teacher's post-lab section includes possible answers to questions, discussion, evaluation, follow-up experiences, and references. Student sections, appropriate for copying, contain general information, objectives, materials, student discovery activities, and processes (CS)

ED 198 011 SE 034 398
Mauldin, Lundie Frankenberg, Dirk
North Carolina Marine Education Manual, Unit Two: Seawater.
North Carolina State Univ., Raleigh. Sea Grant Coll.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program., North Carolina State Dept of Administration, Raleigh.
Report No—UNC-SG-78-14-B
Pub Date—Aug 78
Grant—NOAA-04-6-158-44054
Note—90p., For related documents, see SE 034 397-401.
Available from—UNC Sea Grant, 105 1911 Building, North Carolina State Univ., Raleigh, NC 27607 ($1.50).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Earth Science, Environmental Education, Geology, Junior High Schools, *Oceanography, Physics, *Science Education, Science Instruction, Secondary Education, *Secondary School Science, *Water Resources
Identifiers—Coastal Zones, Waves
Although North Carolina's coastal water is chemically and physically similar to other bodies of sea water, the specific manner in which tides and waves act upon the coastline is unique. Accordingly, the 30 activities presented in this manual are intended to help junior high school students understand how physical forces modify coastal areas. While some lessons relate specifically to North Carolina, the majority address more general concepts of salinity, density, nutrient content, tidal forces, and wave motion. Each section contains background reading, vocabulary, 4 to 14 activities, and information on films, books, and other related resources. Also provided are a table depicting the relationship between the activities and state curriculum guidelines, and a summary of this unit's goals and behavioral objectives. The manual is one of a collection developed by North Carolina teachers and university faculty under a Sea Grant project entitled "Man and the Seacoast." (WB)

ED 198 012 SE 034 399
Mauldin, Lundie Frankenberg, Dirk
North Carolina Marine Education Manual, Unit Three: Coastal Ecology.
North Carolina State Univ., Raleigh. Sea Grant Coll.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program; North Carolina State Dept. of Administration, Raleigh.
Report No—UNC-SG-78-14-C
Pub Date—Aug 78
Grant—NOAA-04-6-158-44054
Note—114p., For related documents, see SE 034 397-401.
Available from—UNC Sea Grant, 105 1911 Building, North Carolina State Univ., Raleigh, NC 27607 ($1.50).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—Biology, *Ecology, *Environmental Education, Junior High Schools, *Marine Biology, Outdoor Education, *Science Education, Science Instruction, Secondary Education, *Secondary School Science
Two dozen activities on the ecology of coastal areas with special emphasis on North Carolina's coastline comprise this manual for junior high school science teachers. Provided are a table correlating these lessons with state curriculum guidelines, and a summary of the unit's goals and behavioral objectives. Among the topics included are coastal habitats, fish, plankton, intertidal organisms and food-chains. Each section contains background information, vocabulary, 2 to 12 activities, and a list of films, books, and other related resources. This manual is one of a collection produced by North Carolina teachers and university faculty under the "Man and the Seacoast" project funded by Sea Grant. (WB)

ED 199 114 SE 034 682
Simonis, Doris G.
Iowa Developed Energy Activity Sampler (IDEAS), Grades 7-12: Science.
Iowa Energy Policy Council, Des Moines, Iowa State Dept of Public Instruction, Des Moines
Pub Date—80
Note—313p. For related documents see SE 034 677-683. Pages 328, 377-380, 429-432, 468-474, 485 removed due to copyright restrictions. Pages 19-172 contain the introduction which is the same for all modules. They have been removed and made into a separate document - SE 034 676
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC13 Plus Postage.
Descriptors—*Energy, Energy Conservation, *Environmental Education, Fused Curriculum, Futures (of Society), Physics, *Science Education, *Science Instruction, *Secondary Education, *Secondary School Science, Technology
Presented is the Science component of the Iowa Developed Energy Activity Sampler (IDEAS), a multidisciplinary energy education program designed for infusion into the curriculum of grades 7-12. Also contained in the program are activity sets for Home Economics (SE 034 679), Industrial Arts (SE 034 678), Language Arts (SE 034 680), Mathematics (SE 034 681), and Social Studies (SE 034 683). Contained in this manual are the 55 student-centered activities from the complete IDEAS curriculum that relate to secondary science. Topics of the lesson include energy flow, thermodynamics, energy limits, alternative energy sources, life styles, and insulation. Activities are arranged under six concepts: (1) Energy is basic, (2) Energy usefulness is limited, (3) The environment is affected by energy exchanges, (4) Energy choices affect society, (5) Conservation and (6) The future is ours to shape and share. Lesson plans include discussion questions and background information, and they are visually illustrated with charts, diagrams, or drawings. (Author/WB)

ED 201 508 SE 034 853
Dickman, Donna McCord
Preparing for a Quieter Tomorrow.
Metropolitan Washington Council of Governments, Washington, D.C.
Spons Agency—Environmental Protection Agency, Washington, D.C. Office of Noise Abatement and Control.
Pub Date—May 80
Note—89p.; For related documents, see SE 034 854-855.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Acoustical Environment, *Acoustics, Citizen Participation, Community Problems, *Environmental Education, Health Education, Physics, *Pollution, *Science Education, Secondary Education, Social Studies
Identifiers—*Noise (Sound)
Presented is an environmental noise module developed as an instructional guide for teachers in grades seven through twelve. The guide consists of eight lecture summaries on noise-related topics including characteristics of sound, sound measurement, noise control, and the effects of noise on humans. Accompanying these summaries are suggested projects, experiments, field trips, films, readings and discussion questions. The module's goal is to assist teachers in creating an awareness of noise as an environmental pollutant, explaining the adverse effects of noise, identifying noise sources and control techniques, and stimulating student involvement in working for a quieter community environment. (Author/WB)

ED 207 824 SE 035 614
Fox, Randolph R., Jr Reese, D Chris
Counting on Energy. Project E3 (Energy, Economy,

ics, and the Environment).
Montgomery County Intermediate Unit 23, Blue Bell, Pa.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Pennsylvania State Dept. of Education, Harrisburg.
Pub Date—80
Grant—76495C
Note—126p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—Activity Units, Conservation Education, *Economics, Elementary School Science, Elementary Secondary Education, *Energy, Energy Conservation, *Environmental Education, Home Economics, Industrial Arts, *Interdisciplinary Approach, Intermediate Grades, Mathematics Education, Science Education, Secondary School Science, Skill Development, Social Studies, *Teaching Guides
Identifiers—*Energy Education
Five units are designed to provide an opportunity for in-depth, technical analysis in the fields of energy, economics, and the environment. In an effort to move upper elementary and secondary students beyond general awareness, activities call for the application of numbers where typically only vague generalities are discussed. Within each chapter, activities are written on three levels of skill development: (1) awareness level, where students identify and analyze concepts by qualitative means, (2) transitional level where they refine and extend these activities to quantitative analysis, and (3) operational level where they apply these techniques in more complex situations. Activities within each unit not only progress in skill level difficulty but also in grade level ranging from fourth to twelfth grade. Drawing upon many subject areas, these interdisciplinary activities focus on five topics: human energy, electricity, space heating, solar energy, and bioconversion. Each unit includes an overview, extensive teaching notes, worksheets, data sheets, and six or more activities. (Author/DC)

ED 211 365 SE 036 041
Barker, Wells J.
A Guide to Field Studies for the Coastal Environment. Project CAPE Teaching Module.
Dare County Board of Education, Manteo, N.C.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date—Jun 81
Note—100p. Not available in paper copy due to copyright restrictions.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Earth Science, Environmental Education, *Field Studies, Grade 8, Junior High Schools, Junior High School Students, *Marine Biology, *Oceanography, *Science Activities, Science Education, *Secondary School Science
Twenty-five coastal field study investigations, comprising this supplement to a junior high school earth science curriculum, are designed to help students obtain a fuller understanding of (1) their coastal environment, (2) some of the problems which confront it, (3) the interrelationships between the land and the surrounding bodies of water, and (4) the opportunities for individuals to effectively work toward solutions to environmental problems. Each lesson includes key concepts, competency goals, objectives, site description, materials, vocabulary, procedure, and source of activity when appropriate. Some of the topics covered are currents, waves, tides, dunes, slope, velocity, mapping, salinity, water hardness, soil, light intensity, and evaporation. Appendices provide further information and tests. (DC)

ED 211 373 SE 036 055
Burrow, John W. And Others
Have You Been to the Shore Before? A Marine Education Infusion Unit on Seashore and Aquarium Life. Revised Edition.
Maine Univ., Orono Coll. of Education
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—80
Grant—NSF-SER-8008177
Note—57p.; For related documents, see SE 036 056-059 and ED 177 013. Produced through the Northern New England Marine Education Project. Contains colored print which may not reproduce well.
Available from—Northern New England Marine Education Project, Univ. of Maine at Orono, 206 Shibles Hall, Orono, ME 04469 ($3.00).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Activity Units, Elementary School Science, Elementary Secondary Education, Environmental Education, *Field Trips, Instructional Materials, Intermediate Grades, Junior High School Students, *Marine Biology, *Oceanography, *Science Activities, Science Education, Secondary School Science
Identifiers—*Coastal Zones, *Marine Education
Classroom and field activities for fifth- through ninth-grade students comprise this teaching guide for the northern New England shore. Teacher background information contains an introduction to life at the shore and the animal classification of marine invertebrates. Activities stress two major concepts: (1) the diversity and complex interactions of marine organisms, and (2) the structural, functional, and behavioral adaptations these organisms make to the shore environment. Topics of classroom activities include saltwater aquariums, seashore life, seaweeds, and a field trip bulletin board. Field activities involve pre-trip planning, beach profiling, exploring for green crabs, and critter watching. Each activity identifies the objective, field site when appropriate, materials, timing, and procedure. Lists of organizational resources, resource persons, places to visit, films, and books are provided for the unit. Informational sheets are also included. (DC)

ED 211 377 SE 036 059
Burrow, John W. And Others
What Adventures Can You Have in Wetlands, Lakes, Ponds, and Puddles? A Marine Education Infusion Unit on Wet Environments. Revised Edition.
Maine Univ., Orono Coll. of Education
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—80
Grant—NSF-SER-8008177
Note—57p. For related documents, see SE 036 055-058. Produced through the Northern New England Marine Education Project. Contains colored print which may not reproduce well.
Available from—Northern New England Marine Education Project, Univ. of Maine at Orono, 206 Shibles Hall, Orono, ME 04469 ($3.00).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Activity Units, Ecology, Elementary Secondary Education, Environmental Education, *Field Trips, Instructional Materials, *Interdisciplinary Approach, Intermediate Grades, Junior High School Students, *Marine Biology, Oceanography, *Science Activities, Science Education, *Water Resources
Identifiers—*Marine Education
Intended for use in middle and junior high schools, these nine classroom and field activities help students better understand the great diversity of natural communities and the complex interactions of aquatic organisms. A background information section presents teachers with an overview of wetlands, streams, lakes and ponds, and puddles. Classroom activities ask students to view films, participate in a food web exercise, create indoor wetland environments using jars and a small children's pool, and decorate the classroom with art projects and study the human history of salt marshes. Field trips allow students to investigate a stream, saltwater marsh, lake, and the school-site watershed. Each activity outlines the objectives, materials when appropriate, materials, timing, and procedures. Teacher resources include lists of organizations, people, teaching units, places to visit, books, and films. Information sheets and student handouts are also included. (DC)

ED 211 379 SE 036 061
Thrift, Nancy Stearns, Ed. And Others
K.E.E.P. - Kentucky's Energy Education Program: Activities for the Classroom, 7-12.
Kentucky State Dept. of Education., Frankfort; Kentucky State Dept. of Energy, Frankfort.
Pub Date—[82]
Note—144p. For related document, see SE 036 060. Funds provided through the Kentucky Energy Conservation Plan.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC06 Plus Postage.
Descriptors—*Conservation Education, *Energy, *Energy Conservation, *Environmental Education, Global Approach, Instructional Materials, *Interdisciplinary Approach, Learning Activities, *Science Activities, Science Education, Secondary Education, Secondary School Science, State Programs
Identifiers—*Energy Education
Seventy-four multidisciplinary activities for grades seven through twelve are contained in this revised edition of energy education lessons for Kentucky students. Section I helps students understand energy and the current crisis by studying laws which govern energy flow and using examples of how these laws illustrate stable energy utilization systems as found in nature. Section II provides instructions for building various workable models to illustrate the development of alternative energy as a significant contribution to Kentucky's energy picture. Section III explains energy at home and in the schools in terms of the laws of thermodynamics, characteristics of systems of equilibrium, and the effect of particular kinds of energy on population. It addresses community issues including local sources of power, and local decision making and global issues including the impact of local energy decisions. The last section focuses on individual choices regarding lifestyle selections and their impact on the environment. It includes student worksheets. (Author/DC)

ED 219 281 SE 038 788
Jacobs, Mary Lynn, Ed.
Energy Storage. Teachers Guide, Science Activities in Energy.
Oak Ridge Associated Universities, Tenn.
Spons Agency—Department of Energy, Washington, D.C. Office of Energy Research.
Report No.—DOE/NBB-0003
Pub Date—May 82
Contract—DE-AC05-76OR00033
Note—40p.; For related documents, see ED 170 132-133 and ED 152 529-532.
Available from—U.S. Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Activity Units, Electric Batteries, *Elementary School Science, Elementary Secondary Education, *Energy, Environmental Education, Motion, *Physical Sciences, *Science Activities, Science Education, *Secondary School Science, Teaching Guides
Identifiers—*Energy Education, *Energy Storage
Included in this science activities energy package for students in grades 4-10 are 12 activities related to energy storage. Each activity is outlined on the front and back of a single sheet and is introduced by a key question. Most of the activities can be completed in the classroom with materials readily available in any community. Among the questions introducing activities are: (1) Will water which is twice as high fall out of a container twice as far? (2) Which has more energy: one teaspoon of alcohol or one teaspoon of alcohol gel? (3) How far can a balloon rocket go on compressed air in one full balloon? (4) Will flashlight batteries that are twice as large last twice as long? (5) How much longer does a C-size battery last when it is turned on-and-off compared to continuous use? (6) Will rye flour cause a bigger boom than wheat flour? (7) Will a flywheel that goes twice as fast go twice as long? (8) Will a flywheel made of 3/4 inch plywood spin 3 times longer than one made of 1/4 inch plywood? and (9) Will a spool go twice as far if its rubber band motor has twice as many turns? (JN)

Secondary

ED 028 086 88 SE 006 275
Bernhart, William M.
A Classroom Teaching and Resource Guide in Conservation Education.
Naturealm, Duncansville, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Elementary and Secondary Education
Report No—DPSC 67-4120
Pub Date Aug 68
Note—255p.
EDRS Price MF-$1.00 HC-$12.85
Descriptors—Bibliographies, Biological Sciences, *Conservation Education, Earth Science, *Ecology, *Instructional Materials, *Secondary School Science, *Teaching Guides
Identifiers—Elementary and Secondary Education Act of 1965, Title 3
In this teaching guide the natural and social sciences are integrated with an emphasis on conservation and ecology. The guide contains ten teaching units dealing with various physical and biological aspects of the environment. Unit one deals with the question of what is conservation. Unit two is concerned with the question of what is a natural resource. Units three through nine deal respectively with energy, minerals, soil, water, air, plants, and animals. Unit ten is entitled, "Human Resources." There are more activities and information in the guide than one teacher could use with a given class, leaving the decision as to which material to use with the teacher. Each unit is self contained and may be used independently of the others. A bibliography of learning materials is included with each unit and a bibliography of free and inexpensive materials appends the guide. This work was prepared under an ESEA Title III contract. (BC)

ED 033 853 SE 007 592
Faber, Robert W. And Others
An Oceanographic Curriculum for High Schools.
Naval Oceanographic Office, Washington, D.C.
Pub Date 68
Note—35p.
Available from—Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 ($0.35)
EDRS Price MF-$0.25 HC-$1.85
Descriptors—*Course Content, Earth Science, Marine Biology, *Oceanology, Resource Guides, *Secondary School Science, *Teaching Guides
Identifiers—National Oceanographic Data Center
Contained are outlines for 18 one-hour lectures on oceanology. Each outline lists topics to be covered, suggestions on which topics should be covered most thoroughly and books for further reading and related films. Lecture topics include oceanographic surveying and research, geology of the oceans, physical properties of sea water, waves, tides and currents, chemistry of sea water, marine biology, food from the sea, air-sea interaction, sea ice, estuaries, man and the sea, the continental shelf, limnology, underwater sound, and conservation. Appendices list various resources, sources of instructional materials, charts, films and bibliographies, organizations and publications which can provide further information, and a selection of relevant scientific American offprints. (EB)

ED 043 501 SE 009 343
High School Oceanography.
Falmouth Public Schools, Mass.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Jul 70
Note—240p.
EDRS Price MF-$1.00 HC-$12.10
Descriptors—*Course Content, *Curriculum, Geology, *Instructional Materials, Marine Biology, *Oceanology, Physical Sciences, Resource Materials, *Secondary School Science
Identifiers—ESEA Title III
This book is a compilation of a series of papers designed to aid high school teachers in organizing a course in oceanography for high school students. It consists of twelve papers, with references, covering each of the following: (1) Introduction to Oceanography, (2) Geology of the Ocean, (3) The Continental Shelves, (4) Physical Properties of Sea Water, (5) Waves and Tides, (6) Oceanic Circulation, (7) Air-Sea Interaction, (8) Sea Ice, (9) Chemical Oceanography, (10) Marine Biology, (11) The Origin and Development of Life in the Sea, and (12) Aquaculture, Its Status and Potential. The topics suggested are intended to give a balanced coverage to the subject matter of oceanography and provide for a one semester course. It is suggested that the topics be presented with as much laboratory and field work as possible. This work was prepared under an ESEA Title III contract. (HB)

ED 045 380 SE 009 857
Hershey, John T. And Others
A Curriculum Activities Guide to Water Pollution and Environmental Studies.
Tilton School, N.H.
Spons Agency—Department of the Interior, Washington, D.C. Federal Water Quality Administration
Pub Date 4 Aug 70
Note—641p.
Available from—Philip Murphy, Tilton School, Tilton, N.H. 03276 (Est. pr. $5.00-$8.00)
EDRS Price MF-$2.50 HC Not Available from EDRS.
Descriptors—Conservation Education, Ecology, *Environmental Education, *Instructional Materials, Natural Resources, Outdoor Education, Pollution, *Secondary School Science, *Teaching Guides, *Water Resources
This activity oriented environmental guide is the result of cooperative efforts of high school teachers, students, scientists, and technicians. The activities are divided into four chapters: Hydrologic Cycle, Human Activities, Ecological Perspectives, and Social and Political Factors. Each activity contains seven parts: an introduction; questions regarding the activity, equipment, procedures, results obtained by using the study; limitations and problems encountered with the activity, and an annotated bibliography. There are seven appendices at the end of the guide. The appendix includes a discussion of water quality parameters, aids to implementation, suggestions regarding limitations and inconveniences, suggestions related to evaluation, a bibliography, a water pollution and environmental glossary, and comments regarding laboratory and field safety. (RH)

ED 046 715 SE 010 209
Beakley, John C. And Others
The Source Book of Marine Sciences.
Florida State Dept. of Education, Tallahassee. Div. of Elementary and Secondary Education
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 70
Note—153p.
Available from—Textbooks and Publications, Dept. of Education, Knott Bldg., Tallahassee, Fla. 32304 ($1.25)
EDRS Price MF-$0.65 HC Not Available from EDRS.
Descriptors—*Environmental Education, *Instructional Materials, Laboratory Experiments, Marine Biology, *Oceanology, Resource Materials, *Science Activities, *Secondary School Science, Teaching Guides
Identifiers—ESEA Title III
Included is a teachers resource collection of 42 marine science activities for high school students. Both the biological and the physical factors of the marine environment are investigated, including the study of tides, local currents, microscope measuring, beaches, turbidity, sea water solids, pH, and salinity, marine bacteriology, microbiology, bioluminescence, taxonomy, plankton, sponges and speculation, pelecypod gill, crustacea, sea urchin development, salinity tolerances, and other topics. Most activities are performed in the laboratory, but simple gathering requires access to ocean beaches. Activities are generally presented in the format--separate introductory statements to the teacher and to the student, problem statement, materials, procedure, and questions. The source book could serve as a laboratory manual. This work was prepared under an ESEA Title III contract. (PR)

ED 050 940 SE 010 198
Cailin, Richard And Others
Everyman's Problem, An Instructional Unit for Senior High School Science, Student Manual and Teacher's Manual.
Baltimore County Board of Education, Towson, Md.
Pub Date 70
Note—163p.
Available from—Board of Education of Baltimore County, Towson, Md. 21204
EDRS Price MF-$0.65 HC Not Available from EDRS.
Descriptors—Area Studies, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Learning Activities, *Manuals, Natural Resources, Pollution, *Secondary School Science, *Student Projects
This student manual and accompanying teachers' guide for senior high school science provide an in-depth study of a community--how it was established and developed. It emphasizes the environmental changes which have occurred through the use and management of its natural resources. A series of experiments in numerous areas provides students an opportunity to investigate the causes for change. Each experiment indicates the materials needed, the procedure to follow, and asks questions to help interpret the results. The teachers' manual also includes suggestions regarding preparation for the experiment, procedures, expected results, responses to interpretation questions, assessment tasks, and acceptable responses for the tasks. Fifty-three objectives serve to evaluate the degree of understanding achieved by the student. (BL)

ED 053 945 24 SE 012 151
Pfeiffer, Carl H.
The Interaction of Man with His Environment. Science III and IIIB.
Monona Grove High School, Monona, Wis.; Wisconsin State Dept. of Education, Madison.
Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Research
Bureau No—3R-5 0646
Pub Date 68
Note—320p.; Due to copyright restrictions, some pages are not included
EDRS Price MF-$0.65 HC-$13.16
Descriptors—*Ecology, Environment, *Environmental Education, *Fused Curriculum, *Instructional Materials, *Integrated Curriculum, Interdisciplinary Approach, Science Activities, Secondary School Science, Workbooks
The two student notebooks in this set provide the basic course outline and assignments for the third year of a four year senior high school unified science program. This course is the less technical of the two third-year courses offered in the program. The first of the three major units in this course, Structure and Dynamics of the Biosphere, is composed of three sub-units: the nature and scope of ecological science, the ecosystem, and man in the biosphere. The second unit, Population Structure and Dynamics, contains four sub-units: structure and organization, the functioning of populations, population genetics, and human populations. The third unit, Problems of Coexistence, contains these sub-units: problems of coexistence with the physical environment, with other organisms, and within society. The final sub-unit of the course is Science and the Evolving Society. The notebook materials for each of the sub-units include: a list of required and recommended readings from various other books, questions for consideration in introducing a lesson, a brief background reading, a basic outline of the lectures with space provided within the outline for notes, laboratory activities and investigations, laboratory problem reports and

other kinds of assignments (discussion questions, fill-ins, problems), and summary statements and review questions. Numerous diagrams and illustrations are included (PR)

ED 053 946 24 SE 012 152
Pfeiffer, Carl H
Homeostatic Systems--Mechanisms for Survival. Science IV.
Monona Grove High School, Monona, Wis.; Wisconsin State Dept of Education, Madison
Spons Agency--Office of Education (DHEW), Washington, D.C. Bureau of Research
Bureau No--BR-5-0646
Pub Date 68
Note--362p.; Due to copyright restrictions, some pages are not included
EDRS Price MF-$0.65 HC-$13.16
Descriptors--Biology, Chemistry, *Fused Curriculum, *Instructional Materials, *Integrated Curriculum, *Interdisciplinary Approach, Physics, *Science Activities, Scientific Principles, Secondary School Science
The two student notebooks in this set provide the basic outline and assignments for the fourth and last year of a senior high school unified science program which builds on the technical third year course, Science IIIA (see SE 012 149). An introductory section considers the problems of survival inherent in living systems, matter-energy interactions relating to living systems, life and the laws of thermodynamics, and homeostasis. The first unit, Matter-Energy Relationships of the Electron, focuses on interactions involving circular movement, translational movement, and movements between electric and magnetic fields. The second unit, Mechanisms for Matter-Energy Interactions in Living Organisms, considers those mechanisms associated with the capture, storage and utilization of energy and matter transport, regulation and exchange of matter, and other functions in living organisms. The materials for each of the sub-units include a list of required and recommended readings from various other books, questions for consideration in introducing a lesson, a brief background reading, a basic outline of the lectures with space provided within the outline for notes, laboratory activities and investigations, laboratory problem reports and other kinds of assignments (discussion questions, fill-ins, problems), and summary statements and review questions. Numerous diagrams and illustrations are included (PR)

ED 055 806 SE 012 171
Nuclear Power and the Environment. Understanding the Atom Series.
Atomic Energy Commission, Oak Ridge, Tenn. Div of Technical Information
Pub Date 69
Note--36p.
Available from--USAEC, P O Box 62, Oak Ridge, Tennessee 37830 (Free)
EDRS Price MF-$0.65 HC-$3.29
Descriptors--*Electricity, *Environment, *Environmental Education, Instructional Materials, Natural Resources, *Pollution, *Radiation, Secondary School Science, Thermal Environment
This booklet is one of the booklets in the "Understanding the Atom Series" published by the U.S. Atomic Energy Commission for high school science teachers and their students. Discussion concentrates on the radiological and thermal aspects of the environmental effects of nuclear power plants, on the procedures followed by the Atomic Energy Commission (AEC) to minimize the impact of nuclear plants on man and his environment, and on the research conducted by the AEC and others to further expand our knowledge. Numerous photographs and diagrams are utilized and a list of suggested references is included (Author/PR)

ED 055 833 SE 012 379
Hon, Will
The Regional Marine Science Project of the Carteret County, North Carolina, Public Schools. Experiments in the Use of Field Ecology as an Approach to Understanding Coastal Environments.
Carteret County Public Schools, Beaufort, N.C.
Spons Agency--Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 69
Note--36p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors--Curriculum Development, Ecology, Environmental Education, *Marine Biology, *Program Descriptions, *Projects, Resource Materials, *Secondary School Science
Identifiers--ESEA Title III
The development of the Regional Marine Science Project in Carteret County, North Carolina, is portrayed in this booklet. Established with Elementary and Secondary Education Act (ESEA) Title III funds in 1966, the project has evolved from one high school course in marine ecology to numerous courses and activities at all levels, primary through college. Oriented to field ecology as an approach to understanding coastal environments, the project makes extensive use of field trips, setting up discovery-type situations with complex problems for group investigation. Phases of the program are described in eight categories: curriculum development and instruction, research on field trip techniques, inservice training, summer science school, marine science library and audio-visual aids, publications, regional coordination of marine science education, and planning for an exhibit. Laboratory and field trip center. An array of pictures depict many of the student activities. In addition, staff photos and biographies are included. This work was prepared under an ESEA Title III contract. (BL)

ED 059 901 24 SE 013 405
Flint, William
The Project Physics Course (Modularized) for Grades 10.12.
Western Washington State Coll., Bellingham. Huxley Coll of Environmental Studies
Spons Agency--National Center for Educational Research and Development (DHEW/OE), Washington, D.C.
Bureau No--BR-0-0848
Pub Date Oct 71
Grant--OEG-0-70-5039
Note--51p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors--Course Content, Course Organization, *Curriculum Guides, *Environmental Education, *Integrated Curriculum, *Physics, *Science Units, Secondary School Science, Unit Plan
Identifiers--Harvard Project Physics
This report was produced by the Sedro-Woolley Project which has the goal of infusing environmental education into the whole curriculum of a school district. Included are assumptions which the author believes are appropriate to environmental education; a relating of these assumptions to some topics of chemistry and physics, an outline of specific accomplishments to date, as well as projected future activities; definitions and rationalizations of Project Physics and modularization, a rationalization of environment objectives within the modules, and finally, a complete set of specific module objectives. Seventeen "mods" are described with specific contents described. Among the mods are Motion, Energy, E-M Field, Quanta, and Radioactivity. Several of the mods are developed in sequential order with prerequisites while others require only "Tool," the beginning mod which develops the mathematics necessary for all subsequent mods (Author/TS)

ED 061 060 SE 013 380
Godfrey, Paul J Hon, Will
Dune Detective, Using Ecological Studies to Reconstruct Events Which Shaped a Barrier Island.
Carteret County Public Schools, Beaufort, N.C.
Spons Agency--Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 70
Note--234p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors--*Earth Science, Ecology, Environmental Education, *Instructional Materials, Learning Activities, *Oceanology, *Secondary School Science, *Student Research, Water Resources
Identifiers--ESEA Title III
This publication is designed for use as part of a curriculum series developed by the Regional Marine Science Project. Students in grades 11 and 12 are exposed to research methods through a series of field exercises guiding investigators in reconstructing the events which have shaped the natural communities of a barrier beach. Background information, field equipment, field assignments, procedures, results and discussion ideas are provided for six exercises: dune survey, washover--physical aspects, washover--ecological succession, maritime forest profile, salt marsh survey--mapping, and salt marsh survey--elevations. Numerous line drawings, diagrams, charts, and photos supplement the narrative material. This work was prepared under an ESEA Title III contract. (BL)

ED 061 061 SE 013 381
Taylor, Beth
The Field Approach to Coastal Ecology. Fall Unit.
Carteret County Public Schools, Beaufort, N.C.
Spons Agency--Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Sep 70
Note--41p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors--Earth Science, *Ecology, Environmental Education, *Grade 10, *Instructional Materials, *Oceanology, Reading Materials, Secondary School Science, *Textbooks
Identifiers--ESEA Title III
This publication is designed for use as part of a curriculum series developed by the Regional Marine Science Project. Coastal environments are utilized to demonstrate basic principles of ecology to tenth grade students with emphasis placed on salt marshes in this first unit for the fall season. (Unit 2 is for spring season.) Material presented in the informative text covers the scope of ecology, coastal and inland ecosystems, factors limiting survival and distribution, chemical cycles, photosynthesis, respiration, and food cycles. Coastal ecology lab exercises acquaint the student with a variety of organisms commonly found in the tidal salt marsh and give practice in collecting, analyzing, and presenting data in a scientific and orderly manner. Numerous line drawings, diagrams, and data recording sheets supplement the narrative material. This work was prepared under an ESEA Title III contract (BL)

ED 062 176 SE 013 639
Authorized Course of Instruction for the Quinmester Program. Science: Pollution: Environmental Crises: Basic Fundamentals of Ecology; and Does It Have to be a Dirty World.
Dade County Public Schools, Miami, Fla.
Pub Date 71
Note--83p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors--Bibliographies, Ecology, *Environmental Education, Films, *Instruction, Laboratory Procedures, *Objectives, Pollution, Secondary School Science, *Teaching Guides, Units of Study (Subject Fields)
Identifiers--*Quinmester Program
Performance objectives are stated for each of the four secondary school units included in this package of instructional guides prepared for the Dade County Florida Quinmester Program. All four units are concerned with aspects of environmental concern: "Pollution," "Does It Have to be a Dirty World?," "Environmental Crises," and "Fundamentals of Ecology." Lists of state-adopted and other texts, of films and filmstrips available in Dade County, and of possible speakers from the county are included. A course outline summarizing the content of the units, numerous suggestions for experiments and activities in laboratory and field, lists of possible individual projects and, in some cases, suggested discussion questions are included. A master sheet showing the relationship of each suggested activity to the objectives of the package is appended to each booklet (AL)

ED 062 180 SE 013 643
McCarthy, Nancy D Silvis, Barbara A
Authorized Course of Instruction for the Quinmester Program. Science: Man and Nature.
Dade County Public Schools, Miami, Fla.
Pub Date 71
Note--27p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors--*Biology, *Ecology, *Environmen-

tal Education, Evolution, Instruction, *Objectives, Secondary School Science, Taxonomy, *Teaching Guides, Units of Study (Subject Fields)
Identifiers—Quinmester Program
Performance objectives are stated for this secondary school unit prepared for the Dade County Florida Quinmester Program The unit examines scientific method, biological classification, evolution, population ecology, and pays attention to problems of the human environment The booklet lists related state-adopted textbooks, cites descriptions of teaching and laboratory activities in these texts, lists films available from the county audio-visual library, recommends 39 books useful for reference, suggests possible student projects and topics for written reports, and provides questions for class discussion A chart relating the performance objectives to the suggested activities is appended (AL)

ED 070 615 SE 015 000
Cox, David C
How to Investigate the Environment in the City: Air and Water.
National Science Teachers Association, Washington, D C
Pub Date 72
Note—12p
Available from—National Science Teachers Association, 1201 16th St, N W, Washington, D C 20036 (Stock No 471-14630, $0 50)
EDRS Price MF-$0.65 HC Not Available from EDRS.
Descriptors—*Air Pollution Control, Environmental Education, Experiments, Instructional Materials, Investigations, Learning Activities, *Student Projects, *Study Guides, *Urban Environment, *Water Pollution Control
Two significant aspects of the urban environment, air and water are focused upon in this instructional aid pamphlet For each component, the range of possible studies is surveyed, together with the state of the situation and associated problems Sample experiments are suggested and their test procedures outlined Where special equipment, inexpensive test kits, or chemicals are required or would enhance the investigation, they are described and illustrated A source list of organizations, periodicals, and publications is also supplied (BL)

ED 071 264 EC 050 872
Me and My Environment. Unit I: Exploring My Environment.
Biological Sciences Curriculum Study, Boulder, Colo
Spons Agency—Bureau of Education for the Handicapped (DHEW/OE), Washington, D C
Pub Date 72
Note—327p
EDRS Price MF-$0.65 HC-$13.16
Descriptors—Biology, *Class Activities, *Curriculum Guides, *Educable Mentally Handicapped, *Environmental Influences, *Exceptional Child Education, Guidelines, Inquiry Training, Instructional Materials, Lesson Plans, Mentally Handicapped, Problem Solving, Student Behavior
Presented is the experimental edition of Unit I Exploring My Environment, which consists of 29 life science curriculum activities intended for the 13-to-15-year-old educable mentally retarded child The curriculum guide is being used in the final field test prior to revision Stressed throughout the program are ecological themes, inquiry skills, problem solving skills, environmental elements, and applicational behaviors and attitudes Seven to 12 activities for each of the three core study areas within Unit I are given of which the following are examples making a ..., sniffing around, forming categories, and reading a thermometer Activities are organized into materials, teaching strategies, and anticipated student behaviors The three cores are solving the environment, Investigating the environment and landmarks in the environment The ecological theme stressed is the interrelationships of environmental components Inquiry skills seen to be developed are observing and identifying Problem solving skills emphasized are experimenting and knowing what the problem is and what to do about it Environmental elements considered are space and shelter Behavioral objectives include the development in the student of a sense of self-identity and an attitude of inquiry (See EC 050 871 and EC 050 873 through EC 050 875 for related curriculum guides) (DB)

ED 071 265 EC 050 873
Me and My Environment. Unit II: Me as a Habitat.
Biological Sciences Curriculum Study, Boulder, Colo
Spons Agency—Bureau of Education for the Handicapped (DHEW/OE), Washington, D C
Pub Date 72
Note—274p
EDRS Price MF-$0.65 HC-$9.87
Descriptors—Biology, *Class Activities, *Curriculum Guides, *Educable Mentally Handicapped, *Environmental Influences, *Exceptional Child Education, Guidelines, Inquiry Training, Instructional Materials, Lesson Plans, Mentally Handicapped, Problem Solving, Student Behavior
Presented is the experimental edition of Unit II Me as a Habitat, which consists of 19 life science curriculum activities intended for the 13-to-15-year-old educable mentally retarded child. The curriculum guide is being used in the final field test prior to revision Stressed throughout the program are ecological themes, inquiry skills, problem solving skills, environmental elements, and applicational behaviors and attitudes Five to eight activities for each of the three core study areas within Unit II are given of which the following are examples seeing is believing, drinking microbes, venereal disease in action, smoking in action, and the use and misuse of drugs Activities are organized into materials, teaching strategies and anticipated student behaviors The three cores study microbes, disease, and environmental choices The ecological theme stressed is diversity and pattern Inquiry skills seen to be developed are associating and describing Problem solving skills emphasized are recording data and discussion and treatment of group data Environmental elements considered are living things A desired behavior outcome is skill in communication about the child's environment (For related curriculum guides see EC 050 871, EC 050 872, EC 050 874 and EC 050 875) (DB)

ED 071 266 EC 050 874
Me and My Environment. Unit III: Energy Relationships in My Environment.
Biological Sciences Curriculum Study, Boulder, Colo
Spons Agency—Bureau of Education for the Handicapped (DHEW/OE), Washington, D C
Pub Date 72
Note—327p
EDRS Price MF-$0.65 HC-$13.16
Descriptors—Biology, *Class Activities, *Curriculum Guides, *Educable Mentally Handicapped, *Environmental Influences, *Exceptional Child Education, Guidelines, Inquiry Training, Instructional Materials, Lesson Plans, Mentally Handicapped, Problem Solving, Student Behavior
Presented is the experimental edition of Unit III Energy Relationships in My Environment, which consists of 25 life science curriculum activities intended for the 13-to-15-year old educable mentally retarded child The curriculum guide is being used in the final field test prior to revision Stressed throughout the program are ecological themes, inquiry skills, problem solving skills, environmental elements, and applicational behaviors and attitudes Five to eight activities for each of the four core study areas within Unit III are given of which the following are examples growing plants, chemical energy, measuring energy values, the food chain game, and the green machine Activities are organized into materials, teaching strategies, and anticipated student behaviors The four cores consider an introduction to energy, energy in food, energy flow through food chains and webs, and food making in plants The ecological theme developed is the complementarity of organisms and environment Inquiry skills seen to be developed are comparing and translating Two problem solving skills emphasized are explaining and defending The environmental element considered is energy A desired behavior outcome is recognition of the child's dependence on his biological environment (For related curriculum guides see EC 050 871 through EC 050 873 and EC 050 875) (DB)

ED 071 267 EC 050 875
Me and My Environment. Unit IV: Transfer and Cycling of Materials in My Environment.
Biological Sciences Curriculum Study, Boulder, Colo
Spons Agency—Bureau of Education for the Handicapped (DHEW/OE), Washington, D C
Pub Date 72
Note—274p
EDRS Price MF-$0.65 HC-$9.87
Descriptors—Biology, *Class Activities, *Curriculum Guides, *Educable Mentally Handicapped, *Environmental Influences, *Exceptional Child Education, Guidelines, Inquiry Training, Instructional Materials, Lesson Plans, Mentally Handicapped, Problem Solving, Student Behavior
Presented is the experimental edition of Unit IV Transfer and Cycling of Materials in My Environment, which consists of 29 life science curriculum activities intended for the 13-to-15-year-old educable mentally retarded child The curriculum guide is being used in the final field test prior to revision Stressed throughout the program are ecological themes, inquiry skills, problem solving skills, environmental elements, and applicational behaviors and attitudes Eight to 12 activities for each of the three core study areas within Unit IV are given of which the following are examples plant and animal hunt, making a pill bug habitat the hamburger lab, garbage, and planting in compost Activities are organized into materials, teaching strategies, and anticipated student behaviors The three cores consider energy and material transfer decomposers in the environment and garbage and the environment respectively The ecological theme developed is the cyclic nature of processes, the inquiry skill seen to be developed is guessing and applying Two problem solving skills emphasized are identifying controls and drawing conclusions The environmental element considered is air A desired behavior outcome is skill in personal body care (For related curriculum guides see EC 050 871 through EC 050 874) (DB)

ED 079 100 SE 016 416
Water Quality Control, Curriculum Guide.
North Carolina State Dept of Public Instruction, Raleigh, Washington City Board of Education, N C.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date [72]
Note—209p
EDRS Price MF-$0.65 HC-$9.87
Descriptors—Curriculum Guides, *Environmental Education, Instructional Materials, *Learning Activities, Natural Resources, Quality Control, *Secondary Grades, *Teaching Guides, Units of Study (Subject Fields), *Water Resources
Identifiers—ESEA Title III
Activities which study how water is used, contaminated, and treated or purified are presented in this curriculum guide, culminating in the investigation of a local water quality problem Designed as a 12 week minimum course for students in grades eight and nine, the guide first presents a review of the content, objectives, major concepts, and sources for student reference materials Major topics or units of study are titled Water, a Renewable Resource (Hydrologic Cycle), Is Water a Renewable Resource?, Scientific Analysis of Local Water Quality, and A Local Study of Water Quality Each unit is composed of a series of pre-, major, and post-activities beginning with a general overview indicating title of the unit, purpose or objective, abstract of content, and unit schedule of activities, including time allotments Individual activities enumerate, where appropriate, background information, major points to emphasize, questions or quizzes, teaching procedures, materials required, and supplemental activities or information A variety of media and processes is suggested to allow for flexibility This work was prepared under a contract for an ESEA Title III project. Environmental Science Study Curriculum (BL)

ED 086 482 SE 016 645
Handbook of Techniques and Guides for the Study of the San Francisco Bay-Delta-Estuary Complex, Part 1, Monitoring Techniques for the

Measurement of Physico-Chemical and Biological Parameters.
Alameda County School Dept., Hayward, Calif.; Contra Costa County Dept of Education, Pleasant Hill, Calif.
Pub Date Feb 71
Note—120p.
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Biological Influences, Ecological Factors, Environmental Criteria, *Environmental Education, Environmental Research, *Guides, *Instructional Materials, *Marine Biology, Natural Sciences, Quality Control, Resource Materials, Water Pollution Control
Identifiers—*California, Project MER, San Francisco Bay
Project MER (Marine Ecology Research) is aimed at improving environmental education in the San Francisco Bay Area schools. As part of meeting this goal, it is hoped that students and teachers can see the results of their efforts being put to practical use. This guide is the first of a series produced to help the students and teachers gather data concerning the San Francisco Bay-Delta-Estuary Complex and to organize these data in a form that could be a contribution to the literature of science and serve as the groundwork upon which knowledgeable decisions about the environment could be based. Presented in this guide are techniques and procedures for measuring and evaluating the ecology of aquatic environment of the Bay. Chapter I deals with how physical and chemical factors affect the distribution of aquatic life. General information on the effect of a particular factor precedes a technical presentation on how to measure or evaluate that factor. The second chapter discusses techniques for studying the plankton population and the third discusses techniques for studying bacterial populations. Field data sheets for recording data are included in the appendices. Related documents are SE 016 646--SE 016 650 (JP)

ED 086 483 SE 016 646
Helrich, Jane
Handbook of Techniques and Guides for the Study of the San Francisco Bay-Delta-Estuary Complex. Part 2, Key to the Phytoplankton Phyla and Genera.
Alameda County School Dept., Hayward, Calif.; Contra Costa County Dept of Education, Pleasant Hill, Calif
Pub Date Feb 71
Note—27p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Biological Influences, Ecological Factors, *Environmental Education, Environmental Research, *Guides, *Instructional Materials, *Marine Biology, Natural Sciences, Resource Materials
Identifiers—*California, Phytoplankton, Project MER, San Francisco Bay
Project MER (Marine Ecology Research) is aimed at improving environmental education in the San Francisco Bay Area schools. This document is the second of a series of guides designed to help students and teachers gather data concerning the San Francisco Bay-Delta-Estuary Complex and to organize these data to make a contribution to the literature of science and to serve as the groundwork upon which knowledgeable decisions about the environment could be based. Presented in this guide is a key for identifying the phytoplankton phyla and genera organisms in the Bay. Physical descriptions of the organisms are accompanied by illustrations. Related documents are SE 016 645 and SE 016 647--SE 016 650 (JP)

ED 086 484 SE 016 647
Sheridan, James
Handbook of Techniques and Guides for the Study of the San Francisco Bay-Delta-Estuary Complex, Part 3, Key to the Invertebrates.
Alameda County School Dept., Hayward, Calif.; Contra Costa County Dept of Education, Pleasant Hill, Calif
Pub Date Feb 71
Note—46p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Biological Influences, Ecological Factors, *Environmental Education, Environmental Research, *Guides, *Instructional Materials, *Marine Biology, Natural Sciences, Resource Materials
Identifiers—*California, Invertebrates, Project MER, San Francisco Bay
Project MER (Marine Ecology Research) is aimed at improving environmental education in the San Francisco Bay Area schools. As part of meeting this goal, it is hoped that students and teachers can see the results of their efforts being put to practical use. This guide is the third of a series produced to help students and teachers gather data concerning the San Francisco Bay-Delta-Estuary Complex and to organize these data to make a contribution to the literature of science and to serve as the groundwork upon which knowledgeable decisions about the environment could be based. Presented in this guide is a key to aid in identifying the more common invertebrate and vertebrate forms found in the Bay area. Physical descriptions are accompanied by illustrations. Related documents are SE 016 645, SE 016 646 and SE 016 648 through SE 016 650 (JP)

ED 086 485 SE 016 648
Handbook of Techniques and Guides for the Study of the San Francisco Bay-Delta-Estuary Complex. Part 4, Key to the Coastal Marine Fishes of California.
Alameda County School Dept., Hayward, Calif.; Contra Costa County Dept. of Education, Pleasant Hill, Calif
Pub Date Feb 71
Note—29p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Biological Influences, Ecological Factors, *Environmental Education, Environmental Research, *Guides, *Instructional Materials, *Marine Biology, Natural Sciences, Resource Materials
Identifiers—*California, Fishes, Project MER, San Francisco Bay
Project MER (Marine Ecology Research) is aimed at improving environmental education in the San Francisco Bay Area schools. As part of meeting this goal, it is hoped that students and teachers can see the results of their efforts being put to practical use. This guide is the fourth of a series which was produced to help students and teachers gather data concerning the San Francisco Bay-Delta-Estuary Complex and to organize these data to make a contribution to the literature of science and serve as the groundwork upon which knowledgeable decisions about the environment could be based. Presented in this guide is a key to aid in identifying both the salt- and fresh-water fish that inhabit the Bay. Physical descriptions are accompanied by illustrations. Related documents are SE 016 645--SE 016 647 and SE 016 649--SE 016 650 (JP)

ED 086 486 SE 016 649
Kimsey, J. B. Fisk, Leonard O.
Handbook of Techniques and Guides for the Study of the San Francisco Bay-Delta-Estuary Complex. Part 5, Krys to the Freshwater and Anadromous Fishes of California.
Alameda County School Dept., Hayward, Calif.; Contra Costa County Dept of Education, Pleasant Hill, Calif.
Pub Date Oct 60
Note—29p
Journal Cit—California Fish and Game, v46 n4 Oct 60 (Reprint)
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Ecological Factors, *Environmental Education, Environmental Research, *Guides, *Instructional Materials, *Marine Biology, Natural Sciences, Resource Materials
Identifiers—*California, Fishes, Project MER, San Francisco Bay
This key to freshwater and anadromous fishes of California is included as the fifth of a series of guides being produced by Project MER (Marine Ecology Research). This project is part of the effort to improve environmental education in the San Francisco Bay Area schools by gathering and organizing data on the ecological character of the San Francisco Bay-Delta-Estuary Complex. Related documents are SE 016 645--SE 016 648 and SE 016 650 (JP)

ED 086 487 SE 016 650
Sikora, Bob
Handbook of Techniques and Guides for the Study of the San Francisco Bay-Delta-Estuary Complex, Part 6, Key to the Common Fishes of San Francisco Bay.
Alameda County School Dept., Hayward, Calif.; Contra Costa County Dept of Education, Pleasant Hill, Calif
Pub Date Jul 73
Note—13p.; Page 6 not included
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Biological Influences, Ecological Factors, *Environmental Education, Environmental Research, *Guides, *Instructional Materials, *Marine Biology, Natural Sciences, Resource Materials
Identifiers—*California, Fishes, Project MER, San Francisco Bay
Project MER (Marine Ecology Research) is aimed at improving environmental education in the San Francisco Bay Area schools. As part of meeting this goal, it is hoped that students and teachers can see the results of their efforts being put to practical use. This guide is the sixth of a series produced to help students and teachers gather data concerning the San Francisco Bay-Delta-Estuary Complex and to organize these data to make a contribution to the literature of science, serving as the groundwork upon which knowledgeable decisions about the environment could be based. Presented in this guide is a key to aid in identifying the common fish of the Bay. Physical descriptions and illustrations of the fish are also given. Related documents are SE 016 645--SE 016 649. (JP)

ED 086 522 SE 017 122
Climer, Robert R.
Human Ecology, Science (Experimental): S365.60.
Dade County Public Schools, Miami, Fla
Pub Date 72
Note—16p.; An Authorized Course of Instruction for the Quinmester Program
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Behavioral Objectives, *Behavior Change, Biology, Curriculum Guides, Ecology, *Environmental Education, Human Development, *Instructional Materials, *Secondary School Science
Identifiers—*Quinmester Program
This course involves the scientific study of the close relationship between evolving human behavior and changing environmental conditions. No state-adopted text is recommended for the course, but the use of several paperbacks, as well as Scientific American Reprint Series, is highly recommended. Supplementary texts are suggested. Eight performance objectives are listed. The course outline includes five major concepts: (1) Human Behavior in Response to the Environment; (2) Comparison of Behaviors in Lower Animals and Man; (3) Cultural Developments and Their Effects on the Behavior of Man; (4) Behavioral Conflicts of Man in Modern Society; and (5) Projecting Future Society and the Future Behavior of Man. Demonstrations by resource people are suggested. Student-performed activities suggested include reports, projects, films, and film strips. An extensive list of discussion questions is presented, as is a master sheet coordinating the entire curriculum. (Author/EB)

ED 086 552 SE 017 224
Awkerman, Gary L.
Animals of the Sea: Coelentrates, Protozoa, and Sponges.
Charleston County School District, North Charleston, S.C.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [73]
Note—82p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Biology, Curriculum, Environmental Education, *Instructional Materials, *Marine Biology, *Oceanology, *Secondary School Science, Study Guides, *Zoology
Identifiers—Elementary Secondary Education Act Title III
These three units are designed for use with standard science curricula. These publications, relating to animals of the sea are Protozoa, Sponges, and Coelenterates. Included are teacher guides, student activities, and demonstrations designed to impart ocean science understanding to high school students. Objectives to be attained

from the unit on Protozoans include (1) identification of radiolarians foraminiferans and tintinnida; (2) descriptions of life processes in these protozoans, and (3) identification of oceanic sediment produced by radiolarians and foraminiferans. After studying the unit on Sponges, students should be able to (1) list the classes of sponges; (2) describe the life functions and habits, and (3) describe sponge reproduction and its importance to sponge industry. At the end of the unit on Coelenterates, students should be able to (1) list the classes, (2) describe locomotion and feeding habits, and (3) describe relationship between the reproductive stages representing alternation of generation phenomena. This work was prepared under an ESEA Title III contract. (Author/EB)

ED 086 553 SE 017 225

Awkerman, Gary L.

Aspects of Marine Ecology.

Charleston County School District, North Charleston, S C

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C

Pub Date [73]

Note—55p

EDRS Price MF-$0.65 HC-$3.29

Descriptors—Biology, Curriculum, *Ecology, Environmental Education, *Instructional Materials, *Marine Biology, Oceanology, *Secondary School Science, *Study Guides

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This publication is designed for use in standard science curricula to develop oceanologic manifestations of certain science topics. Included are teacher guides, student activities, and demonstrations to impart ocean science understanding; specifically, aspects of marine ecology, to high school students. The course objectives include the ability of students to (1) identify the fundamental source of energy for the marine ecosystem, (2) describe the functions of producers, consumers, and decomposers in the ecosystem, (3) identify typical food webs and food chains, (4) explain relationships between local nutrient depletion and stratification of ocean circulation, and (5) discuss the effects of pollution on the marine ecosystem. This work was prepared under an ESEA Title III contract. The reference page will not reproduce clearly. (Author/EB)

ED 086 554 SE 017 226

Awkerman, Gary L.

Estuaries.

Charleston County School District, North Charleston, S C

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C

Pub Date [73]

Note—54p

EDRS Price MF-$0.65 HC-$3.29

Descriptors—Biology, Curriculum, *Environmental Education, *Instructional Materials, *Marine Biology, Natural Sciences, *Oceanology, *Secondary School Science, Study Guides

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This publication is designed for use in standard science curricula to develop oceanologic manifestations of certain science topics. Included are teacher guides, student activities, and demonstrations designed to impart ocean understanding to high school students. When the student has completed this unit, he should be able to (1) define an estuary, (2) describe environmental fluctuations of an estuary, (3) describe five types of estuaries, (4) list biological characteristics of estuaries, and (5) describe the most important function of a crab's shell. Two other units are included in this publication: Estuaries and Man, and Destruction and Restoration. The five major areas in which estuaries are important to man (harbors, sites of industry, fishing grounds, sea farms, and recreational centers) are included in this unit on marine biology. This work was prepared under an ESEA Title III contract. (Author/EB)

ED 086 555 SE 017 227

Awkerman, Gary L.

Marine Biological Field Techniques.

Charleston County School District, North Charleston, S C

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C

Pub Date [73]

Note—28p

EDRS Price MF-$0.65 HC-$3.29

Descriptors—Biology, Curriculum, Environmental Education, *Instructional Materials, *Marine Biology, Natural Sciences, *Oceanology, Resource Materials, *Secondary School Science, *Study Guides

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This publication is designed for use in a standard science curricula to develop oceanologic manifestations of certain science topics. Included are teacher guides, student activities, and demonstrations designed to impart ocean science understanding to high school students. It could be a useful instructional tool for any high school student field trip experience. Suggestions for wearing apparel and necessary equipment are listed. Objectives to be gained by the students include (1) to learn how to use the various nets for capturing marine life; (2) to identify the common organisms of Folly Beach; (3) to identify major beach zones, and (4) to define salinity and describe its principal effects on organisms. The publication includes pictorial representations of the various organisms in marine collections that can be obtained, equipment to be used, and diagramatic sketches of the field trip sites. This work was prepared under an ESEA Title III contract. (Author/EB)

ED 086 556 SE 017 228

Awkerman, Gary L.

Sea Changes, Topics in Marine Earth Science.

Charleston County School District, North Charleston, S C

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C

Pub Date [73]

Note—27p.

EDRS Price MF-$0.65 HC-$3.29

Descriptors—Biology, Earth Science, *Environmental Education, *Instructional Materials, *Marine Biology, Natural Sciences, *Oceanology, *Secondary School Science, Study Guides

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This publication is designed for use in standard science curricula to develop oceanologic manifestations of certain science topics included are teacher guides, student activities, and demonstrations designed to impart ocean science understanding to high school students. The principal theme of Changes in the Sea is presented in this particular publication. Topics discussed include (1) Continental Drift, (2) Shoreline Changes, (3) Sea Level Changes, (4) Beaches, (5) Nearshore Currents and Man-Made Structures, and (6) Estuaries. This particular publication is content-oriented rather than activity-oriented. This work was prepared under an ESEA Title III contract. (Author/EB)

ED 086 557 SE 017 229

Awkerman, Gary L.

Zones of Life in the Sea.

Charleston County School District, North Charleston, S C

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C

Pub Date [73]

Note—28p

EDRS Price MF-$0.65 HC-$3.29

Descriptors—Biology, Conceptual Schemes, *Earth Science, *Environmental Education, Instructional Materials, *Marine Biology, Natural Sciences, *Oceanology, Secondary School Science, Study Guides

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This publication is designed for use in standard science curricula to develop oceanologic manifestations of certain science topics included are teacher guides, student activities, and demonstrations designed to impart ocean science understanding. Specific learning objectives, the rationale, materials needed, and suggested teacher introductions are presented. The six student activities prepared should enable the students to achieve the suggested objectives (1) to identify a number of oceanic zones, (2) to describe changes in environmental factors related to change in depth; (3) to identify zones of a beach, and (4) to describe the beach zones relative to diversity of organisms present. This work was prepared under an ESEA Title III contract. (Author/EB)

ED 087 188 EC 061 290

Me and My Environment, Unit IV: Transfer and Cycling of Materials in My Environment, Experimental Edition 1973-74.

Biological Sciences Curriculum Study, Boulder, Colo.

Spons Agency—Office of Education (DHEW), Washington, D C

Pub Date 73

Note—710p.; This document contains 355 leaves, all of which are 11 inches wide by 8 1/2 inches high and, require two microfiche frames. For related information see EC 050871, EC 050872, EC 050873, EC 050874, EC 050875, EC 061291, EC 061292 and EC 061293

EDRS Price MF-$0.65 HC-$26.32

Descriptors—Adolescents, Behavioral Objectives, Biology, *Class Activities, *Curriculum Guides, *Educable Mentally Handicapped, *Environmental Influences, *Exceptional Child Education, Inquiry Training, Instructional Materials, Mentally Handicapped, Sciences

The experimental 1973-74 edition of Unit IV consists of 28 life science curriculum activities for 13- to 16-year-old educable mentally handicapped children. The role of the teacher in continuing field trials is noted and environmental themes and elements, inquiry skills, problem solving skills, and applicational behaviors and attitudes are stressed. Directions for using the student records-of-progress and tally sheets are provided for the teacher. The three cores of activities are preceded by suggestions of general aims (e.g., student development of a success syndrome and development of some control over the environment), specific goals, objectives, and a planning guide listing materials needed for each activity. Titles for core A, which contains seven activities on energy and material transfer, include (1) Making Compost, (2) The Food Chain Game Revisited, and (3) Food Webs in My Community. Titles of some of the activities in Core B--Decomposers in My Environment are (1) Starting to Rould Up the Food Chain, (2) Talking Rot, (3) Planting in Compost, and (4) A Real Oas. Among the nine activity titles for Core C--Garbage and My Environment are (1) Classroom Trash, (2) Every Litter Bit Helps, and (3) The Recycling Pay Off. Activities are organized in terms of materials, teaching strategies, and anticipated student behavior. An evaluation feedback form accompanies each activity. (MC/SM)

ED 087 189 EC 061 291

Me and My Environment, Unit V: Air and Water in My Environment, Experimental Edition 1973-74.

Biological Sciences Curriculum Study, Boulder, Colo

Spons Agency—Office of Education (DHEW), Washington, D C

Pub Date 73

Note—1,044p.; This document contains 522 leaves, all of which are 11 inches wide by 8 1/2 inches high and require two microfiche frames. For related information see EC 050871, EC 050872, EC 050873, EC 050874, EC 050875, EC 061290, EC 061292 and EC 061293

EDRS Price MF-$0.65 HC-$36.19

Descriptors—Adolescents, Behavioral Objectives, Biology, *Class Activities, *Curriculum Guides, *Educable Mentally Handicapped, *Environmental Influences, *Exceptional Child Education, Inquiry Training, Instructional Materials, *Mentally Handicapped, Problem Solving, Sciences

The experimental 1973-74 edition of Unit V consists of 35 life science curriculum activities intended for 13- to 16-year-old educable mentally handicapped adolescents. The role of the teacher in continuing field trials is noted and environmental themes and elements, inquiry skills, problem solving skills and applicational behaviors and attitudes are stressed. Directions for using the stu-

dent records-or-progress and tallysheets are provided for the teachers The seven cores of activities are preceded by suggestions of general aims (e.g., student development of a success syndrome and development of some control over the environment), specific goals, objectives and a planning guide listing materials needed for each activity Cores A through D--which focus on needs, sources, processes and management associated with water--contain 21 activities with titles such as (1) Living Things Are Mostly Water, (2) A Trip to the Water Plant, and (3) Microbes in Water Titles for the 14 activities contained in cores E through G--on components, change agents and additives in air--include (2) Testing for Carbon Dioxide and Oxygen, (21 Weather and Air, and (3) Do We Need a Filter On Our Town? Activities are organized in terms of materials, teaching strategies, and anticipated student behavior. An evaluation/feedback form accompanies each activity. (MC/SM)

ED 092 358 SE 017 617

O'Connor, Jim

Life Science Through Field Experiences, Science (Experimental): 5311.14.

Dade County Public Schools, Miami, Fla

Pub Date 72

Note—28p., An Authorized Course of Instruction for the Quinmester Program

EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE

Descriptors—Behavioral Objectives, Biology, Conservation Education, *Environmental Education, Instruction, *Instructional Materials, Science Education, *Secondary School Science, *Teaching Guides, Units of Study (Subject Fields)

Identifiers—*Quinmester Program

This unit of instruction is concerned with briefly interpreting some major life science aspects of the South Florida environment and is dependent on outdoor laboratories, excursions, and ecology-oriented instructional materials It is suggested that many of the instructional materials may need to be originated To make collections on field trips is illegal without a permit, thus, information is provided to facilitate this request No enrollment guidelines are suggested, State-adopted texts relevant to the course are listed The performance objectives and course outline are presented in the booklet Relevant publications are suggested and South Florida Environmental Science Media Units available from the Dade County Audiovisual Center are found in the unit Suggested activities, guest speakers, and field trips are provided Films available as well as slides, transparencies, records, and models are listed A list of necessary materials to be purchased is included in the booklet A master sheet is provided relating each suggested activity to the specific performance objectives (EB)

ED 093 599 SE 016 983

Jackland, Thomas And Others

Environmental Chemistry Activities.

Milwaukee Public Schools, Wis. Div. of Curriculum and Instruction

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date 72

Note—69p

EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE

Descriptors—*Chemistry, Curriculum, *Curriculum Enrichment, *Environmental Education, Instruction, Instructional Materials, *Science Activities, Science Education, *Secondary School Science

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Milwaukee Public Schools

The authors of this curriculum supplement believe in a laboratory approach to chemistry and express the feeling that environmental chemistry provides the students an opportunity to apply theoretical chemistry to important practical problems There are eighteen activities presented, each accompanied with behavioral objectives, one or more suggested methods of procedures, an introduction giving pertinent facts related to the concept being studied, and the materials needed. In some instances there is a suggested Follow Up Teacher Demonstration. A set of environmental chemical equations is included as well as a detailed table. Selected Environmental Pollutants, taken from the United Nations Conference on the Human Environment. The reference list suggests seven publications regarded as being pertinent and useful to any chemistry teacher involved with environmental chemistry. (EB)

ED 093 619 SE 017 108

Hershey, John T. And Others

A Curriculum Activities Guide to Birds, Bugs, Dogs, and Weather and Environmental Studies, Volume 5. 2nd Edition.

Institute for Environmental Education, Cleveland, Ohio

Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.

Pub Date Aug 73

Grant—OEG-0-71-4622; OEG-0-72-5105

Note—159p.

Available from—Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, Ohio 44106

EDRS Price MF-$0.75 HC-$7.80 PLUS POSTAGE

Descriptors—Biology, *Curriculum Guides, Environment, *Environmental Education, Field Studies, Instruction, Meteorology, *Science Activities, Science Education, Secondary School Students, Teaching Techniques

Identifiers—*Insutute for Environmental Education

This material is one publication of a series of documents available from the Institute for Environmental Education (Cleveland) and consists of a curriculum activities guide to birds, bugs, dogs, and weather and environmental studies The first edition of this material was prepared by the Documentation Task Force of Project KARE, Philadelphia, and was revised by personnel at the institute The guide is intended for use by teachers and students until they feel sufficiently confident to prepare their own materials and is organized into three sections. Chapter I is on awareness activities, 2 on transitional activities, and 3 on operational acuvities Awareness activities, developed with process skills in mind, are designed to orient students toward a concern for environmental problems and a realization that the problems are appropriate subjects for study. Transitional acuvities are directed toward real community concerns Operational activities are integrated with community efforts to solve environmental problems. The guide's format is that of a questioning sequence, using questions to (1) lead to the activity, (2) initiate the acuvity, (3) continue the activity, (4) expand the activity, and (5) evaluate the activity. Teachers using the guide are invited to use only those activities that are most appropriate to their situation. (PEB)

ED 093 648 SE 017 376

Hershey, John T., Ed And Others

A Curriculum Activities Guide to Water Pollution Equipment and Environmental Studies, Volume 3.

Institute for Environmental Education, Cleveland, Ohio.

Pub Date Sep 73

Note—130p.

Available from—Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, Ohio 44106 ($6.75)

EDRS Price MF-$0.75 HC-$6.60 PLUS POSTAGE

Descriptors—*Activity Learning, *Curriculum Guides, *Environmental Education, Environmental Research, Equipment, *Laboratory Equipment, Pollution, Student Developed Materials, *Water Pollution Control, Water Resources

Identifiers—*Institute for Environmental Education

The purpose of this guidebook is to present instructions for constructing low-cost instruments for environmental studies The instruments discussed were either adopted or designed by students who were presented with the problem of producing low-cost environmental monitoring equipment. This book is a sequel to A Curriculum Activities Guide to Water Pollution and Environmental Studies Volumes 1 and 2, but can be used independently of the guide Information concerning the publication of the curriculum guide mentioned above is available in this document. (JP)

ED 093 682 SE 017 990

Lamb, William G.

A Sourcebook for Secondary Environmental Education.

Texas Univ., Austin. Science Education Center.

Pub Date [73]

Note—117p

EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE

Descriptors—*Annotated Bibliographies, Audiovisual Aids, Bibliographies, *Curriculum, *Environmental Education, Instruction, *Instructional Materials, Learning Activities, Literature Reviews, Science Fiction, *Secondary Grades, Secondary School Science, Teaching Guides

The first sections of this document include a discussion of the general characteristics and general objectives of environmental education and of criteria for choosing environmental education materials for classroom use. The final chapter is a guide to resources for environmental education at the secondary level. Annotated bibliographies of written and of audiovisual materials are provided. Curricular materials are reviewed and are classified under four headings, Semester and Full-Year Courses, Modules and Mini-courses, Field Trip Guides, and Games and Simulations Fifteen addresses for sources of games and simulations are listed The final section discusses the use of science fiction as a classroom tool and provides an annotated list of science fiction stories with environmental themes, an annotated list of special resources, and a list of bibliographies of sources for science fiction studies. (DI)

ED 094 948 SE 016 025

Hulett, Clifton A. And Others

Environmental Education Activity Sheets I-11.

Minnesota Univ., St. Paul. Agricultural Extension Service

Pub Date 74

Note—34p.

Available from—University of Minnesota, Agricultural Extension Service Bulletin Room, St. Paul, Minnesota 55101

EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE

Descriptors—*Environmental Education, Field Studies, Outdoor Education, Science Activities, Secondary School Students

Identifiers—University of Minnesota

These activity sheets, developed by personnel of the Agricultural Extension Service of the University of Minnesota, were designed for youth group campers but may be used by other populations and individuals Each activity sheet focuses on a separate topic (1) Selecting Suitable Uses for Land, (2) Measuring the Steepness of Land, (3) Determining Soil Texture, (4) The Great Rainfall Runoff Race (5) Building a New Town, (6) Exploring the Prairie and Forest, (7) Exploring the Pond or Lakeshore, (8) Exploring the Soil, (9) Exploring Gray Squirrel Environments, (10) Studying Soil Erosion and Its Control, and (11) A Classroom Full of Trees Each sheet is similar in format descriptive information is provided relating to the topic of the activity and directions are given for preparing the materials needed for the activity A brief teaching outline is provided for some of the activities (PEB)

ED 098 098 SO 007 868

Teaching Resource Recovery in Science, Resource Recovery Education Program.

National Association of Secondary School Principals, Washington, D.C., National Center for Resource Recovery, Inc., Washington, D.C.

Pub Date 74

Note—19p., Related documents are SO 007 866, 867, and 870

Available from—National Association of Secondary School Principals, 1904 Association Drive, Reston, Virginia 22091 ($12.00 for kit, 20 percent discount on order of five or more)

EDRS Price MF-$0.75 HC Not Available from EDRS, PLUS POSTAGE

Descriptors—*Class Activities, Community Study, *Conservation (Environment), Course Objec-

tives. *Ecology. *Environmental Education. Interdisciplinary Approach. Pollution. Questioning Techniques. Resource Materials. *Science Education. Secondary Education. Teaching Methods. Technology. *Waste Disposal

This guide, one component of the Resource Recovery Education Kit (see SO 007 866 for a description), contains ideas and activities for teaching about solid waste disposal in secondary level science classes. Among the course objectives are the following: (1) to understand that sufficient technology exists to recover a greater segment of the resources than we are now extracting, (2) to learn about improved methods for reducing waste volume and disposing of the residue, and (3) to develop an understanding of how we can conserve depletable resources for the future. Teaching strategies include constructing models, conducting laboratory experiments, research, and classroom discussion. The guide consists of three major study units: (1) Solid Waste: A Growing Problem, (2) Disposal, and (3) Resource Recovery. Objectives, student activities, questions for discussion and research, basic understandings to be developed, and instructional resources are provided for each unit. A special projects section provides visual and print instruction for constructing a model landfill site simulating the waste conditions that lead to water pollution, identifying the microorganisms responsible for the process of composting, and recycling glass. (Author/RM)

ED 099 188 95 SE 017 050

Tanner, R. Thomas

Environmental Studies in the Physical Sciences. Project Reports, Volume 3, The Rachel Carson Project.

Corvallis School District 509J, Oreg.

Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.

Bureau No—BR-1-0839

Pub Date Sep 72

Grant—OEG-0-71-4623

Note—77p.; Related documents are SE 017 047-054

EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE

Descriptors—Conservation Education, Curriculum Guides, Energy, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, Learning Activities, Natural Resources, Physical Sciences, *Program Content, Program Descriptions, Secondary Education, Teaching Guides

Identifiers—*Rachel Carson Project

This document is the third of seven accompanying volumes included in the Rachel Carson Project. The project attempts to introduce environmental education lessons and units into existing courses of study within a high school rather than to implement environmental education through the introduction of new courses. This volume reports the environmentally-related activities implemented in a physics and a chemistry program by two of the teachers involved in the project. The physics unit concentrates on a study of energy beginning with an introduction of the various forms of energy, i.e., kinetic, potential, work, and heat. Next is an examination of the first law of thermodynamics and its application to steam engines and power sources. The unit concludes with an inquiry into the environmental impact of energy use. A bibliography of the texts and materials used is included. The chemistry unit consists of environmental projects in three areas: literature research, model building, and field research. It includes examples of book reports, an example of a student investigation of the water quality of streams in the area, and a student project involving the construction of an electrostatic precipitator. (MLB)

ED 099 215 95 SE 018 278

Larson, Robert J.

Environmental Activities, Senior High School.

Laramie County School District 1, Cheyenne, Wyo.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date 74

Note—89p.

EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE

Descriptors—Conservation Education, *Curriculum Guides, Ecology, Educational Programs, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Lesson Plans, Natural Resources, Program Development, Science Education, *Secondary Grades

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This guide, for use at the secondary level, is designed to create future citizens who will be aware and understanding of their natural environment. Among the subjects discussed are advertising as an ecological cop-out, recycling, optimum environments, hydrophonics, pest control by means of ultrasonic vibrations, the effectiveness of Cottrell Precipitation on controlling smoke pollution, and chemical tests for lead and phosphate pollution. Each learning activity includes behavioral objectives, directions to the teacher and students, lists of materials needed, references, and a listing of related audiovisual materials. (BT)

ED 099 230 88 SE 018 433

Junglas, Mary R. And Others

Environmental Learning Experiences: Bio-Physical, Senior High School.

Willoughby-Eastlake School District, Willoughby, Ohio

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date 74

Note—115p.

EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE

Descriptors—Conservation Education, *Curriculum Guides, Environment, *Environmental Education, Instructional Materials, Learning Activities, Natural Resources, *Sciences, *Secondary Education, *Secondary School Science, Teaching Guides

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This environmental education curriculum guide was developed for teacher use at the senior high school level. Although the guide deals with the bio-physical aspects of the environment, it is designed to encourage an integration of the disciplines into an inter-disciplinary approach. The volume consists of a set of ideas, activities, and opinions which will help teachers and students generate a positive approach to the environment. The guide is divided into the following six units. Earth Thoughts, which focuses on the student as an integral part of the environment. Quality of Life, which encourages the student to establish what determines his personal quality of life. Environmental Inventory, which examines tools and methods used to investigate environmental problems. Environmental Management, which develops an approach to management through the investigation of a system of water management. Community Problems, which develops an awareness of environmental problems, and Futurism, which looks at changes, developments, and directions in technology. Each unit contains an introduction, stating the purpose and background, instructional objectives, experiences, and references. The experiences of each unit are based on an objective which relates to the subject of the unit. Several activities are included in each experience. (TK)

ED 100 662 88 SE 018 353

Biology, Environmental Education Guide.

Project I-C-E, Green Bay, Wis.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Education, Madison.

Pub Date [74]

Note—119p.

EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE

Descriptors—*Biology, Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, *Science Education, *Secondary Education, *Teaching Guides

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E

This biology guide, for use at the secondary level, is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that emphasize experimentation and discussion relating to environmental problems making science more relevant to the student. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as photosynthesis, the food chain, and the watercycle. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 663 88 SE 018 354

Earth Science, Environmental Education Guide.

Project I-C-E, Green Bay, Wis.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Education, Madison.

Pub Date [74]

Note—33p.

EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE

Descriptors—Conservation Education, *Earth Science, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, *Science Education, *Secondary Education, *Teaching Guides

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E

This earth science guide, for use at the secondary level, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design containing a series of episodes (minilessons) that focus on student-centered activities allowing the student to make observations, collect data, interpret results, and draw conclusions. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as climatic ecosystems, land use, and atmosphere. Most of the 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 667 88 SE 018 358

Life Science, Environmental Education Guide.

Project I-C-E, Green Bay, Wis.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Education, Madison.

Pub Date [74]

Note—40p.

EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE

Descriptors—*Biological Sciences, Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, *Science Education, *Secondary Education, *Teaching Guides

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E

This life science guide is one of a series of guides, K-12, that were developed by teachers to

help introduce environmental education into the total curriculum The materials contained in the guide are supplementary, and designed to aid the science teacher in providing the kinds of experiences needed by students to gain an understanding of the environmental life processes. The guide contains a series of episodes (minilessons) that are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or subject areas. This guide focuses on aspects such as succession, ecosystems, and the food chain. Most of the 12 concepts are covered in one of the episodes contained in the guide Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 697 88 SE 018 595
Physical Science, Environmental Education Guide.
Project I.C.E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—29p
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, *Physical Sciences, *Science Education, *Secondary School Science, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III ESEA Title III, Instruction Curriculum Environment, *Project I C E
This physical science guide for use at the secondary level is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum The guides are supplementary in design, containing a series of episodes (minilessons) that emphasize a student-centered, scientific approach to gain new and deeper understandings of ecology The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or subject areas This guide focuses on aspects such as light, sound, and nuclear energy Most of the 12 concepts are covered in one of the episodes contained in the guide Further each episode offers subject area integration subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives and suggested references and resource materials useful to teachers and students (Author/TK)

ED 100 698 88 SE 018 596
Physics, Environmental Education Guide.
Project I.C.E, Green Bay, Wis
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—45p
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, *Physics, *Science Education, *Secondary School Science, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E
This physics guide, for use at the senior high level, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum The guides are supplementary in design, containing a series of episodes (minilessons) that focus on student-centered activities with direct application of mathematical and physical laws to modern-day technology The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas This guide focuses on aspects such as mechanics, momentum, and light. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 101 945 SE 018 118
[East Syracuse-Minoa Schools Environmental Education Materials, High School Package,]
East Syracuse - Minoa Central Schools, East Syracuse, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date [73]
Grant—OEG-0-71-4621
Note—345p.; Best copy available; occasional marginal legibility
EDRS Price MF-$0.76 HC-$17.13 PLUS POSTAGE
Descriptors—*Biology, Conservation Education, *Curriculum Guides, Ecology, *Environmental Education, Independent Study, Interdisciplinary Approach, Natural Resources, Physics, *Science Education, *Secondary School Science, Units of Study (Subject Fields)
This series of four environmental education units is designed for use at the high school level. The first unit, an advanced science and independent study, includes such topics as student requirements, advisor responsibilities, evaluation forms, research report format, a guide to Syracuse University libraries, and research ideas The second unit, an ecology course, explores biotic interrelationships, air quality, water quality, and other ecology-related problems Course requirements, a course time table, terminal objectives for each area of study, activities, diagrams, worksheets, tables, and reference materials are included An environmental biology unit, the third unit, is a three-week unit which explores such topics as populations, communities, ecosystems, biomes, and biosphere Worksheets, objectives, resources, project suggestions which correlate course text and other curriculum materials are included in the units. The final unit deals with environmental physics, exploring noise, air pollution, the automobile, the bicycle, aircraft, solid waste, and electric power. Each topic includes activities and/or an information outline and discussion questions or topics. (TK)

ED 103 253 SE 018 534
Transect Studies, An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis, National Wildlife Federation, Washington, D.C.
Pub Date 72
Note—33p., Related documents are SE 018 514-533
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C 20036 (Order No 79196, $1.50)
EDRS Price MF-$0.76 HC-$1.95 PLUS POSTAGE
Descriptors—*Ecology, Elementary Grades, *Environmental Education, Instructional Materials, Intermediate Grades, Invertebrates, Junior High Schools, *Learning Activities, Natural Resources, Outdoor Education, *Science Education, Secondary Grades, *Teaching Guides
Identifiers—*Transect Studies
This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires minimal teacher preparation. The philosophy of the units is based on an experience-oriented process that encourages self-paced independent student work. In this unit, students make a line transect and then study the different organisms found along it Preliminary activities are concerned with familiarizing students with techniques of measuring temperature, light intensity, wind direction, and kinds of organisms Next, students prepare the materials to be used at the field site On the field trip, students collect as much data as possible along their transect At a classroom debriefing session, students discuss their findings and attempt to identify interrelationships The activities include a list of materials needed, directions for building the equipment, data collection techniques, and questions for discussion The latter half of the unit is devoted to sample graphs and data sheets that can be duplicated for the students Suggested grade levels for this unit are 3-9 (MA)

ED 104 651 SE 018 632
Gail, Peter A And Others
A Curriculum Activities Guide to Watershed Investigations and Environmental Studies, Volume 6, Revised.
South Brunswick Township Board of Education, Monmouth Junction, N.J
Spons Agency—Office of Education (DHEW), Washington, D.C
Pub Date Dec 74
Grant—OEG-0-72-4987
Note—154p., Best Copy Available, Occasional Marginal Legibility
Available from—Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, OH 44106 ($6.75)
EDRS Price MF-$0.76 HC-$8.24 PLUS POSTAGE
Descriptors—*Environmental Education, Instructional Materials, Investigations, *Learning Activities, *Natural Resources, Outdoor Education, Science Education, Secondary Education, *Teaching Guides, *Water Pollution Control, Water Resources
This curriculum activities guide provides the teacher with a model for a comprehensive program in watershed studies With increased concern over water pollution, a study of the watershed is important to complete an understanding of water drainage problems This guide includes a rationale for the study of watersheds and develops methods of implementation within the school system. An operational model for a watershed study program illustrates the data to be collected, problems to be identified, and special groups to be contacted for support With the teaching activities in the guide, background information is included A section in the guide explains the skills needed for the watershed study and appendices at the end include a bibliography and sample organizational information. (MA)

ED 106 084 SE 018 495
West, Jonathan M
Environmental Education Study Projects for High School Students.
Tennessee Valley Authority, Knoxville.
Pub Date Jul 74
Note—14p
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, *Independent Study, Instructional Materials, Learning Activities, Natural Resources, *Science Education, *Secondary Education, *Teaching Guides
This paper has been designed as a general guide to the teacher, student, group, or club interested in identifying environmental or resource problems at the community level and helping to find solutions to them The paper discusses the independent studies program as a method of studying environmental problems as well as a source of academic credit The establishment of such a program and considerations involved in such a study are examined Environmental problem solving and the complexity of environmental problems are also discussed The paper presents three project types which may be used as guidelines for other independent studies. The first project involves identifying and lessening the impact of a community environmental problem and involves either study of the relationships between related concerns and establishing priorities or as-

sessing the perceived problem through a number of interviews or questionnaires. The second project, Assessing Impact of a Developmental Project, involves using some of the guidelines established by the National Environmental Protection Agency in their impact statements. The third project, Environmental Research, requires a laboratory test facility. Suggested readings and a checklist of environmental concerns are included in the paper. (TK)

ED 107 471 SE 018 149
Environmental Studies Program: A Manchester Watershed Training Project.
Manchester Board of Education, N.H.; Saint Anselms Coll., Manchester, N.H.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Pub Date [74]
Grant—OEG-0-73-5422
Note—244p.; Best Copy Available. Occasional Marginal Legibility
EDRS Price MF-$0.76 HC-$12.05 PLUS POSTAGE
Descriptors—Curriculum. *Ecology. *Environmental Education. Equipment. *Guides. Instructional Materials. *Program Descriptions. Reports. Secondary Education. *Secondary School Science
Identifiers—Watersheds
Described is a project involving the Manchester Public School System and St. Anselm's College, intended to bring about value changes in the citizens of Manchester and surrounding towns and to bring about ecological reform, social ecology, and good conservation methods and practices. The project involved the use of students, high school teachers, college faculty members, and the State of New Hampshire officials from the State Water Pollution Board, State Conservation Departments, State Air Pollution Board and State Education Department. The Studies Program, the program background and the project staffing are described. An outline of the New England Inservice Environmental Education Program is included in the document. An Environmental Studies Guide including a high school ecology curriculum, is presented along with a complete description of Environmental Education Homemade Equipment. A special report on Stevens Pond and a copy of the presentation units are also included in the Program package. (EB)

ED 108 890 SE 019 068
Brown, Robert T., Ed. Clark, Barbara G., Ed.
Horse Manure and Other Fun Projects. Field Studies and Laboratory Experiences in Environmental Biology - A Book of Experimental Ideas for Secondary School Biology Teachers.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date 71
Note—140p.; The product of a conference held on Isle Royale National Park, June 1971; Best copy available; Occasional marginal legibility
EDRS Price MF-$0.76 HC-$6.97 PLUS POSTAGE
Descriptors—*Biological Sciences; Biology; Conservation Education. *Environmental Education. *Instructional Materials. Interdisciplinary Approach. Natural Resources. Outdoor Education. *Science Education. Secondary Education. *Teaching Guides
This guide contains a collection of laboratory and field inquiries designed to promote ecological awareness, sensitivity, and understanding. The activities compiled by 28 teachers are for use in teaching biology at the secondary level. They are presented in a "recipe" form to make it possible for teachers without prior experience or training to use the activities with ease and confidence. The experiments are generally open-ended, leaving the teacher and students with extensions for further activities. Nine chapters are included in the guide: Planning Outdoor Field Experiences. Field Studies, Physical Factors. Field Studies. Plants: Field Studies. Animals. Field Studies. Succession: Field Studies. Water Organisms. Laboratory Studies: Human Ecology. Pollution, and Population, and Permanent Outdoor Facilities Development and Use. Each chapter contains a number of activities. The activities contain, when appropriate, the purpose, procedures, materials, observations, suggestions, and discussion topics, and conclusions. A reference section including books, programs, and resource people completes the guide. (TK)

ED 108 891 SE 019 069
Energy Activities and Resources for the Secondary Student.
Kingsport City Schools, Tenn.
Pub Date 75
Note—74p.
EDRS Price MF-$0.76 HC-$3.32 PLUS POSTAGE
Descriptors—*Energy. *Energy Conservation. Environmental Education. *Instructional Materials. *Natural Resources. Science Education. Secondary School Students. *Teaching Guides
The materials in this guide provide secondary level students (7-12 grade) the opportunity to become aware, knowledgeable, and motivated to find possible solutions to our urgent and complex energy related problems. Five interdisciplinary units are presented in the guide. Uses of Energy. Present and Future Sources of Energy. Conservation of Energy. Environmental Impact of Energy Related Activities, and Energy Limits-Resources. Finitude. These units are flexible and are to be used by the secondary teacher subject to her/his plans and schedules. Each unit contains an overview, objectives, and suggested activities. The activities include such processes and skills as mathematical estimates, discussion, comparisons, creative writing, and inquiry and discovery activities. Also included in the guide are additional activities, appendices, energy related resources, and energy related terms. (TK)

ED 133 224 SE 021 899
McCutcheon, Patricia And Others
Priority One: Environment. Air Pollution and Your Health.
Union Township Board of Education, N.J.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; New Jersey State Dept. of Education, Trenton. Div. of Research, Planning, and Evaluation
Pub Date 75
Note—28p.; For related documents, see SE 021 898-906; Not available in hard copy due to copyright restrictions
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Air Pollution Control. *Environment. *Environmental Education. Health Education. *Instructional Materials. Pollution. *Secondary Education. *Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III. ESEA Title III
This unit is one of a series on environmental education for grades 1-12. The unit is designed to be used with secondary school students and includes the following sections: (1) Seeing Issues as Human Values. (2) The Future of the Automobile. (3) Soot, Smog, and Smell. How Much Harm Can They Do. (4) Emission Control Devices for the Automobile. (5) Pollution Control for Industries and Power Plants. (6) Air Pollution Legislation; (7) The Clean Air Amendments Today, and (8) Schedule Sheet for the Unit. References to audiovisual materials, worksheets, and activities are made; these materials are not included with this publication, but may be purchased. The materials have been validated as successful, cost-effective, and exportable by the standards and the guidelines of the U.S. Office of Education. (RH)

ED 133 225 SE 021 900
McCutcheon, Patricia And Others
Priority One: Environment: Air Pollution and Your Health. Teacher's Guide.
Union Township Board of Education, N.J.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; New Jersey State Dept. of Education, Trenton. Div. of Research, Planning, and Evaluation.
Pub Date 75
Note—28p.; For related documents, see SE 021 898-906. Not available in hard copy due to copyright restrictions
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Air Pollution Control. *Environment. *Environmental Education. Health Education. Instructional Materials. *Pollution. *Secondary Education. *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III. ESEA Title III
This teaching guide is designed to be used with secondary school students and the unit Air Pollution and Your Health. Material for the teacher includes the following: (1) an introduction to the unit; (2) a discussion of the sections of the unit; (3) instructional objectives. (4) suggestions for use of filmstrips, worksheets, reference materials, and activity cards, and (5) an outline of the unit. These materials have been validated as successful, cost-effective, and exportable by the standards and guidelines of the U.S. Office of Education. (RH)

ED 133 226 SE 021 901
Colagrande, John Santarsiero, Thomas
Priority One: Environment. Protecting Our Water Supplies.
Union Township Board of Education, N.J.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; New Jersey State Dept. of Education, Trenton. Div. of Research, Planning, and Evaluation
Pub Date [75]
Note—28p.; For related documents, see SE 021 898-906. Not available in hard copy due to copyright restrictions
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Ecology. *Environment. *Environmental Education. *Instructional Materials, Natural Resources. *Secondary Education. *Units of Study (Subject Fields). *Water Resources
Identifiers—Elementary Secondary Education Act Title III. ESEA Title III
This unit is one of a series in environmental education for grades 1-12. The unit is designed to be used with secondary school students and includes the following sections: (1) Preface; (2) Riverview. (3) A Healthy Waterway; (4) An Unhealthy Waterway. (5) Cleanup Technology; (6) Effects of Certain Other Pollutants; (7) Lake Tahoe. (8) The Role of the Individual; and (9) Schedule Sheet for the Unit. References to audiovisual materials, worksheets, and activities are made; these materials are not included with this publication but may be purchased. These materials have been validated as successful, cost-effective, and exportable by the standards and the guidelines of the U.S. Office of Education. (RH)

ED 133 227 SE 021 902
Colagrande, John Santarsiero, Thomas.
Priority One: Environment. Protecting Our Water Supplies, Teacher's Guide.
Union Township Board of Education, N.J.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; New Jersey State Dept. of Education, Trenton Div. of Research, Planning, and Evaluation.
Pub Date [75]
Note—28p.; For related documents, see SE 021 898-906. Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Ecology. *Environment. *Environmental Education. Instructional Materials, Natural Resources. *Secondary Education. *Teaching Guides. *Water Resources
Identifiers—Elementary Secondary Education Act Title III. ESEA Title III
Material for this teacher's guide include: (1) an introduction to the unit; (2) a discussion of the sections of the unit. (3) instructional objectives; (4) suggestions on use of filmstrips, worksheets, reference materials, and activity cards; and (5) an outline of the unit. These materials have been validated as successful, cost-effective, and exportable by the standards and guidelines of the U.S. Office of Education. (RH)

ED 133 228 SE 021 903
Augis, Lynne And Others
Priority One: Environment. The Energy Challenge.
Union Township Board of Education, N.J.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; New Jersey State Dept. of Education, Trenton. Div. of Research, Planning, and Evaluation.
Pub Date [75]
Note—40p.; For related documents, see SE 021 898-906; Not available in hard copy due to copyright restrictions
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Energy, *Environment, Environmental Education, *Instructional Materials, *Natural Resources, *Secondary Education, *Units of Study (Subject Fields), Wastes
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This unit is one of a series in environmental education for grades 1-12. The unit is designed to be used with secondary school students and includes the following sections: (1) Preface; (2) Foods, Fuels, and You; (3) Blackout in the City; (4) Conservation and Efficiency; (5) Our Present Sources; (6) The Oil Crisis; (7) The Nuclear Controversy; (8) Tapping New Resources; (9) Developing Other Ways; and (10) Schedule Sheet for the Unit. References to audiovisual aids, worksheets, and activities are made, these materials are not included with this publication, but may be purchased. These materials have been validated as successful, cost-effective, and exportable by the standards and the guidelines of the U.S. Office of Education. (RH)

ED 133 229 SE 021 904
Augis, Lynne And Others
Priority One: Environment. The Energy Challenge. Teacher's Guide.
Union Township Board of Education, N.J.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; New Jersey State Dept. of Education, Trenton. Div of Research, Planning, and Evaluation.
Pub Date [75]
Note—32p.; For related documents, see SE 021 898-906; Not available in hard copy due to copyright restrictions
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Energy, *Environment, *Environmental Education, Instructional Materials, Natural Resources, *Secondary Education, *Teaching Guides, Wastes
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
Material for this teacher's guide includes (1) an introduction to the unit; (2) a discussion of the sections of the unit, (3) instructional objectives; (4) suggestions on use of filmstrips, worksheets, reference materials, and activity cards; and (5) an outline of the unit. These materials have been validated as successful, cost-effective, and exportable by the standards and guidelines of the U.S. Office of Education. (RH)

ED 133 230 SE 021 905
Knapp, Clifford
Priority One: Environment. Open Lands and Wildlife.
Union Township Board of Education, N.J.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; New Jersey State Dept of Education, Trenton. Div of Research, Planning, and Evaluation.
Pub Date [75]
Note—40p.; For related documents, see SE 021 898-906; Not available in hard copy due to copyright restrictions
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Ecology, *Environment, Environmental Education, *Instructional Materials, Land Use, *Natural Resources, *Secondary Education, *Units of Study (Subject Fields), *Wildlife Management
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This unit is one of a series on environmental education for grades 1-12. The unit is designed to be used with secondary school students and includes the following sections: (1) Preface; (2) Dead or Alive; (3) Finding Out by Looking Closely; (4) A Year in the Life of a Twin Fawn; (5) Ecology; (6) The Tools of Wildlife Management; (7) Land Use; (8) Helping a Threatened Population, A Model for Action; (9) Suggested Strategies for Action; (10) Appendixes; and (11) Schedule Sheet for the Unit. References to audiovisual materials, worksheets, and activities are made, these materials are not included with this publication but may be purchased. The materials in this unit have been validated as successful, cost-effective, and exportable by the standards and guidelines of the U.S. Office of Education. (RH)

ED 133 231 SE 021 906
Knapp, Clifford
Priority One: Environment. Open Lands and Wildlife, Teacher's Guide.
Union Township Board of Education, N.J.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; New Jersey State Dept of Education, Trenton Div of Research, Planning, and Evaluation.
Pub Date [75]
Note—36p.; For related documents, see SE 021 898-905; Not available in hard copy due to copyright restrictions
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Ecology, *Environment, Environmental Education, Instructional Materials, Land Use, *Natural Resources, *Secondary Education, *Teaching Guides, Units of Study (Subject Fields), *Wildlife Management
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
Material in this teaching guide includes: (1) an introduction to the unit, (2) a discussion of the sections of the unit, (3) instructional objectives, (4) suggestions for use of filmstrips, worksheets, reference materials, and activity cards; and (5) an outline of the unit. These materials have been validated as successful, cost-effective, and exportable by the standards and guidelines of the U.S. Office of Education. (RH)

ED 137 075 SE 022 012
Terry, Mark Witt, Paul
Energy and Order or If You Can't Trust the Law of Conservation of Energy, Who Can You Trust?
Friends of the Earth Foundation, San Francisco, Calif.
Pub Date 76
Note—47p.; Not available in hard copy due to copyright restrictions
Available from—Friends of the Earth, 124 Spear Street, San Francisco, CA 94105 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Energy, *Environment, *Instructional Materials, *Natural Resources, Secondary Education, *Secondary School Science, *Teaching Guides
This instructional program is designed to be used with grade 10 students for 4 to 5 weeks to help students to predict what will happen in a given energy situation. It is designed to lead students to an understanding of their personal energy use, to a realization of the moral nature of the assumptions underlying energy decisions, and to a belief that they can and should participate in decisions affecting their lives. Materials include: (1) Understanding Energy and Order - An Activity; (2) Energy and Order Primer - Presentation; (3) The Nuclear Accident - Presentation; (4) The Automobile Accident - Presentation; (5) The Population Accident - Presentation; (6) Understanding What's on the Bill - An Activity; (7) Understanding What's in the Container - An Activity; (8) The Green Revolution - Presentation; and (9) What's Keeping Us - Presentation. (RH)

ED 141 158 SE 022 680
Pesticides and the Marine Environment. A Learning Experience for Coastal and Oceanic Awareness Studies, No. 237. [Project COAST].
Delaware Univ., Newark. Coll. of Education
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 74
Note—20p.; For related documents, see SE 022 662-687
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—*Environment, *Instructional Materials, *Marine Biology, *Oceanology, *Pesticides, Pollution, Secondary Grades, *Secondary School Science, Teaching Guides, Units of Study
Identifiers—Project COAST
This document, for secondary school students, is designed to provide an introduction to the effects of pesticides in organisms and the environment. Included are background materials for the teacher, charts and graphs of the effect of chemicals on organisms, questions for discussion and study, and references. (RH)

ED 141 175 SE 022 700
Marine and Environmental Studies Field Manual.
Cranston School Dept., R.I.; Warwick School Dept., R.I.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Sep 73
Note—148p.; Page 77 missing from document; Best Copy Available
EDRS Price MF-$0.83 HC-$7.35 Plus Postage.
Descriptors—Animal Sciences, *Biological Sciences, Earth Science, Geology, *Instructional Materials, *Oceanology, Physical Sciences, Plant Science, Secondary Education, *Secondary School Science, *Units of Study
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Tides
This laboratory manual was developed for a field oriented high school oceanology program. The organization of the units includes a selection of supplementary activities to allow students to explore ocean studies in more depth. Included are 19 units. The units include biological oceanography, physical oceanography, and some social science topics. A suggested sequence of activities is provided. (RH)

ED 147 188 SE 023 371
Science Packets.
Maine Audubon Society, Falmouth
Spons Agency—Office of Education (DHEW), Washington, D.C.
Bureau No—522AH60802
Pub Date Sep 77
Grant—G006702036
Note—85p.; For related documents, see SE 023 370 and SE 023 258-259; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Energy Conservation, *Environmental Education, *Instructional Materials, Learning Activities, Natural Resources, Reference Materials, *Resource Materials, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Environmental Energy Education Project
This publication is an energy guide for teachers. It contains discussions and illustrations of five major topics: the sun's radiant energy, solar collection, solar cells, bioconversion (wood, grains, waste), and wind. Each section includes a listing of the concepts contained within and a brief discussion-explanation section. There is a short bibliography included. (MA)

ED 149 993 SE 023 463
Environmental Education, Values for the Future: Ecosystems, Grades 9-12.
Illinois State Office of Education, Springfield.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—64p.; For related documents, see SE 023 448-457 and SE 023 459-465; Pages 25-51 ("Eco-Catastrophe") and page 60 ("Environment Grass Grows in Parking Lots") removed prior to being shipped to EDRS due to copyright restrictions
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Ecology, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Resource Materials, *Secondary

Education. *Teaching Guides. Values
Identifiers—Elementary Secondary Education Act Title III
This booklet on ecosystems is one in a series on environmental education for grades K-12. The activities explore the structure and dynamic nature of ecosystems, as well as the interactions between humans and ecosystems. Four basic behavioral objectives are listed with activity options and appropriate subject areas. Each activity includes materials and resources, procedures and discussion questions. The twelve activities are interdisciplinary and are designed for high school students, grades 9-12. Materials include illustrations, data sheets, worksheets, and case studies. (MA)

ED 149 994 SE 023 464
Environmental Education, Values for the Future: Energy, Grades 9-12.
Illinois State Office of Education, Springfield
Spons Agency—Bureau of Elementary and Secondary Education (DHEW OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—98p.; For related documents see SE 023 448-457 and SE 023 459-465. Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Energy, *Energy Conservation, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III
This booklet on energy is one in a series on environmental education for grades K-12. The activities explore energy use and technology, along with their environmental impact. Five basic behavioral objectives are listed with activity options and appropriate subject areas. Three activities are given for each objective. Information for these includes materials and resources, procedures, and discussion questions. The activities are interdisciplinary and are designed for high school students, grades 9-12. They include role playing, games and simulations, physics experiments, and mathematical calculations. Illustrations, data sheets, worksheets, and tables are also given. (MA)

ED 156 479 SE 024 440
Growth: How Much is Too Much? Student Book. Science Module (9th-10th Grade Biology). Revised Edition.
Georgia Univ., Athens. Coll. of Education
Spons Agency—Office of Education (DHEW), Washington, D.C.
Bureau No—522AH51215
Pub Date 77
Note—104p.; For related documents, see SE 024 441-447. Portions of or the entire page of pages 5, 21, 26, 62, and 78 have been removed due to copyright restrictions; Contains occasional light and broken type; Photographs may not reproduce well
EDRS Price MF-$0.83 HC-$6.01 Plus Postage.
Descriptors—Course Content, *Ecology, *Environmental Education, *Instructional Materials, Land Use, *Population Education, Science Education, *Secondary Education, Waste Disposal
This learning module is designed to integrate environmental education into ninth- and tenth-grade chemistry classes. This module and a companion social studies module were pilot tested in Gwinnett County, Georgia in 1975-76. The module is divided into four parts. Part one provides a broad overview of unit content and proposes questions to stimulate student interest in environmental problems. Part two is intended to develop an understanding of population dynamics. Part three deals with population and land use. Part four addresses the problems of waste disposal. The module is intended to take 16 or 17 days to complete. Some of the activities included are a population study using microbes, a study of symbiosis, soil moisture and percolation rate, and a simulated zoning board meeting. (BB)

ED 156 480 SE 024 441
Growth: How Much is Too Much? Teacher's Guide. Science Module (9th-10th Grade Biology).
Georgia Univ., Athens. Coll. of Education.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Bureau No—522AH51215
Pub Date 77
Note—38p.; For related documents, see SE 024 440-447; Contains light and broken type in "Role Descriptions"
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Course Content, *Ecology, *Environmental Education, Instruction, Land Use, *Population Education, Science Education, *Secondary Education, *Teaching Guides, Waste Disposal
This is a teacher's guide for a learning module designed to integrate environmental education into ninth- and tenth-grade chemistry classes. This module and a companion social studies module were pilot tested in Gwinnett County, Georgia in 1975-76. The module is divided into four parts. Part one provides a broad overview of unit content and proposes questions to stimulate student interest in environmental problems. Part two is intended to develop understanding of population dynamics. Part three deals with population and land use. Part four addresses the problems of waste disposal. This guide includes overall objectives, the module sequence, teacher preparation for class activities, suggested sequence of instruction, and suggested short, answer review quizzes. (BB)

ED 156 483 SE 024 444
Water: How Good is Good Enough? Student Book. Science Module (9th-10th Grade Chemistry). Revised Edition.
Georgia Univ., Athens. Coll. of Education
Spons Agency—Office of Education (DHEW), Washington, D.C.
Bureau No—522AH51215
Pub Date 77
Note—66p.; For related documents, see SE 024 440-447; Portions of or the entire page of pages 31,32, and 40-42 have been removed due to copyright restrictions. Photographs may not reproduce well
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Course Content, *Environmental Education, Experiential Learning, *Instructional Materials, Pollution, Science Education, *Secondary Education, *Waste Disposal, Water Pollution Control, *Water Resources
This learning module is designed to integrate environmental education into ninth- and tenth-grade chemistry classes. This module and a companion social studies module were pilot tested in Gwinnett County, Georgia in classes of students, many of whom had learning disabilities. It emphasizes activity learning. The module is divided into four parts. Part one is on water sources, part two on water quality, part three on sewage treatment, and part four is a review (the water game). There is a total of 14 activities designed for 14 days. Some of the activities are a field trip to the county water treatment plant, the hydrologic cycle, a cloud formation demonstration, and an investigation of the water table. (BB)

ED 156 484 SE 024 445
Water: How Good is Good Enough? Teacher's Guide. Science Module (9th-10th Grade Chemistry).
Georgia Univ., Athens. Coll. of Education.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Bureau No—522AH51215
Pub Date 77
Note—51p.; For related documents, see SE 024 440-447; Page 21 removed due to copyright restrictions; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Course Content, Curriculum Guides, *Environmental Education, Experiential Learning, *Instructional Materials, Science Education, *Secondary Education, *Teaching Guides, Waste Disposal, *Water Pollution Control, *Water Resources
This is a teacher's guide for a module designed to integrate environmental education into ninth- and tenth-grade chemistry classes. The module, pilot tested in Gwinnett County, Georgia in classes of students, many of whom had learning disabilities, emphasizes activity learning and considerable review. The module is divided into four parts. Part one is on water sources, part two on water quality, part three on sewage treatment, and part four (the water game) is a review. There is a total of 14 activities designed for 14 days. Summary statements, broad objectives, discussion topics and questions, supplementary resources, and helpful hints are given for each activity. Also included in the guide are a list of overall objectives, the module sequence, and a list of equipment and supplies. (BB)

ED 157 758 SE 024 760
Evenson, Larry
Chemistry for Pollution Control.
Seminole County Board of Public Instruction, Sanford, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date Jun 76
Note—38p.
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Chemical Analysis, Chemistry, *Environmental Education, *Instructional Materials, *Laboratory Procedures, *Secondary School Science, *Water Pollution Control
This booklet presents some methods of quantitative chemical analysis currently used in the field of fresh water pollution control. Only those tests that may be performed with little or no special reagents or pieces of equipment are listed. The booklet addresses the following determinations: (1) acidity, (2) alkalinity, (3) chloride, (4) hardness, (5) oxygen dissolved, (6) pH value, (7) phosphate, all forms, (8) solids, suspended, and (9) solids, total. (Author/RH)

ED 164 334 SE 025 991
Rasmussen, Frederick A.
Coastal Awareness: A Resource Guide for Teachers in Senior High Science. Preprint.
National Oceanic and Atmospheric Administration (DOC), Rockville, Md. Office of Coastal Zone Management.
Pub Date—Mar 78
Note—75p.; Contains occasional light type
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Activities, *Biological Sciences, *Environmental Education, Instructional Materials, *Marine Biology, Natural Sciences, *Resource Guides, Science Education, Secondary Education, *Secondary School Science
The stated purpose of this resource guide is to entice teachers to explore ecological aspects of coastal awareness. Discussions describe different characteristics of the coast such as: (1) waves, currents, and tides, (2) sandy beaches, (3) rocky shores, (4) estuaries, and (5) marshes. These discussions present some of the physical processes that occur along the coast and how those processes affect the ecology of the coast. Some activities are suggested which can increase high school students awareness of the coast. A resources section including (1) reading suggestions, (2) list of films, (3) some federal and state information sources, and (4) a glossary is presented. (MR)

ED 170 138 SE 027 598
Benson, Delwin E.
Helping Wildlife: Working With Nature.
Wildlife Management Inst., Washington, D.C.
Pub Date—77
Note—32p.; Shaded graphs and drawings may not reproduce well
Available from—Wildlife Management Institute, 709 Wire Building, 1000 Vermont Ave., N.W., Washington, D.C. 20005 ($1.00 postpaid)
Pub Type—Reports - Descriptive (141)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Conservation (Environment), Conservation Education, *Ecology, *Environment, Environmental Education, *Environmental Influences, *Natural Resources, *Wildlife Management
This booklet is intended as a guide for teaching some basic ecological concepts of natural resources and wildlife management. The document is divided into eight sections dealing respectively with ecological concepts; elements of the environment that support life; habitats; population dynamics; aspects of wildlife population management; what wildlife managers do; opportunities for needed action; and a section providing additional sources of information. (Author/RE)

ED 170 141 SE 027 603
Aronus, Craig A. And Others
Remote Sensing and the Earth.
Brevard County Board of Public Instruction, Titusville, Fla.; National Aeronautics and Space Administration, Washington, D.C.
Pub Date—Dec 77
Note—515p.; Not available in hard copy due to numerous colored and shaded photographs which may not reproduce well
Available from—School Board of Brevard County, Instructional Services Div., Project Remote Sensing, 1274 South Florida Avenue, Rockledge, Florida 32955 ($9.74)
Pub Type—Guides - Classroom - Learner (051)
EDRS Price - MF02 Plus Postage. PC Not Available from EDRS.
Descriptors—Cartography, *Earth Science, *Environmental Education, Instructional Materials, Learning Activities, Natural Resources, Reference Materials, *Resource Guides, *Science Education, *Secondary Education, *Space Sciences, Technology
Identifiers—*Remote Sensing
This document is designed to help senior high school students study remote sensing technology and techniques in relation to the environmental sciences. It discusses the acquisition, analysis, and use of ecological remote data. Material is divided into three sections and an appendix. Section One is an overview of the bases of remote sensing. Section Two contains selected readings which report formal research in agriculture, land use, geology, water resources, marine resources, and the environment. Section Three is composed of fundamental laboratory exercises which explore map reading and analysis, characteristics of the visible spectrum, and other relevant areas. The appendix contains supplemental references. Document includes numerous photographs and drawings, as well as study guides after each chapter. (MA)

ED 170 153 SE 027 631
Chave, E. H. And Others
HMSS (Hawaii Marine Science Studies) Sampler: Summer 1978 Draft Edition.
Hawaii Univ., Manoa. Curriculum Research and Development Group
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—78
Grant—NSF-SMI-PCTD-77-13210
Note—53p.; Not available in hard copy due to marginal legibility of original document
Pub Type—Reports - Descriptive (141)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Course Content, *Earth Science, *Environmental Education, Instruction, *Marine Biology, *Oceanology, Science Activities, Science Education, Secondary Education, *Secondary School Science
Identifiers—*Marine Science
The Hawaii Marine Science Studies (HMSS) Project has developed over twenty instructional units, which include student laboratory and field investigations, teacher guides and supplementary reference materials. HMSS units can be taught as a one or two semester course in high school marine science, or selected portions can be combined as marine science modules for use in other secondary courses. Design of HMSS materials is based on the premise that study of the oceans provides opportunity for students of all abilities to actively engage in multidisciplinary scientific inquiry while learning basic concepts of science. HMSS units are organized around the three themes. Two of the themes, the Fluid Earth, and the Living Ocean, together represent the traditional areas of oceanography. The third theme, Technology and the Ocean, provides a natural science background for the study of socio-technical issues. Instructional units included under each theme are listed in this booklet, along with sample instructional materials. (Author/BB)

ED 173 158 SE 028 406
Tullock, Bruce, Ed. And Others
Solar Energy Project: Teacher's Guide.
Department of Energy, Washington, D.C.; New York State Education Dept., Albany, Bureau of Science Education.; State Univ. of New York, Albany, Atmospheric Science Research Center.
Report No—DOE-CS-0060
Pub Date—Jan 79
Note—45p. For related documents, see SE 028 407-413
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock Number 061-000-00234-1, $2.20)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Energy, Environmental Education, Interdisciplinary Approach, *Science Curriculum, *Science Education, *Science Instruction, Science Programs, Secondary Education, *Solar Radiation, Technological Advancement, Technology
Identifiers—*Energy Education, *Solar Energy
This collection of materials supports the teaching of solar energy concepts in the context of secondary school science. Included in this collection are a basic teacher's guide to activities involved in the curriculum, a discussion of multi-disciplinary extensions of solar energy education by subject area, a section on hardware needed for the curriculum, and a section of resources and references. (RE)

ED 173 163 SE 028 411
Tullock, Bruce, Ed. And Others
Solar Energy Project, Activities: General Solar Topics.
Department of Energy, Washington, D.C.; New York State Education Dept., Albany. Bureau of Science Education; State Univ. of New York, Albany. Atmospheric Science Research Center.
Report No—DOE-CS-0061
Pub Date—Jan 79
Note—79p.; For related documents, see SE 028 406-413
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock Number 061-000-00231-6; $2.50)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Class Activities, Ecology, Economics, *Energy, Environmental Education, History, *Lesson Plans, *Science Education, *Secondary Education, Social Studies, *Solar Radiation, *Technological Advancement, Technology
Identifiers—Energy Education, *Solar Energy
This guide contains lesson plans and outlines of activities which introduce students to concepts and issues relating to solar energy. Lessons frequently presented in the context of solar energy as it relates to contemporary energy problems. Each unit presents an introduction; objectives; necessary skills and knowledge; materials; method questions; suggestions for further work, and a teacher information sheet. The teacher information sheet provides target grade level subject areas involved for the lesson and background material, hints on gathering materials for the lesson, suggested time allotment, suggested approach, typical results, precautions, modifications, evaluation, and references. (RE)

ED 174 435 SE 028 252
Resource Material Developed for Secondary Education: 18 Booklets.
Oatland Island Education Center, Savannah, Ga.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—[76]
Grant—G007602019
Note—259p.; Page 17 of "Living on Water, Its Environmental Impact" missing from document prior to its being shipped to EDRS for filming; Contains occasional marginal legibility
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC11 Plus Postage.
Descriptors—Biology, *Conservation (Environment), *Ecology, Environment, *Environmental Education, *Environmental Influences, Health, Pollution, *Science Education, Soil Conservation, Soil Science, Units of Study, Water Pollution Control, Water Resources
Each Learning Activity Packet in this series delineates performance objectives, procedures, materials, and references. Some also contain pre- and post-tests. They are primarily intended for the secondary level. The topics are: (1) Noise Pollution; (2) Georgia Ports Authority: Its Environmental Impact; (3) Environmental Experiencing, (4) Me in My Environment, (5) Lead Poisoning: A Health Problem in Savannah, (6) Weeds - Dandelion, Goldenrod, Ragweed, Crabgrass, (7) Honey Bees, (8) Non-Point Pollution, (9) Is a Dead Log Really Dead?; (10) Soil; (11) The Value of Composting; (12) Water Conservation, (13) Microecology: A Discovery Field-Oriented Activity, (14) A Healthy Ecosystem and the Concept of Diversity, (15) Living on the Water, Its Environmental Impact; (16) Working with Water; (17) Water As Vital Resources and (18) Hurricanes - A Threat to Our Environment. (TM)

ED 175 723 SE 028 806
Bennett, Dean B. Zaubin, Samuel
Student Study Guide - Water Quality Monitoring Approach to Watershed Studies, Presumpscot River Education Project.
Maine Association of Conservation Commissions, Augusta.; Maine Univ., Portland-Gorham.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—75
Grant—GOO7407348
Note—59p.; Contains occasional light and broken type
Pub Type—Guides - Classroom - Learner (051)
EDRS Price - MF01 PC03 Plus Postage.
Descriptors—Ecology, *Environment, *Environmental Education, *Environmental Influences, Higher Education, *Pollution, *Science Education, Secondary Education, Undergraduate Study, *Water Pollution Control, Water Resources
Identifiers—*Monitoring
This guide is designed for both independent study and class use. It provides the basis for a unit in a science class for the secondary school level. At the undergraduate college level, it provides an outline of activities for a contract as part of an education or science course. The lessons in the guide concentrate on the application of science skills and concepts in identifying and solving water and land environmental problems. (Author/RE)

ED 175 728 SE 028 811
Morrison, James W., Ed. Hall, James A., Ed.
Student-Made Environmental Studies Equipment, Volume I.
Manchester Board of Education, N.H.; Saint Anselm's Coll., Manchester, N.H.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—75
Grant—OEG-0-73-5422
Note—59p.; For related document, see SE 028 812; Photographs will not reproduce
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Art Education, *Class Activities, Environment, *Environmental Education, Equipment, Handicrafts, *Industrial Arts, *Instructional Materials, *Interdisciplinary Approach, Recycling, Science Education, *Science Equipment, *Secondary Education
This document contains 20 devices which can be made by junior high and high school students. The products of these student projects can be employed in the study of the environment and range in topic from the study of biochemical oxygen demand in water to the construction of a back pack. Materials used in each project are generally readily available as salvaged material or for little cost. Projects involve a variety of manual skills but are not complex. Construction of these devices may draw on the resources of various secondary school disciplines. (RE)

ED 175 729 SE 028 812
Morrison, James W., Ed. Hall, James A., Ed.
Student-Made Environmental Studies Equipment, Volume II.
Manchester Board of Education, N.H.; Saint Anselm's Coll., Manchester, N.H.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—75
Grant—OEG-0-74-7345
Note—59p.; For related document, see SE 028 811;

Photographs will not reproduce
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Art Education, *Class Activities, Environment, *Environmental Education, Equipment, Handicrafts, Industrial Arts, *Instructional Materials, Interdisciplinary Approach, Pollution, *Recycling, Science Education, *Science Equipment, *Secondary Education
Twenty-two projects are described in this booklet. Materials necessary for construction can be obtained for little cost or as salvaged parts. Equipment produced by these projects can be used in the collection and study of plants and animals and in the study of environmental quality parameters such as air quality and soil conditions. Construction of some of the devices may draw on the resources of various secondary school disciplines (RE)

ED 175 730 SE 028 813
Morrison, James W., Ed. Hall, Jamet A., Ed.
Terrestrial Ecology Guide.
Manchester Board of Education, N.H., Saint Anselm's Coll., Manchester, N.H.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Pub Date—75
Grant—OEG-0-74-7345
Note—159p.; Photographs will not reproduce
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Biology, Botany, Class Activities, *Ecology, Environment, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Natural Resources, *Outdoor Education, Pollution, Science Education, *Secondary Education, *Zoology
This collection of study units focuses on the study of the ecology of land habitats. Considered are such topics as map reading, field techniques, forest ecosystem, birds, insects, small mammals, soils, plant ecology, preparation of terrariums, air pollution, photography, and essentials of an environmental studies program. Each unit contains instructions and materials lists necessary to implement the lessons contained in the unit (RE)

ED 177 014 SE 029 134
Navigation, Northern New England Marine Education Project.
Maine Univ., Orono Coll. of Education., Maine Univ., Orono Sea Grant Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—78
Note—51p.; For related documents, see SE 029 132-135; Not available in hard copy due to copyright restrictions
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Astronomy, Earth Science, Ecology, Environment, *Environmental Education, Geography, Geometry, Interdisciplinary Approach, *Mathematics Education, *Navigation, Ocean Engineering, Oceanology, *Science Education, *Secondary Education, Technical Education, Technology
Identifiers—*Sea Grant
This guide provides student practice problems which use the procedures of ship navigators to reinforce the skills of mathematics learned in the secondary school and which seek to provide examples of the application of mathematical concepts. Along with the practice problems, teacher background material is provided briefly in the body of the unit. More detailed explanations are provided in the appendices. A reference section is included. (RE)

ED 179 355 SE 028 771
Farnsworth, Carolyn Mayer, Victor J.
Lake Erie and Changing Lake Levels, Student Guide and Teacher Guide. OEAGLS Investigation 5.
Ohio State Univ., Columbus. Research Foundation.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md.
Pub Date—Mar 79
Grant—NOAA-04-8-M-01-170;
Note—269p.; For related documents, see SE 028 768-774; Prepared in collaboration with the Ohio Sea Grant Program.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Earth Science, Elementary School Science, Elementary Secondary Education, Environmental Education, *Instructional Materials, Lesson Plans, *Oceanology, *Science Activities, *Science Course Improvement Project, Science Curriculum, *Science Education, Science Instruction, Secondary School Science, Worksheets
Identifiers—*Oceanic Education Activ for Great Lakes Schools, Ohio Sea Grant
This guidebook for teachers is accompanied by a student workbook. The investigations are intended to offer students an opportunity to learn about the causes and effects of increases in the level of Lake Erie and the effects of lake level regulation. Illustrations and graphs accompany the written material. (Author/SA)

ED 179 356 SE 028 772
Kennedy, Beth A. Former, Rosanne W.
Coastal Processes and Erosion, Student Guide and Teacher Guide. OEAGLS Investigation 7.
Ohio State Univ., Columbus Research Foundation.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md.
Pub Date—Feb 79
Grant—NOAA-04-8-M-01-170;
Note—39p.; For related documents, see SE 028 768-774; Prepared in collaboration with the Ohio Sea Grant Program
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Curriculum Development, Environmental Education, *Geology, Instructional Materials, *Oceanology, *Science Activities, Science Course Improvement Project, Science Curriculum, Science Education, Science Instruction, Secondary Education, Secondary School Science
Identifiers—*Oceanic Education Activ for Great Lakes Schools, Ohio Sea Grant
This investigation focuses on the major erosional forces affecting the shoreline which cause it to wear away and build up. The types of devices that protect the shoreline are also discussed. The investigation is presented in the form of a teachers' guide and a students' guide, both of which are included. In the teachers' guide, an overview of the material is followed by the objectives and procedures to use during the investigation. Materials and objectives are listed and suggestions are given on the approach to use. Transparency masters accompany the teachers' guide and instructions are included. Review questions are suggested. (SA)

ED 179 395 SE 029 327
Loy, Gary A., Ed. McCurdy, Donald, Ed.
Basic Teaching Units, BTU's on Energy, Nebraska Energy Conservation Plan.
Nebraska State Energy Office, Lincoln.
Pub Date—[78]
Note—598p.; Not available in hard copy due to marginal legibility of original document. Appendix 6, pages VII-53 through VII-98 and XIV-27 removed due to copyright restrictions
Available from—Nebraska State Energy Office, 301 South Centennial Mall 4th Floor, P.O. Box 95085, Lincoln, NE 68509 (no price quoted)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF03 Plus Postage. PC Not Available from EDRS.
Descriptors—*Curriculum, *Energy, *Energy Conservation, *Fuel Consumption, Fuels, Home Economics, Industrial Arts, *Interdisciplinary Approach, Natural Resources, Petroleum Industry, Physics, Science Education, *Secondary Education, Solar Radiation, Vocational Agriculture
Identifiers—*Energy Education
This collection of 21 teaching units is designed for use in energy education within various disciplines of the secondary curriculum. Each unit is designed to stand alone. Suggested teaching times range from five to fifteen days. No particular order of presentation is implied. Each unit is organized as follows: abstract, recommended level, time required, teaching strategies, advance preparation, goals and objectives, daily lessons recommended, evaluation suggestions, and bibliography. Units that require handouts or transparencies include duplication masters. Teachers are encouraged to modify the units. Topics include scientific principles of energy, historical, present and future energy sources; economics; and solar energy (RE)

ED 179 411 SE 029 434
Braun, Ludwig Friedland, James
Huntington II Simulation Program - BUFLO, Student Workbook, Teacher's Guide, and Resource Handbook.
Digital Equipment Corp., Maynard, Mass.; State Univ. of New York, Stony Brook. Huntington Computer Project.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—Mar 74
Grant—NSF-GW-5883
Note—65p.; For related documents, see SE 029 435-440 and ED 093 644-645; Not available in hard copy due to marginal legibility of original document
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Computer Assisted Instruction, Computer Programs, *Ecology, Environment, *Environmental Education, Game Theory, Models, Natural Resources, *Science Education, Secondary Education, *Simulation, *Wildlife Management
Described is the use of the computer model "BUFLO." BUFLO is a simulation which allows students to study the historical and biological reasons for the extinction of the buffalo. BUFLO simulates the natural life cycle of the buffalo and allows the student to manipulate harvesting policies to reach certain goals outlined in the student handbook. (Author/RE)

ED 179 414 SE 029 437
Braun, Ludwig Friedland, James
Huntington II Simulation Program - POP, Student Workbook, Teacher's Guide, and Resource Handbook.
Digital Equipment Corp., Maynard, Mass.; State Univ. of New York, Stony Brook. Huntington Computer Project.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—Mar 73
Grant—NSF-GW-5883
Note—68p.; For related documents, see SE 029 434-440 and ED 093 644-645; Not available in hard copy due to marginal legibility of original document
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Computer Assisted Instruction, *Ecology, Entomology, Environment, Game Theory, Models, *Population Education, *Population Growth, Science Education, Secondary Education, *Simulation, Zoology
Described is the population growth computer model "POP." This program is designed to allow a student with little mathematical background to explore various simple mathematical models of population growth. Student exercises revolve around the growth of a gypsy-moth population. Three variations of population modeling are included in POP. POP 1, simple exponential growth. POP 2, including an environmental limiting factor, and POP 3, a model with an environmental limiting factor and other modifications. (Author/RE)

ED 179 416 SE 029 439
Friedland, James
Huntington II Simulation Program - TAG, Student Workbook, Teacher's Guide, and Resource Handbook.
Digital Equipment Corp., Maynard, Mass.; State Univ. of New York, Stony Brook. Huntington Computer Project.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—May 73
Grant—NSF-GW-5883
Note—55p.; For related documents, see SE 029 434-440 and ED 093 644-645; Not available in hard copy due to marginal legibility of original document
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Availa-

ble from EDRS.
Descriptors—*Biology. *Computer Assisted Instruction. *Conservation Education, Environment, Game Theory, Instructional Materials, Natural Resources, Population Growth, Sampling, *Science Education, Secondary Education, *Simulation, *Wildlife Management
Presented are instructions for the use of "TAG," a model for estimating animal population in a given area. The computer program asks the student to estimate the number of bass in a simulated farm pond using the technique of tagging and recovery. The objective of the simulation is to teach principles for estimating animal populations when they cannot be counted directly or when counting would disturb or harm the animals. (Author/RE)

ED 179 417 SE 029 440
Friedland, James
Huntington II Simulation Program - USPOP. Student Workbook, Teacher's Guide, and Resource Handbook.
Digital Equipment Corp., Maynard, Mass.; State Univ. of New York, Stony Brook. Huntington Computer Project.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—Jun 73
Grant—NSF-GW-5883
Note—101p.; For related documents, see SE 029 434-439 and ED 093 644-645; Not available in hard copy due to marginal legibility of original document
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Computer Assisted Instruction, *Demography, Environment, *Environmental Education, Family Planning, Game Theory, *Population Education, Science Education, Secondary Education, *Simulation
Presented are instructions for the use of "USPOP," a human population model which involves computer simulation. The student may manipulate variables which affect the population dynamics of the United States. Baseline data are drawn from the 1970 census. Variables which can be manipulated include fertility, age of mother at birth of child, sex ratio of offspring, and age-dependent mortality. (Author/RE)

ED 180 757 SE 029 366
Student Guide for Environmental Education Program, Revised Edition.
Atlanta Public Schools, Ga.
Pub Date—Sep 73
Note—79p.; Not available in hard copy due to marginal legibility of original document. Pages 38-39, and 72 removed due to copyright restrictions
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Curriculum, *Environmental Education, *Independent Study, Instructional Materials, *Learning Activities, Research Methodology, Research Projects, Science Education, *Secondary Education, *Student Projects, *Student Research, Study Guides, Urban Schools
Presented is a student learning guide for high school students working independently on a self-paced research project in an environmental field. Students are introduced to environmental awareness and the environmental crisis, and are presented with a variety of techniques helpful in conducting a research project. Included are choosing a problem, writing a proposal, conducting an interview, planning research, carrying out the research project, and project evaluation. (BT)

ED 180 791 SE 029 432
Posthuma, Fred Stephen, Merle
Introduction to Energy. Instructional Modules and Transparency Masters.
Wisconsin Univ., Madison. Wisconsin Vocational Studies Center
Pub Date—78
Note—139p.; Not available in hard copy due to copyright restrictions
Available from—Wisconsin Vocational Studies Center, 1025 W. Johnson St., Publications Unit, Room 265, University of Wisconsin, Madison, WI 53706 ($6.50)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Curriculum, *Energy, *Energy Conservation, *Environmental Education, Natural Resources, *Science Education, Secondary Education, Solar Radiation
Identifiers—*Energy Education
This energy module is intended for an introductory course on energy for secondary school classes. It consists of behavioral objectives, general background, vocabulary, lesson outlines, coordinated activities, and an annotated bibliography of resources. It is intended to provide a fundamental guide for the establishment of the teacher's own energy curriculum. Because the module is intended to include a shop or lab component, the first two lessons deal with a preliminary introduction and safety. (Author)

ED 180 809 SE 029 538
Metro, Peter M Green, Rachel E.
The Pond Community. Teacher's Manual.
Rocky River Public Schools, Ohio.
Spons Agency—Ohio State Dept. of Education, Columbus. Div. of Research, Planning, and Evaluation.
Pub Date—Mar 77
Note—71p.; For related document, see SE 029 537. Contains occasional light and broken type
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Biology, Conservation Education, *Ecology, *Environment, *Environmental Education, Natural Resources, Science Activities, Science Education, Secondary Education, Teaching Guides, *Water Resources
This study guide is intended as preparation for a visit to a pond. Each lesson includes pre-study questions and post-study questions involving the content of the lesson. Numerous drawings and diagrams are included in each lesson. Also included in the guide are a glossary, bibliography, and a detailed teacher's guide. (RE)

ED 180 833 SE 029 824
Hyman, Connne B. Van Sickle, Janet
Life Systems Program, Woodstock Country School: A Preliminary Curriculum Guide.
Woodstock Country School, South Woodstock, Vt.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—78
Grant—G007802594
Note—198p.; Contains occasional marginal legibility
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC08 Plus Postage.
Descriptors—Art Education, *Curriculum Development, Environment, *Environmental Education, *Humanities Instruction, *Interdisciplinary Approach, *Science Education, *Secondary Education
This curriculum guide presents documentation of development of a holistic approach to curricula in science, art, humanities, and environmental education for the secondary school level. The outgrowth of this curricula development was the integration of these disciplines into a "life systems" curriculum involving an interrelated teaching approach. The curriculum was implemented in a private school using a tri-mester program. Adaptation to public school schedules should not be difficult. (RE)

ED 184 817 SE 030 347
Bottarelli, Charles A., Ed. Dow, John O., Ed.
Energy and Energy Conservation Activities for High School Students.
Energy Information Associates, Inc., Littleton, Colo
Spons Agency—National Science Foundation, Washington, D.C.
Report No—SPI-78-04527
Pub Date—Apr 79
Note—233p.; Contains marginal legibility in Appendices
Available from—Energy Information Associates, Inc., 2690 W. Main St., Littleton, CO 80120 ($6.00 plus handling and postage).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC10 Plus Postage.
Descriptors—*Class Activities, Energy, *Energy Conservation, Environment, *Environmental Education, *Interdisciplinary Approach, Mathematics Education, Natural Resources, *Physical Sciences, Science Education, Secondary Education, *Solar Radiation
This manual contains fifteen energy activities suitable for high school physical and environmental science and mathematics classrooms. The activities are independent, each having its own objectives, introduction, and background information. A special section of each activity is written for the instructor and contains hints, sample data, and suggestions for follow-up activities. Most of the activities are analytical or empirical and require students to have completed a second year of high school algebra. (Author/RE)

ED 184 859 SE 030 512
Biglan, Barbara
Urban Environmental Education Project, Curriculum Module I: Energy Generation - Sources and Consequences.
Allegheny Intermediate Unit, Pittsburgh, Pa
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Jul 79
Note—62p.; For related documents, see SE 030 511-519. Contains occasional light type.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Class Activities, *Electricity, *Energy, Energy Conservation, Environment, Environmental Education, Fuel Consumption, *Fuels, *Natural Resources, *Science Education, Secondary Education, Urban Education
Identifiers—*Energy Education
Included in this module are five activities dealing with sources and consequences of power production. The activities include (1) review of the nature of energy, (2) options for power production, (3) energy resources and their sources, (4) energy and the future, and (5) a simulated energy conference in 1984. Also included are an overview, teacher background information, an activity preview, a pretest, and a module evaluation form. (RE)

ED 184 865 SE 030 518
Nous, Albert P Biglan, Barbara
Urban Environmental Education Project, Curriculum Module VII: Urban Ecology - Our Future Together.
Allegheny Intermediate Unit, Pittsburgh, Pa
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Aug 79
Note—43p.; For related documents, see SE 030 511-519.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Class Activities, *Decision Making, *Ecology, Environment, *Environmental Education, *Environmental Influences, Natural Resources, Pollution, *Science Education, *Secondary Education, Urban Education, *Urban Environment
Included in this module are four activities dealing with ecology and applications of ecological principles in the urban environment. Activities included are (1) the study of ecology, (2) study of consequences of activities within an ecosystem, (3) environmental impacts-benefits and detriments, and (4) choices for the future. Also included are an overview, teacher background information, an activity preview, and a pretest. A module evaluation form and a script for a slide series on Allegheny County, Pennsylvania are also included. (RE)

ED 190 400 SE 031 493
Jones, Michael
Limnology, Student Fieldbook.
Nebraska State Dept. of Education, Lincoln. Div of Instructional Services
Pub Date—77
Note—56p.; Not available in hard copy due to copyright restrictions
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Environmental Education, Higher Education, Instructional Materials, *Laboratory Manuals, *Outdoor Activities, Science Education, *Science Experiments, Secondary Education, *Water Resources
Identifiers—*Limnology, Water Quality

This student fieldbook provides exercises for a three-week course in limnology. Exercises emphasize applications of knowledge in chemistry, physics, and biology to understand the natural operation of freshwater systems. Fourteen field exercises include (1) testing for water quality, (2) determination of water temperature, turbidity, dissolved-oxygen, carbon dioxide, alkalinity, acidity, pH, phosphates, nitrates, (3) sampling at shoreline, in open water, and bottom mud, and (4) examination of samples at those levels. Notes for four teleclessons, data tables, and apparatus diagrams are also included. (CS)

ED 194 302 SE 032 766

Meyland, Sarah J

It's Only a Little Planet: A Primer for Ocean Studies.

Texas A and M Univ., College Station. Sea Grant Coll. Program

Report No.—TAMU-SG-79-404

Pub Date—Sep 78

Note—81p.; Not available in hard copy due to copyright restrictions

Available from—Sea Grant College Program, Texas A&M University, College Station, TX 77843 ($5.00).

Pub Type— Guides - Classroom - Learner (051)

EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.

Descriptors—Chemistry, Ecology, *Environmental Education, *Field Trips, Higher Education, *Marine Biology, *Oceanography, *Outdoor Education, Science Education, Science Equipment, *Secondary School Science

Developed as part of the Day on the Bay Cruise Program, funded by the National Sea Grant Program, this learner's manual outlines ocean studies conducted on a seven-hour cruise of the Galveston Bay area. A description of the geology and human use of Galveston Bay follows a general introduction to coastal and estuarine ecology. Line drawings illustrate plankton and fish common to the study area. Also explained is the operation of the gravity corer, plankton net, reversing thermometer, otter trawl, and other gear employed in the cruise investigations. In addition, the guide discusses both theory and techniques of salinity and dissolved oxygen determination. A glossary defines frequently-used terms. (WB)

ED 194 325 SE 033 147

Rawson, Mac Trussell, Gale

Alabama 4-H Marine Pilot Manual.

Auburn Univ., Ala. Cooperative Extension Service. Mississippi-Alabama Sea Grant Consortium, Ocean Springs, Miss.

Spons Agency—Extension Service (DOA), Washington, D.C.; National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program

Report No.—MASGP-78-024

Pub Date—Aug 78

Grant—NOAA-04-7-158-44017

Note—43p.; Contains occasional light and broken type.

Available from—National Technical Information Service, Operations Div., Springfield, VA 22161 (Order No. PB-287 924/5WF, $6.00)

Pub Type— Guides - Classroom - Learner (051)

EDRS Price - MF01/PC02 Plus Postage.

Descriptors—*Ecology, Environmental Education, *Marine Biology, *Oceanography, *Outdoor Education, Secondary Education, *Secondary School Science

Identifiers—*Marine Education

Brief descriptions and eight activities related to zooplankton, sharks, dune ecology, ocean currents, and sea products comprise this manual. Among the activities are harvesting seafood, making Japanese fish prints, and tracing marine currents with drift bottles. (WB)

ED 196 702 SE 033 646

Flowers, John D

Making Water Pollution a Problem in the Classroom Through Computer Assisted Instruction.

Pub Date—Oct 80

Note—20p.; Paper presented at the Annual Convention of the National Association of Biology Teachers (Boston, MA, October 23-26, 1980)

Pub Type— Guides - Classroom - Teacher (052) — Speeches/Meeting Papers (150)

EDRS Price - MF01 PC01 Plus Postage.

Descriptors—*Computer Assisted Instruction, Computer Programs, Educational Methods, *Instructional Materials, *Problem Solving, *Programed Instruction, Science Activities, Science Education, *Secondary Education, Secondary School Science, *Water Pollution

Alternative means for dealing with water pollution control are presented for students and teachers. One computer oriented program is described in terms of teaching wastewater treatment and pollution concepts to middle and secondary school students. Suggestions are given to help teachers use a computer simulation program in their classrooms. Formulating hypotheses, identifying and manipulating variables, analyzing computer generated data tables, and graphic displays are described with regard to problem solving. (Author/CO)

ED 200 409 SE 034 452

Pennsylvania's Energy Curriculum for the Secondary Grades: Biological Science.

Pennsylvania State Dept. of Education, Harrisburg

Spons Agency—Pennsylvania State Governor's Energy Council, Harrisburg.

Pub Date—80

Note—31p.; For related documents, see SE 034 450-457

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 PC02 Plus Postage.

Descriptors—*Biology, Botany, Ecology, *Energy, Environmental Education, *Science Activities, *Science Education, Science Instruction, *Secondary School Science

Identifiers—Alternative Energy Sources

Described are about two dozen laboratory experiments, demonstrations, and class discussions intended to supplement secondary school biology curricula with energy-related learning activities. Concepts examined in these materials include photosynthesis, energy from biomass, feeding relationships, parasitism, and respiration. Lessons contain notes to the teacher, objectives, discussion questions, and recommended procedures. (WB)

ED 200 410 SE 034 453

Pennsylvania's Energy Curriculum for the Secondary Grades: Earth Science.

Pennsylvania State Dept. of Education, Harrisburg

Spons Agency—Pennsylvania State Governor's Energy Council, Harrisburg

Pub Date—80

Note—66p.; For related documents, see SE 034 450-457. Maps may not reproduce well

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 PC03 Plus Postage.

Descriptors—*Earth Science, *Energy, Environmental Education, Field Trips, *Geology, Natural Resources, *Science Education, Science Instruction, *Secondary School Science

Two dozen energy-related earth science lessons comprise this guide for secondary school teachers. Intended to provide information about energy issues that exist in Pennsylvania and throughout the world, the activities cover topics such as coal mining, radioactivity, and the distribution of oil and gas in Pennsylvania. Lessons include objectives, procedures, illustrated student handouts, and teacher references. Also listed are mines, museums, and power plants in Pennsylvania that earth science classes could visit. (WB)

ED 202 724 SE 035 151

Maver, Victor J And Others

PCBs in Fish: A Problem? Student Guide and Teacher Guide. OEAGLS Investigation 19.

Ohio State Univ., Columbus. Research Foundation

Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md.

Pub Date—Mar 81

Grant—NOAA-04-8-M01-170, NOAA-04-158-44099, NOAA-NA-79AA-D-00120

Note—57p.; For related documents, see SE 035 140-155 and ED 179 352-358. Prepared in collaboration with the Ohio Sea Grant Program

Available from—Ohio Sea Grant Education Office, 263 Arps Hall, Ohio State Univ., 1945 N. High St., Columbus, OH 43210 ($1.00 plus $1.00 per order for shipping).

Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)

EDRS Price - MF01 PC02 Plus Postage.

Descriptors—Chemical Industry, Ecology, *Environmental Education, *Fisheries, Health Education, Pollution, *Public Health, Science Course Improvement Projects, *Science Education, Secondary Education, *Water Pollution

Identifiers—Great Lakes, *Oceanic Education Activities Great Lakes Schools, Ohio Sea Grant Program, *Polychlorinated Biphenyls

In this secondary school unit, students investigate the health effects and methods for controlling polychlorinated biphenyls (PCBs). The teacher's manual contains a materials list, objectives, teaching strategies, supplementary information on PCBs, and answers to questions included in the accompanying student workbook. Activities presented include a teacher demonstration of dilution, a study of PCBs in Lake Erie white bass, and a simulation centered around policies for regulating the use of contaminated fish. (Author/WB)

ED 207 858 SE 035 780

Clark, Richard C., Ed.

A Portfolio of Energy Ideas: Science.

Minnesota State Dept. of Education, St. Paul.

Spons Agency—Minnesota State Dept. of Natural Resources, St. Paul. Environmental Education Board.; Minnesota State Energy Agency, St. Paul.

Pub Date—Jan 81

Note—102p.; For related document, see SE 035 781. Contains occasional colored pages which may not reproduce well

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—Activity Units, Conservation Education, *Energy, Energy Conservation, Environmental Education, *Science Activities, Science Education, *Science Experiments, Secondary Education, *Secondary School Science, *Teaching Guides, *Units of Study

Identifiers—*Energy Education

Presented are 10 science energy education units designed to help students learn how to turn science questions and problems about energy into experiments. Each unit focuses on subject-matter knowledge and on the logic and strategy of scientific problem solving. These teacher-oriented materials include an overview of each unit, background information, grade level and subject area, possible outcomes, teacher notes, teaching strategies, follow-up activities, evaluation questions, resource materials, and other useful information. While some activities are appropriate for use in all or several junior or senior high science classes, others are more specific to one or two such as earth science, physical science, or physics. Among the topics included are solid state physics, insulative properties, hot versus cold experiments, winter safety, energy cells, differential thermal expansion, thermal patterns, solar energy, and heat transfer. (DC)

ED 210 172 SE 035 857

Site and Watershed Mapping.

Institute for Environmental Education, Cleveland, Ohio.

Pub Date—77

Note—33p.; Contains occasional marginal legibility.

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC02 Plus Postage.

Descriptors—*Audiovisual Aids, *Environmental Education, High Schools, *Instructional Materials, Maps, *Map Skills, Physical Sciences, *Science Activities, Science Education, *Secondary School Science, Topography, Water Resources

Identifiers—Compass Reading, *Topographic Maps

Presented as part of a larger unit on watershed investigations are a slideshow script and a map and compass unit intended to help high school students better visualize the relationship between a water sampling site, the entire stream, community, and watershed. The script discusses features of a topographical map, shows how to read one, and demonstrates several mapping exercises involving mapping tables, clinometers, photo maps, and topographical models. Part two elaborates on the topographical map information presented in the slideshow. Also discussed are compasses and how to use them. Several map and compass exercises are included. Appendices provide information for purchasing compasses and teaching aids. (DC)

ED 216 927 SE 038 131

Stoever, Edward C., Jr.

Quake Estate (board game). Crustal Evolution Education Project. Teacher's Guide [and] Student Investigation.

National Association of Geology Teachers.

Spons Agency—National Science Foundation, Washington, D.C.

Report No.—CEEP-MOD-CA18-4-1. ISBN-0-

89873-046-5; ISBN-0-89873-047-3
Pub Date—79
Grant—SED-75-20151; SED-77-08539; SED-78-25104
Note—45p.
Available from—Ward's Natural Science Establishment, Inc., P.O. Box 1712, Rochester, NY 14603 (or P.O. Box 1749, Monterey, CA 93940.)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Earth Science, Educational Games, Environmental Education, Geology, Instructional Materials, Oceanography, *Science Activities, *Science Course Improvement Projects, Science Curriculum, Science Education, Science Instruction, Secondary Education, *Secondary School Science, *Seismology, Teaching Guides, Teaching Methods
Identifiers—*Crustal Evolution Education Project, Earthquakes, National Science Foundation, *Plate Tectonics
Crustal Evolution Education Project (CEEP) modules were designed to: (1) provide students with the methods and results of continuing investigations into the composition, history, and processes of the earth's crust and the application of this knowledge to man's activities and (2) to be used by teachers with little or no previous background in the modern theories of sea-floor spreading, continental drift, and plate tectonics. Each module consists of two booklets, a teacher's guide and student investigation. The teacher's guide contains all of the information present in the student investigation booklet as well as: (1) a general introduction, (2) prerequisite student background, (3) objectives, (4) list of required materials, (5) background information, (6) suggested approach, (7) procedure, including number of 45-minute class periods required; (8) summary questions (with answers), (9) extension activities, and (10) list of references. A game approach is used in this module focusing on land investment and development at a site located at a major plate boundary (San Andreas Fault) in California. Objectives include identifying geologic hazards in an earthquake-prone area, identifying probable effects of these hazards on land and development in the area, and stating measures used to minimize effect of these hazards. (Author/JN)

ED 219 268 SE 038 775
Lessons from an Energy Curriculum for the Senior High Grades. Teacher Guide - Indiana High School Energy Units. Energy Education Curriculum Project.
Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Apr 82
Grant—DE-F645-76CS-60038
Note—75p.; For related documents, see SE 038 776-784.
Pub Type— Guides - Classroom - Teacher (052) — Reports - Descriptive (141)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Conservation Education, *Energy Conservation, Environmental Education, High Schools, *Interdisciplinary Approach, *Learning Activities, Program Descriptions, Science Activities, *Science Curriculum, Science Education, *Secondary School Curriculum, Teaching Guides, Units of Study
Identifiers—*Energy Education, Indiana
Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum, resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. This general teacher's guide provides a rationale for the study of energy education, instructions for using the guide, background information on development of the units, goals/objectives, scope and sequence of the energy education curriculum, summary of the nine units (including unit number and subject area/topic emphasis), unit format, and a matrix indicating how units/lessons can be incorporated into the existing curricula. Strategies for infusing/relating learning to living, school-wide challenges, lifestyle activities, awareness activities, sources of selected references and materials, and a bibliography are also provided. (Author/JN)

ED 219 271 SE 038 778
Lessons from an Energy Curriculum for the Senior High Grades. Unit III - Energy: Food Production and Preparation (Energy Use and Conservation). Energy Education Curriculum Project.
Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Jan 82
Grant—DE-F645-76CS-60038
Note—42p.; For related documents, see SE 038 775-784.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Conservation Education, Educational Games, *Electrical Appliances, Energy, *Energy Conservation, Environmental Education, *Foods Instruction, High Schools, Home Economics, Interdisciplinary Approach, *Learning Activities, Science Activities, Science Curriculum, Science Education, *Secondary School Curriculum, Teaching Guides, Units of Study
Identifiers—*Energy Education, Food Production, Indiana
Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum, resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. Unit III, focusing on energy related to food production and preparation, consists of an introduction (rationale, unit objectives, and general background information), four lessons, unit resources, bibliography, and teacher evaluation form. Each lesson includes lesson title, objectives, background information, activities, evaluation techniques, and resources. Titles of lessons are: (1) Energy Use and Energy Conservation in the Home (Home Energy Game), (2) Energy Consumption in Food Preparation and Production; (3) Food Preparation and Energy Conservation Techniques; and (4) Oven Use and Energy Consumption. (Author/JN)

ED 219 273 SE 038 780
Lessons from an Energy Curriculum for the Senior High Grades. Unit V - Energy and Agriculture. Energy Education Curriculum Project.
Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Oct 81
Grant—DE-F645-76CS-60038
Note—47p.; For related documents, see SE 038 775-784.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Agricultural Production, *Agriculture, *Conservation Education, Energy, *Energy Conservation, Environmental Education, High Schools, Interdisciplinary Approach, *Learning Activities, Science Activities, Science Curriculum, Science Education, *Secondary School Curriculum, Teaching Guides, Units of Study
Identifiers—*Energy Education, Indiana
Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum, resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. Unit V, focusing on energy and agriculture, consists of an introduction (rationale, unit objective, and general background information), one lesson, unit resources, bibliography, and teacher evaluation form. The lesson (Energy Conservation on the Farm) includes objectives, background information, seven student activities, resources, evaluation techniques, and transparency masters. (Author/JN)

ED 219 274 SE 038 781
Lessons from an Energy Curriculum for the Senior High Grades. Unit VI - Fossil Fuels and Energy Alternatives (Solar, Coal). Energy Education Curriculum Project.
Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Apr 82
Grant—DE-F645-76CS-60038
Note—102p.; For related documents, see SE 038 775-784.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—*Coal, *Conservation Education, Energy, *Energy Conservation, Environmental Education, Fuels, High Schools, Interdisciplinary Approach, *Learning Activities, Science Activities, Science Curriculum, Science Education, *Secondary School Curriculum, *Solar Radiation, Teaching Guides, Units of Study
Identifiers—Alternative Energy Sources, *Energy Education, Indiana
Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum, resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. Unit VI, focusing on fossil fuels and energy alternatives (solar and coal), consists of an introduction (rationale, unit objectives, and general background information), eight "solar lessons," three "coal lessons," unit resources, bibliography, and teacher evaluation form. Each lesson includes lesson title, objectives, background information, activities, evaluation techniques, and resources. Titles of solar lessons are (1) All Buildings Are Solar Collectors, (2) The Cardboard Carpenter and the Solar Hot Plate, (3) A Green Ice House, (4) A Water Solar Collector, (5) The Sunshine Papers (drawing and designing a solar plate collector), (6) Color Conduction Comparison, (7) Wind Generator; and (8) Seconds Hand Solar Sources Savonius Rotors. Coal lesson titles are (1) Coal and Energy, (2) Types of Mining and Mines, and (3) Problems with Coal and Solutions. (Author/JN)

ED 219 275 SE 038 782
Lessons from an Energy Curriculum for the Senior High Grades. Unit VII - Energy Conservation. Energy Education Curriculum Project.
Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Jan 82
Grant—DE-F645-76CS-60038
Note—59p.; For related documents, see SE 038 775-784.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Conservation Education, Energy, *Energy Conservation, Environmental Education, Heating, High Schools, Interdisciplinary Approach, *Learning Activities, *Physical Sciences, Science Activities, Science Curriculum, Science Education, *Secondary School Curriculum, Teaching Guides, Units of Study
Identifiers—*Energy Conversion, *Energy Education, Gasohol, Indiana
Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum, resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. Unit VII, focusing on energy conversions, consists of an introduction (rationale, unit objective, and general background information), 10 activities, materials list for first 4 lessons, bibliography, and teacher evaluation form. Each lesson includes lesson title, objectives, background information, activities, evaluation techniques, and resources. Titles of lessons are (1) Calories for Heating Our Homes, the Cost of Heat-

ing; (2) Do We Know the Heat Produced Per Unit of Measure? (3) Measuring Heat Transfer: The Calorie; (4) Kilowatt-Hours, Calories, and BTU's; (5) The Most Economical Home Heat Source; (6) Construction of a Hydroelectric Generator; (7) Heat Exchangers; (8) Moonshine Travel: Sunshine Solutions (Gasohol); (9) Seeing Dust as a Fuel; and (10) Pedal Power. (Author/JN)

ED 219 276 SE 038 783

Lessons from an Energy Curriculum for the Senior High Grades. Unit VIII - Energy Measurement. Energy Education Curriculum Project.

Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.

Spons Agency—Department of Energy, Washington, D.C.

Pub Date—Apr 82

Grant—DE-F645-76CS-60038

Note—34p.; For related documents, see SE 038 775-784.

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC02 Plus Postage.

Descriptors—*Building Design, *Conservation Education, Energy, *Energy Conservation, Environmental Education, High Schools, Interdisciplinary Approach, *Learning Activities, *Physical Sciences, Science Activities, Science Curriculum, Science Education, *Secondary School Curriculum, Teaching Guides, Units of Study

Identifiers—*Energy Education, Indiana, Thermostats

Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum, resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. Unit VIII, focusing on energy measurement, consists of an introduction (rationale, unit objectives, general background information), three lessons, bibliography, and teacher evaluation form. Each lesson includes lesson title, objectives, background information, activities, evaluation techniques, and resources. Titles of lessons are: (1) The Bimetallic Robot; (2) Make Room(s) for Energy; and (3) A Do-It-Yourself Home Insulation Test. Students design, construct, and test their own thermostats in the first lesson, design and draw a house using energy conserving and energy conscious approaches in the second lesson, and complete an insulation audit in the third lesson. (Author/JN)

Elementary/Middle/Secondary

ED 033 862 SE 007 637
Conservation Tools for Educators.
Department of Agriculture, Washington, D.C. Forest Service
Pub Date 68
Note—79p.
EDRS Price MF-$0.50 HC-$4.05
Descriptors—*Conservation Education, Course Content, *Elementary School Science, Integrated Curriculum, Outdoor Education, Resource Materials, *Secondary School Science, Teacher Workshops, *Teaching Guides
Included are suggestions for integrating conservation concepts into the general curriculum, coordinating outdoor work with indoor activities, and for planning and implementing a sequential conservation curriculum. Guidelines given for training of teachers include sample workshop schedules. Minimum requirements for outdoor school sites are listed. Charts are given listing conservation concepts with appropriate grade levels, and, for elementary grades, subject areas in which the concept can be stressed (fine arts, sciences, social studies, language arts, or mathematics). Suggestions for classroom approaches and presentations include a chart of grade level, student growth characteristics, and major science subject matter considered appropriate. Notes are given on subject matter for classroom presentation. Several sample high school conservation course outlines are included, and also a bibliography of some conservation teaching materials. (EB)

ED 061 058 SE 013 371
Nitrate Water Activities, Science Study Aid No. 4.
Agricultural Research Service (DOA), Washington, D.C.
Pub Date Jan 72
Note—12p., revised
Available from—Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 ($0.15, 0-481-766-16)
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Elementary School Science, Environmental Education, *Experiments, *Instructional Materials, Plant Science, *Secondary School Science, Soil Science, Student Projects, *Water Pollution Control, Water Resources
Intended to supplement a regular program, this pamphlet provides background information, related activities, and suggestions for other activities on the subject of nitrate as a water pollutant. Two activities related to plant nutrient pollution, nitrate filtration and measuring nitrate used by plants, are explained in detail, outlining objectives, materials required, procedure, and questions. The third part of this Science Study Aid describes a technique for measuring the amount of nitrate in water, and the amount necessary to carry out the two activities. A vocabulary list and bibliography are included together with diagrams and space for taking notes. (BL)

ED 062 122 SE 013 497
Dunbar, Artice
Testing for Air Pollution.
Agricultural Research Service (DOA), Washington, D.C.
Pub Date Jan 72
Note—8p., Science Study Aid No. 5
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock Number 0100-1619, $0.10)
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Air Pollution Control, Elementary School Science, Environmental Education, *Experiments, *Instructional Materials, Secondary School Science, Student Projects, *Teaching Guides
Three experiments are presented in this Science Study Aid to provide the teacher with some fundamental air pollution activities. The first experiment involved particulates, the second deals with microorganisms, and the third looks at gases in the atmosphere. Each activity outlines introductory information, objectives, materials required, procedure to follow, and discussion questions. Space is provided for completing charts and graphs and taking notes. This study aid is not intended to be a complete teaching unit, rather, a supplement to a regular program providing up-to-date, research related activities. (BL)

ED 063 111 SE 013 528
Boyer, Robert E.
How to Study the Earth From Space.
National Science Teachers Association, Washington, D.C.
Pub Date 71
Note—12p.
Available from—NSTA, 1201 16th Street NW, Washington, D.C. 20036 (Stock No. 471-14624, $0.50)
EDRS Price MF-$0.65 HC Not Available from EDRS.
Descriptors—*Aerospace Education, Aerospace Technology, *Earth Science, Environment, *Environmental Education, Environmental Research, *Natural Resources, *Photography, Pollution, Resource Materials
Identifiers—National Science Teachers Association
This booklet is one in a series of instructional aids designed for use by elementary and secondary school science teachers. It reviews how the various forms of remote sensing can provide invaluable knowledge about the earth as the need for environmental information continues to increase. Remote sensing involves space photography, infrared imagery, and radar imagery, all of which are discussed and represented by example photographs made by these techniques. Nearly 60 uses of remote sensing are listed, including the detection of plant disease, weather studies and predictions, detection of air pollution, water pollution, thermal pollution, and the locating of water and energy resources. An annotated list of resource materials is provided. (PR)

ED 080 361 SE 016 614
Hershey, John F., Ed. And Others
A Curriculum Activities Guide to Water Quality Equipment and Environmental Studies.
Project KARE, Blue Bell, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 73
Grant—OEG-0-72-5105
Note—182p.
Available from—Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, Ohio 44106
EDRS Price MF-$0.65 HC-$6.58
Descriptors—*Construction (Process), Curriculum Guides, *Elementary Grades, *Environmental Education, *Equipment, Instructional Materials, Learning Activities, *Measurement Instruments, Secondary Grades, Testing, *Water Resources
This book is the third in a series of four books emphasizing student-oriented problem solving related to environmental matters. In properly conducted environmental investigations, it is felt students will perceive the need to extend their senses by using instruments. The instrumentation as presented in this guide should aid students in this respect. Chapter 1 offers construction plans for 23 pieces of water quality testing equipment included for each are an introduction to the item, materials and tools needed, procedure for construction, directions for using it, problems encountered, and a bibliography. Basic, intermediate, and advanced water quality kits and systems which can investigate four major water quality parameters—physical, chemical, macrobiological, and microbiological factors—are discussed in Chapter 2. Water quality equipment is listed in Chapter 3 for measuring dissolved oxygen, scientific equipment, tools, resource materials, supplies, containers, and glass and miscellaneous items. Each table identifies the item, use area, (biology, chemistry, physical, topic area, age range of user, and local source to obtain it. How and where to get needed items are dealt with in the final chapter. Related documents are SE 016 524 and SE 016 525. (BL)

ED 101 937 95 SE 017 399
Energy and You. Environmental Education Curriculum.
Topeka Public Schools, Kans.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Jan 74
Note—70p.
EDRS Price MF-$0.76 HC-$3.32 PLUS POSTAGE
Descriptors—*Conservation Education, Curriculum Guides, *Educable Mentally Handicapped, *Energy, Energy Conservation, *Environmental Education, Instructional Materials, Learning Activities, Natural Resources, Outdoor Education, *Science Education, Teaching Guides, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
The causes of the energy crisis are many, and the solutions are complex. Since every person in the world is affected every person should have an understanding of the energy shortage problem. This unit is designed around the following two ideas: (1) to develop an understanding of energy and the need for it, and (2) to understand some of the causes, effects, and solutions of the energy crisis. It attempts to present information regarding energy problems for level II and III educable mentally retarded students. Included are four topics: (1) What Is Energy, (2) Energy Fuels, (3) How We Use Energy, and (4) Conservation of Energy. For each topic there are behavioral objectives, student activities, and teacher suggestions. The numbers in parentheses by the activity number indicate the objectives the activity helps develop. The unit also includes goals and objectives, an objective summary sheet, a unit time line, a materials sheet, and 20 appendixes which contain various teaching aids related to the activities and which are also suitable for duplication. (TK)

ED 103 234 SE 018 515
Change in a Small Ecosystem, An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis; National Wildlife Federation, Washington, D.C.
Pub Date 72
Note—25p., Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79187, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—*Ecology, Elementary Grades, *Environmental Education, Instructional Materials, Intermediate Grades, Investigations, Junior High Schools, *Learning Activities, *Science Education, Secondary Grades, Teaching Guides
Identifiers—*Ecosystems
This environmental unit is one of a series designed for integration within an existing curriculum. It is self-contained and students are encouraged to work at their own speed. The philosophy behind the series is based on an experience-oriented process that promotes independent student work. This particular unit explores the concept of succession in communities. The activities included develop the major concept by requiring students to set up small aquaria and to observe the changes that take place in these small communities. Sampling and population prediction techniques are included in the activities. Teacher information concerning background information, materials, and additional topics is given. This unit is designed for students, grades 5-9. A short bibliography is included. (MA)

ED 103 250 SE 018 531
Soil, An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis.; National Wildlife Federation, Washington, D. C.
Pub Date 72
Note—21p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No 79132, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—*Ecology, Elementary Grades, Elementary Secondary Education, *Environmental Education, Instructional Materials, Investigations, *Learning Activities, Natural Resources, Outdoor Education, *Science Education, Secondary Grades, *Teaching Guides
Identifiers—*Soil
This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires minimal teacher preparation. The philosophy of the series is based on an experience-oriented process that encourages self-paced independent student work. This particular unit investigates soil in relation to acidity, moisture, minerals, and organisms. Students in grades 2-9 can discover how these factors are interrelated and what effects they have on the soil through the activities included in the unit. Techniques for determining soil pH with litmus paper and the presence of soil nitrates with test kits are included. Also, students make a sample of organisms in the soil with the help of a Berlese funnel. Each activity includes a list of the materials needed and where they can be found, background information, directions, and questions for discussion. (MA)

ED 119 964 88 SE 020 016
Man's Impact on the Environment: The Estuary as an Ecosystem, Update.
Brevard County School Board, Cocoa, Fla.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [75]
Note—106p.; For the pilot Test Edition, see ED 106 077. Related documents are SE 020 014-017. Newspaper examples may reproduce marginally
EDRS Price MF-$0.83 HC-$6.01 Plus Postage
Descriptors—Conservation Education, *Ecology, *Environmental Education, *Instructional Materials, Learning Activities, Science Education, Science Materials, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This environmental education program emphasizes the cause and effect of change in an estuary ecosystem with special attention given to man and his role in environmental change. Concepts are employed from the natural and social sciences to investigate environmental problems. The units are designed around these questions: (1) What is an ecosystem? (2) What is a description of the ecosystem being investigated? (3) What are some of the biotic and abiotic features of the ecosystem and how do these features interrelate? (4) Where are some specific locations of the ecosystem being investigated? (5) What biotic and abiotic features in the ecosystem have changed and are undergoing change? (6) What are the natural factors causing change in the ecosystem and how have they been brought about? (7) What are the man-made factors causing change in the ecosystem and how have they been brought about? (8) What are the results of the changes? (9) What, if any, new changes are needed in the ecosystem? and (10) How might these needed changes to the ecosystem be brought about? The units are inquiry oriented and contain learning activities, resources, evaluation techniques, and teacher suggestions on implementation of the program. Readings, maps, and other handouts are given for learner use. (Author/MR)

ED 119 965 88 SE 020 017
Man's Impact on the Environment: The Freshwater Marsh as an Ecosystem, Update.
Brevard County School Board, Cocoa, Fla.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [75]
Note—18?p.; For the Pilot Test Edition, see ED 106 078. Related documents are SE 020 014-016. Maps and charts may reproduce marginally
Available from—The slides described in the abstract are available from ERIC/SMEAC, The Ohio State University, 1200 Chambers Road, 3rd Floor, Columbus, Ohio 43212 (on loan)
EDRS Price MF-$0.83 HC-$10.03 Plus Postage
Descriptors—Conservation Education, *Ecology, *Environmental Education, *Instructional Materials, Learning Activities, Science Education, Science Materials, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This environmental education program emphasizes the cause and effect of change in a freshwater marsh ecosystem with special attention given to man and his role in environmental change. Concepts are employed from the natural and social sciences to investigate environmental problems. Unit activities are inquiry oriented and answer these questions: (1) What is an ecosystem?, (2) What is a description of the ecosystem being investigated?, (3) What are some of the biotic and abiotic features of the ecosystem and how do these features interrelate?, (4) Where are some specific locations of the ecosystem being investigated?, (5) What biotic and abiotic features in the ecosystem have changed and are undergoing change?, (6) What are the natural factors causing change in the ecosystem, and how have they been brought about?, (7) What are the man-made factors causing change in the ecosystem and how have they been brought about?, (8) What are the results of the changes?, (9) What, if any, new changes are needed in the ecosystem?, and (10) How might these needed changes to the ecosystem be brought about? Questions 5-10 are designed into a role-playing simulation game. The guide also contains readings, maps and other handouts, resources, evaluation techniques, and teacher suggestions for program implementation. Slides with descriptions are included. (Author/MR)

ED 125 885 SE 020 614
Energy Conservation, Understanding and Activities for Young People.
Federal Energy Administration, Washington, D.C.
Report No—FEA-D-75-264
Pub Date 76
Note—24p.; Not available in hard copy due to colored pictures and paragraph headings and shaded charts and graphs. Prepared by Office of Conservation Education
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock No 041-018-00091-7, $0.85)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Conservation Education, *Elementary Secondary Education, Energy, *Energy Conservation, *Environmental Education, Fuel Consumption, *Instructional Materials, *Learning Activities, Natural Resources, Science Education
This publication on energy conservation is designed as a resource material for the classroom. It is divided into three chapters concerning a definition of energy, the conservation of energy, and the uses of energy. For each subtopic within the chapters, there is background information and suggested project topics designed for secondary school students. A brief glossary at the end of the booklet defines some of the energy related terms used in the text. A short bibliography and a listing of resource people are included at the end. (MA)

ED 134 455 SE 021 929
Science K-12, Interdependency of Living Things and Living Things With Their Environment. Utica City School District Articulated Curriculum: Project SEARCH, 1975.
Utica City School District, N.Y.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 75
Note—45p.; For related documents, see SE 021 926-931. Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Biology, *Curriculum Guides, Ecology, Educational Objectives, *Elementary School Science, *Elementary Secondary Education, First Aid, Health Education, Integrated Curriculum, Physical Sciences, *Science Education, *Secondary School Science
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
Two-column objectives are listed for an integrated science curriculum (grades K-12), often subheaded according to science area (biology, physical science), and grade level. Choices of environmental topics such as weather, conservation of natural resources, and the interdependence of organisms and environment dominate objectives written for grades K-6. Food webs, ecological community structure, and interactions between organisms are written for grade 7 objectives. Also listed for grade 7 are several objectives for first aid and the study of algae and protozoans. One space science objective is written for grade 8. Grade 9 includes varied biological topics, including microbiology, locomotion, behavior, germination of seeds, and forest conservation. Biology (grades 10-12), physical science (grades 10-11), and advanced biology (grade 12) include ecological topics such as population growth, ecological systems, pollutants (natural and man-made), ecological communities, and succession. Interspersed in grades 10-12 are objectives written for the study of classification (grade 10), and higher plants, reproduction and development in animals, and structure and function in animal systems (grade 12). (CS)

ED 157 681 SE 022 840
Tully, Randolph R., Jr., Ed
A Curriculum Activities Guide to Electric Power Generation and the Environment.
Project KARE, Blue Bell, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 75
Grant—OEG-71-1775
Note—154p.; For related documents, see SE 022 841-842
Available from—Project KARE, Colony Office Bldg., Route 73 & Butler Pike, Blue Bell, Pa. 19422 (no price quoted)
EDRS Price MF-$0.83 HC-$6.69 Plus Postage.
Descriptors—Curriculum Guides, *Elementary Secondary Education, *Energy Conservation, *Environmental Education, *Instructional Materials, Learning Activities, Natural Resources, Science Activities, Science Education, Teacher Developed Materials, Values
Identifiers—Project KARE
This guide was developed by teachers involved in a workshop on "Electric Power Generation and the Environment." Activity topics are: (1) Energy and the Consumer, (2) Energy and Water Pollution, and (3) Energy and Air Pollution. Within these topics, the activities are classified as awareness level, transitional level, or operational level. Each activity contains an introduction, questions, equipment list, and procedure. There are over 70 activities for students in grades 1-12. The appendix provides a brief description of the development of the learning activities in this guide. (MA)

ED 160 418 SE 025 042
Gerlovich, Jack A
Energy Concepts in the Iowa School Curriculum.
Iowa State Dept. of Public Instruction, Des Moines. Div. of Curriculum
Pub Date—Oct 78
Note—32p.
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Conservation (Environment), *Curriculum Development, *Elementary Secondary Education, *Energy, *Energy Conservation, *Program Descriptions, Science Activities, Science Education
Identifiers—*Iowa
This document reports on the Iowa Department of Public Instruction plan to integrate energy education into elementary and secondary programs. This plan includes the development of energy conservation activity packets. The packets contain a variety

of interdisciplinary activities accompanying worksheets, visuals and annotated children and teacher bibliographies for grades K-6. Also included in the plan is the Mankato State University Energy Program which is designed to acquaint teachers with some classroom projects that can be done by students in grades 7-12, and give teachers an extended classroom project in which students evaluate the energy consumption of their school. Finally, this report presents the results of a questionnaire designed to assess the present energy programs and perceived energy needs of Iowa secondary school teachers. The dominant concerns of the teachers surveyed were energy conservation and the political and social aspects of energy problems. (BB)

ED 161 727 SE 025 192
Energy Conservation Activities for the Classroom K-12.
Kentucky Dept of Energy, Frankfort.; Kentucky State Dept. of Education, Frankfort.
Pub Date—[78]
Note—244p.
EDRS Price MF-$0.83 HC-$12.71 Plus Postage.
Descriptors—*Conservation Education, Curriculum Guides, Elementary Secondary Education, *Energy Conservation, *Environmental Education, *Learning Activities, *Science Activities, Science Education, Teaching Guides
After a brief introduction entitled "Where Does the Energy We Use Come From," this unit presents 86 activities. Each activity gives the title, concept, objectives, subject area, level, time involved, materials needed, procedures, and related career activities. Topics cover everything from housing insulation to alternate sources of energy to energy use by appliances and automobiles. The activities include game playing, science experiments, surveys, field trips, and others. The unit concludes with a bibliography. (BB)

ED 167 393 SE 026 774
Gammisch, Susan C. Lanier, James A.
Guide to the Marine Education Materials System (MEMS). Educational Series No. 22.
Virginia Inst. of Marine Science, Gloucester Point, Va.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md.
Pub Date—78
Note—141p.; Not available in hard copy due to copyright restrictions. Colored pages may not reproduce well. Microfiche containing Author Index and Grade Level Index deleted
Pub Type—Guides - General (050) — Collected Works - Serials (022)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Automatic Indexing, Curriculum, Curriculum Enrichment, *Elementary Secondary Education, *Information Systems, *Instructional Materials, *Marine Biology, *Oceanology, Science Education
Identifiers—*Marine Education, Sea Grant
This guidebook has been prepared to orient persons wishing to use the Marine Education Materials System (MEMS), a project supported by the Office of Sea Grant, National Oceanic and Atmospheric Administration (NOAA), Department of Commerce. Entries to the system were compiled by the education staff of the Virginia Institute of Marine Science. Information in the Guidebook consists of an explanation of MEMS and how to use it, an ongoing list of the publications entered, an index of descriptors and listings of entries by author and grade level. In addition to a Preface and introductory section, other sections are (1) How to Use the System, (2) Explanation of Notations, (3) Sample Entries, (4) Types of Documents Included in MEMS, (5) Abbreviations, (6) Distribution Centers, (7) Thesaurus of Descriptors, (8) Descriptors-Accession Numbers; and (9) Listing of Available Entries by Accession Numbers. An author index and grade-level index are also included. (PEB)

ED 167 395 SE 026 777
S.T.E.P. in Bay County, The Rutherford Project.
Florida State Dept of Education, Tallahassee. Office of Environment Education.
Pub Date—76
Note—44p.; Not available in hard copy due to marginal legibility of original document
Pub Type—Reports - Descriptive (141) — Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Elementary Secondary Education, *Environmental Education, Instructional Materials, Learning Activities, *Program Evaluation, *Science Activities, Science Education, Student Attitudes
This document presents an explanation, illustration, and evaluation of a Students Toward Environmental Participation (S.T.E.P.) Project at Rutherford High School in Bay County, Florida. The main objective of this S.T.E.P. Project was to train high school students to teach environmental awareness activities to elementary students. This booklet includes environmental activities, field-tested eco-dramas, and sample evaluations from elementary and junior high school students. The activities are interdisciplinary and include a purpose, materials list, and procedure description. (MA)

ED 170 135 SE 027 582
Interdependence: A Handbook for Environmental Education.
National Association of Independent Schools, Boston, Mass.
Pub Date—Feb 79
Note—51p.; Not available in hard copy due to copyright restrictions
Available from—National Association of Independent Schools, 4 Liberty Square, Boston, Massachusetts 02109 ($4.00)
Pub Type—Reports - Descriptive (141)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Conservation Education, Curriculum, *Educational Programs, *Educational Resources, *Elementary Secondary Education, *Environmental Education, Instructional Materials, *Program Descriptions, *Science Education, Summer Programs, Surveys
The document includes several sections dealing with environmental education. The first section presents a brief description of courses or programs in environmental education offered by schools belonging to National Association of Independent Schools (NAIS). A second section presents expanded descriptions of 9 selected environmental programs. The third section describes summer opportunities in environmental education for teachers and students. A fourth section presents an annotated bibliography of selected textbooks in environmental education. The fifth section is a bibliography arranged by topics of interest to environmental educators. An appendix presents the questionnaire used to gather information on environmental education activities undertaken by NAIS member schools. (RE)

ED 175 725 SE 028 808
Brown, Mark And Others
Endangered Species, Teacher's Guide.
Florida Audubon Society, Maitland.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—75
Grant—GOO7407881
Note—29p.; For related documents, see SE 028 807-810
Pub Type—Guides - Classroom - Learner (051)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Botany, *Conservation (Environment), *Ecology, Elementary Secondary Education, *Environment, Environmental Education, *Environmental Influences, *Natural Resources, Science Education, *Wildlife Management, Zoology
Identifiers—*Endangered Species, Florida
This unit is intended to examine the causes of the endangerment of Florida's plant and animal species with a detailed look at varied ecological systems. Individual lessons are designed to be used either by individual students progressing at their own rate or by small groups. Units may be modified for use by large groups. (Author/RE)

ED 176 960 SE 028 430
Jones, Sam P. Muffet, Bryan R.
Environmental Education Curriculum Guide, Grades K-12. Revised Edition.
Somerset Board of Education, Ky.
Spons Agency—Kentucky State Dept. of Education, Frankfort. Office of Communication Services.; Office of Education (DHEW), Washington, D.C.
Pub Date—78
Note—210p.
Available from—Kentucky Information Dissemination System, Office of Communication Services, Kentucky Department of Education, Frankfort, KY 40601 (no price quoted)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC09 Plus Postage.
Descriptors—Air Pollution Control, *Conservation Education, Earth Science, *Elementary Secondary Education, Energy Conservation, Environment, *Environmental Education, Fuel Consumption, *Interdisciplinary Approach, *Natural Resources, *Outdoor Education, Pollution, Science Education, Water Pollution Control, Water Resources
This guide contains over 80 class activities covering numerous concepts of environment. The guide is divided into two sections. The first section contains activities applicable to elementary school classes. The second section includes activities useful in high school classes and is subdivided into subject areas targeted by the activity. Each activity throughout the guide includes grade level, concepts, performance objectives, activities, additional resources and references, and an evaluation checklist. (RE)

ED 179 352 SE 028 768
Meinke, James D. Kennedy, Beth A.
The Effect of Lake Erie on Ohio's Temperature, Student Guide and Teacher Guide. OEAGLS Investigation 1.
Ohio State Univ., Columbus. Research Foundation.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md.
Pub Date—Feb 79
Grant—NOAA-04-8-M-01-170;
Note—22p.; For related documents, see SE 028 769-774; Prepared in collaboration with the Ohio Sea Grant Program
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Earth Science, Elementary School Science, Environmental Education, *Instructional Materials, Lesson Plans, *Oceanology, *Science Activities, *Science Course Improvement Project, Science Curriculum, Science Education, Science Instruction, *Secondary School Science, Worksheets
Identifiers—*Oceanic Education Activ for Great Lakes Schools, Ohio Sea Grant
This guidebook for teachers is accompanied by a student workbook. The investigations are intended to offer students an opportunity to learn about the absorption and release of heat energy and its effects on the Earth's atmosphere. The influence of Lake Erie on Ohio's temperature is related to the other investigations. Illustrations, maps, and graphs accompany the written material. (SA)

ED 179 353 SE 028 769
Meinke, James D. Kennedy, Beth A.
The Effect of Lake Erie on Climate, Student Guide and Teacher Guide. OEAGLS Investigation 2.
Ohio State Univ., Columbus Research Foundation.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md.
Pub Date—Apr 79
Grant—NOAA-04-8-M-01-170;
Note—22p.; For related documents, see SE 028 768-77a; Prepared in collaboration with the Ohio Sea Grant Program
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Earth Science, Elementary School Science, Elementary Secondary Education, Environmental Education, *Instructional Materials, Lesson Plans, *Oceanology, *Science Activities, *Science Course Improvement Project, Science Curriculum, *Science Education, Science Instruction, Secondary School Science, Worksheets
Identifiers—*Oceanic Education Activ for Great Lakes Schools, Ohio Sea Grant
This guidebook for teachers is accompanied by a student workbook. The investigations are intended to offer students an opportunity to study the effects of air temperature on air density and movement, the circulation of air and how it changes the amount of precipitation in the area around the Great Lakes, and the implications of the "lake effect" for the economy of northern Ohio. Illustrations, maps, data tables, and graphs accompany the written material. (Author/SA)

ED 179 443 SO 012 143
A List of Books on the Marine Environment for Children and for Young People.
Delaware Univ., Newark. Coll. of Education.; Delaware Univ., Newark. Coll. of Marine Studies.
Spons Agency—Du Pont Corp., Wilmington, Del.; National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.; National Oceanic and Atmospheric Administration (DOC), Rockville, Md. Office of Coastal Zone Management.; Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—79
Note—69p.; For a related document, see SO 012 142
Available from—Project COAST, College of Education, University of Delaware, Newark, DE 19711 ($2.00)
Pub Type— Reference Materials - Bibliographies (131)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Adolescents, *Childrens Books, Educational Resources, Elementary Secondary Education, Fiction, *Marine Biology, Natural Sciences, *Oceanology, Physical Environment, Physical Geography
This annotated bibliography lists approximately 900 books on the marine environment, most of which are in the collection of the University of Delaware's Project COAST (Coastal and Oceanic Awareness Studies). A majority of the books, which include both fiction and nonfiction, were published within the last twenty years. Although the document is divided in two sections, Children's Books and Young People's Books, the sections overlap and both should be considered in selecting books for each age group. Entries within the two sections are arranged alphabetically by title. (Author/KC)

ED 183 363 SE 029 535
Jennings, Frederick Metro, Peter M.
Ecology for the Exceptional Child.
Rocky River Public Schools, Ohio.
Spons Agency—Ohio State Dept. of Education, Columbus. Div of Research, Planning, and Evaluation.
Pub Date—Jan 76
Note—203p.; Contains occasional light and broken type
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC09 Plus Postage.
Descriptors—Class Activities, Conservation (Environment), *Conservation Education, *Ecology, Environment, *Environmental Education, *Exceptional Child Education, Instructional Materials, Outdoor Education, Science Education, Secondary Education, *Special Education, Wildlife Management
The program contained in this guide is designed to be a student-centered approach to learning. Outlined are activities for large groups, small groups, or individualized study. Activities can be used with students of differing exceptionalities. Sufficient curriculum materials are provided for a continuous program over three years. Each activity unit provides a rationale statement, objectives, suggested activities, and detailed instructions for each activity. (Author/RE)

ED 184 869 SE 030 527
Tarkel, Tux
The Maine Teacher's Energy Primer.
Maine Audubon Society, Falmouth.
Pub Date—79
Note—41p. Not available in hard copy due to copyright restrictions
Available from—Maine Audubon Society, Energy Department 118 U S Route One, Falmouth, ME 04105 ($5.00, $3.50 12 or more)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Class Activities, *Curriculum Development, Decision Making, Elementary Secondary Education, *Energy, *Energy Conservation, *Environmental Education, Middle Schools, *Science Education, Solar Radiation
Identifiers—*Energy Education
This guide is intended to serve a two-fold purpose: (1) to familiarize the teacher with the jargon, issues, and concepts of energy problems, and (2) to assist the teacher in preparing a curriculum dealing with energy issues. The guide is divided into four chapters (1) energy basics, (2) uses of energy, (3) conservation, and (4) future scenarios. Each section contains background information and activity descriptions. Each chapter is prefaced with a specification of objectives and a glossary of terms. (RE)

ED 187 629 SO 012 613
Curricular Dimensions of Global Education.
Pennsylvania State Dept of Education, Harrisburg.; Research for Better Schools, Inc., Philadelphia, Pa.
Pub Date—79
Note—242p.
Pub Type— Guides - Classroom - Teacher (052) — Opinion Papers (120) — Information Analyses (070)
EDRS Price - MF01/PC10 Plus Postage.
Descriptors—Art Education, Curriculum Design, *Curriculum Development, Early Childhood Education, Educational Environment, *Educational Objectives, Elementary Secondary Education, Environmental Education, *Global Approach, Health Education, *Interdisciplinary Approach, Mathematics Instruction, Multicultural Education, Nutrition, Nutrition Instruction, School Administration, Science Education, Second Language Instruction, Social Studies, *Teaching Methods
The document discusses the curricular implications of global studies for teachers of all subjects and grade levels emphasizing that the global approach can facilitate the integration of knowledge. The purpose is to help educators become aware of the implications that global studies have for their special interests. It is presented in 12 chapters. Chapter I describes a model of an interdisciplinary global studies course. Chapter II presents an overview of global education in the United States. Chapter III offers ways to integrate science and other curriculum areas to present a realistic world picture. Chapter IV discusses the implications for early childhood education with special reference to the Year of the Child. Chapter V delineates four goals which multicultural education and global studies have in common. Chapter VI clarifies the problem of applying arts to global studies. Chapter VII recommends action in the area of foreign languages. Chapter VIII uses a case-history approach to the curricular implications of global education in regard to school administration, structure, and climate. Chapters IX and X present key concepts from the fields of health and nutrition and social studies that provide the critical issues for global studies. The concluding chapters suggest a variety of teaching strategies in the areas of mathematics and environmental concerns. (CK)

ED 188 875 SE 031 017
Energy in the Ecosystem. A Curriculum Guide for Elementary and Secondary Teachers.
New Jersey State Dept of Environmental Protection, Trenton
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Pub Date—[80]
Grant—G007701233
Note—54p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Ecology, *Elementary Education, *Energy, *Environmental Education, Food, *Natural Resources, *Secondary Education, Wildlife Management
This curriculum guide deals with natural resource management in a way that includes man as user and manager of these resources. The role of energy in the ecosystems explained and examined. Learning activities are included for both elementary and secondary students. The text also includes material for class discussion, recommended films, and references. (SB)

ED 191 746 SE 032 884
Do-It-Yourself Guide to: An Energy Seminar. Construction Plans and Use Guidelines.
Minnesota Regional Environmental Education Council, Minneapolis; Quarry Hill Nature Center, Rochester, Minn.
Pub Date—80
Note—20p.; For related documents, see SE 032 885-887 and ED 178 351. Contains marginal legibility on "Data Sheet for Teachers." Photographs may not reproduce well
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Class Activities, Elementary Secondary Education, *Energy, Energy Conservation, *Environmental Education, *Exhibits, *Nature Centers, Physics, Science Instruction
Identifiers—Energy Consumption, *Energy Education
Ten learning stations containing displays and student activities relating to energy comprise the seminar described in this booklet. On a data sheet, each student answered questions based upon information obtained at the learning stations. The guide contains instructions for constructing each exhibit, including a materials list, estimated cost, and a photograph of the completed station. Also provided are an energy quiz and sample student data sheet. Although the seminar was designed for junior high school participants, it has been used successfully with students in fifth grade through senior high. Among the topics investigated are insulation types, thermostat setting, chemically-produced electricity, energy efficiency, and electricity from mechanical energy. (WB)

ED 191 747 SE 032 885
Do-It-Yourself Guide to: A Habitat Seminar. Construction Plans and Use Guidelines.
Minnesota Regional Environmental Education Council, Minneapolis.; Quarry Hill Nature Center, Rochester, Minn.
Pub Date—80
Note—32p.; For related documents, see SE 032 884-887 and ED 178 351. Contains occasional broken type. Photographs may not reproduce well
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Biology, *Class Activities, *Ecology, Elementary Secondary Education, *Environmental Education, *Exhibits, Land Use, *Nature Centers, Science Instruction, Wildlife Management
This guide describes the construction and use of 12 learning stations dealing with habitats and people's impact upon them. At each station, students observe photographs or a model and then answer questions on a data sheet based upon the display. The booklet contains instructions for building each exhibit along with a materials list, estimated cost, and a photograph of the completed display. Also provided are background information and questions for teachers to use in follow-up discussions. In addition, a habitat quiz and sample student data sheet are included. (WB)

ED 191 748 SE 032 886
Do-It-Yourself Guide to: A Land Use Seminar. Construction Plans and Use Guidelines.
Minnesota Regional Environmental Education Council, Minneapolis.; Quarry Hill Nature Center, Rochester, Minn.
Pub Date—80
Note—37p.; For related documents, see SE 032 884-887 and ED 178 351. Photographs may not reproduce well
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Class Activities, Elementary Secondary Education, *Environmental Education, *Land Use, Nature Centers, *Planning, *Regional Planning, Resource Centers
Presented are 12 learning stations containing displays relating to land use. The booklet gives the necessary information to duplicate the Land Use learning activities. The first section contains working drawings, materials list, approximate cost, and a photograph as well as a description of the model. The text of a sign giving directions to the participants is also included. The second section contains all of the printed material including Student Data Sheet, Land Use IQ Quiz, Land Use IQ Quiz Answer Sheet, and Teacher Data Sheet. (Author/WB)

ED 191 749 SE 032 887
Do-It-Yourself Guide to: A Solid Waste Seminar. Construction Plans and Use Guidelines.
Minnesota Regional Environmental Education Council, Minneapolis; Quarry Hill Nature Center, Rochester, Minn.
Pub Date—80
Note—26p.; For related documents, see SE 032 884-886 and ED 178 351. Photographs may not reproduce well

Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Class Activities, Elementary Secondary Education, *Environmental Education, *Exhibits, *Nature Centers, Nonschool Educational Programs, *Recycling, Science Instruction, Social Studies, *Waste Disposal
Ten learning stations dealing with solid waste comprise the seminar described in this booklet. At each station, students observe a display and then answer questions listed on their data sheets. Although the seminar was intended for junior high school students, it has been used successfully with upper elementary and adult participants. Among the topics studied are composting, recycling of rubber and metal products, methods of waste disposal and the "throw-away" mentality. The guide includes directions for building each station display, a materials list, estimated cost, and a diagram or photograph of the completed exhibit. Also provided are a solid waste quiz, sample student data sheet, background information for teachers, and questions for class discussion. (WB)

ED 193 031 SE 032 872
Population Education in Science: Some Sample Lessons.
United Nations Educational, Scientific, and Cultural Organization, Bankok (Thailand). Regional Office for Education in Asia and Oceania.
Pub Date—80
Note—52p.; For related documents, see SE 032 869-871.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Elementary Secondary Education, *Environmental Education, *Food, *Natural Resources, Overpopulation, *Population Education, Science Education, *Science Instruction, Science Teachers, Teaching Guides
This science teacher's manual contains nine sample population education lessons adapted from materials produced in several countries in Asia and Oceania. Activities are designed for lower primary through high school students. Included are class discussions, small group activities and a role-playing situation. Food chains, human dependence upon plants and animals, methods for increasing food supply, water pollution, and land resources are among topics investigated. A scope and sequence chart depicts how teachers can integrate population growth and related issues into the regular science curriculum. (WB)

ED 196 728 SE 034 023
Smith, Jean, M., Comp.
Endangered Species: An Educator's Handbook.
Florida State Dept. of Education, Tallahassee. Office of Environment Education; Florida State Dept. of Natural Resources, Tallahassee.
Pub Date—[8]
Note—55p.; Not available in hard copy due to marginal legibility of original document.
Pub Type— Guides - Classroom - Teacher (052) — Reference Materials - Bibliographies (131)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Animals, Audiovisual Aids, Botany, Ecology, Elementary Secondary Education, *Environmental Education, Ethics, Science Education, *Wildlife
Identifiers—*Endangered Species
Presented are two articles, an annotated bibliography, and other information useful in teaching about endangered species, especially those found in Florida. The articles provide an ethical rationale, teaching suggestions, and a discussion of the value of wildlife. Descriptions of over 100 pertinent books, periodicals, movies, and filmstrips are in the bibliographies. The appendix lists Florida's endangered and threatened organisms along with organizations and agencies concerned with protecting endangered species. (WB)

ED 198 010 SE 034 397
Mauldin, Lundie, Frankenberg, Dirk
North Carolina Marine Education Manual, Unit One: Coastal Geology.
North Carolina State Univ., Raleigh. Sea Grant Coll.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program; North Carolina State Dept. of Administration, Raleigh.
Report No.—UNC-SG-78-14-A
Pub Date—Aug 78
Grant—NOAA-04-6-158-44054
Note—129p.; For related documents, see SE 034 398-401.
Available from—UNC Sea Grant, 105 1911 Building, North Carolina State Univ., Raleigh, NC 27607 ($1.50)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—*Earth Science, Elementary School Science, Elementary Secondary Education, Environmental Education, *Geology, Intermediate Grades, Marine Biology, *Oceanography, *Science Education, Science Instruction, *Secondary School Science
Identifiers—Coastal Zones, Estuaries
Presented are teaching materials designed to supplement North Carolina's course of study plans in earth science for the intermediate grades and junior high schools. This manual is one of a collection produced by North Carolina teachers and university faculty under a Sea Grant project entitled "Man and the Seacoast." Included are 27 activities and related materials on plate tectonics, coastal plain sediments, island geology and ecology, and estuarine geology and ecology. Each section contains background reading, vocabulary, three to six activities, and information on films, books and other related resources. Also provided are a table depicting the relationship between the activities and state curriculum guidelines, and a summary of this unit's goals and behavioral objectives. (WB)

ED 198 013 SE 034 400
Mauldin, Lundie, Ed. And Others
North Carolina Marine Education Manual, Unit Four: Coastal Beginnings.
North Carolina State Univ., Raleigh. Sea Grant Coll.
Spons Agency—National Oceanic and Atmosphere Administration (DOC), Rockville, Md. National Sea Grant Program; North Carolina State Dept. of Administration, Raleigh.
Report No.—UNC-SG-78-14-E
Pub Date—Jun 79
Grant—NOAA-04-6-158-44054
Note—197p.; For related documents, see SE 034 397-401. Photographs may not reproduce well.
Available from—UNC Sea Grant, 105 1911 Building, North Carolina State Univ., Raleigh, NC 27607 ($2.00).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC08 Plus Postage.
Descriptors—*Anthropology, Elementary Secondary Education, *Environmental Education, *Ethnology, *Geography, Interdisciplinary Approach, Marine Biology, Oceanography, Science Education, *Social Studies, United States History
Identifiers—Coastal Zones
Presented are simulations, puzzles, class discussions, crafts and other activities designed to introduce the past cultures of North Carolina's coastal peoples to elementary and secondary students. The manual is one of several produced by North Carolina teachers and university faculty under the "Man and the Seacoast" project with Sea Grant funding. Included are over 50 lessons on resource use by coastal peoples, anthropological techniques, early explorers, and coastal geography. Each section contains background reading, vocabulary, several activities, and information on films, books and other related resources. Also provided are a summary of goals and behavioral objectives, and a table which relates these activities to state curriculum guidelines. (WB)

ED 199 085 SE 034 427
Bissie, Robert, And Others
Population Dynamics: A Curriculum Guide for Elementary and Secondary Teachers.
New Jersey State Dept. of Environmental Protection, Trenton
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—[80]
Grant—G007701233
Note—55p.; For related documents, see ED 183 316 and ED 188 875
Pub Type— Guides - Classroom - Learner (051) — Reports - Descriptive (141)
EDRS Price - MF01 PC01 Plus Postage.
Descriptors—Conservation (Environment), *Conservation Education, *Ecology, Elementary School Science, Elementary Secondary Education, Environmental Education, Natural Resources, Population Education, Population Trends, Science Education, Secondary School Science, Teaching Guides, *Wildlife
Presented is one of five Wildlife and Environmental Education Teaching units that deal with resource management in a way that includes man as user and manager of natural resources. Included are activities (with their suggested grade levels) that deal with population dynamics. Fifteen supportive activities are described. A list of recommended films and references is appended. Included within the unit is an evaluation sheet for teachers of the unit. (CS)

ED 202 727 SE 035 154
Fortner, Rosanne, Malven, Victor J.
Knowing the Ropes. Student Guide and Teacher Guide. OEAGLS Investigation 22.
Ohio State Univ., Columbus. Research Foundation.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md.
Pub Date—Jan 81
Grant—NOAA-04-8-M01-170, NOAA-04-158-44099, NOAA-NA-79AA-D-00120
Note—27p.; For related documents, see SE 035 140-155 and ED 179 352-358. Prepared in collaboration with the Ohio Sea Grant Program.
Available from—Ohio Sea Grant Education Office, 283 Arps Hall, Ohio State University, 1945 N. High St., Columbus, OH 43210 ($1.00 plus $1.00 per order for shipping)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC02 Plus Postage.
Descriptors—Elementary Secondary Education, Language Arts, Lexicology, *Mechanics (Physics), *Oceanography, *Physics, Science Course Improvement Projects, *Science Education, *Seafarers
Identifiers—*Ocean Education Activities Great Lakes Schools, Ohio Sea Grant Program, *Shipping Industry
Ropes and their uses for the sailor are the focus of this unit. Students begin the study by taking apart a section of rope and putting it back together, testing strength at various stages. They also practice tying different knots and learn about the uses of ropes in sailing. After investigating the mechanics of a block and tackle, students consider how ropes, ships and sailors have influenced the English language. Provided along with the students' guide is a teacher's manual which contains a materials list, objectives, recommended teaching approaches, an answer key, and evaluation items. (Author/WB)

ED 204 105 SE 034 905
Trees of Our National Forests.
Forest Service (DOA), Washington, D.C.
Report No.—FS/PA-1124
Pub Date—Nov 80
Note—35p.; Contains photographs which may not reproduce well.
Pub Type— Reference Materials (130)
EDRS Price - MF01 PC02 Plus Postage.
Descriptors—Botany, Elementary School Science, Elementary Secondary Education, *Environmental Education, *Forestry, Government Publications, *Natural Resources, Recreational Facilities, *Resource Materials, Science Education, Secondary School Science, *Trees
Identifiers—*Forests
Presented is a description of the creation of the National Forest system, how trees grow, managing the National Forests, types of management systems, and managing for multiple use, including wildlife, water, recreation and other uses. Included are (1) photographs, (2) line drawings of typical leaves, cones, flowers, and seeds, and (3) descriptions of the douglas fir, ponderosa pine, southern pines, sugar maple, and white oak. Ten areas to visit and addresses of regional foresters to obtain more detailed information are also included. (SK)

ED 205 395 SE 035 455
Kellogg, Don, Ed. And Others
Environmental and Conservation Instructional Activities.
Oklahoma State Dept. of Education, Oklahoma City.
Pub Date—77
Note—349p.; Pages 32 and 33 missing from document prior to its being shipped to EDRS for fiming.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC14 Plus Postage.

Descriptors—*Conservation Education, *Ecology, *Elementary Secondary Education, *Environmental Education, *Natural Resources, Outdoor Education, *Science Education, Social Studies, Soil Science, Water Resources, Wildlife
Identifiers—School Yards
Conservation and environmental education activities comprise this manual for K-12 teachers in Oklahoma. Materials are grouped by subject matter: (1) Soil and Land Use, (2) Water, and (3) Habitat and Wildlife. Each chapter begins with background information designed as a short course for the teacher on the topic covered. This is followed by a set of lessons and descriptions of government agencies, private organizations, books, films, and other resources. Also included in the manual is a chapter on resource management practices and a chapter containing directions and case studies dealing with the development of outdoor classrooms. (WB)

ED 211 361 SE 036 037
Szuhy, Donna L. T.; Shepard, Clint L.
Forest Environment-Learning Experiences.
Ohio State Dept. of Natural Resources, Columbus.
Pub Date—81
Note—22p.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Cognitive Processes, Conservation Education, Elementary Secondary Education, *Environmental Education, *Forestry, Instructional Materials, *Interdisciplinary Approach, *Learning Activities, *Questioning Techniques, Teaching Methods, Trees
Environmental education, as a teaching methodology, is appropriate for all subject areas and environments. Two teaching approaches are presented with the 13 activities in this booklet serving as examples of their application to the forest environment and different disciplines. The first approach is based upon the understanding that learners retain more information if it is presented through thinking skills processes rather than by factual memorization. Each activity has learners use one of more of the thinking skills processes as adapted by the U.S. Forest Service. The second approach, a questioning strategy, uses four kinds of questions in x sequence: open, focus, interpretive, and summary. Each activity lists questions based upon this strategy in addition to the thinking skills and questions. Information for each activity indicates the objectives, time necessary to complete, numbers of students (individuals, class, groups), location, equipment, and procedures. Topics include, among others, family tree, leaves, bark, forest floor, rotten stump, change, and the urban forest. Other activities are suggested for different subject areas. (DC)

ED 219 244 SE 038 587
Canipe, Stephen
Energy Bingo.
Pub Date—[82]
Note—19p.
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Educational Games, Elementary Secondary Education, *Energy, Environmental Education, Fuels, Learning Activities
Identifiers—*Energy Education
Rules are provided for this bingo game focusing on terms related to solar, coal, nuclear, hydro, and wind energy. Playing cards and calling cards (to be cut out by the teacher) are also provided. (JN)

Sociocultural Emphasis

Elementary/Middle

ED 034 104 64 AA 000 464
Lee, Tunney And Others
Teacher's Guide to the City: The MATCH Box Project; Prototype Edition.
Childrens Museum, Boston, Mass.
Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Research.
Bureau No—BR-5-0710
Pub Date 65
Contract—OEC-4-16-019
Note—56p.; Appendix to Kreise, Frederick H., Materials and Activities for Teachers and Children. A Project to Develop and Evaluate Multi-Media Kits for Elementary Schools
EDRS Price MF-$0.25 HC-$2.96
Descriptors—*Activity Learning, Audiovisual Aids, *Discovery Learning, *Elementary Grades, Instructional Aids, *Multimedia Instruction, Resource Materials, *Social Studies Units, *Teaching Guides
Identifiers—MATCH Boxes, *Materials and Activities for Teachers and Children
To introduce children (grades 1-3) to the concept of the city and to give them an appreciation for the relationship that exists between the cities men build and the lives they live in them, a multimedia kit has been assembled. The items in the kit allow the child to explore the city from various viewpoints. By comparing their similarities and differences the child can acquire a reasonable image of what a city is and what happens there. The kit includes photographs, films, books, a model city, and a record. There are 17 lesson plans. Each is printed on a separate card and gives detailed information concerning objectives, materials, and procedures. The teacher may choose the number and order of lessons most suitable for the class. Supplementary information includes a map, a poem, and background information about the contents of the kit. A list of suggested additional materials is provided. The guide is prefaced by a short history of the MATCH Box Project. (JY)

ED 051 011 SO 001 186
A Curriculum Guide in Elementary Social Studies: Man in the Community, Grade Two.
Howard County Board of Education, Clarksville, Md.
Pub Date 70
Note—169p.
Available from—Social Studies Department, Howard County Public Schools, Clarksville, Maryland 21029 ($3.00)
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Citizenship, *Community Study, Concept Teaching, *Cross Cultural Studies, Cultural Environment, *Curriculum Guides, Elementary Grades, *Environmental Education, Field Experience Programs, Geography, Grade 2, Human Relations Units, Map Skills, Natural Resources, Non Western Civilization, Rural Environment, *Social Studies Units, Urban Environment, Values
Identifiers—Japan, Maryland, Thailand, *Values Education
Man in the Community is the theme of this social studies curriculum guide for Grade 2. The course emphasizes what a community is, how people contribute as individuals and family groups, and comparative study of community life. A stated aim is for the student to gain knowledge of his place in the community and his worth as an individual. Content is divided into three units of study. 1) People Create Communities; 2) The Community and Its Natural Resources; and, 3) Comparison of Communities Around the World. Special features of the grade two curriculum are field experience programs, environmental education, and a variety of map, globe, and other geography skills. A city community in Japan and a small village of Thailand are the selected areas for comparative study. Format of the guide is consistent with this series with major divisions for 1) Concepts, 2) Teaching Strategies, 3) Content and Materials, 4) Varieties in Strategies and Content, and 5) Evaluation. Related documents are SO 001 185 through SO 001 189. (JSB)

ED 051 012 SO 001 187
A Curriculum Guide in Elementary Social Studies: Man and His Institutions, Grade Three.
Howard County Board of Education, Clarksville, Md.
Pub Date 70
Note—258p.
Available from—Social Studies Department, Howard County Public Schools, Clarksville, Maryland 21029 ($3.00)
EDRS Price MF-$0.65 HC-$9.87
Descriptors—Citizenship, City Planning, City Problems, Communications, Concept Teaching, *Curriculum Guides, Democratic Values, Elementary Grades, *Environmental Education, Governmental Structure, *Government Role, Grade 3, Human Relations Units, Industrialization, Pollution, Public Affairs Education, Social Change, *Social Studies Units, Transportation, *Urban Studies
Identifiers—*Baltimore, Columbia, Maryland, *Values Education
The course theme of this grade 3 social studies curriculum guide is Man and His Institutions. With a background of family and community study in grades 1 and 2, the purpose at this level is to analyze more institutions created by man to meet the growing complexities of society. Specific institutions selected for study are: 1) Government as an institution; 2) Transportation and Communication; 3) Urbanization and Industrialization; and, 4) Education as an Institution (Optional). Format of the guide is consistent with the series with major divisions for 1) Concepts, 2) Teaching Strategies, 3) Content and Materials, 4) Varieties in Strategies and Content, and 5) Evaluation. Baltimore, Maryland and the planned city of Columbia, Maryland are the urban communities chosen for study. Related documents are SO 001 185 through SO 001 189. (Author/JSB)

ED 055 018 SO 001 950
Project Canada West, Five to Nine: Urbanization and the Social Studies Curriculum for the First Four Years (K-3) of Canadian Schools.
Western Curriculum Project on Canada Studies, Edmonton (Alberta).
Pub Date Jun 71
Note—60p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Affective Objectives, Cognitive Objectives, Concept Teaching, Curriculum Development, Elementary Grades, *Environmental Education, Individual Development, *Inquiry Training, Kindergarten, Literature Reviews, Self Concept, Self Esteem, Socialization, *Social Studies, Urban Environment, Urbanization, *Urban Studies, Values
Identifiers—Canada, *Project Canada West, Values Education
The Powell River Project proposes in this progress report to design a curriculum with the Canadian urban environment as a major focus promoting cognitive and affective learnings that are verifiably appropriate. Using a team of primary teachers as designers, activities and experiences will be selected which lead the child to learn his role in society, understand the relationship between groups, the interdependence of people and institutions, and how they are affected by urbanized environments, and, develop self concept, self esteem, and a sense of individual responsibility. The criteria for the selection of teaching strategies and activities are outlined: practice and development of intellectual skills, diversity of techniques, open classroom climate, active decision-making, use of inquiry techniques, and free concept and value formation. Criteria for the structure of the materials are also given. To begin, the project reviewed relevant literature on urbanization, child psychology and learning theory, structure and strategy in the social studies, printed teaching and learning resources, and current and projected social studies curricula for the Canadian provinces. The findings are summarized here and the bibliography is appended. Also appended are: 1) a summary of an inventory of knowledge, skills and attitudes of kindergarten children, and, a study of the understanding of the elementary children of Powell River concerning their civic election. (Author/SBE)

ED 056 874 SE 012 580
Anderton, Pat
Town and Townships.
Madison Public Schools, Wis.
Pub Date [71]
Note—47p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Audiovisual Aids, Environmental Education, Filmstrips, Instructional Materials, *Intermediate Grades, *Land Use, *Municipalities, *Teaching Guides
Long range effects of early public land surveys, the distinction between towns and townships, and the significance of town government in modern Wisconsin are portrayed in this teacher's guide for upper elementary grades. With supplementary materials it could be used in a unit on local or Wisconsin geography, as an introduction to problems of urban growth, or as a segment on governmental entities which make up a modern metropolitan area. Two filmstrips are employed to present the facts. Part I describes the public land survey and its effects particularly on farm boundaries, field shapes and plowing patterns, road locations, and community shapes and patterns. Part II deals with the effects of the survey on patterns of local government in Wisconsin and raises some questions on the consequences of 19th century governmental patterns as they complicate 20th century urban growth. Both filmstrips are explained in their entirety, illustrating each frame and its accompanying script. Supplementary materials in the booklet relate the long

ranga significance of the Land Ordinance of 1785, early policy questions of land use, methods of establishing and maintaining boundary lines, and the numbering and describing of sections, townships, and ranges. Additional materials include maps, tests, a bibliography, and suggested uses of the materials. Filmstrips are not included. (BL)

ED 084 187 SO 002 655
The Urban Condition. An Interdisciplinary Program in Urban Social Studies.
Alexandria City Schools, Va.
Pub Date [70]
Note—83p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*City Problems, *Concept Teaching, Course Descriptions, Ethnic Studies, Grade 8, *Interdisciplinary Approach, Junior High Schools, *Social Studies Units, Urban Culture, Urban Environment, Urbanization, Urban Slums, *Urban Studies
Described in this guide is a thirty-six week, interdisciplinary, urban social studies course for 8th grade students that is designed to involve students in the substance and process of urban problems. The major objective is to prepare students to live and survive in an urban environment. The program emphasizes a process approach to thinking, stressing inquiry training, problem solving, and value clarification. Substantive, value, and method concepts from the social sciences are developed in an attempt to stimulate thinking. Each unit and subunit states specific objectives in performance terms, provides teaching strategies, includes related activities, and lists basic and supplementary materials. The four major units nearly all of three weeks duration (as are the subunits), are: I. Social studies skills workshop; II. Perspectives of the urban scene (two subunits); III. The people of the city, and, IV. Challenges of the urban scene (seven subunits of topics on city problems). A variety of multi-media materials, comprised of differing reading levels and multi-ethnic materials are used. (SJM)

ED 080 367 SE 016 628
Environmental Education Curriculum Guide for Intermediate Social Studies.
Neola Forest Environmental Education Center, Reading Pa.
Pub Date [73]
Note—39p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Curriculum Guides, *Ecology, *Elementary Grades, *Environmental Education, Fundamental Concepts, Instructional Materials, Learning Activities, Natural Resources, *Social Studies
The concept that society must possess an ecological conscience which can relate the economic, social, political and other disciplines of culture to meet the challenge of maintaining a quality environment, represents the basic philosophical rationale for these instructional materials. They are designed to give specific emphasis to the ecological implications of man's activities as generally explored in the social studies curricula for grades four through six. The outdoor laboratory approach is employed to encourage students to become more aware of their responsibilities as citizens in considering and preserving man's natural resources. Five generalizations about man's relationship to his environment serve as a base around which concepts, questions, and activities are built. Three concepts are identified for each generalization, and individual concepts detail open-ended questions, discovery activities, appropriate terms or vocabulary words, and instructional materials (multimedia). Performance objectives, suggestions for evaluation, and a bibliography of books and field guides are also provided in this curriculum guide. (BL)

ED 091 268 SO 007 421
Man and His Relationship to the Natural and Cultural Environment: The United States. A Resource Guide.
Hawaii State Dept. of Education, Honolulu. Office of Instructional Services.
Pub Date 72
Note—52p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—*American Culture, *Cultural Background, Cultural Factors, Economic Education, Elementary Education, Ethnic Studies, Models, Political Science, Resource Guides, Social Mobility, Social Stratification, *Social Studies, Teaching Guides, *United States History, *Values
A sample of a one-year curriculum for an elementary social studies program is organized within the framework of the value system which gives expression to the culture of the American nation, rather than following the sequential development of historical events. The goal of the program is to understand contemporary Americans, comprehend the social conditions of the present by a study of the nation in the past and if Americans today detect drastic changes in values, beliefs, and practices. The publication is primarily a resource guide which includes the following four units: American Culture; Social Stratification, Political Culture, and Economic Resources and Growth. Each unit begins with an introductory overview followed by a listing of the generalizations guiding the development of the unit. Major concepts are then defined and the student objectives are spelled out. Sample suggested activities are then developed. Each unit ends with possible evaluation exercises and a suggested listing of instructional materials for teachers and students. The first unit on American culture can be used as a model for developing similar units. (Author/KSM)

ED 091 269 SO 007 422
Man in His Natural and Cultural Environment. A Resource Guide.
Hawaii State Dept. of Education, Honolulu. Office of Instructional Services.
Pub Date 72
Note—82p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Cultural Awareness, Culture Contact, Curriculum Guides, Elementary Education, *Environmental Education, Learning Activities, Map Skills, Natural Resources, Resource Guides, Social Change, *Social Influences, *Social Studies, Teaching Guides, Thematic Approach, Unit Plan, Values
A sample of a one-year curriculum for an elementary social studies program employs a thematic approach to the theme of man in his natural and cultural environment. The publication is primarily a resource guide which includes the following five units: Our Environment is Everything Around Us; People Have a Cultural Environment; People Have a Social Environment; People Use the Earth's Resources; and People Adapt to Change. Each unit begins with an introductory overview followed by suggested instructional materials for teachers and students. The unit is then developed through various suggested learning activities with notes in the margins spelling out objectives for the lessons. Each unit ends with suggested evaluation exercises. There are numerous learning activities from which teachers may select, adapt, or modify to meet the specific needs of their students. A suggested outline for one approach for studying this theme is presented. The suggested activities are to be flexibly interpreted and the teacher is encouraged to add or delete materials and activities for a particular group of students. Learning materials for teachers and students are analyzed for their application to each of the units. (Author/KSM)

ED 093 243 SO 007 590
Dunfee, Maxine; Crump, Claudia
Teaching for Social Values in Social Studies.
Association for Childhood Education International, Washington, D.C.
Pub Date 74
Note—74p.
Available from—Association for Childhood Education International, 3615 Wisconsin Avenue, N.W., Washington, D.C. 20016 ($2.75, orders under $5.00 cannot be billed)
EDRS Price MF-$0.75 HC-Not Available from EDRS. PLUS POSTAGE
Descriptors—*Conflict Resolution, Democratic Values, Discriminatory Attitudes (Social), Educational Strategies, Elementary Education, Environmental Education, Friendship, *Human Relations, Interaction, *Interpersonal Relationship, Learning Activities, Role Playing, Self Concept, Simulation, *Social Studies, Teaching Techniques, *Values
A guide for teaching values in social studies takes a positive stand with regard to the importance of values education in the elementary school based on the belief that many personal and societal problems are the results of unresolved value conflicts. It is hypothesized that children who have continuing experiences in value identification, clarification, and conflict resolution are better able to meet daily problems and that social studies offers an effective vehicle for value clarification as its content is drawn from the world of human relationships and interactions. An introductory chapter clarifies the values dilemma in social studies. Five chapters describe strategies and suggest activities for building self-concept, widening friendships, overcoming bias and prejudice, realizing democratic ideals, and renewing the environment, all through the valuing processes. Classroom exercises, role playing, simulation, and discussion techniques are explained in each chapter. Activities involve entire classes, small groups, and individuals as well as student-teacher and peer interaction related to social studies content areas. (Author/KSM)

ED 098 084 SO 007 773
Keach, Everett T., Jr.; Williams, Elmer D
Primary Environmental Education Project: Teacher's Guide and Modules 1, 2, and 3.
Georgia Univ., Athens
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 73
Grant—OEG-0-72-5121
Note—383p.
Available from—Primary Environmental Education Project, 206 Dudley Hall, University of Georgia, Athens, Georgia 30602 ($9.00 for teacher's guide and nine modules, mimeo)
EDRS Price MF-$0.75 HC-Not Available from EDRS. PLUS POSTAGE
Descriptors—*Activity Learning, Cognitive Objectives, Concept Formation, Ecology, Elementary Grades, *Environmental Education, Instructional Materials, *Integrated Activities, Interdisciplinary Approach, Learning Processes, Management, Pollution, Process Education, *Social Studies Units, *Systems Concepts, Teaching Methods
The teacher's guide accompanies nine instructional modules on environmental education which are designed as supplementary material for a primary level social studies program. The modules focus on teaching/learning activities that will build on understanding of the interrelationships between man and the land, water, and air. A major objective is to have the students deal realistically with the environment. Emphasis is given to the thinking processes of young children and the provision for many opportunities to engage in creative thinking. Each instructional module (1) lists all required materials, (2) provides ID-15 learning experiences organized with a statement of content, required materials, behavioral objectives, focusing questions, and overview, and (3) suggests supplementary experiences. The teacher's guide describes and illustrates teaching strategies based on three cognitive tasks: concept formation, interpretation of data, and application of principles—and on productive-divergent thinking behaviors. Additional suggestions for using the modules, a rationale for involving the community, and a final evaluation instrument are also included. (Author/JH)

ED 099 210 88 SE 018 238
Hellrich, Carl - And Others
This Land is Your Land, The Problem of Land Utilization. Environmental Ecological Education Project.
Parkway School District, Chesterfield, Mo.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [73]
Note—82p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Conservation Education, Curriculum Guides, *Environmental Education, Environmental Influences, Grade 7, Instructional Materials, *Land Use, Learning Activities,

*Natural Resources, *Secondary Education, Teaching Guides
Identifiers—Elementary Secondary Education Act Title III ESEA Title III
This unit written for seventh-grade school children, focuses on the variety of factors that are involved in land utilization It specifically examines land use in St Louis County, Missouri, and discusses such concepts as the variety of ways man has used this land, the influence surface features have on land use, the influence of socio-cultural factors on land use, the effect of natural disasters--particularly in regard to improper land use, and the variety of careers in every aspect of land use The unit includes the behavioral objectives and the expected student criteria for evaluation, pretests and posttests, suggested methodologies for teaching each concept, a bibliography of both teacher and student resource books, a glossary of terms, a list of appropriate films, and environmental resource inventory data sheets for each of the junior high schools in the Parkway School District (MLB)

ED 100 649 88 SE 018 232
Abbott, Verlin M
Environmental and Architectural Influences on Homes. Environmental Ecological Education Project. Revised.
Parkway School District, Chesterfield, Mo
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C
Pub Date Jun 72
Note—65p
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, *Elementary Education, *Environmental Education, *Housing, Housing Needs, Housing Patterns, *Interdisciplinary Approach, Natural Resources, Outdoor Education, Science Education, Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This unit, intended for grades four and five, focuses on houses and how they have influenced man and how man has influenced them Among the 14 concepts discussed are the history of homes, home and the environment, homes and heritage, homes and human needs, the design of homes and available land Besides the concepts, the unit includes behavioral objectives identified by concept, a pre- and post-test, teacher background information, and a suggested instructional sequence which includes a variety of related activities A bibliography and film list are listed. (TK)

ED 100 650 88 SE 018 241
Abbott, Verlin M.
The Classroom as a Miniature Society. Environmental Ecological Education Project. Revised.
Parkway School District, Chesterfield, Mo
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, DC
Pub Date Jun 72
Note—69p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, *Elementary Education, *Environmental Education, Instructional Materials, *Interdisciplinary Approach, Natural Resources, Outdoor Education, Science Education, *Social Environment, Sociocultural Patterns, Teaching Guides, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This unit, intended for grades five and six, includes a group of experiences designed to help students and the teacher understand society's effects on their environment and its parallel the activities in the classroom as a miniature society with life outside the school. The main idea developed is that cooperation is the key word in man's interaction with others and his environment Among the ten concepts discussed are cooperation between society and the total environment, the need for conservation laws, valuing and freedom. Besides the ten concepts, the unit includes behavioral objectives which are identified by concept, a pre- and post-test, background information designed to help the teacher effectively deal with attitudes and values, and a suggested instructional sequence A bibliography is also presented. (TK)

ED 100 693 88 SE 018 364
Social Studies 7-8, Environmental Education Guide.
Project I-C-E, Green Bay, Wis
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Public Instruction, Madison
Pub Date [74]
Note—80p
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Conservation Education, Economics, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Political Science, Psychology, *Science Education, *Secondary Education, *Social Studies, Sociology, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This social studies guide, for use in grades 7 and 8, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum The guides are supplementary in design, containing a series of episodes (minilessons) that broaden the student's views of environmental problems through social studies activities The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas This guide focuses on aspects such as sociology, economics, psychology, and political science The 12 concepts are covered in one of the episodes contained in the guide Further, each episode offers subject area integration subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students (Author/TK)

ED 100 778 95 SO 008 068
Coppen, Barr
An Environmentally Related Program for the Sixth Grade.
Western Washington State Coll., Bellingham. Huxley Coll of Environmental Studies
Spons Agency—National Center for Educational Research and Development (DHEW/OE), Washington, D.C
Bureau No—BR-0-0848
Pub Date Dec 71
Grant—OEG-0-70-5039
Note—56p. This document is part of the ongoing Sedro-Woolley Project (see ED 061 118 and 066 363). Pages 45-48 from the appendix have been removed to conform with copyright law
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Biology, Concept Teaching, Conservation Education, *Earth Science, *Ecology, Elementary Education, *Environmental Education, Field Trips, Grade 6, Human Geography, *Interdisciplinary Approach, Models, Physical Geography, School Community Relationship, *Social Studies Team Teaching
Identifier—*Sedro Woolley Project
The successful integration of ecology and social studies in this sixth grade program offers students a chance to become aware of themselves and their immediate surroundings, both in the classroom and in the community This model and the suggested learning activities can be successfully adapted for use at any of the other elementary levels Students in the project study natural, manmade, and social aspects of the world through the use of team teaching, group activities, field trips, and community projects Students gain an awareness of important environmental concepts and become aware of their social environment One problem encountered in this project is the advanced reading level of most of the materials on environmental education However many of the articles suitable for class use can be reworded in order for students to comprehend them Sample evaluation forms and suggested supplementary materials useful in the classroom and in conjunction with field trips are included in the appendix (Author/JR)

ED 101 943 95 SE 018 116
[East Syracuse-Minoa Schools Environmental Education Materials, Middle School Package, Grade 8--Social Studies.]
East Syracuse-Minoa Central Schools, East Syracuse, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date [73]
Grant—OEG-0-71-4621
Note—155p; Best copy available, occasional marginal legibility
EDRS Price MF-$0.76 HC-$8.24 PLUS POSTAGE
Descriptors—American History, Conservation Education, *Curriculum Guides, Economics, *Environmental Education, Government Role, Grade 8, History, Interdisciplinary Approach, Learning Activities, Science Education, *Secondary Education, *Social Studies, Teaching Guides, Technology, Units of Study (Subject Fields)
This interdisciplinary social studies unit is designed for use in the eighth grade The unit is developed around three themes: Habitation Patterns, Economic and Technological Development, and Changing Role of Government. Habitation Patterns encompasses the generalization that change is often the result of many forces. The history and growth of the U S, 1492-1900, is developed in three sections, 1492-1783, colonial America, 1783-1860; the U S as an emerging nation; and 1860-1900, the growth of a capitalistic society. Objectives, activities and strategies, materials, and expected outcomes are also included. The Economic and Technical Development of the U S encompasses the generalization that differing ways of life tend to compete for available resources. This theme is broken into five sections, 1492-1783, 1783-1860, 1860-1900, 1900-1945, and 1945-1971, activities and strategies, materials, and expected outcomes are identified for this theme. The Changing Role of Government encompasses the generalization that the government of a society is closely related to its values, even so, no government can satisfy all groups all the time This theme is broken into the same five sections as above. Policies, plays, background information, tests, and references are included in the appendices. (TK)

ED 102 048 SO 008 069
Jungblom, Edwin V.
An Interdisciplinary Program Incorporating Population Studies for Intermediate Grades. Sedro-Woolley Project Report No. 13.
Western Washington State Coll., Bellingham. Huxley Coll. of Environmental Studies
Spons Agency—National Center for Educational Research and Development (DHEW/OE), Washington, D.C.
Pub Date Dec 71
Note—58p.; Related Documents ED 058 126 and 129, ED 059 901, ED 059 947-950, ED 061 118; ED 066 365
EDRS Price MF-$0.76 HC-$3.32 PLUS POSTAGE
Descriptors—Course Objectives, *Curriculum Development, Demography, Elementary Education, *Environmental Education, Evaluation Methods, Field Trips, Graphs, *Interdisciplinary Approach, Intermediate Grades, Junior High Schools, *Population Education, Population Trends, Questioning Techniques, *Social Studies, Teaching Methods, World Problems
Identifiers—*Sedro Woolley Project
The publication contains exercises on population education which can be used in social studies and science classes in grades 4-7 Although the language of the material is geared to the intermediate grades, the exercises can easily be adapted for primary, high school, and adult education The publication's major objective is to

change the lifestyle of people or to alter drastically the values that people have about finite Spaceship Earth Teaching techniques include readings; classroom discussions, gathering, collecting, and analyzing data, developing hypotheses and drawing conclusions from data; constructing graphs, research, field trips and writing essays The major portion of the publication contains exercises dealing with population explosion, famine, epidemic, health and sanitation, death rate, birth rate, growth rate, and population estimates Unit objective, teaching methods, student resource material, questions for discussion, and evaluation techniques are provided for each topic Specific issues to investigate and problem study areas are also provided (Author/RM)

ED 120 045 SO 008 941

McCrea, Lester C And Others

Demography and Environment Earth: Teacher Edition.

Baltimore City Public Schools, Md Urban Life-Population Education Inst

Pub Date 74

Note—108p. For related documents, see SO 008 940 through 945, Some pages may not reproduce clearly due to print quality of original document

Available from—Population Studies, Baltimore City Public Schools, 2418 St Paul Street, Baltimore, Maryland 21218 ($1 00)

EDRS Price MF-$0.83 HC-$6.01 Plus Postage

Descriptors—Concept Teaching, *Demography, Elementary Education, *Environmental Education, Global Approach, Graphs, *Human Geography, Instructional Materials, Learning Activities, *Population Education, Population Growth, Population Trends, Social Sciences, Social Studies Units, Teaching Guides, Teaching Techniques

This document is one in a series of instructional materials on population education developed for the Baltimore public schools The unit, designed for elementary grades 5 and 6, focuses on demography and human factors and consequences. The first part of the resource unit presents basic information, methodology and understandings of demography and population growth. Extensive use is made of charts and graphs and mathematics to present the problems surrounding population trends The second section introduces the human element in population growth and possible consequences of overpopulation. The focus is on the implications of population growth for the society, individual, and earth which are seen as interrelated concepts Each episode in the unit contains the topic, objectives, materials needed, discussion and activities This unit may be taught as a whole, or specific topics within the unit may be taught separately (Author/JR)

ED 120 053 SO 008 955

Benyamin, Feiler And Others

An Interdisciplinary Instructional Unit on Land-Use In Pinellas County, Florida. Social Studies Project No. 877.

Spons Agency—Florida State Dept of Education, Tallahassee Office of Environment Education

Note—151p., Pages 23.30 and 113.124b of the original document are copyrighted and therefore not available, They are not included in the pagination

EDRS Price MF-$0.83 HC-$8.69 Plus Postage

Descriptors—*Curriculum Development, Curriculum Guides, *Environmental Education, Environmental Influences, Instructional Materials, Interdisciplinary Approach, Junior High Schools, *Land Use, Learning Activities, *Social Studies, Teacher Developed Materials, Transportation, Water Resources, Zoning

Identifiers—*Florida (Pinellas County)

This unit contains a number of learning activities which can be incorporated into junior-high environmental education classes Objectives are to make students aware of local environmental problems and clarify their personal values about environmental issues Along with general kinds of land-use problems and historical overviews, the unit focuses specifically on four major land use issues in Pinellas County, Florida, including beach development and natural disasters, land-use and planned zoning, transportation; and water supplies, distribution, and wastes Each unit of the guide contains appropriate teacher information, such as materials needed, special notes to the teacher, activities, objectives, skills, generalizations, and guidelines Although focused on Florida, the unit serves as a good model that can be easily adapted to other regions Teachers can substitute maps, graphs, and other kinds of local information using the Pinellas County model as an example (JR)

ED 121 567 88 SE 019 334

Bennett, Dean B Willink, Wesley H

Environmental Education Teacher's Guide. Junior High School. A Core Experience Study of the Human Environment.

Maine Environmental Education Project, Yarmouth.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date 75

Note—64p. For related documents, see SE 019 332-335

Available from—Maine Environmental Education Project, Intermediate School, Yarmouth, Maine 04096 (free)

EDRS Price MF-$0.83 HC-$3.50 Plus Postage

Descriptors—Audiovisual Aids, Curriculum Guides, Environment, *Environmental Education, Junior High Schools, *Land Use, *Learning Activities, *Secondary Education, Skill Development, *Teaching Guides,

Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This Environmental Education Teacher's Guide developed for use in the junior high school, is designed to familiarize teachers with how an environmental education program can help in their teaching and in achieving the goals of the school The suggested core activities in this guide are designed to be a motivating way of introducing junior high school students to a practical understanding of the human environment The activities focus on those factors important in evaluating the compatibility of land uses with each other and with the natural environment The practicality of the unit is enhanced by the application of facts and concepts to a developed river corridor The activities have been devised to develop specific understandings, feelings, and skills Basic concepts, attitudes, objectives, and skills are identified and a pre-post test is included to help the teacher assess educational outcomes (GT)

ED 124 450 SO 009 143

Garrett, Anne C Kozak, Betty Ann

Our Crowded, Dirty World: The Development of Our Environmental Crisis and Its Impact upon One's Habitat. Instructional Activities Series.

National Council for Geographic Education.

Report No—IA/E-5

Pub Date 75

Note—7p., For related documents, see ED 096 235 and SO 009 140 through 167

Available from—NCGE Central Office, 115 North Marion Street, Oak Park, Illinois 60301 ($50, elementary set $6.25)

EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS,

Descriptors—Ecological Factors, *Ecology, Elementary Education, *Environmental Education, Geography, *Learning Activities, Observational Learning, Social Studies, Teacher Developed Materials, Urban Environment, Urban Studies

This activity, the fifth in a set of elementary teacher-developed units for geography, is intended to help teachers in developing an ecological unit It examines pollution problems in the United States through observation and inquiry. An environmental walk activity is outlined that can be performed in any area near a school. It provides an opportunity for students to examine and evaluate data, hypothesize about collected data, and draw conclusions Teachers are recommended to contact their local park authorities for more materials. A bibliography of free or inexpensive materials on pollution is provided, along with an exemplary map available from "The Washington post" for free See SO 009 140 for a general description and explanation of the elementary and secondary sets comprising this series. (ND)

ED 124 451 SO 009 144

Callahan, Miriam Thomas And Others

Population: 1 + 1 = 2 Many Instructional Activities Series.

National Council for Geographic Education

Report No—IA/E-6

Pub Date 75

Note—14p., For related documents, see ED 096 235 and SO 009 140 through 167

Available from—NCGE Central Office, 115 North Marion Street, Oak Park, Illinois 60301 ($50, elementary set $6.25)

EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.

Descriptors—Demography, Elementary Education, *Food, Geography, Graphs, Instructional Materials, *Learning Activities, Population Education, *Population Growth, Social Studies, Teacher Developed Materials

This activity, one in a set of teacher-developed instructional activities for elementary-level geography, investigates the problems and promise in meeting the nutritional needs of the world's people. Graphs are the principal media for instruction Thirty-nine statements are given from which students choose ten that show promise for feeding the world's population and ten that offer the least help. Seven graphs are provided in the material. See SO 009 140 for a general description and explanation of the elementary and secondary sets comprising this series. (Author/ND)

ED 130 927 SO 009 493

Morris, Donald M

Teaching about the Child and World Environment: Elementary Teacher's Kit.

United Nations Children's Fund, New York, N Y United States Committee

Report No—KIT-5420

Pub Date 76

Note—72p

Available from—School Services, United States Committee for UNICEF, 331 East 38th Street, New York, New York 10016 (Kit # 5420, $2.50)

EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.

Descriptors—Climatic Factors, Cognitive Objectives, Conservation (Environment), Educational Games, Elementary Education, Elementary School Curriculum, *Environmental Education, Environmental Influences, Futures (of Society), *Global Approach, *Human Geography, Instructional Materials, Interdisciplinary Approach, Physical Environment, Pollution, Science Curriculum, *Social Studies Units, Teaching Guides, World Geography

Three environmental education units relating environmental concerns to elementary school students' own experiences are described in this materials packet Emphasis is on helping students become more sensitive to human and personal dimensions of environmental upset Designed to teach children about themselves and their air, water, and land environments in an increasingly interdependent world, the units focus on natural disasters such as earthquakes, floods, weather upsets, pollution, and scarcity of natural resources Each unit specifies objectives, materials, grade levels, and teaching procedures, supplies history briefs of related materials; defines terms where necessary, and provides a summary and footnotes Activities include simulation of an earthquake and a simple watershed, class discussion of environment-oriented articles from the newspaper, cutting out natural objects from construction paper, testing for bacteria, making models of geographic areas, and listening as the teacher reads stories of natural disasters Several articles which appeared in UNICEF News and a wall sheet that are part of this kit are available from the publisher but are not included on the microfiche (Author/DB)

ED 132 011 SE 021 447

Amor, Ruth

The Games Cities Play. [Project ECOLogy ELE Pak. Amor Pak].

Highline Public Schools, Seattle, Wash.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date [76]

Note—18p., For related documents, see SE 021

a38.478. Not available in hard copy due to marginal legibility of original document
Available from—Highline Public Schools, Instructional Division, Project ECOLogy ESEA Title III, Bill Guise, Director, 15675 Ambaum Blvd. S.W., Seattle, WA 98166 ($2.50).
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*City Problems, *Elementary Education, Environment, *Environmental Education, *Instructional Materials, *Units of Study (Subject Fields), *Urban Studies
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This is a simulation game and a part of the environmental education program developed by the Highline Public Schools. The game emphasizes why a city is formed, how it grows, where it develops, and some problems with which it must cope. It is designed to be used with elementary students in the intermediate grades. The materials were tried and evaluated, evaluation data may be obtained from the Highline Public Schools. (RH)

ED 135 690 SO 009 790
King, David C., Ed. Long, Cathryn J., Ed.
Patterns for Teaching Interdependence: Part A, K-3 [And] Part B, 4-6, Global Perspectives: A Humanistic Influence on the Curriculum.
Center for Global Perspectives, New York, N.Y.; Denver Univ., Colo. Center for Teaching International Relations
Spons Agency—Hazen Foundation, New Haven, Conn.; National Endowment for the Humanities (NFAH), Washington, D.C.
Pub Date 76
Note—51p.; For related documents, see SO 009 791-792.
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Class Activities, *Concept Teaching, Curriculum Development, Educational Objectives, Elementary Education, *Global Approach, Humanistic Education, Interdisciplinary Approach, International Relations, Learning Activities, *Lesson Plans, Skill Development, Social Change, *Social Studies, *Teaching Techniques
Identifiers—*Interdependence
Ideas for creating lessons to introduce global perspectives on interdependence into the elementary social studies curriculum are presented. The booklet is intended as a companion to a series of guides for teaching selected universal concepts to K-12 students. Section I introduces five lessons for use in grades K-3. Lessons stress the interdependence of the parts of the human body, groups such as the family, basic needs of people, and plants and animals. For each topic, performance objectives are specified and the teaching procedure is outlined. Activities include question games, class discussion, role playing, mural drawing, story telling, and cooking. Section II suggests lessons for grades 4-6. Lessons stress the concepts of systems and mutual dependence on a global scale. Performance objectives are specified for each topic and the teaching procedure is outlined. Activities include simulations, drawing analysis, class discussion, group role play, science activities, science fiction fantasies, and group research. Concepts and key ideas are stressed in each lesson through suggested questions. Teacher reactions and lesson suggestions are solicited. (Author/DB)

ED 135 694 SO 009 798
King, David C., Ed. Long, Cathryn J., Ed.
Suggestions for Curriculum Development on Communication: Part B, 4-6, Global Perspectives: A Humanistic Influence on the Curriculum, Number Three in a Series of K-12 Guides.
Center for Global Perspectives, New York, N.Y.; Denver Univ., Colo. Center for Teaching International Relations
Spons Agency—National Endowment for the Humanities (NFAH), Washington, D.C.
Pub Date Dec 76
Note—71p.; For a related document, see SO 009 797
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Class Activities, *Communications, *Concept Teaching, Curriculum Development, Democratic Values, Educational Objectives, Elementary Education, *Global Approach, Grade 4, Grade 5, Grade 6, *Humanistic Education, Interdisciplinary Approach, Learning Activities, Lesson Plans, Skill Development, Social Change, *Social Studies, Teaching Guides, *Teaching Techniques
A guide for infusing global perspectives on communication into the social studies curriculum of grades 4-6 is designed to be used selectively by teachers. The four major objectives are to help students (1) understand how the world's system can influence the individual's life; (2) recognize different viewpoints, (3) develop an ability to make judgments about world influence on one's personal life, and (4) recognize that personal actions can influence world interrelatedness. Section I presents ideas for developing nine communication activities. The activities involve language skills, dialect investigation, cross-cultural communication, technological change, consumer education, and an understanding of conflicting viewpoints. For each topic, areas of study are specified, objectives are listed, and teaching techniques are suggested. Section II presents six self-contained lessons which demonstrate how global perspectives fit in with the existing curriculum. The lessons involve language exploration, verbal and nonverbal communication, body movement, historical perspectives on communication, and people's feelings about animals. Multiple activities--such as dictionary games, simulations, story telling, TV viewing, and class discussion--are suggested for each lesson, along with a description of areas of study, objectives, suggested time, and required materials. A subject index is included. Teacher and reviewer comments are solicited. (Author/DB)

ED 141 142 SE 022 664
Ships and Seaways, A Learning Experience for Coastal and Oceanic Awareness Studies, No. 105. [Project COAST].
Delaware Univ., Newark. Coll of Education
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 74
Note—47p.; For related documents, see SE 022 662-687
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Elementary Education, *Instructional Materials, *Language Arts, *Oceanology, *Social Studies, *Teaching Guides, Transportation, Units of Study
Identifiers—Project COAST, Ships
This unit for elementary school students (grade 5) provides materials for about five class periods. Emphasized are language arts and social studies activities related to ships and seaways. Activities include topics on common vessels, shipping routes, navigational guides, and art and writing related to field experiences. A number of transparency masters and a suggested book list are included. (RH)

ED 142 488 SO 010 192
Strauss, Edward L.
The Cemetery: An Outdoor Classroom, A Student Workbook, Project KARE Edition.
Con-Stran Productions, Philadelphia, Pa., Project KARE, Blue Bell, Pa
Pub Date 74
Note—35p.; For a related document, see SO 010 191
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Death, Elementary Secondary Education, Environmental Influences, Field Trips, Human Geography, Interdisciplinary Approach, Junior High School Students, Language Arts, *Learning Activities, Mathematics, Middle School, Sciences, *Social Studies, Student Attitudes, *Student Projects, Urban Environment
Twenty-seven activities are suggested for middle or junior high school students to perform while visiting any local cemetery. The activities make use of skills in mathematics, language arts, social studies, science, and environmental studies. All activities require a pencil and a copy of this workbook. Other materials for specific activities include camera, tape measure, and newsprint and crayons for making rubbings. Gravestone rubbings are not only enjoyable to make but they also allow information to be transported in the classroom in its original state. Many of the activities involve students in recording birth and death dates, comparing ages of death of men and women during various periods, analyzing epitaphs, and identifying the social causes of death such as war. An open-ended sentence completion activity encourages students to describe their feelings about death and life goals after having spent some time in the cemetery. A number of activities with a science orientation involve the students in identifying and studying the plant and animal life within the cemetery. Parts of flowers are to be identified, scientific names of leaves are to be researched, and insect life is recorded. Sketches or photos of plants, rocks, and animals are encouraged. Classes will have to make several trips to the cemetery in order to accomplish most of the activities. (AV)

ED 142 489 SO 010 193
Strauss, Edward L. Fleishman, Michael
City Street: An Outdoor Classroom, A Student Workbook, Project KARE Edition.
Con-Stran Productions, Philadelphia, Pa., Project KARE, Blue Bell, Pa
Note—36p.; For a related document, see SO 010 192
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Elementary Secondary Education, Environmental Influences, Field Trips, Human Geography, Interdisciplinary Approach, Junior High School Students, Language Arts, *Learning Activities, Mathematics, Middle Schools, Municipalities, Sciences, *Social Studies, Student Projects, *Urban Areas, Urban Environment, Urban Studies
Forty-one activities are suggested for middle or junior high school students to perform while visiting a city street. The activities make use of skills in mathematics, language arts, social studies, and environmental studies. A pencil and a copy of this workbook are essential; other materials required by some of the activities are a tape measure, magnet, and tape recorder. The students can work individually or in groups to determine the following types of information about a city block: number of windows in houses, various building materials, length of sidewalk, scientific names of trees and plants, services provided by stores and businesses, noises of different times of the day, and safest or shortest ways from home to school. Creative activities include writing a poem about the smells and sounds of the city block, creating a radio commercial to show certain aspects of the block, interviewing residents, inventing new uses for familiar objects found on the block, and mapping routes from one place to another. The authors recommend that a trip to a city street be arranged like a field trip, and that permission be obtained from school administrators and parents. (AV)

ED 146 084 SO 010 382
Fagan, James S.
Transportation and the Environment, Student Workbook [And] Teacher's Answer Book to Student Workbook, Publication 74-3.
Georgia Univ., Athens. Geography Curriculum Project.
Note—84p.; For related documents, see ED 113 222 and ED 120 036
Available from—Geography Curriculum Project, Department of Social Science Education, 107 Dudley Hall, University of Georgia, Athens, Georgia 30602 ($3.25, paper covers)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Answer Keys, Concept Teaching, *Environmental Education, Environmental Influences, Geographic Concepts, Geography, *Geography Instruction, Grade 7, Instructional Materials, *Mastery Learning, Mastery Tests, Physical Geography, Pollution, Secondary Education, *Social Studies, Social Studies Units, *Test Reviews, Tests, *Transportation, Workbooks
Identifiers—*Geography Curriculum Project
The document offers a student workbook and a teacher's answer book to accompany a seventh grade geography unit on transportation and its environmental impact (see ED 120 036 and 113 222). Two types of exercises are offered in the workbook: a review sheet to be filled in by the students after studying a chapter and a final self-mastery test. The tests are keyed by page and paragraph to the text. In the event a student misses an item on the formative test, he can restudy the keyed paragraph in the text, find the correct response, and write the correct response in the workbook. The review sheets direct stu-

dents to reconstruct models, define terms, list purposes, fill in blanks, and provide opinions and brief answers based upon information in the text. Optional activities are also suggested, such as measuring street noise, photographing transportation facilities, taking polls, and charting family trips. The tests, which consist of from 10-20 questions, require the students to fill in blanks, provide short answers, and give examples. (Author/DB)

ED 149 983 SE 023 452
Environmental Education. Values for the Future: Environmental Ethics. Grades 6-8.
Illinois State Office of Education, Springfield.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—52p.; For related documents, see SE 023 448-457 and SE 023 459-465. Page 9 "Composting Generates Heat" removed prior to being shipped to EDRS due to copyright restrictions
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Elementary Secondary Education, *Environment, *Ethics, *Instructional Materials, Interdisciplinary Approach, Learning Activities, Middle Schools, Natural Resources, Science Education, *Teaching Guides, Values
Identifiers—Elementary Secondary Education Act Title III

This booklet on environmental ethics is one of a series in environmental education for grades K-12. The concept of man's role in helping to preserve the natural order and the importance of maintaining a pleasant environment is presented in this booklet for grades 6-8. Five basic concepts are listed, along with the behavioral objectives, subject areas, key words and definitions associated with each. Teachers and students are given three activity options for each basic concept. Information for these activities includes materials and resources needed, procedures, discussion questions, further activities, and sample worksheets. (MA)

ED 149 985 SE 023 454
Environmental Education. Values for the Future: Economics Grades 6-8.
Illinois State Office of Education, Springfield.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—32p.; For related documents, see SE 023 448-457 and SE 023 459-465. Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Decision Making Skills, *Economics, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Middle Schools, Social Studies, *Teaching Guides, Technology, Values
Identifiers—Elementary Secondary Education Act Title III

This booklet on economics is one of a series in environmental education for grades K-12. The activities in this booklet are concerned with the relationship of the standard of living to the level of technology and economic system developed by a society. The role of economics in determining environmental quality is also assessed. Three basic concepts are listed, along with behavioral objectives, subject areas, key words, and definitions for each. Three activity options are given under the basic concepts. Information for these activities includes materials and resources, procedures, discussion questions, further activities, and sample worksheets. The activities are interdisciplinary and designed for students in grades 6-8. (MA)

ED 150 079 SO 010 684
Maryland Today: An Elementary Social Studies Unit.
Montgomery County Public Schools, Rockville, Md.
Pub Date 77
Note—61p.
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Cognitive Objectives, Cultural Education, Curriculum Guides, Educational Objectives, Elementary Education, *Environmental Education, Evaluation, Geography Instruction, Grade 4, Inquiry Training, *Learning Activities, Map Skills, Measurement Techniques, Performance Criteria, Resource Guides, Skill Development, Social Studies, *Social Studies Units, *State History, Teaching Techniques
Identifiers—*Maryland

This instructional guide suggests a way for teachers of fourth grade students to organize a social studies unit related to the study of Maryland. The eight to ten week unit is divided into four sections. Section I, a general unit outline, presents organizing concepts and questions, instructional objectives, and suggested topics for study. Section II considers the important geographical features of Maryland. Section III examines how people in Maryland can preserve the environmental quality of their state. Section IV focuses on Maryland's cultural heritage and suggests ways in which the people of Maryland can preserve their heritage. For each topic, a two-part format is followed. First, a class discussion is outlined. Questions are listed and correlated instructional supports to be used by the teacher are described. These include use of flash cards, maps, globes, bulletin boards, art materials, and the blackboard. The second part lists student performance objectives, activities and procedures, assessment measures, and resources. Learning activities involve students in map, globe, and compass exercises; inquiry questioning techniques; illustration analysis; geographic feature model making; class and panel discussions; educational games; theatrical presentations; class reports; and field trips. A directory of resource material on Maryland lists books, filmstrips, maps, television series, and transparencies. (Author/DB)

ED 151 297 SO 010 782
Energy Activities for Junior High Social Studies.
Minnesota State Energy Agency, St. Paul.
Pub Date Apr 77
Note—36p.; Not available in hard copy from EDRS due to poor reproducibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Activity Learning, *Activity Units, Community Attitudes, Consumer Education, Cultural Differences, Decision Making Skills, Educational Games, *Energy, *Energy Conservation, Environmental Education, Futures (of Society), Grade 7, Grade 8, Group Activities, Information Utilization, *Instructional Materials, Interdisciplinary Approach, Junior High School Students, Life Style, Personal Values, Problem Solving, Science Activities, Science Instruction, Science Units, Simulation, Social Problems, Social Studies, *Social Studies Units, Student Attitudes, Student Opinion, Student Reaction

The document contains seven learning activities for junior high students on the energy situation. Objectives are to help students gain understanding and knowledge about the relationships between humans and their social and physical environments, solve problems and clarify issues, examine personal beliefs and values, and recognize the relationships between beliefs, values, and individual behavior. In the first unit, "For Peat's Sake," social studies and science teachers cooperate. In these experiments the heat value of peat is compared to other materials and it is suggested that peat be used for energy production. Students collect information about the energy situation in the second unit. They play an energy game and develop a questionnaire to sample student and community opinions about energy. The third unit, "Implications," is a tool which helps students examine possibilities, complexities, interrelationships, and implications of trends and innovations. In the other four units students compare the differences energy has made in lifestyles, consider the implications of alternative living as energy conservation, discuss what they love and hate about power/energy, and explore the future in terms of their own life styles. (Author/JK)

ED 157 817 SO 011 027
Bringing Energy to the People: Washington, D.C. and Ghana. Grades 6,7. Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy.
National Science Teachers Association, Washington, D.C.
Spons Agency—Office of the Assistant Secretary for Intergovernmental and Institutional Relations (DOE), Washington, D.C. Education, Business and Labor Affairs.
Report No—HCP/U3841-0006
Pub Date Feb 78
Contract—EX-76C-10-3841
Note—69p.; For related documents, see SO 011 028-030; Best copy available
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee 37830 (free, paper cover)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Class Activities, *Comparative Analysis, Cross Cultural Studies, Elementary Secondary Education, *Energy, *Energy Conservation, Grade 6, Grade 7, Graphs, Interdisciplinary Approach, Intermediate Grades, Junior High Schools, Lesson Plans, Map Skills, Physical Geography, Sciences, Social Studies Units, Teacher Developed Materials, *World Geography
Identifiers—*District of Columbia, *Ghana (Accra)

This instructional unit contains four classroom lessons dealing with energy for use in grades six and seven. The overall objective is to provide students with a comparative overview of two basic energy concepts: energy is a basic need in all cultures, and energy use affects the way people live. In the lessons, which can easily be integrated into studies of world cultures and physical geography of the world, students compare Accra, Ghana, with the Washington, D.C. area in terms of climate, geographic location, energy dependence, and services that meet their needs. The four lessons developed by teachers are: (1) A Geographical Picture of Two Cities, (2) Tracing the Sources of Electric Power in Ghana and in the Washington, D.C. area, (3) Two Transportation Systems. How Are They Alike? How Are They Different, and (4) How is Electricity Used in Two Different Cultures? The second lesson can also be taught in science courses. Students construct climagraphs, analyze and interpret fact sheet maps and bar graphs, answer questions about highway and road maps, and examine case studies. A time allotment varying from one to four classes for each of the four lessons is suggested, but will probably vary depending on student interest and ability. Each lesson contains complete teacher and student materials, background information for the teacher on the topic under study. (Author/RM)

ED 157 818 SO 011 028
An Energy History of the United States. Grades 8-9. Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy.
National Science Teachers Association, Washington, D.C.
Spons Agency—Office of the Assistant Secretary for Intergovernmental and Institutional Relations (DOE), Washington, D.C. Education, Business and Labor Affairs
Report No—HCP/U3841-0004
Pub Date Jan 78
Contract—EX-76C-10-3841
Note—120p.; For related documents, see SO 011 027-030; Best copy available
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee 37830 (free, paper cover)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Class Activities, *Energy, Energy Conservation, Grade 8, Grade 9, *Interdisciplinary Approach, Lesson Plans, Mathematics, *Natural Resources, Sciences, Secondary Education, Social Studies Units, Teacher Developed Materials, *United States History

This instructional unit contains eight classroom lessons dealing with a history of energy in the United States for use in grade eight and nine social studies, science, and mathematics courses. The lessons were developed by teachers. The overall objective is to help students understand the present necessity to reexamine and perhaps alter our present energy patterns. Students study about the impact that the different types of ener-

go used from animal times to the present have had on U S culture and learn about the physical properties of wood, coal, and oil, particularly about the ability of these substances to give heat. The activities in which students are involved include answering questions based on short reading selections, gathering and interpreting materials from a picture, comparing the uses of energy by a colonial farm family and by a family of today, constructing a can calorimeter, learning how to determine the energy content of wood, applying the principles of scientific motivation to energy data, constructing and interpreting graphs, making a model of a steam turbine, and learning how to determine the heat content of oil. The amount of time needed to teach each lesson varies from one to four classroom periods. Each lesson is self-contained, and includes instructions for the teacher and student materials. The eight lessons are organized into three units: (1) America's Wooden Age (1650-1820), (2) The Coming of Coal (1840-1920), and (3) Oil Bright Promise (1880-present). (Author/RM)

ED 157 819 SO 011 029

Energy in the Global Marketplace: Grades 9, 10, 11. Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy.

National Science Teachers Association, Washington, D.C.

Spons Agency—Office of the Assistant Secretary for Intergovernmental and Institutional Relations (DOE), Washington, D.C. Education, Business and Labor Affairs

Report No—HCP/U3841-0007

Pub Date May 78

Contract—EX-76-C-10-3841

Note—54p.; For related documents, see SO 011 027-030; Best copy available

Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee, 37830 (free, paper cover)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Class Activities, *Economic Education, Economics, *Energy, *Global Approach, Grade 9, Grade 10, Grade 11, Lesson Plans, Secondary Education, Social Studies Units, Teacher Developed Materials, World Geography

This instructional unit contains six classroom lessons in which 9th, 10th, or 11th grade social studies students examine the effects of competition among nations and world regions as demand for oil outstrips supply. The overall objective is to help students understand the concept that energy is a commodity to be bought and sold like any other commodity but in a marketplace that is a global one. The lessons were written by teachers and can be integrated into social studies, economics, world history, contemporary issues, and world geography courses. The lessons are (1) Why Some Nations Use More Energy, (2) Energy Who Has It, Who Needs It?, (3) From Those Who Have To Those Who Want: The Oil Trade Routes, (4) What If Everyone Wants More?, (5) Petrodollars: The Problem of Too Much Money, and (6) The Oil Price Game -- Everybody Plays (A Simulation Of The World Market for Oil). The activities in which students are involved include analyzing maps, graphs, and charts, answering questions based on short reading selections, and playing games. Each lesson can be taught in one classroom period. All teachers and student materials are included. (Author/RM)

ED 157 834 SO 011 046

Indian River County Environmental Education Instructional Guide, Language Arts and Social Studies, Sixth Grade.

Florida State Dept. of Education, Tallahassee.

Pub Date 78

Note—39p.; For related documents, see SO 011 047-049; Not available in hard copy from EDRS due to poor reproducibility of parts of the original document

Available from—Office of Environmental Education, Department of Education, Knott Building, Tallahassee, Florida 32308 (on loan)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Biological Sciences, Concept Teaching, *Conservation (Environment), Ecology, Elementary Education, Environment, *Environmental Education, Grade 6, *Language Arts, *Learning Activities, Natural Resources, Pollution, *Population Trends, Social Factors, *Social Studies, Teaching Guides, Water Pollution Control, Wildlife Management

The guide is one in a series for teachers, students, and community members to help them utilize community resources in developing and teaching environmental concepts, responsibility, and problem solving. This particular guide focuses on social studies and language arts aspects of environmental education for sixth graders. Background information and activities are based on the Indian River County environment in Florida. An introduction explains that there are five forest types in the county, which is a scenic and recreation area. Ten major areas of environmental and human concern in the county include water pollution abatement, solid waste disposal, and rare and endangered habitats. Endangered and threatened wildlife are identified. Section one presents 13 social studies activities based on two major concepts: (1) as population increases, its effects on the environment change, and (2) although resources are finite, there are almost infinite demands on those resources. Activities involve creation and observation of terrarium life and simulation of different community members' water needs. Section II presents six language arts activities based on the concept that as population increases, its effects on the environment become more pronounced. Activities include calculation of birth and death rates, and writing poetry about ecology. A concluding section outlines Florida school regulations concerning educational field trips. (AV)

ED 157 835 SO 011 047

Indian River County Environmental Education Instructional Guide, Social Studies, Seventh Grade.

Florida State Dept. of Education, Tallahassee.

Pub Date 78

Note—40p.; For related documents, see SO 011 046-049; Not available in hard copy from EDRS due to poor reproducibility of original document

Available from—Office of Environmental Education, Department of Education, Knott Building, Tallahassee, Florida 32304 (on loan)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Biological Sciences, *Concept Teaching, *Conservation (Environment), Ecology, Environment, *Environmental Education, Grade 7, Individual Power, Land Use, *Learning Activities, Natural Resources, Pollution, *Population Trends, Secondary Education, *Social Studies, Teaching Guides, Technology

The guide is one in a series for teachers, students, and community members to help develop and teach environmental concepts, responsibility, and problem solving. It presents concepts and activities related to environmental education for seventh grade social studies classes. Background information is based on the Indian River County environment of Florida. The introduction describes the county's forest areas, its endangered wildlife, and areas of local environmental concern. The main portion of the guide contains 21 activities based on three major concepts. These concepts emphasize the relationship between population size and demands upon natural resources, and each individual's role as an agent for change in the environment. Activities involve role play, research into local and foreign use of minerals and imported products, creation of maps showing location of the world's mineral resources, and debate over the advantages and disadvantages of technological constructions such as interstate highways, condominiums, and skyscrapers. (AV)

ED 157 836 SO 011 048

Indian River County Environmental Education Instructional Guide, Social Studies, Eighth Grade.

Florida State Dept. of Education, Tallahassee.

Pub Date 78

Note—48p.; For related documents, see SO 011 046-049; Not available in hard copy from EDRS due to poor reproducibility of original document

Available from—Office of Environmental Education, Department of Education, Knott Building, Tallahassee, Florida 32304 (on loan)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Biological Sciences, *Concept Teaching, *Conservation (Environment), Ecology, Environment, *Environmental Education, Grade 8, Land Use, *Learning Activities, Natural Resources, Pollution, *Population Trends, Secondary Education, Social Problems, *Social Studies, Teaching Guides

The teaching guide presents social studies activities for eighth graders to learn about environmental concepts, problems, and responsibilities. Part of a series for teachers, students, and community members, it is based on the Indian River County environment in Florida. The introduction identifies the county's natural resources, wildlife, and issues of environmental concern. The activities are based on concepts emphasizing the interdependence of all living things and the effects of population growth upon the environment. Some of the activities focus on local problems of Indian River County. For example, students consider the territorial needs of endangered species and examine ways in which modern society changes or destroys their habitats. Other activities involve identifying material goods for which settlers moved west, discovering differences in American Indians' and white settlers' use of natural resources, and exploring causes of wars between nations. Students also discuss pollution caused by industrial waste and population density. Appendices contain outline maps of the United States and Europe to be used in making transparencies for some of the activities. (AV)

ED 162 905 SE 025 444

Lent, Judith And Others

America's Wild Horses "Filling 'Em In": A Social Studies Subject for Upper Elementary Students. Teachers Guide.

Bureau of Land Management (Dept. of Interior), Washington, D.C.

Pub Date—Jul 78

Note—42p.; Activity poster removed prior to being shipped to EDRS for filming

EDRS Price MF-$0.83 HC-$2.06 Plus Postage.

Descriptors—*Biological Sciences, Conservation Education, *Ecology, Elementary Secondary Education, Environment, *Environmental Education, *Horses, Instructional Materials, Land Use, *Natural Resources, Social Studies, Teaching Guides, *Wildlife Management

Identifiers—*Burros

This learning package is designed to portray to upper elementary and junior high school students the various factors influencing the relationship of wild horses and burros to their environment in the Western United States. Protested by the Wild and Free-Roaming Horse and Burro Act of 1971, the thousands of protected horses and burros pose a challenge to government leaders, land managers, ranchers, and citizens as they consider methods for managing growing herds on public lands. Discussed are the role of wild horses and burros in Western history, their relationship to their ecosystem, the need for management, and management alternatives and land use decisions. The package includes a teacher's guide and activity poster. It is designed to be used with the film "Dapples and Grays, Pintos and Bays," and a children's story, "Thank You for Helping Us." (RE)

ED 164 414 SO 011 417

Heitzman, William Ray

America's Maritime Heritage: From Sail Power to Nuclear Power. Book 1 and Book 2. An Energy Education Activity Book [And] America's Maritime Heritage: A Frequently Forgotten Treasure.

Con-Stran Productions, Philadelphia, Pa.

Note—45p.; Photographs throughout document may not reproduce clearly

EDRS Price MF-$0.83 HC-$2.06 Plus Postage.

Descriptors—Changing Attitudes, Class Activities, Elementary Education, Energy, Conservation, *Environmental Education, *Interdisciplinary Approach, Natural Resources, *Social Studies, *Unit Plan, *Water Resources

These documents provide background information and a series of problems and activities to familiarize students with important maritime activities in the United States. Book I contains problems involving the movement of freight on inland waterways, questions on energy and the environment, and a chart with questions on United States oil imports. Book II features information on hydroelectric

power, water transportation, and energy consumption. The third book traces the history and influence of the sea on America and discusses shipbuilding, trading, commercial fishing, leisure time, and the arts. The growing interest in marine science and the development of maritime parks and museums are noted. Annotated lists of pertinent periodicals, books, pamphlets, and films are included. (KC)

ED 186 315 SO 012 549
The Energy Dome. Social Studies Packet-Grades 4, 5, 6.
National Science Teachers Association, Washington, D.C.
Spons Agency—Department of Energy, Washington, D.C.; Office of Consumer Affairs, Washington, D.C.
Report No.—DOE/CA/06083-03
Pub Date—Apr 80
Contract—EC-77-C-01-6083
Note—106p.. For a related document, see SO 012 550.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—Class Activities, Decision Making Skills, Elementary Education, *Energy, *Energy Conservation, Fuel Consumption, Fuels, Grade 4, Grade 5, Grade 6, Intermediate Grades, Lesson Plans, Natural Resources, Plastics, *Social Studies, Teaching Guides, Units of study

This teacher's guide contains a unit of study for teaching about energy in grades four, five, and six. The guide is self-contained and includes the fact sheets students need to work out the activity problems. The unit is organized around the theme of the domed athletic stadium. The students begin by surveying the energy it takes to travel from their homes to the stadium and to operate all the machines that heat, cool, and light the huge arena. These energy users are then related to the sources from which the energy is refined or processed. After students discover the great variety of direct uses of energy and the growth in the demand for more fossil fuel based power, they turn to a study of different indirect uses of oil for which the plastics industry serves as an example. Artificial turf provides the organizer for this section as students study the processing steps involved in making it. The impact of the gap between U.S. consumption and production of oil and natural gas is explored in a puzzle-like activity which provides students with data and requires that they make personal decisions about conserving our increasingly limited supplies of oil and natural gas. In a concluding unit, students use a set of fact sheets on three alternative energy sources for the future and are asked to make a decision about using high-cost fuel to heat a stadium. Teacher background information on energy is also included in the guide. (Author/RM)

ED 187 355 SE 030 941
An Energy Curriculum for the Middle Grades, Unit Two: Energy and American History With Adaptations for Science, Language Arts, Practical Arts.
Indiana State Dept. of Commerce, Indianapolis Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Apr 80
Grant—DE-FG-45-79R510071
Note—174p.. For related document, see SE 030 940. Contains occasional light and broken type.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Class Activities, *Curriculum Guides, Elementary Secondary Education, *Energy, *Energy Conservation, Fuel Consumption, Fuels, *History, Interdisciplinary Approach, Natural Resources, Public Policy, *Science Education, Social Studies, Technology, United States History
Identifiers—*Energy Education

This guide is intended to integrate energy education into the curriculum of the middle school grades. It contains a rationale, a detailed introduction including a teacher's guide, glossary, and bibliography, a teacher's guide to a cartoon book, and separate teacher's entries and student entries for various eras of American history. The subjects discussed in the various sections include: (1) Energy and Colonial America; (2) Energy and Industrialism; and (3) Energy and the Post War Period. (RE)

ED 194 440 SO 012 989
Myers, Richard S.; Myers, Harriet B.
Energy Awareness Resource Unit for Intermediate Grades.
Pub Date—80
Note—44p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Conservation Education, Educational Objectives, Elementary Education, *Energy, *Energy Conservation, Evaluation Methods, Futures (of Society), Grade 4, Grade 5, Grade 6, Interdisciplinary Approach, *Learning Activities, Lesson Plans, *Minicourses, Natural Resources, Science Curriculum, Social Studies, *Teaching Methods, Units of Study

This instructional package suggests objectives, activities, and evaluation methods for use in an elementary school minicourse on energy. Objectives are to help students become aware of the present energy situation and to make more intelligent energy-related decisions in the future. Activities involve language arts, science, math, social studies, art, music, and drama. A period of several weeks is required to complete all suggested activities and evaluation procedures. The document is presented in seven major sections. Section I introduces the unit. Section II outlines major topics--alteration of lifestyles, energy conservation, population pressures, priorities for energy use, and new sources of energy. Section III lists objectives. Section IV describes pre-assessment activities. Section VI (the bulk of the document) describes a variety of learning activities including group projects, creating an energy information center, planning an energy fair, working on art projects, surveying friends and family regarding energy use, drawing energy-use time lines, and calculating energy consumption of various household appliances. Section VI suggests evaluation methods including observation and self-assessment through discussion. The final section lists materials and reading assignments required for various activities. The document concludes with an appendix containing a student evaluation log, a participation chart, and background information on energy. A bibliography is also included. (DB)

ED 196 788 SO 013 072
Resources for Using a Global Approach in Elementary Social Studies. TeachERIC Resource Series, No. 2.
ERIC Clearinghouse for Social Studies/Social Science Education, Boulder, Colo.; Social Science Education Consortium, Inc., Boulder, Colo.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Report No.—ISBN-0-89994-248-2
Pub Date—80
Contract—400-78-0006
Note—18p.
Available from—SSEC Publications, Social Science Education Consortium, 855 Broadway, Boulder, CO 80302 ($9.95 for the series, not sold individually)
Pub Type— Information Analyses - ERIC Information Analysis Products (071) — Reference Materials - Bibliographies (131)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Annotated Bibliographies, Elementary Education, *Global Approach, Resource Materials, *Social Studies

This annotated bibliography, one of four separate resources in the Teach ERIC Resource Series, cites materials that will help elementary teachers incorporate a global approach into social studies instruction. All materials listed are available through the ERIC system and in journal articles. The purpose of the Series is to help familiarize teachers with the ERIC system and what it can do for them. The rationale for teaching about global studies is that there is a critical need for preparing students for living in a world characterized by global interdependence and complex interrelationships. The kind of information provided in the bibliography includes how to implement a global education program, units of study, teaching guides, and descriptions of global education projects. The bibliography is organized into two major parts: the first part cites journal articles; the second part lists ERIC documents. Within each part, the citations are arranged in chronological order by their ERIC accession numbers. The grade level applicability range for each resource is indicated along with its availability in microfiche, paper copy, or both. Information about ordering or obtaining access to journal articles and other resources is provided in a brief introduction to each part. (Author/RM)

ED 197 997 SE 034 178
History of Energy. Easy Energy Reader, Book II.
Information Planning Associates, Inc., Rockville, Md.
Spons Agency—Department of Energy, Washington, D.C. Office of Consumer Affairs
Report No.—EDM-1138
Pub Date—May 80
Contract—EU-78-C-01-6497
Note—73p.. For related documents, see SE 034 177-180. Photographs may not reproduce well.
Available from—Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830 (free)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Content Area Reading, *Energy, Environmental Education, *Interdisciplinary Approach, Junior High Schools, *Reading Materials, *Science Education, Social Studies, Technological Advancement

Presented are five articles on the history of energy and how it has come to play an important role in people's lives. Designed for the junior high school language arts curriculum, each article is scored for readability according to the Gunning Fog Index. By referring to these ratings, a teacher can provide students with increasingly more challenging reading material. Among these articles are: (1) How Does Energy Contribute to Our Way of Life, and (2) Energy and Doubling Time. Also included are a glossary of energy terms and a list of related readings. This is the second in a series of four books on energy. (WB)

ED 197 998 SE 034 179
Energy: What Can We Do Right Now? Easy Energy Reader, Book III.
Information Planning Associates, Inc., Rockville, Md.
Spons Agency—Department of Energy, Washington, D.C. Office of Consumer Affairs
Report No.—EDM-1139
Pub Date—May 80
Contract—EU-78-C-01-6497
Note—67p.. For related documents, see SE 034 177-180. Photographs may not reproduce well.
Available from—Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830 (free)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052) — Opinion Papers (120)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Content Area Reading, *Energy, *Environmental Education, *Interdisciplinary Approach, Junior High Schools, Opinions, *Reading Materials, Science Education, *Social Studies

Highlighted in this collection of five articles on the nation's energy problems are the viewpoints of black people, environmentalists, consumers, and utility executives. Also included is a group of statements to help the reader develop a personal energy policy. Intended for junior high school language arts classes, this is the third in a series of four books on energy. Each article is rated for readability according to the Gunning Fog Index. By referring to these scores, a teacher can provide students with increasingly more challenging reading material. An energy glossary and list of related readings follow the articles. (WB)

ED 199 120 SO 013 150
Miller, Barbara Ed.
Thinking Globally, Acting Locally About Food, Population and Energy Issues. Seventh Grade Interdisciplinary Unit.
Aurora Public Schools, Colo.
Spons Agency—Denver Univ., Colo. Center for Teaching International Relations
Pub Date—79
Note—306p.. Not available from EDRS in paper copy due to marginal legibility of the original document. Some pages will not reproduce clearly in microfiche.
Available from—Aurora Public Schools, 1085 Peoria Street, Aurora, CO 80011 ($6.00)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.

Descriptors—Developed Nations, Developing Nations, *Energy, *Food, *Global Approach, Grade 7, Junior High Schools, Junior High School Students, Learning Activities, *Population Education, *Social Studies, Teaching Methods, *Units of Study, World Problems

This social studies unit suggests activities and teaching methods for use by seventh grade social studies classroom teachers as they develop and implement educational programs on global food, population, and energy problems. Objectives are to help students become aware of global interdependence, identify roles of various nations in causing and solving problems related to food and population, and develop skills in gathering and analyzing data regarding world problems. The document is presented in seven sections. Chapter I suggests activities which introduce students to global interdependence and to differences in life styles between developed and developing nations. Students are involved in a variety of activities including determining items essential to a good life, working with maps and globes, creating bulletin boards and collages, answering questions on worksheets, and discussing global issues in small groups and in class. Chapters II through IV present activities which focus specifically on population, food, or energy. Activities involve case studies, data sheets, time lines, simple computation problems, and map and globe work. Chapters V and VI offer culmination activities and supplemental projects. Students are directed to pull together background information and skills gained through participation in earlier course activities. Specific activities and projects in which they are involved include producing a filmstrip, making posters and bulletin boards, creating energy tools out of classroom junk, discussing food and energy sources, and diagramming energy issues. For all activities suggested in the document, information is presented on title, background, objectives, time and materials required, skills, focus, and procedures. (DB)

ED 209 125 SO 013 647

Johnson, Jacquelyn; Benegar, John

Global Issues in the Intermediate Classroom, Grades 5-8.

ERIC Clearinghouse for Social Studies/Social Science Education, Boulder, Colo.; Social Science Education Consortium, Inc., Boulder, Colo.

Spons Agency—National Inst. of Education (ED), Washington, D.C.

Report No.—ISBN-0-89994-265-2

Pub Date—81

Contract—400-78-0006

Note—150p.; Some handouts may not reproduce clearly from EDRS in paper copy or microfiche.

Available from—Social Science Education Consortium, Inc., SSEC Publications, 855 Broadway, Boulder, CO 80302 ($8.95).

Pub Type—Guides - Classroom - Teacher (052) — Information Analyses - ERIC Information Analysis Products (071)

EDRS Price - MF01/PC06 Plus Postage.

Descriptors—Cross Cultural Studies, *Cultural Awareness, *Global Approach, Intermediate Grades, Junior High Schools, Learning Activities, Social Studies, Teacher Developed Materials, World Affairs, World Problems

This publication contains teacher developed activities for teaching about global issues in grades 5-8. The self-contained activities are organized into three major parts. Part I, "Global Awareness," introduces students to the concept of global education. Students are made aware of the nature of the world and the part they play in it as inhabitants of the planet. For example, the activity, "Global Connections," involves students in interacting with one another to discover how their class is connected to the rest of the world. Using a bingo game format, students look for classmates who fit appropriate squares on their game sheets. Each square represents a certain kind of "global connection." Through the activities in Part II, "Global Interdependence," students learn that they are connected to other people and countries in countless ways and that these links exist across cultures as well as time and distance. In the "Peanut Butter Crunch" activity, students examine the effects of the drought of 1980 on the manufacturing of peanut butter. Because of the drought and the lifting of the peanut import quota, the United States began to import peanuts from China, India, and Argentina. In other activities, students examine the relationship between the United States and oil exporting nations, variations in the price of gasoline, and multinational corporations. Part III contains activities designed to teach cross cultural understanding. Students analyze the news for violations of human rights and examine the McDonald's fast food restaurant chain as a worldwide phenomenon. Related resources in the ERIC system are cited. (Author/RM)

ED 215 923 SO 013 984

Barrett, Junelle P.; And Others

Teaching Global Awareness: An Approach for Grades 1-6. Global Awareness Series.

Denver Univ., Colo. Center for Teaching International Relations

Spons Agency—Denver Univ., Colo. Graduate School of International Studies, Denver Univ., Colo. School of Education

Pub Date—81

Note—165p.; Colored pages may not reproduce clearly.

Available from—Center for Teaching International Relations, University of Denver, Denver, CO 80208 ($19.95 plus $2.00 postage and handling)

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.

Descriptors—Cultural Awareness, Elementary Education, Environmental Education, *Global Approach, *Language Arts, Learning Activities, Population Education, *Reading Instruction, Skill Development, *Social Studies

The activities on global awareness in this guide are designed for use in elementary grades in social studies, reading, language arts, and creative arts courses. The activities are organized into four major sections each of which addresses a specific goal. The four goals are (1) to learn to recognize the interconnection between one's own life, one's society, and major global concerns such as environment, population, resources, and human rights, (2) to develop an understanding of basic human commonalities while recognizing the importance of individual and cultural differences, (3) to develop an awareness of how perceptions, values, and priorities differ among various individuals, groups, and cultures; and (4) to develop the skills that will enable students to respond creatively to local, national, and international events and to participate effectively at those levels. Examples of activities include having students collect pictures from magazines that depict the global effects and problems of pollution, interview community persons about changes that have occurred over the years, read folk tales, and celebrate holidays of different countries. (Author/RM)

ED 215 926 SO 014 002

Bock, Judith; And Others

Coming to Our Senses: An Environmental Approach to Teaching at the Elementary Level. Second Edition.

Centre for Environmental Education, Montreal (Quebec).

Pub Date—75

Note—64p.

Available from—STOP, 1361 Greene Avenue, Montreal, Quebec H3Z 2A5 ($2.00)

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC03 Plus Postage.

Descriptors—Childhood Needs, Consumer Economics, Elementary Education, *Environmental Education, Learning Activities, Sensory Experience, Tactual Perception, Visual Perception

This booklet contains activities and teaching suggestions that will help elementary students become aware of their environment. It will help teachers foster among their pupils an understanding of their place in nature, a sense of wonder, a reverence for life, thoughtful use of resources, and the realization that the earth is a home to be shared. There are four parts to the booklet. Part I deals with "The Child's Sensory Awareness." Activities involve students in looking, listening, touching, tasting, and smelling. "The Child as a Part of Nature" is the topic of Part II. Activities help students understand their basic needs—air, water, food, shelter, and interdependence. Discovery projects in the classroom involve students in maintaining an aquarium, growing plants, and observing the behavior of animals. Students are also involved in field trips to weather stations, filtration plants, supermarkets, and animal shelters. Part III treats "The Child as a User." Children discuss topics such as bicycles, clothing, and soft drinks and visit museums, a public library, and a newspaper publishing company. "The Child in the Community" is the topic of Part IV. Students are involved in discussions about sharing in the family and home, at school, in the neighborhood, in their country, and in the world. The last quarter of the booklet contains a film list, a teacher's resource list, and a children's reading list. (Author/RM)

ED 216 081 UD 022 267

Living Together in Newark. A Curriculum for the Study of the City of Newark, New Jersey, in Third Grade.

Newark Board of Education, NJ. Dept. of Curriculum Services

Pub Date—73

Note—64p.; Not available in paper copy due to institution's restrictions.

Available from—Newark Board of Education, Curriculum Development and Materials, 2 Cedar Street, Newark, NJ 07102 (write for price).

Pub Type—Guides - General (050)

EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.

Descriptors—*Class Activities, *Community Resources, Community Services, Cultural Differences, Educational Objectives, Grade 3, History, Instructional Materials, *Municipalities, *Neighborhoods, *Primary Education, Social Influences, Social Studies, Units of Study, *Urbanization

Identifiers—*New Jersey (Newark)

This is a curriculum guide for the study of the city of Newark, New Jersey, in grade 3 social studies classes. Included are suggested lessons plans, curriculum resources, and instructional activities designed to provide information on the city's growth and development and to increase children's understanding of people's relation to their environment, conservation of natural and human resources, causes and effects of human interdependence, the democratic way of life, and moral values. Bibliographies for students and teachers are appended. (MJL)

Middle/Secondary

ED 062 234 SO 002 784
Liftin, Elaine;
Social Studies: Ecology and Survival.
Dade County Public Schools, Miami, Fla.
Pub Date 71
Note—27p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Activity Units, Behavioral Objectives, Case Studies, *Conservation Education, Curriculum Guides, *Ecology, *Environmental Education, Grade 7, Grade 8, Grade 9, Junior High Schools, Natural Resources, Overpopulation, *Pollution, *Problem Solving, Resource Guides, Secondary Grades, Social Studies Units
Identifiers—Ecosystems, Florida, *Quinmester Program
Designed as an elective course of study for grades seven through nine, this curriculum guide provides a study of the political, economic, and social aspects of ecological problems in the community, state, or nation. The focus is on the causes and effects of pollution and alternative courses of governmental and student (citizen) action. A suggested sequence is given for the nine week course. Weeks 1 - 2 pupils discuss vocabulary terms and identify basic concepts and principles as they relate to ecology. Weeks 3 - 6, students analyze the cause of ecological problems and examine examples of and effects of five types of pollution -- air, water, land, noise, and people, and, identify case studies of pollution in the community and nation. Weeks 7 - 9, students examine legislation and its enforcement, formulate programs, and enlist community support. Arranged in the same format as other quinmester courses, a learning activities section provides a picture of the main idea and specific behavioral objectives for a set of learning activities. Related documents are SO 002 708 through SO 002 718, and SO 002 768 through SO 002 792. (Author/SJM)

ED 075 223 SE 015 891
Activities for Studying Megalopolis, Grade Level 4-8. Environmental Education Series, Bulletin No. 247-II.
Montgomery County Public Schools, Rockville, Md.
Report No—Bull-247-H
Pub Date [70]
Note—34p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Curriculum Development, *Elementary Grades, *Environmental Education, Instructional Materials, *Learning Activities, *Metropolitan Areas, Natural Resources, Outdoor Education, *Teaching Guides, Units of Study (Subject Fields)
This bulletin is one in a series of environmental education activity guides for grades K-12, developed and field-tested by teachers in the Montgomery County (Maryland) Public Schools. Primarily for use in the middle grades four through six, the guides are not intended to constitute complete units in themselves. They are, rather, a compilation of activities considered appropriate for particular environmental studies. In this guide about the megalopolis, for grades four through eight, the 31 activities are divided into three categories: Analysis of Residential Communities, Identifying Characteristics of Commercial/Industrial Areas, and Identifying Patterns of City Growth and Land Use. Each activity includes the instructional objective, procedures to follow, and materials required. A student evaluation sheet follows each category and the bulletin concludes with a list of suggested discussion questions. Related documents in the series are SE 015 885 through SE 015 890 and SE 015 892 through SE 015 893. (BL)

ED 075 315 SO 005 646
Huxley, Kathryn And Others
Environment and Population. A Sourcebook for Teachers.
National Education Association, Washington, D.C.
Pub Date 72
Note—[illegible]p.
Available from—National Education Association, 1201 Sixteenth Street, Washington, D.C. 20036 (Stock No. 381-12016 $3.75 paper, Stock No. 381-12018 $5.25, cloth)
EDRS Price MF-$0.65 HC Not Available from EDRS.
Descriptors—Activity Units, Concept Teaching, *Demography, Ecology, *Environmental Education, Family Life, Health Education, Interdisciplinary Approach, Local Issues, Population Distribution, *Population Education, *Population Growth, Population Trends, Resource Guides, Secondary Grades, Social Studies
The primary objective of this sourcebook is to help the teacher relate causes and consequences of population change to other social and environmental issues already being explored in the classroom. Sources suggested here are for use as supplementary material to be integrated into existing curricula. Divided into main sections that cover Contemporary Issues, Family Life, Health, History or Social Studies, Science, and Sociology, each chapter is also divided by concepts, and contains supportive discussion, suggested activities, references, recommended readings, and a list of relevant films. All of the chapters except two, Contemporary Issues and Sociology, are divided into Level I (most appropriate for students in grades 7-9), and Level II (geared more to the interests and abilities of high school students). (Author/OPH)

ED 082 982 SE016 776
MacLagan, Robert
Environmental Issues: A Courtroom Simulation.
Bureau of Land Management (Dept of Interior), Washington, D.C.
Pub Date [73]
Note—77p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Court Litigation, Decision Making, *Environment, Instructional Materials, Learning Activities, *Local Issues, Resource Units, Role Playing, *Simulation, Social Studies, *Teaching Guides
A variety of methods can be used to resolve environmental controversies, such as passing new laws, enforcing existing laws, conducting public education programs, and creating new governmental management agencies. In many instances the courts become the site for environmental decision-making. The purpose of this activity is to help acquaint students with laws, lawsuits, and courtroom activity and their relationship to the solution of environmental questions. The students need to understand that the activity is a simulation--an abstraction of a real-world event. The procedures are basically the same as an actual court case but time periods, expertise required, formalities, etc., have been modified. The simulation is described in terms of a two-week period although the teacher may adjust the timing to suit classroom needs. General directions for the simulation, which concerns itself with a local resource controversy and its solution, are given together with specific directions for the various groups advocate (plaintiffs and defendents), jury, community interest, media, and legal alternatives. The research and activities culminate with a simulated trial. Appended material includes fact sheets, sections from public laws, and suggested defenses. (BL)

ED 092 377 SE 017 915
Population. Grades 7-12. Environmental Education Instructional Unit, Final Edition.
North Carolina State Dept of Public Instruction, Raleigh. Div. of Science Education.
Pub Date 73
Note—43p.; For related documents, see SE 017 916 and 917
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—City Planning, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, *Intermediate Grades, Mathematics Education, Overpopulation, *Population Growth, Science Education, Secondary Grades, Social Studies, Unit Plan, Urban Environment, Worksheets
This unit on population is one in a series of three prepared for use in classrooms in North Carolina. An interdisciplinary approach encompassing mathematics, science, and social studies is utilized in these environmental units. The material is designed for middle grades and above. Many activities are open-ended. The depth to which students become involved in the utilization of this unit is determined by factors such as grade level, interest of students, and relevance of the material to courses into which it is integrated. Each activity in this unit emphasizes the population crisis that exists today, not only in faraway locations, but in towns like Fox City, North Carolina. Although the name of the town is fictitious, the statistics about a town of its size are factual. Students study how an increase in population will affect transportation, housing and urban renewal, recreation and municipal services. Task sheets list specific goals for the activities and thought directives instruct the students to proceed in a logical manner. Collections of statistics in the form of fact sheets give valuable information needed by both student and teacher. (JP)

ED 099 213 88 SE 018 243
Abbott, Veslin M.
"Boomsville to Doomsville" - Development of Industry Within a Community. Environmental Ecological Education Project. Revised, July 1973.
Parkway School District, Chesterfield, Mo.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Jul 73
Note—188p.
EDRS Price MF-$0.75 HC-$9.00 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, *Environmental Education, *Industrialization, *Industry, Instructional Materials, Learning Activities, Natural Resources, School Industry Relationship, *Secondary Education, Teaching Guides, Units of Study (Subject Fields), Values
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This unit, developed for use with junior high school students, focuses on industry as an integral part of community life. It discusses factors industry should consider before choosing a location. It attempts to demonstrate that industry should not always be regarded negatively in a given community, but rather that it can benefit a community by providing employment opportunities and additional tax revenue. The unit stresses the manufacturing and processing aspects of production and not the distribution and retailing features. It also emphasizes the value of cooperation between industry and local citizens. Two publications necessary to teach the unit are listed along with additional teaching aids in a section for the teacher. The unit includes the behavioral objectives and the expected student criteria for evaluation, pretests and posttests, teacher background information, a suggested instructional sequence, a bibliography of both student and teacher resources, student data sheets and readings. (MLB)

ED 103 240 SE 018 521
Man's Habitat - The City, An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis; National Wildlife Federation, Washington, D.C.
Pub Date 71
Note—32p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79061, $1.50)
EDRS Price MF-$0.76 HC-$1.95 PLUS POSTAGE
Descriptors—Elementary Grades, *Environment, *Environmental Education, *Environmental Influences, Instructional Materials, Intermediate Grades, Investigations, Junior High Schools, *Learning Activities, Natural Resources,

Science Education, Secondary Grades, Teaching Guides, *Urban Education

This environmental unit is one of a series designed for integration within an existing curriculum. In using these self-contained units students are encouraged to work at their own speed. The philosophy behind the units is based on an experience-oriented process that promotes independent work. This particular unit attempts to expand the student's understanding of environment by studying man's influence on the city. Activities center around an analysis of the local school community. Students learn the components of their school community and the relationships represented there. A community profile is developed through maps made from transects, survey questionnaires, photographs, and histograms based on data collected. On of the objectives included in this unit is that the students become concerned with their community problems and learn ways of becoming actively involved. This unit, designed for students in grades 4-9, contains information for teachers, such as materials needed, directions for the activities, sample survey summaries, and duplication materials for a student booklet. Additional activities are included at the end of the unit. (MA)

ED 120 044 SO 008 940

Cochran, Caroline S. *McCrea, Lester C.*

Population Education in Baltimore.

Pub Date Nov 75

Note—18p.; For related documents see SO 008 941 through 945; Best copy available

EDRS Price MF-$0.83 HC-$1.67 Plus Postage

Descriptors—*Curriculum Development; Demography; Elementary Secondary Education; *Environmental Education; *Global Approach; Life Style; *Population Education; Population Growth; Program Descriptions; Resource Units; *Social Sciences; Social Studies Units; Urban Studies; World Problems

Identifiers—Urban Life Population Education Institute

First in a series of six documents, this report describes the Urban Life Population Education Institute (ULPEI) program which was designed to demonstrate population realities to Baltimore public schools so that teachers can introduce population studies into the school curriculum. The first part of the paper presents background information on the ULPEI program. Through a series of workshops with Baltimore public school teachers, the format of population education units was developed. A global approach to the population problem was decided upon along with an understanding of how population problems exist on the personal level. Using this philosophy, a series of units were developed by teachers that can be infused into existing curricula. (See SO 008 941 through 945.) Several major conclusions reached by the ULPEI Program are that population education should be introduced into the school system, racism is an essential component of population education and must be discussed and understood, the ULPEI curricular materials can be adapted to other school systems and teachers can more easily accept population education after they have been involved in in-need through awareness workshops. The second part of the paper contains several appendices including footnotes, questionnaires, short discussion papers emphasizing the need for population education and teacher awareness, a brief annotation of each of the curriculum units, and an order form. (Author/JR)

ED 120 046 SO 008 942

McCrea, Lester C. *And Others*

Demography and You. Teacher Edition.

Baltimore City Public Schools, Md.; Urban Life Population Education Inst.

Pub Date Dec 74

Note—53p.; For related documents see SO 008 940 through 945

EDRS Price MF-$0.83 HC-$3.50 Plus Postage

Descriptors—Birth Rate; *Demography; Environmental Education; Global Approach; Graphs; Instructional Materials; Junior High Schools; Learning Activities; *Population Education; Population Growth; *Population Trends; Secondary Education; Social Sciences; Social Studies Units; Teaching Guides; Teaching Techniques

This teacher's guide is the grades 7-9 unit for population education developed for the Baltimore public schools. This mini-demographic course covers various factors of population growth and change. The activities of the unit consist of seven major concepts: (1) demography provides information for understanding population growth, trends, and changes; (2) the world is involved in a population explosion; (3) world population grows when the birth rate is higher than the death rate; (4) the earth can support only a certain number of people; (5) population is becoming more concentrated in urban areas; (6) the age structure of a population is an important index of population growth and (7) personal decisions have demographic consequences. Twelve columns comprise the major unit. Each contains topic concepts, objectives, activities, materials needed and conclusions. The units use graphs, charts and a few statistics. (Author/JR)

ED 120 048 SO 008 944

McCrea, Lester C. *And Others*

B-More Baltimore: Teacher Edition.

Baltimore City Public Schools, Md.; Urban Life-Population Education Inst.

Pub Date Dec 74

Note—103p.; For related documents see SO 008 940 through 945; Best copy available

Available from—Population Studies, Baltimore City Public Schools, 2418 St. Paul Street, Baltimore, Maryland 21218 ($3.00)

EDRS Price MF-$0.83 HC-$6.01 Plus Postage

Descriptors—*City; Demography; City Planning; City Problems; Ethnic Studies; Instructional Materials; Junior High Schools; Learning Activities; *Population Education; Secondary Education; Social Sciences; Social Studies Units; Teaching Guides; *Urban Studies

This grades 7-9 unit is part of the series of population education materials for Baltimore public schools. Focusing on urban studies, the unit traces the historical growth of Baltimore and examines recent trends affecting the city while projecting possible solutions to enhance its quality of life. Although specifically focusing on Baltimore as a model city, the unit introduces the concept that the qualities and problems of Baltimore are similar to those of other urban areas. The individual activities specifically focus upon Baltimore, however, teachers can develop materials for their own city using this model. (Author/JR)

ED 120 049 SO 008 945

McCrea, Lester C. *And Others*

Production, Pollution, Population: Issues for a Changing World: Teacher Edition.

Baltimore City Public Schools, Md.; Urban Life-Population Education Inst.

Pub Date Dec 74

Note—81p.; For related documents see SO 008 940 through 944; Some pages may not reproduce clearly due to print quality of original document

Available from—Population Studies, Baltimore City Public Schools, 2418 St. Paul Street, Baltimore, Maryland 21218 ($1.00)

EDRS Price MF-$0.83 HC-$3.50 Plus Postage

Descriptors—Case Studies; *Cross Cultural Studies; Demography; Developing Nations; *Environmental Education; *Global Approach; *Hunger; Instructional Materials; Learning Activities; Nutrition; Pollution; *Population Education; Secondary Education; Social Sciences; Social Studies Units; Teaching Guides; Teaching Techniques

Part of the population education curriculum materials for the Baltimore public schools, this teaching guide is for the 7-12 resource unit. The unit activities take the student out of his present context of family, neighborhood, and city to help him understand some of the global issues relating to population. The unit focuses on the life of a specific North African family, enabling students to grasp parallels and differences between his family and the African family. The unit encompasses the problem of the world food crisis as well as population and pollution. Two columns make up the curriculum. Each contains a title, topic, objectives, activities, materials needed and suggested homework activities. (Author/JR)

ED 128 289 SO 009 425

Interdisciplinary Unit on Land Use and Social Action in Pinellas County.

Pinellas County District School Board, Clearwater, Fla.

Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.

Pub Date Feb 76

Note—290p.

EDRS Price MF-$0.83 HC-$15.39 Plus Postage.

Descriptors—*Community Study; Course Objectives; *Environmental Education; Grade 8; Grade 9; Interdisciplinary Approach; *Land Use; Population Distribution; Secondary Education; *Social Action; Social Responsibility; *Social Studies Units; Teaching Methods; Values; Water Resources; Zoning

Identifiers—*Florida

Interdisciplinary social studies units on land use and social action for eighth and ninth grade students are provided. Although specifically written for students living in Pinellas County, Florida, the units can be adapted easily for teaching about land use in general and of land use in one's own community. The overall objective is to help students look at what is happening in their community and clarify their values and life-style aspirations. Specific unit topics include the concept of land use, an historical view of land use and planning, beach development and natural disasters, transportation, zoning, water supplies, distribution, wastes, and population. Objectives, materials needed, and teaching methods are provided for each unit. Teaching strategies suggested are varied. Short readings and audiovisual presentations are followed by classroom discussions. Students write short stories, speeches, poems, and songs, make collages and travel posters, analyze graphs and tables, examine case studies, conduct interviews with community people, take field trips, and role-play community situations. Pre- and posttests are also included. (Author/RM)

ED 133 151 88 SE 021 466

Edgar, Linda

Overpopulation Produces.... What Are We Going To Do About It? [Project ECOLog] ELE Pak. Edgar Pak].

Highline Public Schools, Seattle, Wash.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date [76]

Note—63p.; For related documents see SE 021 438-478. Ditto 1 and 7 have been removed due to copyright restrictions

Available from—Highline Public Schools, Instructional Division, Project ECOLog, ESEA Title III, Bill Gurtz, Director, 15675 Ambaum Blvd., S.W., Seattle, WA 98166 ($2.50)

EDRS Price MF-$0.83 HC-$3.50 Plus Postage.

Descriptors—Ecology; Environment; *Environmental Education; Geography; *Instructional Materials; *Overpopulation; Population Growth; *Population Trends; Science Education; *Secondary Education; *Units of Study (Subject Fields)

Identifiers—Elementary Secondary Education Act Title III; ESEA Title III

This unit is one of a series produced for environmental education programs by the Highline Public Schools. These materials are designed for use with junior high school students studying the concept of population. Population trends, and problems created by changes in populations. The seven concepts in the unit take about three weeks to complete. The materials are most easily adapted to science or geography classes. Each lesson includes the concept or the lesson materials needed, probable time for the lesson, procedure, evaluative activity, and suggested extra activities. Materials for making ditto masters are included. (RH)

ED 135 649 SE 022 132

Whole Earth Design.

Indiana State Board of Health, Indianapolis, Indiana State Dept. of Public Instruction, Indianapolis.

Pub Date 76

Note—140p.

EDRS Price MF-$0.83 HC-$7.35 Plus Postage.

Descriptors—Biology; Ecology; *Elementary Secondary Education; *Environment; *En-

vironmental Education *Instructional Materials, Land Use, Natural Resources, Problem Solving, *Teaching Guides, Urban Areas

The purpose of this interdisciplinary instructional design is three fold. At its basic level it serves as an activity based program guide for developing in students and instructors, grades 4-12, the ability to observe, assimilate and interpret the world around them. On another level it provides the "hands-on" experiences that open the bounds of the usual four walled classroom and allows the student and instructor to develop a learning motif that is limited only by their imaginations. Finally, at its most creative level, the design is structured to acquaint student and instructor with the principles of values and decision-making. Through a multi-disciplined approach, the design attempts to engage student and instructor in the complex problems of priorities and personal world. Confidence and curiosity should be magnified through this exercise, exciting student and instructor to step beyond the limits of their present knowledge. Each investigation contains suggestions for setting the stage, a series of tasks to be done individually or in small groups (task card samples to be used with these activities), summary activities and questions, supplementary charts and tables where appropriate, and in some instances, additional information about the type of teaching activity to be used. Collecting data from primary sources and group problem solving are used throughout the material. (RH)

ED 141 094   SE 022 569

Stahl, Robert J

Valuing Exercises for the Environmental Education Classroom.

Florida Univ., Gainesville P. K. Yonge Lab School

Pub Date 76

Note—38p. Contains light and broken type

EDRS Price MF-$0.83 HC-$2.06 Plus Postage

Descriptors—Conservation Education *Decision Making Skills *Environmental Education *Instructional Materials Outdoor Education, Secondary Grades *Teaching Guides *Values

This guide gives five formats and examples for helping middle school and high school students clarify relationships between environmental knowledge and decisions. Section I introduces the need for values clarification. Section II defines values clarification. Section III explains four phases of values clarification. Section IV explains the need for a value sheet, a planned, written activity designed to elicit value clarification patterns of language usage from students. Section V lists the parts of the value sheet. Section VI presents four interrogative modes which may be used in questioning students. Section VII discusses five formats which may be followed. The examples presented are designed to be used in conjunction with units focusing on energy use and pollution. Teachers are encouraged to copy and modify these value sheets. Each of the formats outlines needed teacher preparation, the situation for discussion and decisions to be made. The guide lists discussion ... and gives samples of value sheets. A ... graphy of materials related to the values clarification approach is included. (Author AJ)

ED 179 795   CE 023 550

O'Brien, Alexander

Crisis - Energy. Solar Energy Education Project.

Howell Township Board of Education, NJ

Spons Agency—New Jersey State Dept. of Education, Trenton Div. of Vocational Education

Pub Date—[79]

Note—24p. Not available in paper copy due to light, broken type. For related documents see CE 023 547-549

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.

Descriptors—Class Activities, *Energy, *Energy Conservation, Federal Regulation, *Government Role, Junior High Schools, Learning Modules, *National Programs, *Social Studies, Social Studies Units

This learning module offers a five-hour class schedule for discussion and study of the overall U.S. energy system including resources, consumption rates, governmental plans and regulations, energy conservation problems and techniques, and energy conservation programs. The module includes a pre-post test, suggested class activities, a basic vocabulary list and diagrammatic presentation of information. (CP)

ED 186 316   SO 012 550

The Energy Future Today: Grades 7, 8, 9. Social Studies.

National Science Teachers Association, Washington, DC

Spons Agency—Department of Energy, Washington, DC, Office of Consumer Affairs, Washington, DC

Report NO—DOE/CA/06083-01

Pub Date—Apr 80

Contract—EC-77-C-01-6083

Note—88p. For a related document, see SO 012 549

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC04 Plus Postage.

Descriptors—Class Activities, Decision Making Skills *Energy *Energy Conservation, Fuel Consumption, Fuels, Grade 7, Grade 8, Grade 9, Junior High Schools, Lesson Plans, Natural Resources, *Natural Sciences, Secondary Education *Social Studies, Teaching Guides, Units of Study

This teacher's guide contains a unit of study for teaching about energy in grades seven, eight, and nine. The guide is self-contained and includes the handouts students need to work out the activity problems. The unit is developed around the concepts of shortage, scarcity, tradeoffs, investment, and decision making. Students develop these concepts by examining data from both the social sciences and the natural sciences. By participating in several decision-making activities students develop participatory skills as well as an understanding of the problems involved in energy decisions. The activities in which students are involved are many and varied and include using the newspaper headlines to identify effects of a fuel shortage, using graphs and cartoons to define scarcity, and studying the appeals in advertising slogans to identify some of the ways attitudes are formed toward or away from conservation. The packet is divided into four units each of which contains two or three lessons. It is designed to last approximately two weeks. The unit can be extended if the teacher chooses some of the optional decision-making or research activities. Teacher background information on energy is also provided in the guide. (Author/RM)

ED 199 115   SE 034 683

Simmons, Doris G

Iowa Developed Energy Activity Sampler (IDEAS), Grades 7-12: Social Studies.

Iowa Energy Policy Council, Des Moines. Iowa State Dept. of Public Instruction, Des Moines

Pub Date—80

Note—177p. For related documents see SE 034 677-682. Pages 253-256, 291-294, 324, 330, 341 removed due to copyright restrictions. Pages 19-172 contain the introduction which is the same for all modules. They have been removed and made into a separate document - SE 034 677

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 PC08 Plus Postage.

Descriptors—Current Events *Energy, Energy Conservation, *Environmental Education, Fused Curriculum, *Futures (of Society), Quality of Life, Resource Materials, *Secondary Education, *Social Studies

Described is the Social Studies component of the Iowa Developed Energy Activity Sampler (IDEAS), a multidisciplinary energy education program designed for infusion into the curriculum of grades seven through twelve. Aspects of the energy situation addressed in these lessons include resource finiteness, exponential growth, standard of living, foreign relations, historical perspectives, and future alternatives. Also contained in the IDEAS program are activity sets for Home Economics (SE 034 678), Industrial Arts (SE 034 679), Language Arts (SE 034 680), Mathematics (SE 034 681), and Science (SE 034 682). Provided in this manual are the 30 student-centered activities from the complete IDEAS curriculum that relate to secondary social studies. Illustrated by drawings, charts, or diagrams, the lesson plans include discussion questions and background information. Activities are arranged under six concepts: (1) Energy is basic, (2) Energy usefulness is limited, (3) The environment is affected by energy exchanges, (4) Energy choices affect society, (5) Conservation, and (6) The future is ours to shape and share. (Author WB)

ED 211 376   SE 036 058

Butzow, John W. And Others

What Is Our Maritime Heritage? A Marine Education Infusion Unit on Ships and Sailing. Revised Edition.

Maine Univ., Orono Coll. of Education

Spons Agency—National Science Foundation, Washington, DC

Pub Date—80

Grant—NSF-SER-8008177

Note—71p. For related documents, see SE 036 055-059. Produced through the Northern New England Marine Education Project. Contains colored print which may not reproduce well.

Available from—Northern New England Marine Education Project, Univ. of Maine at Orono, 206 Shibles Hall, Orono, ME 04469 ($3.00)

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 PC03 Plus Postage.

Descriptors—*Activity Units, Elementary Secondary Education, Environmental Education, Instructional Materials, *Interdisciplinary Approach, Intermediate Grades, Junior High School Students, Local History, *Marine Biology, *Navigation, North American History, *Oceanography, Water Resources

Identifiers—*Marine Education, Shipbuilding, *Ships

The heritage of ships and boats of northern New England serves as the focal point of this interdisciplinary unit for fifth- through ninth-grade students. Information on maritime heritage, buoyancy and flotation, building a whitehall rowing boat, masts and sails, basics of sailing, and northern New England ships and shipping is provided in the teacher's section. Corresponding illustrations are included. A variety of student activities involve making sailing and floating model boats, singing sea chanties, playing board games, reading poems and prose, and making scrimshaw. Instructor print and nonprint resources and places to visit are provided. (DC)

ED 214 838   SO 013 970

Lamy, Steven L. And Others

Teaching Global Awareness with Simulations and Games. Grades 6-12. Global Awareness Series.

Denver Univ., Colo. Center for Teaching International Relations

Pub Date—81

Note—161p. Some small print type and colored pages may not reproduce clearly from EDRS in microfiche

Available from—Center for Teaching International Relations, University of Denver, Denver, CO 80208 ($14.95 plus $2.00 postage and handling).

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.

Descriptors—Advantaged, Civil Liberties, *Concept Teaching, Developed Nations, Developing Nations, Disadvantaged, Economic Development, *Educational Games, Elementary Secondary Education, Ethnic Groups, Futures (of Society), *Global Approach, Individual Needs, International Relations, International Studies, Map Skills, Quality of Life, *Simulation, *Social Studies, Teaching Guides, Technological Advancement

This teaching guide contains 15 simulation games for students in grades 6-12 on the topic of global awareness. The overall objective is to help students understand various global concepts and social studies content. Specifically, it gives students the chance to experience and understand international/intercultural situations which involve people in all walks of life such as politicians, diplomats, farmers, sharecroppers, and consumers. Students focus on the four global themes of inequality, development and technology, human rights, and basic human needs. For example, in one game, "Self Defense," students divide into countries with pseudonames such as Grainland, Southland, and Northland and unknowingly replay the actions leading to World War I. In another game, "Creating World Maps Visual Data Charts," students redraw the size of countries to correspond to the amount of oil and food they use and their population. Some activities may be adapted for elementary grades and for the

college classroom. Simulations and games are arranged according to difficulty and often subject matter. Each simulation includes an introduction and a list of objectives. Information is given on the grade level, time required, materials needed, procedures to be followed, and instructions for debriefing and follow-up. Supplementary resources such as films and slides are often suggested. A major portion of the guide provides handout materials for teaching the games. (Author/NE).

ED 214 842 SO 013 975

Otero, George G., Jr., Comp.
Teaching about Population Issues.
Denver Univ., Colo. Center for Teaching International Relations.
Pub Date—Apr 81
Note—86p.; Sponsored by the Graduate School of International Studies and the School of Education. A few pages marginally legible.
Available from—Center for Teaching International Relations, University of Denver, Denver, CO 80208 ($8.95 plus $2.00 postage and handling).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Aging (Individuals), Birth, Critical Thinking, Demography, Discussion (Teaching Technique), Educational Games, Elementary Secondary Education, Females, Food, Learning Activities, Migration Patterns, Minority Groups, Mothers, *Population Education, *Population Growth, Simulation, Teaching Guides
Identifiers—Gross National Product, Population Control

This teaching guide on population issues contains 19 activities for students in grades 7-12. The objective is to analyze population issues that have resulted from human population dynamics. In this guide, four categories of activities are included: some are discussion starters, some provide factual data, some focus on thinking skills, and some are simulation games. For example, "Pop Quotes," is an activity designed to spark students' interest in thinking about population issues. In this activity, students make mobiles, write quotes about population on the mobiles, and hang them around the room. In a simulation game, students role play different members of Congress who must vote on an immigration law. "Changing Migration Patterns to the U.S." is a factual data activity that documents migration patterns with the use of charts. Participants then analyze the meaning of the data. In "Population and Group - It All Adds Up," the focus is on thinking skills. This activity is designed to help the student evaluate the role growth plays in the quality of life. Students collect industrial or Chamber of Commerce ads which reflect the desire for growth or reflect the desire to improve the quality of life. Then students question whether the ad encourages growth or improves the quality of life. Each activity contains an introduction, a list of objectives, teaching procedures, follow-up activities, and information on time required and materials needed. This guide includes a list of available materials on population/food topics and a list of organizations that can provide additional information on these topics. (Author/NE)

ED 215 920 SO 013 974

Otero, George G., Jr., Comp.
Teaching about Population Growth.
Denver Univ., Colo. Center for Teaching International Relations.
Spons Agency—Denver Univ., Colo. Graduate School of International Studies.; Denver Univ., Colo. School of Education.
Pub Date—Mar 81
Note—114p.; Pages containing small and broken print type may not reproduce clearly.
Available from—Center for Teaching International Relations, University of Denver, Denver, CO 80208 ($8.95, plus $2.00 postage and handling).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Demography, Elementary Secondary Education, Geographic Concepts, Learning Activities, Population Distribution, *Population Education, *Population Growth, Population Trends, Pretests Posttests, Teaching Guides

This teaching guide contains 20 activities on population growth for students in grades 6-12. The purpose is to help students gain the skills, knowledge, and understanding of population dynamics so that they can make rational decisions and take responsible action regarding population matters and public policy. Activities are organized around the population dynamics of growth, size, density, and distribution as well as demography. Each activity is based on an assumption. For example, "World Population Data Sheet" proves that the earth's human population is distributed unevenly over the earth's surface. Other assumptions are: the earth is a finite system; population is a group of organisms limited in time and space; specific factors determine the size and makeup of a population; desired population size depends on people's wants and expectations; world population is growing rapidly, because of a reduction in the death rate; organisms need specific external resources to support life and they require space; and population is a major factor in human/environmental interactions. Each activity contains an introduction and a list of objectives. It includes information about grade level, time required, and materials needed. The procedure to follow is explained and ideas are given to evaluate the performance of students. There are handout and supplementary materials. A pretest/posttest is provided. (Author/NE)

Secondary

ED 045 350 SE 009 310
Man's Urban Environment.
De Kalb Community School District 428 Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date [69]
Note—48p
EDRS Price MF-$0.25 HC-$2.50
Descriptors—City Planning *Community Planning, *Environment, Land Use, Natural Resources, Regional Planning *Secondary Education, *Teaching Guides, *Urban Environment
Identifiers—ESEA Title III
This teaching guide develops a unit on community planning for the high school student The format allows the student to make selected decisions in areas of geography, economics, history and politics that form a base for the student to build a model of his own city as it is, and how the student would like to see it Included is a vocabulary list film list, and selected bibliography of books and journal articles This work was prepared under an ESEA Title III contract (BB)

ED 059 958 SO 002 715
LaRoe, Margaret F — LaRoe, Edward T
Social Studies: Eco-Politics.
Dade County Public Schools, Miami, Fla
Pub Date 71
Note—40p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Activity Units, Behavioral Objectives, Citizenship, Concept Teaching, Consumer Economics, Curriculum Guides, *Ecology, Economics, *Environmental Education, Government Role, Grade 10, Grade 11, Grade 12, *Interdisciplinary Approach, Political Issues, *Pollution, Population Education, Resource Guides, Secondary Grades, World Problems
Identifiers—Ecosystems, Florida, *Quinmester Program
This guide, one of a series in the Quinmester Program is intended to aid teachers in grades 10 through 12 as they prepare instructional programs dealing with current environmental crisis issues The aim of this course of study is to help students understand political and economic ramifications of environmental problems and to motivate and provide them with the tools and the desire to become effective consumers and citizens The guide is divided into 1) a broad goals section, 2) a course content section which outlines units on ecological principles, environmental problems economics of pollution, government and pollution, industry and pollution, pollution control, individual action, and future implications of environmental policy, 3) a learning activities section providing a picture of the main idea and specific behavioral objectives for a given set of learning activities, and, 4) a materials section Appendix I consists of President Nixon's 1970 message on the environment; Appendix II enumerates environmental organizations Related documents are SO 002 709 through SO 002 718 (Author/SJM)

ED 061 126 SO 002 711
Faulkner, Brenda F
Social Studies: Cities In Crisis.
Dade County Public Schools, Miami, Fla.
Pub Date 71
Note—38p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Activity Units, Behavioral Objectives, City Improvement, City Planning, *City Problems, Community Study, Curriculum Guides, Ecology, *Environmental Education, Grade 10, Grade 11, Grade 12 *Problem Solving, Resource Guides, Secondary Grades, *Social Studies Units, *Urban Studies
Identifiers—Florida, *Quinmester Programs
This elective quinmester program for grades 10 through 12 focuses upon the study of urban problems Students analyze city problems taking into consideration ecology, city planning, model cities, and other factors in an attempt to provide creative solutions The course is arranged into seven sections Student activities are to 1) discuss the history of the development of American cities, 2) examine environmental, sociological, economic, political problems of cities and propose plans for solving the problems, 3) discuss legislative intent to solve the housing problem, 4) discuss effects of prejudice and discrimination in cities, 5) determine the effect of local policies on cities, 6) explain the need and effects of zoning, and, 7) develop a comprehensive plan for a city Related documents are SO 002 708 through SO 002 718, and SO 002 768 through SO 002 792 (Author/SJM)

ED 066 366 SO 002 991
Brown, Jerry L.
A Plan for an Instructional Unit on Population Dynamics. Final Report.
Indiana Univ., Bloomington. Population Education Project.
Spons Agency—Population Council, New York, N.Y.
Pub Date Nov 71
Note—168p.
EDRS Price MF-$0.65 HC-$6.58
Descriptors—*Curriculum Design, *Curriculum Development, *Demography, Environmental Education, Grade 12, *Population Education, Population Trends, Secondary Education
Identifiers—*Population Education Project
A grade twelve instructional design unit on population is described in this curriculum plan. The purpose of the unit, approximately six weeks in length, is to provide students with basic knowledge about population dynamics and decision-making process, and value analysis skills using approaches of social sciences Emphasis is upon helping the individual to understand the effects of his behavior on himself and others. The plan document presents background information on the center, procedures for developing instructional materials, the unit purpose and goals, and possible multidisciplinary and future-oriented topics, two assessment instruments (appended) constructed to measure students' population related knowledge and attitudes (the results indicating that although students are concerned they lack basic knowledge about population), instructional objectives, and the matching of objectives with four instructional techniques, cast into an "instructional flow" that can serve as a framework for development of the unit (SJM)

ED 066 407 SO 004 360
Urban Sociology. Curriculum Bulletin, Grade 12.
Wilmington Public Schools, Del
Pub Date 71
Note—149p.
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Activity Units, Behavioral Objectives, Community Study, Educational Objectives, Grade 12, Resource Guides, Secondary Grades, *Social Studies Units, *Sociology, Teaching Guides, Urban Areas, *Urban Culture, Urban Environment, *Urbanization, *Urban Studies
The focus of the urban sociology teaching guide for grade 12 is on the effect of urbanization upon four of the major social institutions: familial, governmental, economic, and educational An overall educational objective is to prepare students for developing rational solutions to problems confronting urban society. Objectives are stated in behavioral terms for each of the five units. Through enumeration of content, suggested activities, and resource material, the guide recommends a proven roadway to reach the objectives. The course emphasis is on people and the effects of social institutions upon them While urban problems in general are considered, problems of Wilmington are highlighted in order to involve students in specific local issues that affect them Unit I introduces the student to the nature of sociology, especially of urban areas. Unit II studies the family in an urban setting. Unit III examines broad problems on any urban government in meeting the needs of dwellers. Unit IV analyzes urban economic institutions. Unit V examines the functions of the educational institution The teacher is urged to make use of community resources, local newspapers, television programs, and public meetings (SJM)

ED 067 304 SE 014 917
Bemist, Clair W
Social Studies Resource Units.
Brevard County School Board, Cocoa, Fla
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date 72
Note—296p
EDRS Price MF-$0.65 HC-$9.87
Descriptors—*Environment, Human Relations, Instructional Materials, Problem Solving, *Resource Units, *Secondary Grades *Social Studies, *Teaching Guides
Identifiers—ESEA Title III
Based on the premise that fundamental solutions to environmental problems must include social solutions, these three resource units are designed to study the interrelation of man and nature as part of the social studies curriculum A series of inquiry questions are posed with the intent of stimulating students to find solutions to our environmental crisis The "inquiry and problem solving approach seeks to (1) build a framework of reference to attain an understanding of the causes and effects of our present environmental crisis, (2) attain an awareness of both the beauty and ugliness of our environment, (3) develop a sense of pride and social responsibility for the preservation of our planet, (4) foster a realistic identity with the social problems relating to our environment, (5) create the desire to become involved in finding solutions to these problems, and (6) realize the importance of attitudes toward making advances in the human conditions Each of the units, Technology and Our Environment, Man vs Nature, and Responsible Social Action Toward Our Environment, is subdivided into inquiry questions learning activities resource materials, possible evaluation techniques, teacher suggestions student comments, and teacher comments A resource bibliography is included This work was prepared under an ESEA Title III contract (BL) 130SO

ED 068 339 SE 014 916
Bemist, Clair W
The Curious Entanglement of Law, Politics, and the Environment.
Brevard County School Board, Cocoa, Fla
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date 72
Note—369p. The 20 35mm slides cannot be reproduced
EDRS Price MF-$0.65 HC-$13.16
Descriptors—*Environment, Instructional Materials, *Legislation, *Politics, *Resource Units, Secondary Grades, Social Sciences, *Teaching Guides
Identifiers—*Elementary Secondary Education Act Title III ESEA Title III.
Since environmental problems are becoming increasingly important as political issues, these resource units serve as a base for the study of political and legal influences on environmental control Inquiry questions and learning activities are designed to gain an understanding of (1) the forces that give impetus to present environmental law, (2) the relationship of different levels of government that are involved in the environment whether in policy setting, law making, or enforcement capacity and (3) court procedures in environmental cases Also, they provide an opportunity to (1) recognize types of propaganda and evaluate facts utilized in making environmental decisions, (2) recognize that integrating environmental improvement implies responsible financial planning, and (3) participate in bringing about desired changes by responsible action Each of the three units, Local Government and the Environment, State and Federal Government and the Environment, and Awakening the Process for Change, is subdivided into inquiry questions,

learning activities, resource materials, possible evaluation techniques, teacher suggestions student comments and teacher comments A resource bibliography also includes a set of 20 35mm slides This work was prepared under an ESEA Title III contract for the project "Broad Spectrum Environmental Education Program" (BL)

ED 068 348 SE 014 946
Kroll, Claudia J
An Environmental Unit for the Social Studies.
Pub Date 72
Note—62p . Due to copyright restrictions, pages 49-56 are not included
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Environmental Education *Land Use, Resource Materials, *Secondary Grades, *Social Studies Teaching Guides *Unit Plan
Based on the inquiry method of learning, this instructional unit attempts to encourage students to discover for themselves the facts, problems, values, conflicts, and potential solutions of an environmental issue Specifically, it deals with surface mining in the United States with special focus on surface mining in Illinois Materials and instructional strategies necessary for actual classroom use are presented serving as a source of ideas and procedures for the teacher Although planned for use in high school social studies classes, it may be adapted for other disciplines or integrated into other units Chapter I defines the purpose, importance, significance and terms of the topic and unit Chapter 2 provides behavioral objectives, a list of instructional aids included in the unit, introductory activities, activities to provide further information, accumulative activities, and a means of student evaluation Summary and conclusions are contained in Chapter 3 Appended material includes a list of free materials to send for and ten instructional aids a questionnaire, test, coal production charts, mining terms, statements by governmental personnel, a slide presentation explanation, conflicting views on strip mining, a bibliography, and two magazine articles (BL)

ED 073 032 SO 005 402
Fagerstrom, Richard A Borad, Bruce
Environmental Issues Conflict Unit. Teacher's Guide and Student Book.
Diablo Valley Education Project, Orinda, Calif., New York Friends Group, Inc , New York Center for War/Peace Studies
Pub Date 72
Note—156p
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Air Pollution Control, Concept Teaching, *Conflict, Conservation Education, *Ecology, *Environmental Education, Inductive Methods, Instructional Materials, Natural Resources, Pollution, Problem Solving, Recycling, Secondary Grades, *Social Studies Units, Teaching Guides, Values, Water Pollution Control
Identifiers—*Controversial Issues
The two separate manuals focus on environmental issues of interest to secondary students An introductory unit deals with basic ecology and is followed by another unit that explores man's ethic toward the use of environment Emphasis is upon two major ecological conflicts, one over the use of a wilderness area, and the other over the use of living and non-living resources of the oceans In the third unit, students examine the right of Walt Disney productions to develop the Mineral King area of the Sequoia National Forest in California into a resort Questions over use of the oceans are examined in the last unit, with students discussing a variety of issues ranging from oil spills and fishing rights to the division of the wealth in the oceans Inductive methods encourage students to discover controversy through the examination and discussion of issues and through various suggested activities Problem solving and concept learning are emphasized The teaching guide is arranged into four major units containing several lesson plans each including rationale, objectives, student assignment, and procedures The lessons in the student workbook are coordinated with the guide The teacher is provided with a tentative time schedule allowing the study to range from nine weeks to a full semester's work (SJM)

ED 087 688 SO 006 993
Watford, Robert Hawke, Sharrel
Studies in the Environment. Redesigning the Community, profiles of Promise 20.
ERIC Clearinghouse for Social Studies/Social Science Education, Boulder, Colo , Social Science Education Consortium, Inc , Boulder, Colo
Spons Agency—National Inst of Education (DHEW), Washington, D.C
Pub Date [73]
Note—24p
Available from—Social Science Education Consortium, 855 Broadway, Boulder, CO 80302 ($10.00, 1 copy of 30 issues, $20 00, 5 copies of 30 issues)
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Architecture, *Art Education, City Problems, Course Descriptions, Design Needs, *Environmental Education, Environmental Influences, Evaluation Methods, Grade 9, Program Descriptions, *School Community Relationship, *Social Studies, Student Projects, Units of Study (Subject Fields), Urban Culture, Urban Environment, *Urban Studies
Identifiers—Missouri, Profiles of Promise, University City
"Redesigning the Community" is the ninth grade unit of the University City school district program known as Arts in General Education, a K-12 series of special instructional units taught as part of the regular subject areas of language arts and social studies In social studies the main focus is on environmental design and planning In this ninth grade social studies unit, students explore some general concepts of culture through general readings Then a more in-depth look at a city's relationship to culture is presented through the use of slides and literature Next, students are introduced to specific aspects of urban design and begin a study of the home community The culmination experience of the unit is a student activity project in which a specific aspect of University City is chosen for redesign Three student projects described focus on the zoo, adequate housing, and community worship facilities At the completion of the projects, students present proposals to a review board composed of class members and moderating teacher for critical appraisal of functional and aesthetic factors of the plans Student evaluation measures are included with each of the 19 lesson guides Teachers' assessments, provided on a form at the end of each of four lessons, contribute to annual modification of the program Instruction units for the entire Arts in General Education Project and the 19 lessons of "Redesigning The Community" are listed (KSM)

ED 088 722 SO 003 515
Mank, Evans R
Man and His Physical Environment: Teacher's Manual.
Illinois Univ., Urbana Social Science Curriculum Study Center
Spons Agency—Office of Education (DHEW), Washington, D C Bureau of Research
Bureau No—BR-5-0383
Pub Date 67
Contract—OEC-4-10-058
Note—130p
EDRS Price MF-$0.75 HC Not Available from EDRS.
Descriptors—Concept Teaching, *Geographic Concepts, Geography, *Geography Instruction, *Human Geography, Inductive Methods, Maps, *Physical Geography, Resource Materials, Secondary Grades, Sequential Programs, *Social Studies Units, Teaching Guides, World Geography
Building upon Course I, this teaching guide for the first of four units of Course II introduces the secondary student to geographic concepts and generalizations of the physical world to which man has related over time All units of the second course emphasize the process of development whereby man, coping with given conditions in his physical environment, develops established ways of dealing with the problems of socialization, economic constraints, and political power "Man and His Physical Environment," a seven week instructional unit, provides a framework for study of the emergence and development of simpler and advanced cultures. Students arrive at concepts utilizing inductive methods while studying landforms, climate, vegetation, soils, and location globally in relation to the distribution of man. A student manual is incorporated into the guide Transparency overlays and other visual aids are listed including slides, maps, and selected films developed to teach concepts basic to an understanding of man's physical environment Related documents are ED 048 062, SO 003 169, through SO 003 175, SO 003 516, and SO 003 517 (Author/SJM)

ED 098 072 88 SE 018 237
Population, Environmental Ecological Education Project.
Missouri State Dept of Education, Jefferson City , Parkway School District, Chesterfield, Mo
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C.
Pub Date [73]
Note—253p
EDRS Price MF-$0.75 HC-$12.60 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, *Environmental Education, *Instructional Materials, Learning Activities, Natural Resources, *Population Education, Population Growth, Population Trends, *Secondary Education, Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This unit on population, designed for senior high school students is divided into six packets with the following major topics general introduction to the effects of a growing population, urbanization, family structures, family planning, consumption, environmental decay, and controlling the environment Each packet contains a list of the topical concepts to be taught, the behavioral objectives and the expected student criteria for evaluation pretests and posttests, teacher background information, a suggested instructional sequence, a student booklet with instructions, activities and relevant readings, and a teacher bibliography. (MLB)

ED 098 100 SO 007 870
Teaching Resource Recovery in Social Studies. Resource Recovery Education Program.
National Association of Secondary School Principals, Washington, D C , National Center for Resource Recovery, Inc , Washington, D C
Pub Date 74
Note—13p , Related documents are SO 007 866-868
Available from—National Association of Secondary School Principals, 1904 Association Drive, Reston, Virginia 22091 ($12 00 for Kit, 20 discount on orders of five or more)
EDRS Price MF-$0 75 HC Not Available from EDRS, PLUS POSTAGE
Descriptors—Class Activities, Community Study, *Conservation (Environment), Course Objectives, *Ecology, Economic Factors, Energy Conservation, *Environmental Education, Interdisciplinary Approach, Political Issues, Questioning Techniques, Resource Materials, Secondary Education, Social Problems, *Social Studies, Teaching Methods, *Waste Disposal
This guide one component of the Resource Recovery Education Kit (see SO 007 866 for a description), contains ideas and activities for teaching about solid waste disposal in secondary level social studies classes Among the course objectives are the following (1) to explore the impact of our society on the problem of solid waste and the need for effective management (2) to encourage student activities and involvement in environment conservation (3) to examine technological developments which can reduce the problems and costs of refuse collection and (4) to become aware of how local economic, political, and social problems are related to solid waste disposal and how local situations differ Teaching strategies include having students conduct interviews, polls, and studies of the local community and classroom discussion The guide consists of five major study units (1) Solid Waste A Growing Problem, (2) Collection and Transportation, (3) Disposal, (4) Resource Recovery, and (5) Solid Waste Management Systems Objectives, student activities, questions for discussion, and

research, basic understandings to be developed, and instructional resources are provided for each unit. (Author/RM)

ED 099 187 95 SE 017 049
Tanner, R Thomas
The American and His Environment—A Social Sciences Course, Project Reports, Volume 2, The Rachel Carson Project.
Corvallis School District 509J, Oreg
Spons Agency—Office of Education (DHEW), Washington, D C Office of Environmental Education
Bureau No—BR-1-0839
Pub Date Sep 72
Grant—OEG-0-71-4623
Note—73p, Related documents are SE 017 047-054
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—*Conservation Education, *Curriculum Guides, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, *Secondary Education, *Social Studies, Teaching Guides
Identifiers—*Rachel Carson Project
This document is the second of seven volumes included in the Rachel Carson Project. The project attempts to introduce environmental lessons and units into existing courses of study within a high school rather than to implement environmental education through the introduction of new courses. This volume focuses on the social science area by emphasizing environment through Stuart Udall's THE QUIET CRISIS. The unit concludes with a study of participatory democracy in contemporary America with specific conservation organizations as examples. The volume includes THE QUIET CRISIS unit, suggested methods of instruction including games, contemporary music, and projects, a study of conservation organizations, a discussion on the meaning of "environmental backlash", and examples of students' ideas solicited from an assignment regarding a land ethic for the future. (ML,B)

ED 099 232 88 SE 018 435
Junkins, Mary R And Others
Environmental Learning Experiences: Socio-Cultural, Senior High School.
Willoughby-Eastlake School District, Willoughby, Ohio
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date 74
Note—90p
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, Environment, *Environmental Education, *Instructional Materials, Learning Activities, Natural Resources, *Secondary Education, *Sociocultural Patterns, Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This environmental education curriculum guide was developed for teacher use at the senior high school level. Although the guide deals with the socio-cultural aspects of the environment, it is designed to encourage an integration of the disciplines into an inter-disciplinary approach. The volume consists of a set of ideas, activities, and opinions which will help teachers and students generate a positive approach to the environment. The guide is divided into the following seven units: Earth Thoughts, which deals with attitudes, their identification, variety, and selection. Quality of Life, which concerns the process of valuation. Environmental Inventory, which focuses on historical influences, their impact and importance. Environmental Management, which identifies how a community deals with the management of the environment. Politics of Environment, which involves student participation in solving environmental problems. Community Problems, which looks at the socio-cultural aspects of the community, and Futurism, which considers what people of the past and present felt about the future. Each unit contains an introduction, stating the purpose and background, instructional objectives, experiences, and references. The experiences of each unit are based on an objective which relates to the subject of the unit. Several activities are included in each experience. (TK)

ED 100 660 88 SE 018 351
American History, Environmental Education Guide.
Project I-C-E, Green Bay, Wis
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept of Education, Madison
Pub Date [74]
Note—29p
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—American History, *Conservation Education, *Environmental Education, *History, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This American history guide, for use at the secondary level, is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that emphasize the relationship between current environmental problems and American economic, social, and political development, providing the student with succinct and realistic opportunities for involvement in environmental concerns. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in subject areas. This guide focuses on aspects such as immigration, industrialism, and the civil war. Most of the 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 674 88 SE 018 365
World History, Environmental Education Guide.
Project I-C-E, Green Bay, Wis
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington D C, Wisconsin State Dept of Public Instruction, Madison
Pub Date [74]
Note—33p
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, *History, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Social Studies, Teaching Guides, *World History
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This world history guide, for use at the secondary level, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that emphasize the relationship between current environmental problems and world economic, social, and political development, providing the student with succinct and realistic opportunities for involvement in environmental concerns. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in subject areas. This guide focuses on aspects such as ancient history, value clarification, and world conflict. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 777 95 SO 008 066
Reinard, William
Investigating Environmental Problems in a High School Biology Course for Grades 11-12.
Western Washington State Coll, Bellingham, Huxley Coll of Environmental Studies
Spons Agency—National Center for Educational Research and Development (DHEW/OE), Washington, D C
Bureau No—BR-0-0848
Pub Date Dec 71
Grant—OEG-0-70-5039
Note—18p, This document is part of the ongoing Sedro-Woolley Project (see ED 061 118 and 066 363). Pages 15 through 19 from the appendix have been removed to conform with copyright laws
EDRS Price MF-$0.75 HC-$1.50 PLUS POSTAGE
Descriptors—*Biology, *Ecology, *Environmental Education, Environmental Research, *Interdisciplinary Approach, Models, Problem Solving, Secondary Education, Social Sciences, Social Studies, *Values
Identifiers—*Sedro Woolley Project
A second-year biology class at Sedro-Woolley High School is part of an interdisciplinary program designed to develop a heightened awareness of environmental problems. A model for such a course is explained and evaluated. Students' awareness of values increases through the use of problem-solving techniques, audiovisual aids, articles and books, and school-community projects in pursuing environmental concerns. These learned values rest on sociological, psychological, emotional, spiritual, and philosophical bases that interrelate with the values of scientific and technological developments. Through this, the student becomes aware that an environmental situation is the result of the relationship of man to his world. In evaluating results of the study, two thoughts come to mind for the teacher involved in an integrated academic program: (1) in keeping with the idea that all education is environmental education, one would conclude that ideas relative to environmental concerns should be interwoven into the total fabric of the educational process, and (2) a real challenge is presented to the teacher in preparing students to recognize our society's cultural attitudes and value systems and to provide a chance for the student to become adept at evaluating these attitudes and values, his own as well as those of society, and at developing his own perceptions. (Author/JR)

ED 103 294 SO 008 120
Graham, Duncan
A Study of Planet Three: A World Geography/Social Studies Course.
Pub Date 74
Note—11p
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—Activity Learning, Course Descriptions, Ecology, *Environmental Education, Films, Futures (of Society), *Global Approach, Grade 12, *Human Geography, Instructional Materials, International Education, *Physical Geography, Secondary Education, Social Studies, Teaching Techniques, *World Geography, World Problems
Identifiers—Interdependence
This 12th grade course in world geography is based on the philosophical assumption that human beings on earth make up a global village of interdependent people. It is world geography with a planetary perspective—an inquiry into the nature of the planet and its dominant species, Homo Sapiens. Seven units cover the following topics on physical and human aspects of our world: astronomical perspectives, the place of earth in space and time, natural characteristics—relief, climate, and vegetation, population density and distribution factors affecting it, the needs of people, quality of life indices, economic diversity,

factors affecting the diversity from an historical perspective, and future trends. The subtopics of the themes described in the course are to be filled out through the multi- exploration of the students and teacher. Emphasis in the course is placed on individual research, creative thought, and participation in group discussion for which students are expected to keep a diary. Suggested with each unit are a variety of films, activities, particularly involving globe work, and various forms of role-play, often using the theme of a spaceship approaching the earth. Sources of films and factual data and for the global orientation are cited. (JH)

ED 104 794 95 **SO 008 292**

Jamison, Sandra *Campbell, Bruce*

Pollution: Problems and Solutions. Grade Nine, Unit One. 9.1 Comprehensive Social Studies Curriculum for the Inner City.

Youngstown Board of Education, Ohio

Spons Agency—Office of Education (DHEW), Washington, D.C.

Pub Date Jun 71

Note—78p.; For related documents see ED 070 693 and SO 008 272 through SO 008 300. Not available in hard copy due to marginal legibility

EDRS Price MF-$0.76 HC Not Available from EDRS. PLUS POSTAGE

Descriptors—Citizen Role, Ecological Factors, *Ecology, *Environmental Education, Grade 9, Learning Activities, *Pollution, Secondary Education, Social Problems, *Social Studies Units, Teaching Techniques, *Urban Education

Identifiers—Elementary Secondary Education Act Title III, FICSS, Focus on Inner City Social Studies

The ninth grade unit of the FICSS series (Focus on Inner City Social Studies -- see SO 008 271) studies the economic and political realities of the inner city. This document, the first unit of the 9th grade section, deals with the ecological crises involving pollution and its causes. Specific problems include air pollution, pesticides, herbicides, water pollution, and population control. The unit provides both facts and scope of the crises and direction for positive action by citizens of all ages to aid in correcting the problems. Many of the learning activities in the unit will build skills in chart and graph reading as well as in interpreting pictorial data. Students also learn to utilize library sources and gather and interpret facts from field trips and interviews in an effort to understand their own immediate environment. Specific teaching procedures and strategies and knowledge, skill, and behavioral objectives are outlined to aid the teacher in developing the concepts of the unit. A bibliography of supplementary reading concludes the document. (Author/JR)

ED 107 466 **SE 016 954**

Berkowitz, Githa, Ed *Levy, Alan, Ed.*

Housing in the Urban Environment.

Group for Environmental Education, Philadelphia, Pa.; Pennsylvania Advancement School, Philadelphia, Philadelphia School District, Pa.

Pub Date 71

Note—78p.; Related documents are ED 045 426, SE 016 955 and 956

EDRS Price MF-$0.76 HC-$4.43 PLUS POSTAGE

Descriptors—Conservation Education, *Curriculum Guides, *Environmental Education, Housing, Instructional Materials, Learning Activities, Metropolitan Areas, *Natural Resources, Outdoor Education, *Science Education, Secondary Education, Teaching Guides, *Urban Environment

This booklet focuses on housing, the most private human environment. The effects of housing on one's social and physical worlds, and in turn on one's attitudes toward the total environment, are examined. The activities in this booklet aim to develop an understanding of space within the housing environment, types of housing, and how one can change and control this type of environment. The 14 lessons contained in this unit deal with such housing factors as income, family size, taste, the choice process, housing needs, location, neighborhoods, and problems. Each lesson includes objectives and a purpose, a materials list, and several activities. The activities involve discussion, role playing, simulation, problem solving, map making, and worksheets. A section for teacher use suggests additional activities and provides further directions for use of the booklet. The final section prepared by the Housing Association of Delaware Valley provides advice on solving neighborhood problems. (TK)

ED 107 549 **SO 008 265**

Peters, Richard O

The World of Man: A Curriculum Guide.

Note—65p.

EDRS Price MF-$0.76 HC-$3.32 PLUS POSTAGE

Descriptors—*Anthropology, Conservation (Environment), Cultural Background, Curriculum Guides, Ecology, *Environmental Education, Environmental Influences, Instructional Materials, Interdisciplinary Approach, Natural Resources, Overpopulation, *Pollution, *Population Education, Secondary Education, *Social Studies Units

This one semester, ecology-oriented, eleventh or twelfth grade elective course exposes students to the problems of environmental degradation and makes them aware of man's attempts to remedy crisis situations. The curriculum guide is divided into three major topics, each comprised of several subtopics which include content objectives, and suggested materials. Topic I, "Man's Record on the Earth," examines the subtopics of Topic II, "The Population Problem," studies the distribution of the world's people, dynamics of population growth, and the effects of population patterns on the environment. Topic III, "Economics, Politics, and Conservation," explores the exploitation and degradation of our natural resources. (Author/DE)

ED 110 396 **SO 008 539**

Cohan, Mark E *Gustafson, Neil C.*

Population and Social Change: A Curriculum Guide for High School Teachers, Working Copy.

Upper Midwest Research and Development Council, Minneapolis, Minn.

Pub Date Sep 74

Note—38p.

Available from—Upper Midwest Council, Federal Reserve Bank Building, Minneapolis, Minnesota 55480 ($1.00)

EDRS Price MF-$0.76 HC-$1.95 PLUS POSTAGE

Descriptors—Curriculum Guides, Demography, Environmental Education, *Futures (of Society), Learning Activities, *Population Distribution, *Population Education, Population Growth, Secondary Education, *Social Change, Social Factors, Social Problems, Social Sciences, *Social Studies

This curriculum guide for secondary students contains learning activities on population and social change. The guide revolves around four major concepts. The first concept is population change which refers to the numerical increase or decrease of population. Population distribution is the second major concept which refers to the patterns of where people live. Included are references to economic, cultural, geographic, and psychological factors. The third concept is the effects of population change on both the natural and man-made environments. Planning for the future is the last concept covered in the curriculum guide. For each of the concepts, one major learning activity is included with questions, supporting concepts, and evaluation. The guide lists suggested instructional objectives as well as an evaluation form for teachers to rate the curriculum guide. Ideas for additional learning experiences and sources of further information conclude the document. (Author/JR)

ED 111 716 **SO 008 549**

Oakley, Deborah

Population Stabilization in the United States: A Teaching Case Study.

Spons Agency—Ford Foundation, New York, N.Y.

Pub Date 75

Note—18p.

Journal Cit—Teaching Notes, n6 p45-61 Fall/Winter 1975

EDRS Price MF-$0.76 HC-$1.58 Plus Postage

Descriptors—Birth Rate, Demography, *Futures (of Society), Higher Education, Political Science, *Population Education, *Population Growth, Population Trends, Role Playing, Secondary Education, *Simulation, Social Studies Units, *Teaching Techniques

A simulation of a Congressional hearing on national population policy is provided. University students and community members decide on a resolution introduced in the United State Senate in 1971 which proposed the stabilization of population growth. Students organize themselves into four interest groups--Black Americans, business, industrial, conservation-environment, and women's rights--and present testimony before the hearing. The teacher is required to recruit outside persons as Congresspersons who will eventually decide whether to recommend the resolution to the Senate. Background information on United States population growth and projected future population increases are provided in the unit. Three evaluation methods, a list of possible associated activities, and a bibliography for each of the four lobbying groups are also included. (DE)

ED 113 215 **SO 008 428**

Environmental Decisions, Teacher's Guide. Environmental Education Unit. Ninth Grade Civics. Revised.

Little Rock School District, Ark.

Pub Date [75]

Note—87p.; For related documents, see SO 008 427, 429, and 652. A few pages are of marginal legibility

EDRS Price MF-$0.76 HC-$4.43 Plus Postage

Descriptors—*Civics, Curriculum Guides, *Decision Making, Ecology, *Environmental Education, Grade 9, Interdisciplinary Approach, Learning Activities, *Local Issues, Pollution, Secondary Education, Short Courses, *Social Studies Units, Student Centered Curriculum, Teaching Techniques

Identifiers—*Environmental Education Project, ESEA Title III

Part of a sequential series of curriculum units in environmental education for grades 4 through 12, this curriculum guide for grade 9 focuses on identifying problems, formulating hypotheses, considering alternatives, and making decisions in environmental education. The activities include the showing of films, making environmental decisions, simulations, and an off-campus field trip. The unit includes an overview, major concepts, behavioral objectives, a daily schedule, lesson plans for the classroom activities and the field trip, a pretest, and student and teacher evaluation forms. The unit is three weeks long, multidisciplinary in nature, and structured around student-centered activities in which emphasis is placed upon the study of the local environment. (Author/JR)

ED 113 216 **SO 008 429**

Environmental Problems of the United States, Teacher's Guide. Environmental Education Unit, Eleventh Grade American History.

Little Rock School District, Ark.

Pub Date [74]

Note—91p.; Not available in hard copy due to marginal legibility of original document. For related documents, see SO 008 427, 428, and 652

EDRS Price MF-$0.76 Plus Postage. HC Not Available from EDRS.

Descriptors—Curriculum Guides, *Ecology, *Environmental Education, Grade 11, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Local Issues, Pollution, *Population Education, Resource Materials, Secondary Education, Short Courses, *Social Studies Units, Student Centered Curriculum, Teaching Techniques

Identifiers—*Environmental Education Project, ESEA Title III

Part of a sequential series of curriculum units in environmental education for grades 4 through 12, this curriculum guide focuses on environmental problems in the United States for eleventh grade students. This unit is designed to make the student aware of how the problems of the past become critical problems of the present. Activities foster an examination of population, technology, pollution, environmental careers, and involvement in an urban encounter field trip. The unit includes an overview, major concepts, behavioral objectives, a daily schedule, lesson plans for classroom activities and the field trip, career opportunities in environmental education, pretest and posttests, and student and teacher evaluation. The unit is three weeks long, mul-

tidisciplinary in nature, and structured around student centered activities in which emphasis is placed upon the study of the local environment (Author/JR)

ED 113 256 SO 008 652
Population Problems, Teacher's Guide--Environmental Education Unit, Twelfth Grade Sociology.
Little Rock School District, Ark
Pub Date [75]
Note—70p., Not available in hard copy due to marginal legibility of original document. Related documents are SO 008 427-429
EDRS Price MF-$0.76 Plus Postage. HC Not Available from EDRS.
Descriptors—Curriculum Guides *Demography, *Environmental Education, Grade 12 Instructional Materials, *Overpopulation, *Population Education, Population Growth, Secondary Education, Social Influences, Social Studies Units, Sociology, Teaching Guides
Identifiers—*Environmental Education Project ESEA Title III
Human population growth and the implications of increasing population on the well-being of men and nations is examined in this twelfth grade curriculum guide which is part of a series for grades 4 through 12. The primary functions of the unit are to introduce the student to reasons for population growth, results of overextended populations, and solutions to overpopulation Consideration is also given to political and sociological problems which arise as adjuncts to the question of population The component parts of this guide are, an overview of the unit, the major concepts in the unit, behavioral objectives, daily schedule, lesson plans for classroom activities, a pretest for the unit, and student and teacher evaluation forms The unit requires three weeks to complete, and is structured around 15 student-centered activities which include films, survey questionnaires, filmstrips, student readings, discussion activities data analysis, and role playing (Author/DE)

ED 113 269 SO 008 673
Klaff, Vivian Handler, Paul
Computer Assisted Instruction of Population Dynamics: A New Approach to Population Education. Report No. T-19.
Illinois Univ., Urbana Coordinated Science Lab
Spons Agency—Agency for International Development (Dept. of State), Washington, D.C.
Pub Date Aug 75
Note—56p
EDRS Price MF-$0.76 HC-$3.32 Plus Postage
Descriptors—*Computer Assisted Instruction, Computer Oriented Programs, *Demography, Educational Innovation, Futures (of Society), Global Approach, Higher Education, Instructional Media, *Population Education, Population Growth, Population Trends, Secondary Education, *Teaching Techniques, World Affairs, *World Problems
Available on the University of Illinois PLATO IV Computer system, the Population Dynamic Group computer-aided instruction program for teaching population dynamics is described and explained. The computer-generated visual graphics enable fast and intuitive understanding of the dynamics of population and of the concepts and data of population The basic program is a population projection model which can forecast the population of over 120 countries, based on either constant or changing 1970 demographic parameter assumptions Basic data are 1970 total population, age composition categorized into 18 five-year intervals, period age specific fertility rates, and a cohort specific mortality rate schedule Other programs in the series contribute additional parameters including economic development, educational development, food demand and supply, energy demand, labor force analysis, migration and urbanization, population history, and birth control use. These materials explain how to use the system, provide information on concepts, definition, and the program algorithms, and provide suggestions for the practical applications of the program. (Author/DE)

ED 114 254 95 SE 018 110
Population Inquiries: U.S. and World Dynamics. Volume I.
Indiana Univ., Bloomington Population Education Project
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Pub Date 74
Grant—OEG-0-72-5143
Note—215p., For Volume 2 see SE 018 111
EDRS Price MF-$0.76 HC-$10.78 Plus Postage
Descriptors—Conservation Education, *Curriculum Guides, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, *Population Education, Population Growth, Population Trends, Science Education, *Secondary Education, Social Studies, Teaching Guides
This instructional unit on population issues for use in high school social studies classes has been designed to provide the social studies teacher with a wide variety of instructional options. These are oriented toward providing non-college-bound juniors or seniors with visually stimulating activity-oriented instruction on vital social issues relating to population change. This unit is divided into three chapters Chapter 1 is a description of the project design and development Chapter 2 provides a brief overview of the purpose and structure of the unit along with suggestions for using the unit in the classroom. Chapter 3 consists of the instructional unit, which contains a series of activities each including a purpose, learning goals, teaching schedule, teaching aids, learning aids, teaching procedures, student application exercises, notes to the teacher, and student confirmation sheets A section of student materials is also included along with a teacher idea grabbag Resource materials are listed throughout the instructional unit and include filmstrips, reading material, a visual questionnaire, role playing and slides A separate pamphlet, entitled "Population Pendulum," is also attached. (TK)

ED 116 981 SO 008 795
Teaching About World Hunger. No. 5419.
United Nations Children's Fund, New York, N.Y. United States Committee
Pub Date [75]
Note—63p., Not available in hard copy due to marginal legibility of original document
Available from—U.S. Committee for UNICEF, School Services, 331 East 38th Street, New York, New York 10016 (Order No. 5419, $1.50)
EDRS Price MF-$0.76 Plus Postage. HC Not Available from EDRS.
Descriptors—Class Activities, Developing Nations, Economic Disadvantagement, *Food, Futures (of Society), *Global Approach, *Hunger, Instructional Materials, International Organizations, International Programs, Resource Materials, Secondary Education, *Social Studies Units, Teaching Techniques, *World Problems
This secondary-level resource unit surveys hunger and malnutrition in developing countries and the interdependent factors affecting world food supplies The main part of the unit is divided into four sections which examine the historical and geographical, economic and political, health and nutritional, and environmental and ecological factors concerning the world food shortage Suggested classroom activities and questions are provided for each section Also in the unit are additional classroom activities and readings including a simulation game, comparison charts of food consumption, protein conversions, and world population data, an historical essay on hunger, a descriptive essay on the green revolution, a summary of the World Food Conference Resolutions, and an annotated list of related materials Hard copy, available through UNICEF, contains an issue of "UNICEF NEWS," a world child emergency wallsheet, two United Nations Development Program brochures and posters, a UNICEF brochure, and a 1975-76 UNICEF publications catalog (Author/DE)

ED 118 486 SO 008 885
Beer, Diana Darnall
Suggested Materials and Themes for a Study of Population in Secondary Social Studies.
Pub Date Aug 73
Note—194p., Master's Thesis, The University of Texas at Austin
EDRS Price MF-$0.83 HC-$10.03 Plus Postage
Descriptors—Annotated Bibliographies, Demography, Educational Resources, Environmental Education, Instructional Materials, Learning Activities, *Masters Theses, *Population Education, *Population Trends, Secondary Education, *Social Studies, Teaching Techniques, *World Geography
The main objective of this thesis is to suggest materials for use in secondary social studies classrooms for improvement of instruction on population and world geography. The thesis provides background information on population, a listing of sources where additional information can be found, and major generalizations, discussion questions, and related activities which can be used in the classroom Annotated bibliographies of available materials are organized within broad subject categories, including basic teacher references, organizational sources of additional population information, suggested themes for a study of population, and solutions to the population problem Each category begins with an author commentary and follows with the bibliographic information Entries are alphabetized by author and include title, publisher, and date. Extensive annotations are presented, giving the reader an idea of the breadth and scope of the individual materials (Author/JR)

ED 118 526 SO 008 954
Gutierrez, Robert
Unit on Political Decision Making and Action Strategy over a Local Environmental Problem.
Spons Agency—Florida State Dept. of Education, Tallahassee Office of Environment Education
Pub Date 75
Note—47p
EDRS Price MF-$0.83 HC-$2.06 Plus Postage
Descriptors—Class Activities, Conflict Resolution, *Decision Making, *Environmental Education, Instructional Materials, Political Influences, *Political Issues, Political Power, *Political Science, Public Policy, Resource Materials, Secondary Education, Social Studies, *Social Studies Units, Teaching Techniques, Values
This unit provides six lessons in which students develop a strategy for political action on a local environmental issue The unit emphasizes the process of solving political problems within the political system and may be adapted to any geographical or social problem The first lesson introduces a general environmental issue and requires students to make a value decision between the rights of people and nature In lesson two, the students examine a local environmental problem in political terms through a simulation and a field trip Lesson three is a simulation which introduces students to the concepts of conflict, conflict solution, and decision making Lesson four is a slide discussion of the various kinds of political power. Lesson five provides readings and questions for a discussion on how organized political-pressure groups work Lesson six requires the students to formulate their own political strategy for a solution to the environmental issue Except for audiovisual materials, this unit contains all the necessary student readings, teaching instructions, discussion questions, and evaluation questions for the unit (DE)

ED 120 068 SO 008 970
Gillespie, Judith A. Lazarus, Stuart
Clean Air Now: Political Issues Comparing Political Experiences, Experimental Edition.
American Political Science Association, Washington, D.C., Social Studies Development Center, Bloomington, Ind
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date 75
Note—144p., For related documents, see SO 008 957-972
EDRS Price MF-$0.83 HC-$7.35 Plus Postage
Descriptors—Case Studies, Change Strategies, Class Activities, *Community Action, Community Change, Concept Teaching, Course Content, Documentaries, Grade 12, Instructional Materials, Political Influences, *Political Issues, *Political Science, Politics, *Pollution, Secondary Education, *Social Studies Units
Identifiers—California (Riverside), *Comparing Political Experiences, High School Political Science Curriculum Project
The fourth unit in the second-semester Comparing Political Experiences course focuses on a

specific, controversial political issue. Using a documentary approach this unit analyzes the concept of political change by examining the changes in Riverside California, as that community confronts the issue of smog. The unit is divided into five student activities. The first activity introduces students to the geographic area of southern California, the causes and effects of smog, the effect of smog on Riverside and the political environment in Riverside. Activity 2 explores the concept of mobilization and how it has affected the smog issue. Activity 3 introduces the concept of political innovation and the way it affects change. Students focus on the court case "Riverside vs Ruckelshaus" as an illustration of political innovation. Activity 4 examines how the concept of interdependence affects change and the extent to which Riverside became interdependent with aspects of the political environment. Activity 5 teaches students how to forecast the future of a political system experiencing change by examining alternative futures for Riverside. Each activity contains the necessary student materials and student discussion questions. A data packet of supplementary readings and exercises is also included. (Author/DE)

ED 120 069 SO 008 971

Gillespie, Judith A. Lazarus, Stuart

Clean Air Now. Teacher's Guide: Political Issues, Comparing Political Experiences, Experimental Edition.

American Political Science Association, Washington, D.C. Social Studies Development Center, Bloomington, Ind.

Spons Agency—National Science Foundation, Washington, D.C.

Pub Date 75

Note—84p. For related documents, see SO 008 957-972

EDRS Price MF-$0.83 HC-$3.67 Plus Postage

Descriptors—Case Studies, Change Strategies, Class Activities, *Community Action, *Community Change, Concept Teaching, *Course Objectives, Documentaries, Grade 12, Instructional Materials, *Political Issues, *Political Science, Pollution, Secondary Education, Skill Development, Social Studies Units, Teaching Guides, Teaching Procedures

Identifiers—California (Riverside), *Comparing Political Experiences, High School Political Science Curriculum Project

This teacher's guide to unit four of the second semester "Comparing Political Experiences" course provides specific objectives and instructional procedures for each of five activities which focus on the smog problem in Riverside, California. In addition, the guide provides instructions for coordinating the use of the student text, individual material, data packet, and skills activities for the unit. The introduction contains a statement of the general rationale, knowledge objectives, analytical, moral reasoning, and participation skill objectives, instructional design, and evaluation materials for the course and the unit. Knowledge of the Riverside documentary provides a concrete example of a system experiencing change. Ideally, students will move from the Riverside case as an illustration to knowledge of the concept of political change, and beyond to extending this knowledge of change to their own activities. Included are reaction forms to be filled out by the teacher to evaluate the effectiveness of the unit. (Author/DE)

ED 121 653 95 SO 009 012

Allen, Rodney F.

The Ethics of Environmental Concern: A Rationale and Prototype Materials for Environmental Education Within the Humanistic Tradition. Final Report, Volume 2.

Florida State Univ., Tallahassee.

Spons Agency—National Center for Educational Research and Development (DHEW/OE), Washington, D.C., Office of Education (DHEW), Washington, D.C. Office of Environmental Education.

Bureau No—R021079

Pub Date 30 Sep 73

Grant—OEG-0-72-5145

Note—202p.; For related documents, see SO 009 013-015

EDRS Price MF-$0.83 HC-$11.37 Plus Postage

Descriptors—City Problems, Class Activities, Creative Development, Elementary Secondary Education, *Environmental Education, Instructional Materials, *Learning Activities, Skill Development, Slow Learners, Social Studies, *Social Studies Units, *Urban Culture, *Urban Environment

Identifiers—*Environmental Education Project

As part of the series of student materials developed by the Environmental Education Project at Florida State University, this volume contains three instructional units on urban environment. Designed for upper-elementary and secondary students, the materials require only low-level reading abilities while insisting on high-level participation. The first unit contains 59 student activities and exercises to help students develop sensitivity toward and awareness of their natural and man-made environments. Unit 2, on city environment, provides 39 student activities and exercises which require students to express themselves creatively. These activities make use of a student's imagination and ability to fantasize and express private thoughts via art, music, dance, stories, poetry, drama, and invention. Unit 3 contains three lessons which stress students' social participation in the life of their community. These three lessons contain 46 separate activities and exercises designed to help students develop communication and group experience skills and then apply these skills to community problems. Each unit also contains instructional objectives and procedures. (Author/DE)

ED 121 654 95 SO 009 013

Allen, Rodney F.

The Ethics of Environmental Concern: A Rationale and Prototype Materials for Environmental Education Within the Humanistic Tradition. Final Report. Volume 3.

Florida State Univ., Tallahassee

Spons Agency—National Center for Educational Research and Development (DHEW/OE), Washington, D.C., Office of Education (DHEW), Washington, D.C. Office of Environmental Education.

Bureau No—R021079

Pub Date 30 Sep 73

Grant—OEG-0-72-5145

Note—92p. For related documents, see SO 009 012-015

EDRS Price MF-$0.83 HC-$4.67 Plus Postage

Descriptors—*American Culture, *American Literature, American Studies, Cultural Factors, Environment, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Life Style, Secondary Education, Social Studies, *Social Studies Units, United States History, *Values

Identifiers—*Environmental Education Project

As part of the series of student materials developed by the Environmental Education Project at Florida State University, this volume contains three units for American history, American studies, and American literature courses. Selected readings from literature are presented to help students examine human values about the environment from an historical prespective. Designed for secondary students, each unit begins with an analytical model to test the values and life-style dispositions in the reading selections. The first unit examines six literature selections from colonial and early American history, using a model developed by anthropologist Clyde Kluckholm. This model provides an ideational relationship between goals, values, and commitments exhibited in the literature selections. The second unit employs the creative process model of landscape architect, Lawrence Halprin, to examine environmental values from seven literature selections written around the turn of the century. The final unit requires students to analyze life-styles from seven literature selections about the present and future using a set of value-clarification questions. Each unit includes a set of student discussion questions and teaching objectives. (Author/DE)

ED 121 655 95 SO 009 014

Allen, Rodney F.

The Ethics of Environmental Concern: A Rationale and Prototype Materials for Environmental Education Within the Humanistic Tradition. Final Report, Volume 4.

Florida State Univ., Tallahassee.

Spons Agency—National Center for Educational Research and Development (DHEW/OE), Washington, D.C., Office of Education (DHEW), Washington, D.C. Office of Environmental Education

Bureau No—R021079

Pub Date 30 Sep 73

Grant—OEG-0-72-5145

Note—170p. For related documents, see SO 008 012-015

EDRS Price MF-$0.83 HC-$8.69 Plus Postage

Descriptors—American Culture, *Cross Cultural Studies, Cultural Factors, Environment, *Environmental Education, Global Approach, Instructional Materials, Junior High Schools, Learning Activities, *Life Style, *Population Education, Population Growth, *Social Studies Units, Values, World Problems

Identifiers—*Environmental Education Project

As part of the series of student materials developed by the Environmental Education Project at Florida State University, this volume contains three instructional units dealing with population growth and perception of the environment. Designed for junior high students, each unit contains an extensive introduction to orient a teacher to the major concerns, rationale, objectives, lesson plans, student materials, and evaluation components. Unit 1 includes 16 student activities that require students to examine the variables of population change, problems of population growth, the various stages of population growth, and ethical questions about the need to maintain a balanced relationship between population size and the natural environment. Unit 2 contains 11 activities about how various world cultures perceive the environment. Unit 3 includes 12 student activities in which students reflect on the economic development of the United States and its implication on both the natural and international environmental situation. (Author/DE)

ED 121 656 95 SO 009 015

Allen, Rodney F.

The Ethics of Environmental Concern: A Rationale and Prototype Materials for Environmental Education Within the Humanistic Tradition. Final Report, Volume 5.

Florida State Univ., Tallahassee

Spons Agency—National Center for Educational Research and Development (DHEW/OE), Washington, D.C., Office of Education (DHEW), Washington, D.C. Office of Environmental Education

Bureau No—R021079

Pub Date 30 Sep 73

Grant—OEG-0-72-5145

Note—96p.; For related documents, see SO 009 012-015

EDRS Price MF-$0.83 HC-$4.67 Plus Postage

Descriptors—*Chinese Culture, Class Activities, Environment, *Environmental Education, Ethics, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Life Style, Poetry, Secondary Education, Self Actualization, Social Studies, *Social Studies Units, *Values

Identifiers—*Environmental Education Project

As part of the series of student materials developed by the Environmental Education Project at Florida State University, this volume contains three diverse instructional units integrating values and environmental education. Designed for secondary students, each unit contains lesson plans, objectives, and student readings. Unit 1 provides eight student activities focusing on the effect of ancient Chinese values and modern philosophy on Chinese life-styles and attitudes toward the environment. Unit 2 lists the components of student 'messing about' kits which contain familiar objects such as pictures, seeds, booklets, and cans as well as instructional media. Students examine the objects in the kit in order to arrive at greater environmental awareness and clarify their values about the life-styles necessary to maintain a balanced relationship with nature. Unit 3 uses poetry and personal reflections about trees to involve students in man's disposition toward nature and others. (Author/DE)

ED 125 925 SO 009 151

Bill, Erwin

What Is All This Dam Foolishness? Instructional Activities Series IA/S-2.

National Council for Geographic Education

Pub Date 75

Note—10p.; For related documents, see ED 096 235 and SO 009 140-167
Available from—NCGE Central Office, 115 North Marion Street, Oak Park, Illinois 60301 ($0.50, secondary set $15.25)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Case Studies, *Classroom Games, Conflict, Conflict Resolution, *Construction Needs, Environment, *Geographic Concepts, *Geography Instruction, Instructional Materials, *Land Use, *Learning Activities, Maps, Role Playing, Secondary Education, *Simulation, Teacher Developed Materials

This activity is one of a series of 17 teacher-developed instructional activities for geography at the secondary grade level described in SO 009 140. This activity investigates the proposed construction of a dam. It employs a simulation technique in which students debate the conflicts that may evolve between groups with differing goals. To provide background information and to set the scene for the simulation, two short newspaper articles discuss crop yield increase due to irrigation and land value increases. A letter to the editor and an article opposing the building of the dam are also included. Eleven roles are presented for various special and nonspecial interest group members of the community who will be affected favorably or adversely by the building of the dam. These include farmers representatives from a coal burning electric plant, and land speculators, and a fisherman. Each role discusses the position of one person toward building a dam and offers reasons for holding those positions. The issues are debated among the various interest groups and culminate in a special hearing. An environmental impact statement and a fact sheet describing such things as the cost and advantages of the dam, are presented. A map shows dam construction. (Author/DB)

ED 125 928 SO 009 154
Wright, Keith L. Lambert, Jack R.
Rookery Bay: Can Conservation and Development Coexist? Instructional Activities Series IA/S-5.
National Council for Geographic Education
Pub Date [75]
Note—11p.; For related documents, see ED 096 235 and SO 009 140-167
Available from—NCGE Central Office, 115 North Marion Street, Oak Park, Illinois 60301 ($0.50, secondary set $15.25)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Case Studies, *Conflict, Conservation (Concept), Conservation (Environment), *Conservation Education, *Development, Dialogue, Discussion (Teaching Technique), Environmental Education, *Geographic Concepts, *Geography Instruction, Illustrations, *Land Use, Maps, Secondary Education, Site Development, Teacher Developed Materials

This activity is one of a series of 17 teacher-developed instructional activities for geography at the secondary grade level described in SO 009 140. This activity investigates land use conflict between conservationists and developers in Florida through dialogue and discussion approaches. A dialogue between two main characters is presented which may be recorded or played by students in the dialogue. Susie, an eighth grader from New York, is visiting her uncle who is a resident of Tampa, Florida. The dialogue provides data about a mineral swamp wilderness Rookery Bay—which is an ideal nursery for birds and fish. Susie and her uncle discuss conservation and ecology measures in land development in nearby sites. The discussion points out that Rookery Bay will be affected by the growth and development surrounding it, and that developers need to employ ecological safeguards to protect these areas. After the dialogue, students discuss the relationship between environmental quality and quick financial gains. Maps of the area and swamp photographs are provided. (DB)

ED 125 930 SO 009 156
Veal, Willis D.
Economic Development: The Quest for Material Well-Being. Instructional Activities Series IA/S-7.
National Council for Geographic Education
Pub Date 75
Note—7p.; For related documents, see ED 096 235 and SO 009 140-167
Available from—NCGE Central Office, 115 North Marion Street, Oak Park, Illinois 60301 ($1.25, secondary set $15.25)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Case Studies, Construction Costs, *Developing Nations, Development, Dialogue, Economic Change, *Economic Development, Environmental Education, Foreign Countries, *Geography Instruction, Industrialization, Learning Activities, *Middle Eastern Studies, Political Issues, Population Growth, Secondary Education, Site Development, Social Change, Teacher Developed Materials, Teaching Techniques

This activity is one of a series of 17 teacher-developed instructional activities for geography at the secondary grade level described in SO 009 140. The activity investigates economic change in developing nations. It employs the dialogue approach. Given data about the Aswan High Dam in Egypt and about the environment of northeast Africa, students analyze the dam's contributions to the Egyptian economy and evaluate the societal and ecological problems that resulted from its construction. A chronological table of Aswan Dam developments, statistical data, a table of planned economic growth activity, and maps of Egypt and the Nile Conservation Works are provided. (DB)

ED 125 931 SO 009 157
Fernald, Edward A.
Canalers and Conservationists: The Projected Cross-Florida Canal. Instructional Activities Series IA/S-8.
National Council for Geographic Education
Pub Date 75
Note—8p.; For related documents, see ED 096 235 and SO 009 140-167
Available from—NCGE Central Office, 115 North Marion Street, Oak Park, Illinois 60301 ($0.50, secondary set $15.25)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Case Studies, Conservation (Environment), Development, *Ecological Factors, Economic Development, *Environmental Education, Geographic Concepts, *Geography Instruction, Inductive Methods, *Land Use, Learning Activities, Locational Skills (Social Studies), Maps, Models, Physical Geography, *Problem Solving, Secondary Education, Teacher Developed Materials

This activity is one of a series of 17 teacher-developed instructional activities for geography at the secondary-grade level described in SO 009 140. This activity investigates environmental quality employing the problem-solving technique. Using a map which shows the proposed route of the cross-Florida barge canal as a focal point, the teacher leads a classroom discussion on the government's reasons for constructing the canal and draws from the students' hypotheses and/or problems regarding environmental change, land use, and planning. The students then develop a model for testing their hypotheses. Students can compare their model with one provided in the materials, called Model for Solving Environmental Quality Problems. Using data from maps and charts, students discuss the general requirements for the canal and the cultural and physical changes which are likely to occur when the canal is built. A culminating evaluation activity involves students in a discussion of the use of models and maps in problem solving. (Author/DB)

ED 125 933 SO 009 159
Clark, A. Rees. Cybriwsky, Roman A.
Neighborhood Response to Land-Use Planning: A Role-Playing Game. Instructional Activities Series IA/S-10.
National Council for Geographic Education
Pub Date 75
Note—22p.; For related documents, see ED 096 235 and SO 009 140-167
Available from—NCGE Central Office, 115 North Marion Street, Oak Park, Illinois 60301 ($1.25, secondary set $15.25)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Conflict, Conflict Resolution, Decision Making, *Geography Instruction, Instructional Materials, *Land Use Learning Activities, *Neighborhood, Neighborhood Improvement, *Planning, Role Playing, Secondary Education, Simulated Environment, *Simulation, Social Environment, Social Studies, Student Participation, Teacher Developed Materials, Urban Environment

This activity is one of a series of 17 teacher-developed instructional activities for geography at the secondary-grade level described in SO 009 140. The activity is a simulation which involves 15 to 25 students in making decisions about the best use of an inner city tract of land. The developers recommend that the game extend over at least three class periods, including a preparation phase, a role-playing phase, and a discussion phase. On the first day students read newspaper clippings, a scenario description and a City Planning Commission Hearing Worksheet, and study a map of the area. Role cards, factor cards, and bias cards are then distributed. There are three major sets of roles: planning commissioners, city-wide roles, and local community roles. On the second day the simulation begins with a hearing before the planning commission. Three city agencies proposing development plans—the public housing authority, the parks and recreation department, and a private land developer present arguments to support their choices. When each has finished his presentation the commission members may ask questions about the proposal. Local citizens from diverse social strata then testify, arguing for or against the various proposals. On the last day, the planning commission announces its decision and the teacher leads a debriefing discussion. All materials needed for the simulation are provided. (Author/DB)

ED 125 937 SO 009 163
Allen, Rodney F.
Environmental Education as Telling Our Stories. Instructional Activities Series IA/S-14.
National Council for Geographic Education
Pub Date 75
Note—13p.; For related documents, see ED 096 235 and SO 009 140-167
Available from—NCGE Central Office, 115 North Marion Street, Oak Park, Illinois 60301 ($0.75, secondary set $15.25)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Anthropology, Autobiographies, Biographies, *Environmental Education, Geography Instruction, *Humanistic Education, Knowledge Level, Learning Activities, Life Style, Mythology, Philosophy, Religion, Secondary Education, Social Studies, *Story Telling, Student Attitudes, Student Centered Curriculum, Teacher Developed Materials, *Teaching Techniques, *Values

This activity is one of a series of 17 teacher developed instructional activities for geography at the secondary-grade level described in SO 009 140. The activity investigates the role of story telling as illustrative of human values and as an appropriate medium for environmental education. The author identifies a need for individuals to know who they are in relation to their environment, and he recommends reflective inquiry on the many answers discovered by societies and individuals. Thus myth, biography, autobiography, and religious-philosophical literature are seen to be useful in communicating a world view and sets of values and in developing personal awareness and empathy in the reader. Eighteen self-revealing and clarifying activities are suggested for students to put themselves in touch with their environment. Among them are fantasies about the life of inanimate objects and memories of past events in one's own life. A final exercise involves evaluating eight life styles and rank ordering them by preference. (Author/DB)

ED 125 938 SO 009 164
Allen, Rodney F.
"This World Is So Beautiful...": Feelings and Attitudes in Environmental Education. Instructional Activities Series IA/S-15.
National Council for Geographic Education
Pub Date 75
Note—9p.; For related documents, see ED 096 235 and SO 009 140-167
Available from—NCGE Central Office, 115

North Marion Street, Oak Park, Illinois 60301 ($0.50, secondary set $15.25)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Affective Objectives, Changing Attitudes, Conservation (Concept), Conservation Education, Curriculum Development, Ecological Factors, Ecology, Environmental Criteria, *Environmental Education, Geography Instruction, *Humanistic Education, Learning Activities, Multimedia Instruction, Secondary Education, Social Studies, *Student Attitudes, *Student Centered Curriculum, Student Interests, Student Reaction, Teacher Developed Materials, Teaching Techniques

This activity is one of a series of 17 teacher developed instructional activities for geography at the secondary-grade level described in SO 009 140. The activity investigates the rationale and means for including attitudes, feelings, and emotions in the environmental education curriculum. Explanation is given about the role of attitudes and feelings in our reactions to environment. Students should understand that their reactions to nature and other people are basically emotional and that coping with those emotions involves understanding each situation and judging each stimulus. In order to help students understand their feelings and attitudes toward environment, several teaching strategies are suggested. These include discussion of popular folk rock songs, selection of certain material goods, analysis of historical literature and current media content, and reflection on the meaning of photographs from several points of view. (Author/DB)

ED 137 065 SE 021 529
Lantz, H. B., Jr.
"No Deposit - No Return" What's It Costing Me? A Complete Program of Action.
Orange County School Board, Va.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Feb 75
Note—42p.; For related document, see SE 021 528; Not available in hard copy due to marginal legibility of original document
Available from—Title III Environmental Education Center, Orange County High School, Orange, Virginia 22960 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Conservation (Environment), *Environment, Environmental Education, Higher Education, *Instructional Materials, *Legislation, Natural Resources, *Pollution, *Secondary Education
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Solid Wastes

This booklet of materials on how to achieve beverage container legislation is the culmination of efforts of many people including students. Included in the booklet is the script to (1) a slide presentation, (2) a copy of the Oregon Bottle Bill and a progress report, and (3) a fact sheet regarding the effect of beverage containers on raw materials, energy, litter, and economics. (RH)

ED 138 538 SO 010 026
What's the Use of Land? A Secondary School Social Studies Project.
Jefferson County Public Schools, Lakewood, Colo.; National Aeronautics and Space Administration, Washington, D.C.
Pub Date Oct 76
Note—69p.
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock Number 033-000-00665-9, $1.45 paperbound)
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Class Activities, Concept Formation, Conservation Education, *Curriculum Development, Educational Objectives, *Environmental Education, Geographic Concepts, *Geography Instruction, *Interdisciplinary Approach, *Land Use, Learning Activities, Maps, Map Skills, Physical Geography, Rural Urban Differences, Secondary Education, *Social Studies, Social Studies Units, State History
Identifiers—Colorado

A land use unit using information from space programs is intended to help secondary teachers develop, plan, and implement land use programs in the social studies classroom. The subject of this unit is a flood control dam in Colorado. Interdisciplinary curriculum includes activities in mapmaking, environmental and mathematical studies, local community history, and physical geography. The project may be used in the present form or altered to fit a land use investigation in an existing curriculum. The publication is divided into three major parts. Part I describes the multidisciplinary unit concept, provides a curriculum outline, specifies objectives, suggests other land use studies, and outlines learning activities involving aerial photographs, drainage basins, flood threats to a community, water volume during a flood, location of flood control dams, types of dams, and effects of dam construction. The second part gives advice on where to obtain and how to use data for surveys. Part III provides information on factors that influence land use and suggests class activities. Topics discussed include rural and urban land use, transportation, commerce, agriculture, forestry, recreation, and environmental protection. Maps, aerial photographs, and a bibliography are included in the document. (Author/DB)

ED 141 157 SE 022 679
Economic and Political Exploitation of Marine Resources. A Learning Experience for Coastal and Oceanic Awareness Studies, No. 235. (Project COAST).
Delaware Univ., Newark. Coll. of Education
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 74
Note—37p.; For related documents, see SE 022 662-687; Contains occasional light type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Conservation (Environment), Economics, *Instructional Materials, *Natural Resources, *Oceanology, *Secondary Grades, *Social Studies, *Teaching Guides, Units of Study
Identifiers—Project COAST, *Resource Utilization

This unit was designed for use by secondary school students in social studies classes. Materials are provided for four class periods. Emphasized is exploitation of mineral, food, and animal resources found in the sea. Included are suggestions to the teacher, student activities, assessment materials, and a selective bibliography. (RH)

ED 141 160 SE 022 684
Simulation Game: Superport. A Learning Experience for Coastal and Oceanic Awareness Studies, No. 311. (Project COAST).
Delaware Univ., Newark. Coll. of Education
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 74
Note—34p.; For related documents, see SE 022 662-687; Contains occasional light type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Educational Games, Environment, *Instructional Materials, *Oceanology, Sciences, *Secondary Grades, *Simulation, *Social Studies, *Teaching Guides, Units of Study
Identifiers—Project COAST

Superport is a learning experience which requires students to examine how a superport and its related industries will affect the marine environment of a given geographical area. The activity is designed to provide roles for up to 90 students. The simulation begins with the students defining factors that might be related to the installation of a superport. Continued studies expose students to a wide range of information sources and activities. The lesson plan could be expanded to cover a period of several weeks or could be confined to one week. It is designed primarily for secondary school students in social studies. (RH)

ED 147 216 SO 010 433
Clark, Leon E.
The Cost and Value of American Children: A Teaching Module.
Population Reference Bureau, Inc., Washington, D.C.
Pub Date [77]
Note—18p.
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Behavioral Objectives, *Child Rearing, *Children, *Costs, Demography, Economic Factors, Expenditures, *Family Planning, Graphs, Higher Education, Inflation (Economics), Junior High Schools, Learning Modules, *Parent Role, *Population Education, Questionnaires, Secondary Education, *Student Attitudes, Trend Analysis

This teaching module contains questionnaires, a guide for submitting questionnaire responses, and seven data sheets dealing with costs and benefits of raising children in the United States. Intended for use by students from junior high school through college, the materials encourage students to reexamine their attitudes toward parenthood, help them examine advantages and disadvantages of having children, expose them to data on the cost of raising children, and help them understand the roles of culture and economy in shaping a society's perceptions of children. The first section outlines grade levels, time and materials, objectives, and procedures for utilizing the data sheets in class activities. The second section contains data sheets. The first data sheet poses six questions on the cost and value of children. The second data sheet provides a response form designed to facilitate collection and recording of questionnaire responses. Data sheets three, four, and five are graphs representing direct and indirect costs of children at various stages of the life cycle. The sixth data sheet tabulates results of a 1973 Hawaiian survey of advantages of parenthood. The final data sheet is a questionnaire which directs students to respond positively or negatively to 45 statements of opinion about children. (Author/DB)

ED 147 222 SO 010 466
Spicer, Brian, Ed. And Others
Man and Space. The Global System, Level 1.
Pub Date 72
Note—169p.; For related documents, see SO 010 467-468; Figures, photographs and maps may not reproduce clearly due to poor reproducibility of original document
Available from—Jacaranda Press, 65 Park Road, Milton, Queensland, Australia 4064 ($6.00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Agriculture, Area Studies, Design Needs, Earth Science, Ecological Factors, Educational Objectives, *Environmental Education, *Geographic Concepts, *Geography Instruction, Industrialization, *Learning Activities, Maps, Neighborhood, Physical Environment, Physical Geography, Secondary Education, Skill Development, *Social Studies, Teacher Developed Materials, Textbooks
Identifiers—*Australia

Part of a geography series which stresses understanding of the environment through mastery of specific skills and concepts, the secondary level textbook examines environmental systems as they exist at present. A system is defined as one of a large number of elements (people, cities, rocks, soils, air, clouds) which make up the environment. Although developed for use in Australian secondary schools, the material and activities can be adapted for use in other countries by replacing Australian examples with other examples more relevant to students. The text comprises 15 chapters, 14 of which describe a specific system including the following: desert, barrier reef, swamp, farm, cattle station, mine, bakery, communication, urban and rural neighborhoods, and a garage repair shop. Skills and objectives are listed in the introduction and tests are included throughout the text. The format of each chapter generally includes background information, illustrations, maps, graphs, and discussion questions. Learning activities suggested to help students observe elements of a system and analyze spatial relationships between them include role playing, surveys, library research, map work, class reports, debates, and field trips. The final chapter suggests questions and activities for evaluating student skills and understanding of textual material. (Author/DB)

ED 147 223 SO 010 467
Spicer, Brian, Ed. And Others
Space In Change. The Global System, Level 2.
Pub Date 73
Note—198p.; For related documents, see SO 010 466-468; Photographs, figures and maps may

not reproduce clearly due to poor reproducibility of original document
Available from—Jacaranda Press, 65 Park Road, Milton, Queensland, Australia 4064 ($6.00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Agriculture, Area Studies, Communism, Ecological Factors, Economic Change, *Economic Development, Economic Progress, Environmental Education, Futures (of Society), Geographic Concepts, *Geography Instruction, Land Use, Learning Activities, *Living Standards, Population Trends, Secondary Education, Social Change, *Social Studies, Social Systems, Textbooks, Trend Analysis
Identifiers—Africa, *Australia, Europe (East), United States
Part of a geography series which stresses understanding of the environment through mastery of specific skills and concepts, the secondary level textbook examines how and why different environments have changed through time. The book is presented in eight chapters organized around the three main themes of change in local areas, land use, and the impact of ideas on land use. Chapters I and II describe recent attempts to increase the level of development and improve the standard of living in Tanzania and in the Kaira District of India. Chapters III and IV cite recent intensive development which has occurred in outback Australia as a result of mining, irrigation development, and scientific research. Chapters V and VI investigate the nature and process of development of the United States from 1607-1900 and provide case studies of farmers in North Carolina, Pennsylvania, and Iowa. Chapter VII traces the changes which followed the introduction of communism in eastern Europe. The final chapter suggests questions and activities for evaluating student skills and understandings of textual material. The format of each chapter generally includes background information, illustrations, maps, graphs, and discussion questions in addition to activities such as role playing, surveys, library research, map work, class reports, and written essay assignments. Cognitive, affective, and psychomotor objectives are presented in the introduction. (Author/DB)

ED 147 224* SO 010 468
Spicer, Brian, Ed. And Others
Production and Space. The Global System, Level 3.
Pub Date 74
Note—283p.; For related documents, see SO 010 466-467; Figures, photographs and maps may not reproduce clearly due to poor reproducibility of original document
Available from—Jacaranda Press, 65 Park Road, Milton, Queensland, Australia 4064 ($8.00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Agriculture, Developing Nations, Economic Change, Economic Climate, Economic Factors, Economic Progress, Environmental Education, Food, Futures (of Society), *Geographic Concepts, *Geography Instruction, Human Geography, Industrialization, Industrial Technology, Interaction, Living Standards, *Manufacturing, Secondary Education, Skill Development, *Social Studies, Tables (Data), Textbooks
Part of a geography series which stresses understanding of the environment through mastery of specific skills and concepts, the secondary level textbook investigates the interrelationships between humans and the goods they produce. The book is presented in 26 chapters organized around five main themes: (1) agricultural production, (2) manufacturing production, (3) difficulties that men of different backgrounds experience in living and producing together, (4) the relationship between living standard and health, and (5) interactions between men and specific environments. Cognitive, affective, and psychomotor objectives are listed in the introduction and a final chapter suggests questions and activities for measuring student mastery of the objectives. Chapter format generally includes background information, illustrations, maps, graphs, and discussion questions. Some chapters also include learning activities such as library research, map work, essay assignments, and model construction. The major learning activities, however, are presented in the final chapter in which students are directed to [illegible] analytic skills developed throughout the global system series to hypothetical farm and factory data. Specifically, students are expected to construct a map and systems diagram of the farm and factory from information presented, explain the layout of each site, and determine whether the uses to which men are putting the site are suitable in terms of suggested variables. (Author/DB)

ED 149 990 SE 023 460
Environmental Education, Values for the Future: Environmental Ethics, Grades 9-12.
Illinois State Office of Education, Springfield
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—45p.; For related documents, see SE 023 448-457 and SE 023 459-465
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Environmental Education, *Ethics, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Science Education, *Secondary Education, *Teaching Guides, Values
Identifiers—Elementary Secondary Education Act Title III
This booklet on environmental ethics is one of a series on environmental education for grades K-12. In this booklet for high school students the idea of a personal value system is developed and tested. Five basic behavioral objectives are given, along with a listing of appropriate subject areas. Three activity options are related to each concept. Information for the activities includes materials and resources, procedures, and discussion questions and activities. The activities are interdisciplinary and include surveys, films, book reports, and field trips. Sample data sheets, survey forms, and illustrations are given. (MA)

ED 149 991 SE 023 461
Environmental Education, Values for the Future: Environmental Decisions, Grades 9-12.
Illinois State Office of Education, Springfield
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—81p.; For related documents, see SE 023 448-457 and SE 023 459-465; Pages 72-76 "Legislative Scoreboard - the 94th Congress" and "The Right to Write" removed prior to being shipped to EDRS due to copyright restrictions
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—*Decision Making, *Skills, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Problem Solving, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III
This booklet on environmental decisions is one in a series on environmental education for grades K-12. The activities are designed to involve high school students actively in the decision making process. The effect of using laws as a vehicle for environmental improvement is also explored. Five basic behavioral objectives are developed with subject areas and activities. There are three optional activities per objective and each includes a listing of materials and resources, procedures, and discussion questions. The activities are interdisciplinary and contain such games, problems, games and simulations, role playing, and case studies. Illustrations, sample worksheets, and readings are also given. (MA)

ED 149 992 SE 023 462
Environmental Education, Values for the Future: Economics, Grades 9-12.
Illinois State Office of Education, Springfield
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—48p.; For related documents, see SE 023 448-457 and SE 023 459-465; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Economics, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, *Natural Resources, *Secondary Education, Teaching Guides, Technology, Values
Identifiers—Elementary Secondary Education Act Title III
This booklet on economics is one in a series on environmental education for grades K-12. The activities explore economic systems, basic concepts, benefits, and the use of the cost benefit equation to assess the value of technology in modifying the environmental quality. Four basic behavioral objectives are developed with subject areas and activities. Three activity options are listed for each objective. Information for these includes materials and resources, procedures, and discussion questions. The activities are interdisciplinary and are designed for high school students, grades 9-12. Maps, role cards, survey forms, and case studies are also given. (MA)

ED 149 995 SE 023 465
Environmental Education, Values for the Future: Technology, Grades 9-12.
Illinois State Office of Education, Springfield
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—36p.; For related documents, see SE 023 448-457 and SE 023 459-464; Page 1 (Explanation of Concept Area) missing from document prior to being shipped to EDRS for forming Best Copy Available.
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Economics, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, *Secondary Education, *Teaching Guides, *Technology, Values
Identifiers—Elementary Secondary Education Act Title III
This booklet on technology is one of a series in environmental education for grades K-12. The activities in this booklet are concerned with the societal and environmental costs of technology. Three basic behavioral objectives are listed with activity options and appropriate subject areas. Information for the nine activities includes materials and resources, procedures, and discussion questions. These interdisciplinary activities, designed for grades 9-12, include surveys, games, studies, and experiments. (MA)

ED 152 643 SO 010 778
Murphy, Elaine M., Long, Alison C.
Population and Human Development: A Course Curriculum Including Lesson Plans, Activities, and Bibliography. Revised.
Population Inst., Washington, D.C.
Pub Date Dec 77
Note—70p.; Pages 41-43, 46-49 may not reproduce clearly in hard copy due to poor legibility of original document; For a related document, see ED 131 691
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Behavioral Objectives, Bibliographies, Curriculum Guides, *Demography, Educational Resources, Environmental Education, Family Planning, Global Approach, Higher Education, Human Development, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Lesson Plans, Policy Information, *Population Education, *Population Growth, Resource Guides, Secondary Education, Social Sciences, Teaching Techniques
This course outline suggests materials and learning activities on the interrelatedness and consequences of population growth and other population matters. The document describes 15 class sessions which integrate information for sociology, anthropology, psychology, biology, animal behavior, and education. Topics include the history of human population growth, evolution, political implications of scarce resources, immigration, world population growth, family size, urbanization, and practical and philosophical consideration of United States population policies. Learning activities involve students in role playing, group discussion, presentation of papers and reports to the class, community surveys, and values clarification games. For each topic, information is presented on reading and writing assignments, suggested lecture topics, discussion, learning activities, films, class visitors, special-

papers and projects, and behavioral objectives Intended primarily for use on the college level, the curriculum can also be modified for use with advanced secondary school students A bibliography and form requesting teacher feedback conclude the document. (Author/DB)

ED 153 842 SE 023 168
Brick, Phyllis and Others
Interdisciplinary Student/Teacher Materials In Energy, the Environment, and the Economy: 1, How a Bill Becomes a Law to Conserve Energy, Grades 9, 11, 12.
National Science Teachers Association, Washington, D C
Spons Agency—Bureau of Intergovernmental and Institutional Relations (DOE), Washington, D C Office of Education, Business and Labor Affairs.
Report No—EDM-1033
Pub Date Oct 77
Contract—EX-76-C-10-3841
Note—122p , For related documents, see SE 023 167-172 and SE 023 218 Not available in hard copy due to marginal legibility of original document
Available from—U S Department of Energy Technical Information Office P O Box 62, Oak Ridge Tennessee 37830 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Energy, Environment, Federal Legislation, *Instructional Materials, *Integrated Curriculum, Science Education, *Secondary Education, *Social Sciences, *Teaching Guides
This instructional unit for secondary school students is designed to integrate facts and concepts of energy, environment, and economics into the study of the process of making and applying a law (the fifty-five mile-per-hour speed limit law) The unit contains activities on the legislative process designed to fit into traditional segments of instruction in U S history, government, or civics courses Activities containing learning exercises on constructing and interpreting graphs and tables are suitable for science or mathematics courses. The activities are intended to encourage interdisciplinary teaching This unit contains complete teacher and student materials including a pre-test, background reading, objectives, teaching strategies, and suggestions for evaluation. (BB)

ED 153 923 SO 010 867
INTERdependence Curriculum Aid.
Philadelphia School District, Pa ; World Affairs Council of Philadelphia, Pa.
Pub Date [77]
Note—110p., Pages 19, 74, 75 contain copyrighted material and have been removed by ERIC. They are not included in the pagination
Available from—World Affairs Council of Philadelphia, John Wanamaker Store, Third Floor Gallery, 13th and Market Streets, Philadelphia, Pennsylvania 19107 ($3 00, paper cover)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Civil Liberties, Conflict Resolution, *Cooperative Planning, Curriculum Guides, *Depleted Resources, Developed Nations, Developing Nations, Economic Factors, Food, *Global Approach, *Human Dignity, International Relations, Learning Activities, Peace, Physical Environment, Political Influences, Poverty Research, Secondary Education, Social Problems, *Social Studies Units, Technological Advancement, Technology, World Affairs, *World Problems
Stressing global interdependence, this guide suggests resources, materials, and activities related to major world problems. Global interdependence, is interpreted as connections between and among nations in areas of war and peace, human rights, environmental use, economics, and international law The major objective is to help students understand the international moral, political, economic, and geophysical dimensions of world problems Following a discussion of the concept of interdependence and a listing of resources, the document presents eight units related to global concerns food and nutrition, global economy, human rights, oceans, peace, resource scarcity, science and technology, and international institutions Each unit includes objectives, background, discussion questions, bibliography, resource materials, audiovisual aids, classroom activities, field trips, and references Learning activities involve students in educational games, group discussion and role playing, reading and writing assignments, oral reports, writing letters to government agencies in the United States and abroad, surveying class and community members on topics related to global development, compiling annotated bibliographies, and arranging class visitations by experts on disarmament, poverty, development, and related topics The units are designed for use as a complete course, mini-course, or for integration into existing curriculum. (Author/DB)

ED 156 481 SE 024 442
Growth: How Much is Too Much? Student Book. Social Studies Module (9th-10th Grade Social Studies) Revised Edition.
Georgia Univ , Athens. Coll. of Education.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Bureau No—522AH5121S
Pub Date 77
Note—125p ; For related documents, see SE 024 440-447, portions of or the entire page of pages 21, 51-53, 55, 61, 74, 79, 90-91, and 102 have been removed due to copyright restrictions; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$6.01 Plus Postage.
Descriptors—Course Content, Ecology, *Environmental Education, *Instructional Materials, Land Use, *Population Education, Science Education, *Secondary Education, *Social Sciences, *Waste Disposal
This learning module is designed to integrate environmental education into ninth- and tenth-grade social studies courses The module and a parallel module designed for chemistry classes were pilot tested in Gwinnett County, Georgia in 1975-76. The module is divided into four parts The first part alerts students to the serious problems that growth and development can bring to the environment and provides an ecological setting for analyzing alternative solutions The second part provides factual information and various perspectives on population growth and the ways in which it has changed the county community In the third part, waste collection and disposal and its relationship to land use planning, community health, and the quality of life are analyzed through a series of readings and activities. The fourth part introduces basic principles of careful land use as a means of preventing environmental decay. The module takes eighteen days to complete. Some of the student activities are a study of the population growth of Gwinnett County, field trips to sites of planned land use, and a simulation of a zoning board meeting (BB)

ED 156 482 SE 024 443
Growth: How Much is Too Much? Teacher's Guide. Social Studies Module (9th-10th Grade Social Studies).
Georgia Univ., Athens Coll of Education
Spons Agency—Office of Education (DHEW), Washington, D C.
Bureau No—522AH51215
Pub Date 77
Note—52p., For related documents, see SE 024 440-447, Pages 13 and 18 removed due to copyright restrictions, Contains marginal legibility in the Role Descriptions and Maps sections
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Course Content, Curriculum Guides, Ecology, *Environmental Education, *Land Use, *Population Education, Science Education, *Secondary Education, *Social Sciences, *Teaching Guides, Waste Disposal
This is the teacher's guide for a learning module designed to integrate environmental education into ninth- and tenth-grade social studies classes This module and a parallel module designed for chemistry classes were pilot tested in Gwinnett County, Georgia in 1975-76. The module is divided into four parts. The first part alerts students to the serious problems that growth and development can bring to the environment and provides an ecological setting for analyzing alternative solutions. The second part provides factual information and various perspectives on population growth and the ways in which it has changed the county community. In the third part, waste collection and disposal and its relationship to land use planning, community health, and the quality of life are analyzed through a series of readings and activities The fourth part introduces basic principles of careful land use as a means of preventing environmental decay The teacher's guide gives overall project objectives, the module sequence and supplemental materials, and suggested short-answer review quizzes (BB)

ED 156 485 SE 024 446
Water: How Good Is Good Enough? Student Book. Social Studies Module (9th-10th Grade Social Studies).
Georgia Univ., Athens. Coll. of Education
Spons Agency—Office of Education (DHEW), Washington, D C.
Bureau No—522AH51215
Pub Date 77
Note—78p.; For related documents, see SE 024 440-447, portions of or the entire page of pages 18-20, 45-46, and 49 have been removed due to copyright restrictions; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—Conservation Education, Course Content, *Environmental Education, *Instructional Materials, Pollution, Science Education, *Secondary Education, *Social Sciences, Waste Disposal, *Water Pollution Control, *Water Resources
This is an environmental education module for integrating topics of water quality in ninth- and tenth-grade social studies classes. The module was pilot tested in Gwinnett County, Georgia in 1975-76. The module sequence is divided into four parts. The first part provides an introductory episode to stimulate student interest in an environmental issue concerning water The second part is designed to improve understanding of water sources and treatment The third part develops social studies concepts around examples from the county community The fourth part has the student apply what he/she has learned to prepare a publicity project. This module is intended to accompany a similar one in ninth- and tenth-grade chemistry classes (BB)

ED 156 486 SE 024 447
Water: How Good Is Good Enough? Teacher's Guide. Social Studies Module (9th-10th Grade Social Studies).
Georgia Univ., Athens Coll of Education.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Bureau No—522AH51215
Pub Date 77
Note—40p.; For related documents, see SE 024 440-446; Pages 27-28 missing from document prior to being shipped to EDRS for filming; Best Copy Available; Pages 33-34 removed due to copyright restrictions, Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Conservation Education, *Curriculum Guides, *Environmental Education, Pollution, Science Education, *Secondary Education, *Social Sciences, *Teaching Guides, Waste Disposal, Water Pollution Control, *Water Resources
This teacher's guide is for an environmental education module to integrate topics of water quality in ninth- and tenth grade social studies classes. This module was pilot tested in Gwinnett County, Georgia in 1975-76 Included in the guide are overall objectives, the module sequence, an introduction, a suggested teaching sequence, a word review game, and review and reading exercises The module sequence is divided into four parts The first part provides an introductory episode to stimulate student interest in an environmental issue concerning water The second part is designed to improve understanding of water resources and treatment The third part develops social studies concepts around examples from the county community In the fourth part, the student applies what he/she has learned to prepare a publicity project. This module is intended to go with a similar one in ninth- and tenth-grade chemistry classes (BB)

ED 157 837 SO 011 049
Indian River County Environmental Education Instructional Guide, Social Studies, Grade Nine.
Florida State Dept of Education, Tallahassee

Pub Date 75
Note—46p.; For related documents, see SO 011 046-048. Not available in hard copy from EDRS due to poor reproducibility of original document
Available from—Office of Environmental Education, Department of Education, Knott Building, Tallahassee, Florida 32304 (no fee)
EDRS. Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Biological Sciences, *Concept Teaching, *Conservation (Environment), Crime, Disease Rate, Ecology, Environment, *Environmental Education, Grade 9, Land Use, *Learning Activities, Natural Resources, Pollution, *Population Trends, Secondary Education, Social Problems, *Social Studies, Teaching Guides, Technology
The teaching guide presents social studies activities to help ninth graders learn about environmental concepts, problems, and responsibilities Based on the Indian River County environment in Florida, it is part of a series for teachers, students, and community members The introduction describes the county's geography, natural resources, endangered wildlife, and local environmental issues The main portion of the guide presents activities based on three major concepts environmental effects of population increase, impact of society's demands on finite resources, and individual responsibility for protecting the environment The activities involve study of crime and disease rates in proportion to population density, research into community air pollution problems, debate over the benefits of recycling, analysis of families' needs for goods and services which deplete natural resources, and observation of city council sessions when environmental issues are discussed Appendices present charts and maps of natural resource supply and use, and an outline of Florida school regulations concerning educational fieldtrips (AV)

ED 161 754 SE 025 244
Gallagher, James Joseph, Ed.
A Guide for Teaching Regional Environmental Planning. Final Report of Project Inservice Personnel Development: Regional Environmental Planning Workshops for Tri-County Secondary School Teachers.
Michigan State Univ., East Lansing. Science and Mathematics Teaching Center.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Sep 78
Grant—OE-G-007701356
Note—58p.; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Environmental Education, Environmental Influences, Inservice Teacher Education, *Instructional Materials, Learning Activities, Natural Resources, *Regional Planning, Resource Materials, *Secondary Education, *Teaching Guides
This guide is designed for teachers, administrators, inservice leaders, and teacher educators. Its purpose is to provide an organizational framework, material, and resources for the development of instructional plans and strategies for incorporating regional environmental planning in the secondary school curriculum The guide is divided into three major parts. The first relates the role of regional environmental planning in solving some of today's environmental problems. The second part defines and describes regional environmental planning. It covers transportation, water supply, pollution control, waste disposal, and material recycling The third part presents steps in introducing regional environmental planning into the school or community education programs. Information sources, implementation guidelines, and sample activities are included. (Author/MA)

ED 164 417 SO 011 420
The Future and Population: What Will a No-Growth Society Be Like? A Teaching Module.
Population Reference Bureau, Inc., Washington, D.C.
Pub Date—Dec 78
Note—19p.; Map in Figure 1 may not reproduce clearly due to small print type in original document
Available from—Population Reference Bureau, Inc., P.O. Box 35012, Washington, D.C. 20036 ($1.00 each, two or more copies, 50 50 each)
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Adult Education, Birth Rate, Educational Objectives, *Futures (of Society), *Global Approach, Higher Education, Instructional Materials, Learning Activities, Learning Modules, Newsletters, Planning, *Population Education, *Population Growth, Population Trends, Secondary Education, *Social Change, Social Indicators, Trend Analysis
This teaching module for high school students and adults examines the future of zero population growth in 26 countries by the year 2000 The module contains an essay for students to read, followed by exercises, activities, and discussion questions based on the essay. Objectives include understanding the components of population change, identifying important issues which may arise as societies approach zero population growth, and evaluating options involved in planning for the future. The essay explores aspects of future life in the selected countries which will probably reach zero population growth by 2000 These countries, all of which are industrialized and relatively wealthy, include Australia, France, East and West Germany, Japan, the United States, and Russia. It is hypothesized that no-growth society in these countries will produce the following large numbers of people in the older age groups and a consequent need to plan for pensions, health care, and other services, fewer opportunities for promotions in jobs but more emphasis on equality, and less pressure on energy, housing, transportation, and the environment Activities based on the essay include a crossword puzzle, small group work, role playing, and opportunities for students to describe their predictions about the future The module also includes an issue of Interchange, the Population Reference Bureau newsletter, which reports on population related matters and describes new teaching tools. (AV)

ED 166 301 UD 019 053
Johnson, Letitia K. Ryan, Michael
Ecology in Urban Education.
Spons Agency—Montana State Dept. of Public Instruction, Helena.
Pub Date—20 May 78
Grant—ESEA-77253202008E(CO)
Note—26p.
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*City Demography, Community Characteristics, *Curriculum Guides, *Ecology, *Environmental Education, *Geography Instruction, Secondary Education, Social Studies Units, *Urban Environment
In this course guide to the teaching of urban ecology, six learning activities on the following topics are outlined: (1) city location and growth; (2) an in-depth study of New Orleans; (3) city shape and structure; (4) size and spacing of cities; (5) cities with special functions; (6) local community study. Educational objectives for each activity are described. Library references, a bibliography, and possible community resources are included. Methods of learning evaluation are described. Emphasis in the curriculum design is placed on student awareness, decision making, and involvement in the local community. (WT)

ED 167 365 SE 026 732
Our U.S. Energy Future, Teacher Guide. Computer Technology Program Environmental Education Units.
Northwest Regional Educational Lab., Portland, Oreg.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Jan 78
Note—37p.; For related documents, see SE 026 733-741; Contains light and broken type particularly in computer printouts
Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland, Oregon 97204 ($3.75)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Computer Assisted Instruction, *Energy, Energy Conservation, *Environmental Education, Futures (of Society), Instructional Materials, Policy Formation, *Secondary Education, *Simulation, Social Studies
Identifiers—*Energy Education
This is the teacher's guide to accompany the student guide which together comprise one of five computer-oriented environmental energy education units This unit explores the possible effects of the thirteen main energy-related decisions proposed in President Ford's 1975 State of the Union Address The computer program at the base of the unit simulates the effects of any combination of the decisions on energy supply and consumption, on domestic production and reserves, and on pollution. This unit is designed for grades 9 through 12 and can be used in social studies or in environmental science. The teacher's guide presents: (1) unit objectives, (2) background information on the lessons or parts of the unit along with study questions, (3) notes on using the unit in class, and (4) program documentation with a sample run. (MR)

ED 167 366 SE 026 733
Our U.S. Energy Future, Student Guide. Computer Technology Program Environmental Education Units.
Northwest Regional Educational Lab., Portland, Oreg.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Oct 77
Note—30p.; For related documents, see SE 026 732-741; Contains occasional light and broken type
Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland, Oregon 97204 ($3.25)
Pub Type—Guides - Classroom - Learner (051)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Administrative Policy, *Computer Assisted Instruction, Decision Making, *Energy, Energy Conservation, Environmental Education, Futures (of Society), Secondary Education, *Simulation, *Social Studies
Identifiers—*Energy Education
This is the student guide in a set of five computer-oriented environmental energy education units. Contents are organized into the following parts or lessons. (1) Introduction to the U.S. Energy Future; (2) Description of the "FUTURE" programs; (3) Effects of "FUTURE" decisions, and (4) Exercises on the U.S. energy future. This guide supplements a computer simulation that students can use to study the effects of their energy decisions. (MR)

ED 167 367 SE 026 734
The Global Energy Situation on Earth, Teacher Guide. Computer Technology Program Environmental Education Units.
Northwest Regional Educational Lab., Portland, Oreg.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Sep 75
Note—49p.; For related documents, see SE 026 732-741; Not available in hard copy due to marginal legibility of original document
Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland, Oregon 97204 ($3.95)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Computer Assisted Instruction, *Energy, *Environmental Education, *Global Approach, Higher Education, Instructional Materials, Secondary Education, *Simulation, Social Studies, World Problems
Identifiers—*Energy Education
This is the teacher's guide to accompany the student guide which together comprise one of five computer-oriented environmental energy education units. This unit is organized around a computerized data base of information related to global energy use The data is organized on a country-by-country basis for the 53 largest countries in the world For each country data have been stored on 24 variables, such as use and production of energy, per capita income, energy reserves, and so on. Using the computer program, students are guided through a series of inquiries into the data base The data base may be expanded by the teacher These materials are designed for grades 9 through 14 and are appropriate for Social Studies and Environmental Education or Science courses This teacher's guide presents: (1) an introduction to the unit; (2) background information on the program and how to use it; (3) student exercises; (4) information sources; and (5) program listing. (MR)

ED 167 371 SE 026 738
Computer Oriented Exercises on Attitudes and U.S. Gasoline Consumption. Attitude. Teacher Guide. Computer Technology Program Environmental Education Units.
Northwest Regional Educational Lab., Portland, Oreg.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Sep 75
Note—25p.; For related documents, see SE 026 732-741; Not available in hard copy due to marginal legibility of original document
Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland, Oregon 97204 ($3.25)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—*Attitudes, *Computer Assisted Instruction, *Energy Conservation Environmental Education, *Fuel Consumption, Higher Education, *Instructional Materials, Secondary Education, Social Studies, Surveys
Identifiers—*Energy Education
This is the teacher's guide to accompany the student guide which together comprise one of five computer-oriented environmental energy education units. This unit is concerned with the attitude of people toward gasoline shortages and different steps the government could take to reduce gasoline consumption. Through the exercises, part of which make use of a computer program, students consider methods of reducing gasoline consumption, explore the attitudes of people toward these methods, learn that people's attitudes differ, and form and express their own attitudes. This unit is appropriate for social studies and environmental education courses grades 9 through 14. This teacher's guide provides a sample run of the computer program and gives suggestions for using the unit in class. (MR)

ED 167 372 SE 026 739
Computer Oriented Exercises on Attitudes and U.S. Gasoline Consumption. Attitude. Student Guide. Computer Technology Program Environmental Education Units.
Northwest Regional Educational Lab., Portland, Oreg.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Sep 75
Note—29p.; For related documents, see SE 026 732-741; Contains occasional light type
Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland, Oregon 97204 ($3.25)
Pub Type—Guides - Classroom - Learner (051)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Attitudes, *Computer Assisted Instruction, Energy, *Energy Conservation, Environmental Education, *Fuel Consumption, Higher Education, *Secondary Education, Simulation, Social Studies
Identifiers—*Energy Education
This is the student guide in a set of five computer-oriented environmental/energy education units. Contents of this guide present: (1) the three gasoline consumption-reducing options for which attitudes are to be explored; (2) exercises; and (3) appendices including an energy attitudes survey. (MR)

ED 167 374 SE 026 741
A Computer Oriented Problem Solving Unit, Consume. Student Guide. Computer Technology Program Environmental Education Units.
Northwest Regional Educational Lab., Portland, Oreg.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Sep 75
Note—48p.; For related documents, see SE 026 732-740
Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland, Oregon 97204 ($3.95)
Pub Type—Guides - Classroom - Learner (051)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Computer Assisted Instruction, Ecology, *Energy, *Environmental Education, *Higher Education, Mathematics, Problem Solving, Resource Allocations, *Secondary Education, Social Studies
Identifiers—*Energy Education
This is the student guide in a set of five computer-oriented environmental/energy education units. Contents are organized into the following parts or lessons: (1) introduction to power and energy, (2) energy consumption and supply, (3) energy conservation and distribution, (4) energy flow and the question of transportation, and (5) computer models and energy. Exercises are given with each part and students can solve these problems with a calculator or may use a computer. (MR)

ED 171 597 SO 011 277
Haupt, Arthur; Kane, Thomas T.
The Population Reference Bureau's Population Handbook.
Population Reference Bureau, Inc., Washington, D.C.
Spons Agency—Ford Foundation, New York, N.Y.
Pub Date—'8
Note—65p.; Photographs may not reproduce clearly in hard copy
Available from—Population Reference Bureau, 1337 Connecticut Avenue Avenue N.W., Washington, D.C. 20036 ($2.00)
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052) — Numerical Quantitative Data (110)
EDRS Price - MF01 PC03 Plus Postage.
Descriptors—Birth Rate, Cohort Analysis, Death, *Demography, Family Planning, *Futures (of Society), Global Approach, Higher Education, Human Capital, Infant Mortality, Instructional Materials, Migration, Migration Patterns, National Demography, *Population Distribution, *Population Growth, *Population Trends, Secondary Education, Social Influences, *Trend Analysis, Urbanization
This handbook offers information on population dynamics. The population data resource is intended for use by journalists, policymakers, teachers, high school and college students, libraries, advertising agencies, and family planning groups. The document is presented in 12 sections. Section I introduces demography, explains the purpose and scope of the handbook, and details population growth's impact on every facet of life. Section II identifies and describes measures and tools used by demographers to describe population. Sections III through X focus on age and sex composition, fertility, mortality, morbidity, nuptiality, migration, urbanization, and distribution, and population change. For each of these topics, the handbook includes background information, a glossary of population and demographic terms; illustrations, maps, graphs, and charts; and statistical analysis of selected country and state population figures. Section XI provides a glossary of 113 population terms. The final section offers a directory of population information sources. (DB)

ED 174 484 SE 028 620
Aaron, Cathy; And Others
Energy-Intensive Urban Growth and the Quality of Life. Field Test Version.
Far West Lab. for Educational Research and Development, San Francisco, Calif.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—77
Grant—G007701993
Note—268p.; For related documents, see SE 028 618-625; Contains occasional light and broken type and colored pages that may not reproduce well; Page 103 deleted due to poor reproducibility of original
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC11 Plus Postage.
Descriptors—City Planning, *City Problems, *Energy, *Environment, Environmental Education, Environmental Influences, *Land Use, Public Policy, *Regional Planning, Secondary Education, *Teacher Education, Urban Studies
Identifiers—*Energy Education
This module seeks to develop teachers' awareness and understanding of the problems of energy-intensive urban growth and its impact on quality-of-life. It seeks to develop understanding of the city as a system, understanding of quality-of-life as applied to the urban ecosystem, and skills in studying and planning for quality urban settings. It also seeks to facilitate teacher development of classroom/instructional materials focused on urban growth. (Author/RE)

ED 179 436 SO 012 129
Switzer, Kenneth A.; Mulloy, Paul T.
Global Issues: Activities and Resources for the High School Teacher.
Denver Univ., Colo. Center for Teaching International Relations., ERIC Clearinghouse for Social Studies/Social Science Education, Boulder, Colo., Social Science Education Consortium, Inc., Boulder, Colo.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—79
Contract—400-78-0006
Note—172p.
Available from—Social Science Education Consortium, Inc., 855 Broadway, Boulder, CO 80302 ($7.95)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—Civil Liberties, Conflict, Economic Development, Economics, Educational Objectives, Energy, Environmental Influences, *Global Approach, Instructional Materials, Learning Activities, Natural Resources, Secondary Education, *Social Studies Units, Teaching Methods, *World Affairs, *World Problems
The book is an introduction to teaching about contemporary global concerns in the high school social studies classroom. It contains background and lesson plans for seven units in addition to 39 reproducible student handouts, annotated lists of other good classroom resources, and a guide to sources of teaching materials on global issues. Topics covered include an introduction to the concept of global awareness, world trade and economic interdependence, global conflict and the arms race, economic development and foreign aid, environment and technology, energy and natural resources, and human rights. For each unit, two lesson plans are offered, with suggestions for topics and courses, time allotment, instructional objectives, and teaching methods for introducing, developing, and concluding the lesson. Student handouts offer materials for the learning activities such as relevant statistics and graphs, attitude tests, news media analysis, ranking nations, scenarios, discussion questions, decision-making and role-playing exercises, and case studies. Primary and supplementary sources are listed in an annotated bibliography for each unit, including materials such as books, films, simulations, games, pamphlets, and filmstrips. An appendix lists publishers of the classroom materials with their addresses. (CK)

ED 179 980 CS 205 330
Kerosek, Elizabeth Carrot; Marous, Leah Keaney
Futurism: Framework for Composition.
Pub Date—Oct 79
Note—16p.; Paper presented at the Annual Fall Conference of the New England Association of Teachers of English (Portsmouth, NH, October 19-21, 1979)
Pub Type—Guides - Classroom - Teacher (052) — Speeches/Meeting Papers (150)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Composition (Literary), Curriculum Guides, English Curriculum, *English Instruction, *Futures (of Society), Language Arts, Science Fiction, Secondary Education, Teaching Guides, Units of Study, *Writing Skills
Noting that the study of the future has been neglected within the language arts framework, this paper proposes a curriculum unit that uses such study as a vehicle to develop composition skills. The paper provides the following information: the general objectives of the unit, evaluation methods, general humanistic themes to be studied; materials; and outlines of eight lessons covering seven change agents of the future, demographic shifts, ecological shifts, cultural diffusion, space innovation, technological innovation, cultural value shifts, and information/idea shifts. (FL)

ED 180 774 SE 029 403
Gallagher, James Joseph, Ed.; Treagust, David F., Ed.
A Supplement to a Guide for Teaching Regional Environmental Planning. Resource Material Development Project: Supplemental Materials for Teaching Regional Environmental Planning in Secondary Schools.
Michigan State Univ., East Lansing, Science and Mathematics Teaching Center.
Spons Agency—Office of Education (DHEW), Washington, D.C.

Pub Date—Jul 79
Grant—G007802612
Note—106p.: For related document, see ED 161 754. Contains occasional light and broken type
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage
Descriptors—Curriculum Guides. *Curriculum Planning. *Environmental Education. Environmental Influences. *Instructional Materials. *Land Use. *Learning Activities. Models. Planning. *Regional Planning. Secondary Education
Presented is an issue-oriented approach for incorporating regional environmental planning concepts into existing secondary school curricula. Part I describes the use of an issue-oriented approach to teaching regional planning. Models for analyzing an issue are presented. Two sample units are included. Part II presents a summary of environmental planning legislation on the federal, state, regional, and local level. A detailed list of information sources is provided. Part III contains a discussion and illustration of the development of an urban study unit as a means of increasing students' sensitivity to various aspects of their environment. (Author/RE)

ED 184 861 SE 030 514
Bell, Eileen
Urban Environmental Education Project, Curriculum Module III: Urban Transportation - Where Are We Going?
Allegheny Intermediate Unit, Pittsburgh, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Jul 79
Note—75p.: For related documents, see SE 030 511-519
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Bicycling. *Class Activities. Energy. *Energy Conservation. Environment. Environmental Education. Regional Planning. *Transportation. *Urban Education. Urban Environment. *Urban Planning
Identifiers—*Energy Education
Included in this module are five activities dealing with modes of transportation in the urban environment. The activities include (1) a discussion of transportation considerations in urban areas; (2) a discussion of bikeways and their desirability in the urban environment; (3) the bikeway and the environment; (4) designing a bikeway; and (5) decision-making concerning a bikeway. Also included are an overview, teacher background information, an activity preview, and a pretest. A module evaluation form is provided. (RE)

ED 184 862 SE 030 515
Doran, Ernest B.
Urban Environmental Education Project, Curriculum Module IV: Community Heritage and You.
Allegheny Intermediate Unit, Pittsburgh, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Jul 79
Note—52p. For related documents, see SE 030 511-519.
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Community Characteristics. Decision Making. Environment. *Environmental Education. Futures (of Society). History. Interdisciplinary Approach. Local History. Middle Schools. *Secondary Education. *Social Studies. *Urban Education. *Urban Environment
Included in this module are five activities dealing with characteristics of a community resulting from its past and setting the stage for its future. Activities included are (1) geographic specification of the area; (2) search for monuments; (3) investigation of genealogy; (4) examination of traditions and change; and (5) community futures and decision-making. Also included are an overview, teacher background information, an activity preview, a pretest, and a module evaluation form. (RE)

ED 184 866 SE 030 519
Bell, Eileen
Urban Environmental Education Project, Curriculum Module VIII: Planning Your Urban Environment.
Allegheny Intermediate Unit, Pittsburgh, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Jul 79
Note—51p.: For related documents, see SE 030 511-518.
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC03 Plus Postage.
Descriptors—*Community Planning. *Decision Making. Environment. *Environmental Education. Interdisciplinary Approach. Middle Schools. Planning. *Public Policy. Regional Planning. Secondary Education. *Urban Education. *Urban Planning
Included in this module are five activities dealing with planning the urban environment. Activities included are (1) analysis of new town development in the United States; (2) analysis of new town development in foreign countries; (3) discussion of technological advances expected in the next 25 years and their impact on the urban environment of the future; (4) design of a model future urban environment; and (5) evaluation of the student-designed model urban environment. Also included are an overview, teacher background information, an activity preview, a pretest, and a module evaluation form. (RE)

ED 188 977 SO 012 670
Widutis, Florence
The Person and the Planet: A Problems Course. A Curriculum Guide.
Planetary Citizens, New York, NY.
Pub Date—80
Note—51p.
Available from—Planetary Citizens, 777 United Nations Plaza, New York, NY 10017 ($4.00)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Curriculum Guides. *Global Approach. Higher Education. *Humanistic Education. Human Relations. Individual Development. *Learning Activities. Problem Solving. *Psychology. Religion. Secondary Education. Self Concept. Self Evaluation (Individuals). Skill Development. Social Action. *Social Studies. *Teaching Methods. World Problems
The curriculum guide presents five units which explore individual growth and self-assessment and how they are related to the transformation of the world community and a resolution of its problems. The one-semester course is designed for senior high school students or college freshmen and sophomores. Objectives emphasize personality and interrelationship improvement through self-transformation, and global awareness and problem solving through use of imagination, intuition, and logical reasoning and research. The guide is presented in six chapters. Chapter I provides the introduction, discussing objectives, prerequisites, skills, teaching methods, and teacher preparation. Chapters II through VI present the five units. Unit I, Personal Growth and Human Relations, focuses on self-assessment, human relations problems, and ways to integrate the personality. Unit II, Psychology of the Higher Consciousness, emphasizes transpersonal psychology through a study of the world's religions, ethical values, meditation, and personal growth and change. Unit III, The Planet and Its Problems, suggests 15 global problems and a number of problem-solving exercises. Unit IV focuses on sharing the research and problem solving done in the previous unit through student teaching. Sections on lesson planning and evaluation criteria are included. Unit V emphasizes organizing for social action. For each unit, detailed teaching strategies are offered, with a thorough explanation of the exercises. An appendix offers suggestions for expanding the course to two semesters and a bibliography. (CK)

ED 195 396 SE 033 209
Murphy, Elaine M.
Population and Hawaii: A Case Study.
Population Reference Bureau, Inc., Washington, D.C.
Pub Date—Nov 80
Note—17p.; Contains shaded graphs which may not reproduce well.
Available from—Population Reference Bureau, 1337 Connecticut Ave., N.W., Washington, DC 20036 ($1.00 each, two or more $0.75 each).
Pub Type—Guides - Classroom - Learner (051)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Case Studies. Demography. Environmental Education. Futures (of Society). *Population Education. *Population Growth. *Population Trends. *Resource Materials. Secondary Education. *Social Studies
Identifiers—*Hawaii
Presented is background information and activities that deal with human population dynamics. Using Hawaii as an example, the unit explores population trends, demographic concepts, and some societal implications of population growth. Among the related activities provided are a crossword puzzle, graphing exercise, debate topics, and small group problem-solving experiences. Also included are suggested creative activities, a glossary, and descriptions of reference materials. (WB)

ED 199 175 SO 013 253
Thomas, John H.
Making Changes: A Futures-Oriented Course in Inventive Problem Solving. Lesson Book.
Research for Better Schools, Inc., Philadelphia, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Report No—ISBN-088280-081-7
Pub Date—81
Note—169p.
Available from—ETC Publications, P.O. Drawer 1627-A, Palm Springs, CA 92263 ($8.95)
Pub Type—Guides - Classroom - Learner (051)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Critical Thinking. *Decision Making Skills. *Futures (of Society). Global Approach. *Learning Activities. *Problem Solving. Secondary Education. Social Studies. Units of Study. World Problems
This textbook-workbook for secondary school students is designed to stimulate inventive problem solving of future world problems. It is organized into four units and contains 23 lessons. Unit I defines the nature of the course and provides methods for stating and defining problems, brainstorming, working in groups, and judging ideas. Unit II discusses methods for forecasting the future and determining accelerating trends, and focuses on solutions. Unit III focuses on analogies as a means to problem solving. Unit IV presents a "Future Wheel" which is a method of looking for possible consequences and needs that might result from an event or development. Each lesson lists objectives, contains numerous illustrations, and is activity oriented. Students learn to construct checklists and matrices for problem solving. Activities include finding solutions to school vandalism, controlling forest fires, designing uses for old airplanes, wave pipe and mattresses, and designing solar and underground housing units and a special windmill to meet the needs of a farm family. The final lessons focus on a class-wide activity, Project Vista, a planned community for which students design housing and sit on committees for the environment, education, work, and health and welfare. (KC)

ED 200 279 [illegible]
Blanchard, Hazel
A Teacher's Guide to Setting Up a Futures Studies Course.
Pub Date—28 Jan 81
Note—13p.; Paper presented at the Educational Alternatives for a Changing Society Conference (Miami, FL, January 27-30, 1981).
Pub Type—Guides - Non-Classroom (055); Speeches/Meeting Papers (150); Reference Materials - Bibliographies (131)
EDRS Price - MF01 PC01 Plus Postage.
Descriptors—Course Content. Course Objectives. *Courses. *Futures (of Society). Postsecondary Education. Relevance (Education). Secondary Education. Teaching Methods
Given the increased popular and academic interest in futuristic topics, interested instructors should prepare for teaching futures studies courses. In doing so, teachers can begin by acquainting themselves with relevant literature and by participating, if possible, in the activities of the World Future Society and other organizations devoted to futures topics. After this exposure to futuristic themes, the instructor can incorporate futuristic content into their current courses, keeping in mind five general principles: (1) the challenges of the future are in part determined by present trends; (2) futures studies involve the use of scenarios and other forecasting tools; (3) the complicated challenges of the future require creative problem-solving; (4) each individual can influence the future by his/her present actions; and (5) in studying the future, the in-

dividual must become socialized to others' perspectives and values. Course content should involve a general thematic examination at the secondary level and an examination of forecasting techniques at the postsecondary level. Course objectives should aim at enabling students to become conscious of future problems, to think in the future tense, and to plan for and achieve scenarios of the future. These objectives can be achieved through seminars and simulation exercises. (Selected student responses to a futures course and a 56-item bibliography are included.) (JP)

ED 200 414 SE 034 457
Pennsylvania's Energy Curriculum for the Secondary Grades: Social Studies.
Pennsylvania State Dept. of Education, Harrisburg.
Spons Agency—Pennsylvania State Governor's Energy Council, Harrisburg.
Pub Date—80
Note—73p. For related documents, see SE 034 450-456.
Pub Type— Guides - Classroom - Teacher (052) — Reference Materials (130)
EDRS Price - MF01 PC03 Plus Postage.
Descriptors—Community Action, Current Events, *Energy, *Environmental Education, Global Approach, Secondary Education, *Social Studies, *Technological Advancement, Technology, Values Clarification
Identifiers—Alternative Energy Sources
The crux of energy-related issues goes beyond technological matters to the political, economical, cultural, geographical, and historical aspects of human society. Accordingly, this manual presents background information and lessons that are designed to help secondary school social studies classes examine several facets of energy problems and solutions. Unit I, Pumping Iron, looks at energy from an historical perspective in an effort to identify some causes and effects. The next unit, Energy Alternatives Today, raises political and economical issues on the local and national levels. Unit III, A Global Perspective, is devoted to worldwide implications, while the final section, The Local Community as a Model, aims at personal and civic action. Numerous maps, charts, and diagrams illustrate the written material. (Author/WB)

ED 202 717 SE 035 144
Fortner, Rosanne; Parker, Ray
Shipping: The World Connection. Student Guide and Teacher Guide. OHIOGLS Investigation 12.
Ohio State Univ., Columbus. Research Foundation.
Spons Agency—National Oceanic and Atmosphere Administration (DOC), Rockville, Md.
Pub Date—Dec 80
Grant—NOAA-04-8-M01-170, NOAA-04-158-44099, NOAA-NA-79AA-D-00120
Note—32p., For related documents, see SE 035 140-155 and ED 179 352-358. Prepared in collaboration with the Ohio Sea Grant Program.
Available from—Ohio Sea Grant Education Office, 283 Arps Hall, Ohio State Univ., 1945 N. High St., Columbus, OH 43210 ($1.00 plus $1.00 per order for shipping).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC02 Plus Postage.
Descriptors—*Business, *Economics, *Exports, *Geography, Global Approach, *International Relations, Oceanography, Science Education, *Secondary Education, Social Studies, *Water Resources
Identifiers—Great Lakes, *Oceanic Education Activities Great Lakes Schools, Ohio Sea Grant Program, *Shipping Industry
This unit investigates through three activities the importance of the Great Lakes in international trade. A student workbook and a teaching guide are provided. Included in the teacher's manual are an overview of the unit, a materials list, objectives, teaching suggestions, evaluation items, and answer keys to student activities. In the first lesson students identify the imports, exports and countries involved in shipping through the Port of Toledo, Ohio. The other activities consist of constructing a working model to study how a series of locks operates, and completing a crossword puzzle of shipping terms. (Author/WB)

ED 202 726 SE 035 153
Schlarb, Karin V.; Mauer, Victor J.
Shipping on the Great Lakes. Student Guide and Teacher Guide. OHIOGLS Investigation 21.
Ohio State Univ., Columbus. Research Foundation.
Spons Agency—National Oceanic and Atmosphere Administration (DOC), Rockville, Md.
Pub Date—Mar 80
Grant—NOAA-04-8-M01-170, NOAA-04-158-44099, NOAA-NA-79AA-D-00120
Note—32p., For related documents, see SE 035 140-155 and ED 179 352-358. Prepared in collaboration with the Ohio Sea Grant Program.
Available from—Ohio Sea Grant Education Office, 283 Arps Hall, Ohio State Univ., 1945 N. High St., Columbus, OH 43210 ($1.00 plus $1.00 per order for shipping).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC02 Plus Postage.
Descriptors—*Economics Education, Energy Conservation, Environmental Education, *Geography, Map Skills, Mathematics Education, Secondary Education, *Social Studies, *Transportation, *Water Resources
Identifiers—Great Lakes, *Oceanic Educational Activities Great Lakes Schools, Ohio Sea Grant Program, *Shipping Industry
Presented in this unit are three activities designed to illustrate the importance of the Great Lakes in transporting cargo. Students first determine the movement of various materials shipped from selected ports. They then compute from map measurements the distances and relative costs of transporting different cargoes via water, rail and truck. Finally, students compare the energy efficiency and environmental implications of these three modes of transport. Included are a list of objectives, an answer key, teaching recommendations, and evaluation items. A student workbook is also provided. (Author/WB)

ED 202 765 SO 013 376
U.S. Population Data Teaching Package.
Population Reference Bureau, Inc., Washington, D.C.
Pub Date—Mar 81
Note—26p.
Available from—Population Reference Bureau, Inc., P.O. Box 35012, Washington, DC 20013 ($2.00 per single copy, 2 or more, $1.75 each, add 50 $0 postage on orders of $5.00 or less).
Pub Type— Guides - Classroom - Teacher (052) — Guides - Classroom - Learner (051)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Census Figures, Charts, Demography, Map Skills, *Population Education, Population Growth, Population Trends, Resource Materials, Secondary Education, Statistical Data
This document contains teaching materials on the 1980 census data for use with secondary level students. The primary objective of the materials is to give students a statistical snapshot of their country as it is today after a decade of change. They will also help students develop skills in analyzing maps and charts. The materials consist of the newsletter "Interchange," a United States Population Data Sheet, and a set of four student information sheets. The newsletter contains teacher instructions, a pretest-posttest, and five discussion questions. The newsletter also contains a few articles on population education. The U.S. Population Data Sheet is a chart of statistics for the nation as a whole and each of the four regions, nine divisions, states, and the District of Columbia. Along with recently released population totals as of Census Day, April 1, 1980 are: comparisons with 1970; projections for 1980, latest birth, death, and infant mortality rates, migration and immigration figures, per capita income, racial composition; population density, and percent of elderly. The student information sheets consist of an essay describing the major population trends of the 1970s and a map of the U.S. showing percent of population increase or loss for each state. Questions on the map and a set of exercises to help students analyze the statistics on the Data Sheet are included on the student information sheets. (Author/RM)

ED 207 859 SE 035 781
Clark, Richard C., Ed.
A Portfolio of Energy Ideas: Social Studies.
Minnesota State Dept. of Education, St. Paul.
Spons Agency—Minnesota State Dept. of Natural Resources, St. Paul. Environmental Education Board, Minnesota State Energy Agency, St. Paul.
Pub Date—Jan 81
Note—93p.; For related document, see SE 035 780. Contains occasional colored pages which may not reproduce well.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Activity Units, Conservation Education, Elementary Secondary Education, *Energy, Energy Conservation, *Environmental Education, *Social Problems, *Social Studies, *Teaching Guides, *Units of Study
Identifiers—*Energy Education
Presented are 12 social studies units which examine current energy issues and present energy dilemmas for careful study and reflection. The activities emphasize: (1) a range of teaching strategies; (2) problem identification, problem solving, and problem analysis; (3) futures education, (4) students as active learners, and (5) consideration of the thoughts, feelings, and attitudes which the energy situation evokes. These teacher-oriented materials include an overview of each unit, background information, teaching strategies, follow-up activities, evaluation questions, resource materials, and other useful information. Students use brainstorming, large and small group discussion, questionnaires, values clarification techniques, and other similar strategies to examine different energy-related issues. Some of these include lifestyles, social obstacles, laws, media, conservation, energy dependency, alternative energy sources, and regulations. (Author/DC)

ED 212 519 SO 013 809
Global Education. Curriculum Handbook. Social Studies.
Livonia Public Schools, Mich. School of Global Education.
Spons Agency—Department of Education, Washington, D.C.
Pub Date—81
Note—47p.; For a related document, see CS 206 657.
Pub Type— Guides - Classroom - Teacher (052) — Reports - Descriptive (141)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Course Descriptions, Educational Objectives, *Global Approach, *History Instruction, *Humanities Instruction, *Interdisciplinary Approach, Learning Activities, Literature, Resource Materials, Secondary Education, *Social Studies, United States History, World Affairs, World History, World Problems
This handbook outlines three courses with a global approach which have been implemented in the Livonia Public Schools, Livonia, Michigan. Existing global realities--the growing interdependence of nations and peoples, the depletion of nonrenewable resources, and the ominous world food problem--make it imperative that schools teach global studies. The first course focuses on world history and explores the chronological development of man and civilization from his primitive beginnings to his present complex world, with emphasis on global interdependence and its many facets. The second course deals with U.S. history, showing the merger of many diverse people and cultures and the resultant change from a traditional society to a modern society. Also, it compares this growth to show our dependence/interdependence politically, economically, and socially from/to traditional and modern societies in other parts of the world. The third course examines specific global issues of the teacher's choosing. Each of the three outlines contains a brief description of the course, general objectives, and suggested materials. Unit outlines indicating specific objectives, and sample activities are then provided for each course. The many and varied activities involve students in reading and discussing literature, making outlines, conducting research, listening to guest speakers, taking field trips, constructing maps, writing papers, viewing audiovisuals, and presenting dramas. (Author/RM)

ED 215 863 SE 037 047
Energy Use and the Environment. Concepts & Activities for the Classroom: Secondary Social Studies Module.
Hawaii State Dept. of Education, Honolulu. Office of Instructional Services.
Pub Date—Jun 80
Note—255p., Contains colored pages which may not reproduce well.

Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC11 Plus Postage.
Descriptors—*Conservation Education, *Energy, *Energy Conservation, *Environmental Education, Interdisciplinary Approach, *Learning Activities, Secondary Education, *Social Studies, Teaching Guides
Identifiers—*Energy Education, Hawaii

As part of a comprehensive, interdisciplinary environmental education program for elementary and secondary education in Hawaii, this teaching guide provides a variety of energy education activities for secondary social studies. An extensive introduction outlines the total program and how it fits into the general education program. It explains how to use the teaching guide, which is organized around 15 core themes: energy fundamentals, evolution of energy, energy today, conservation, human dimensions, alternatives, storage and transmission systems, environmental and ecological considerations, cost, energy versus population versus food, interdependence, self-sufficiency, appropriate technology, and future perspectives. Background information is provided for each theme with related objectives and concepts. In addition, a list of activities and vocabulary is given. Some of the suggested activities are presented in an elaborate form indicating subject, grade, themes, objectives, concepts, competencies, other related objectives, materials, and activity with follow-up procedures. A bibliography concludes the manual. (DC)

ED 216 369 CS 206 897
Swift, Jonathan
Global Education: Fantasy, Reality, and the English Class.
Pub Date—Jun 80
Note—22p.
Pub Type— Guides - Classroom - Teacher (052) — Reports - Descriptive (141)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Cultural Awareness, *Curriculum Development, *English Curriculum, English Instruction, *Global Approach, Integrated Activities, *Integrated Curriculum, *Interdisciplinary Approach, Language Arts, Multicultural Education, Program Descriptions, Secondary Education

Global education aims to increase student awareness of cultural, political, and economic interdependence in the world of the past, present, and future. For a number of reasons, many English teachers regard global education as part of the social studies curriculum. However, global education also should be part of the English curriculum because (1) the field of English is so broad that no attempt to organize or relate the subdisciplines can be without merit; (2) facility in language is fundamental to every discipline; (3) literature is a reflection of the universal problems, values, and activities of all humankind; (4) the skills of reading, writing, speaking, and listening can be taught in many contexts of usage; (5) the benefits of comparative approaches in literature, humanities, and languages are potentially even greater than hitherto represented; (6) divergent points of view can be fostered especially well in the English classroom; and (7) myths, symbols, metaphors, translations, and forms of expression are all culture oriented. A multidisciplinary approach to global education developed by the Livonia Public School District in Michigan offers students three sequences. The first sequence deals with the deep past from the creation of the cosmos to the middle ages in human history; the second sequence concerns the present—the discovery and colonization of the United States in relation to the rest of a developing world; and the third sequence deals with the skills, attitudes, and facts needed to face a future filled with alternatives. (HOD)

Elementary/Middle/Secondary

ED 046 826 SO 000 538
Stegner, Robert W
Characteristics of a Model K-12 Population Education Program.
Pub Date 24 Nov 70
Note—10p. Paper presented at the College and University Meetings, National Council for the Social Studies, New York, New York, November 24, 1970
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Conceptual Schemes, *Curriculum Development, Curriculum Planning, Educational Needs, Elementary Grades, *Environmental Education, *Interdisciplinary Approach, *Problem Solving, Program Descriptions, Secondary Grades, Sex Education
Identifiers—Ecosystem, *Population Education
The population Curriculum Study of the University of Delaware proposes a school program to develop a comprehensive knowledge and understanding of man in his environment. The central theme of the Population-Curriculum Study is: MAN IS PART OF A NATURAL SYSTEM, AND IS ULTIMATELY SUBJECT TO THE LIMITS OF THE SYSTEM! We are thinking of population education not merely as training to bring about a decline in the population growth rate but rather as the central theme of the entire educational enterprise, encompassing the needs and behavior of man, his population and his environment, and the interactions of these forces. Using this definition, many aspects of population education can already be identified in existing school programs. Existing curricula have a good deal of content that is related both directly and indirectly to population-environment studies, which can be used without disruption of existing programs. To prepare a population-environment education program under these circumstances the first need is a conceptual scheme outlining the concepts needed to understand population-environment problems. The program built on this conceptual scheme should be K-12, multidisciplinary, and problem-solving in approach. Obviously, we cannot solve our population problems in the schools, but the schools can help students to attain concepts of the natural systems, for democratic decisions. (Author/SLD)

ED 080 349 SE 016 525
Hershey, John T., Ed And Others
A Curriculum Activities Guide to Population and Environmental Studies.
Project KARE, Blue Bell, Pa
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 73
Grant—OEG-0-72-5105
Note—197p
Available from—Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, Ohio 44106
EDRS Price MF-$0.65 HC-$6.58
Descriptors—*Curriculum Guides, Elementary Grades, *Environmental Education, Instructional Materials, *Learning Activities, Perception, *Population Education, *Problem Solving, Secondary Grades, Student Research
This book is the second in a series of four books emphasizing student-oriented problem solving related to environmental matters. It is divided into three activity levels: awareness, transitional, and operational. The activity sequence is designed to motivate students toward a concern for environmental quality, take action related to particular problems or concerns and provide background for in-depth, on-going problem investigations. Population awareness is developed through study of (1) density, distribution, and diversity, (2) food, clothing, and shelter, and (3) political and social factors. Process-skills emphasize observation, data collection, data recording, and making inferences and predictions based on recorded observations. Each activity identifies the situation and notes open-ended questions, equipment needed, procedure, past students, limitations and a biography. Transitional activities focus on real problems of the community and extend those of the first level in each of the three study areas. Economic, political, social, scientific, technological, aesthetic, and legal factors are considered. Activity format is the same. Operational activities are an outgrowth of the first two levels. Four approaches to problem solving are presented. They are simulation, contract projects, debating, and modeling situations. Related documents are SE 016 524 and SE 016 614. (BL)

ED 106 055 SE 016 960
Our Man-Made Environment, A Collection of Experiences, Resources and Suggested Activities.
Group for Environmental Education, Philadelphia, Pa
Pub Date Sep 71
Note—59p
EDRS Price MF-$0.76 HC-$3.32 PLUS POSTAGE
Descriptors—*Conservation Education, Educational Resources, Elementary Secondary Education, *Environmental Education, Instructional Materials, Metropolitan Areas, *Natural Resources, Science Education, *Teaching Guides, *Urban Environment
This collection of activities, experiences, and resources focuses on the man-made environment. The activities and resources were compiled to facilitate a program based upon the teacher's and student's own living experiences in their own environment. The goals of the program are to develop the individual's awareness of his environment and subsequently his understanding of it and to instill confidence in his ability to judge the environment, hence enabling him to control and change it. An introduction, suggested activities, a collection of teaching experiences, an introductory list of resources, and a recommended library are included. The introduction contains a description of the program, concepts and implementation strategies. The activities are directed toward the discovery of the world as a purposeful environment and include measuring, photography, and discussion. The collection of experiences is ideas and activities which evolved while implementing the program. A list of resources, including audio-visual aids, maps, newspapers, periodicals and books, plus a recommended library, complete the booklet. (Author/TK)

ED 114 269 SE 019 346
Enksen, Aase Messina, Judith
Learning About the Built Environment.
Educational Facilities Labs., Inc., New York, N.Y.; National Association of Elementary School Principals, Washington, D.C.
Spons Agency—Rockefeller Foundation, New York, N.Y.
Pub Date 74
Note—88p.; Printed in blue ink, occasional marginal legibility
Available from—National Association of Elementary School Principals, 1801 North Moore Street, Arlington, Virginia 22209 ($3.00)
EDRS Price MF-$0.76 Plus Postage. HC Not Available from EDRS.
Descriptors—Curriculum Development, *Elementary Secondary Education, *Environmental Education, Interdisciplinary Approach, *Learning Activities, *Physical Environment, Reference Materials, Resource Materials, Teaching Guides, *Urban Environment
This publication is a catalogue of resources addressed specifically to school teachers. The essence of the man-made environment is what man builds--cities, streets, houses, parks, and the spaces that connect them. Thus, the focus of the materials in this sourcebook is on what man builds, why he builds, how he builds, and how he and the environment affect one another. Included are interdisciplinary materials for use in both elementary and secondary schools. Section I contains information on reference material for the teacher in developing and conducting a program on the built environment--teacher guides, resource and training centers, and background materials. The second section describes learning resources for use in and out of the classroom. Included are materials that pertain specifically to the built environment and other more comprehensive programs which give a thorough treatment of the built environment as an essential component of the total environment. The third section contains descriptions of some current projects on the environment for which no curriculum materials are available but which may provide additional teaching and learning suggestions. (BT)

ED 119 962 88 SE 020 014
Man's Impact on the Environment: The Barrier Beach as an Ecosystem, Update.
Brevard County School Board, Cocoa, Fla
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [75]
Note—134p.; For the Pilot Test Edition, see ED 106 076. Related documents are SE 020 015-017. Photographs and newspaper examples used may reproduce marginally
Available from—The slides described in the abstract are available from ERIC/SMEAC, The Ohio State University, 1200 Chambers Road, 3rd Floor, Columbus, Ohio 43212 (on loan)
EDRS Price MF-$0.83 HC-$7.35 Plus Postage
Descriptors—Conservation Education, *Ecology, *Environmental Education, *Instructional Materials, Learning Activities, *Oceanology, Science Education, Science Materials, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This environmental education program emphasizes the cause and effect of change in a barrier beach ecosystem with special attention given to man and his role in environmental change. Concepts are employed from the natural and social sciences to investigate environmental problems. The units are designed around these questions: (1) What is an ecosystem?, (2) What is a description of the ecosystem being investigated?, (3) What are some of the biotic and abiotic features of the ecosystem and how do these features interrelate?, (4) Where are some specific locations of the ecosystem being investigated?, (5) What biotic and abiotic features in the ecosystem have changed and are undergoing change?, (6) What are the natural factors causing change in the ecosystem and how have they been brought about?, (7) What are the man-made factors causing change in the ecosystem and how have they been brought about?, (8) What are the results of the changes?, (9) What, if any, new changes are needed in the ecosystem?, and (10) How might these needed changes to the ecosystem be brought about? The units are inquiry oriented and contain learning activities, resources, evaluation techniques, and teacher suggestions for implementation of the program. Readings, maps, and other handouts are given for learner use. Slides with descriptions are included. (Author/MR)

ED 119 963 88 SE 020 015
Man's Impact on the Environment: The City as an Ecosystem.
Brevard County School Board, Cocoa, Fla
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [75]
Note—180p.; For related documents, see SE 020 014-017. Newspaper examples used may reproduce marginally
EDRS Price MF-$0.83 HC-$10.03 Plus Postage
Descriptors—Conservation Education, *Ecology, *Environmental Education, *Instructional Materials, Learning Activities, *Population Education, Science Education, Science Materials, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This environmental education program emphasizes the cause and effect of change in a city ecosystem with special attention given to man and his role in environmental change. Con-

cepts are employed from the natural and social sciences to investigate environmental problems. Unit activities are inquiry oriented and answer these questions: (1) What is an ecosystem?, (2) What is a description of the ecosystem being investigated?, (3) What are some of the biotic and abiotic features of the ecosystem and how do these features interrelate?, (4) Where are some specific locations of the ecosystem being investigated?, (5) What biotic and abiotic features in the ecosystem have changed and are undergoing change?, (6) What are the natural factors causing change in the ecosystem and how have they been changed?, (7) What are the man-made factors causing change in the ecosystem and how have they been brought about?, (8) What are the results of the changes?, (9) What, if any, new changes are needed in the ecosystem?; and (10) How might these needed changes to the ecosystem be brought about? Questions 6-8 are answered through population, water supply, and air pollution activities. The teacher's guide also contains resources, evaluation techniques, and teacher suggestions for program implementation. Readings, maps, and other handouts are given for learner use. (Author/MR)

ED 120 054 SO 008 956

Wolfe, Robert, Ed

World Hunger Crisis Kit. Hope for the Hungry.

World Without War Publications, Chicago, Ill.

Pub Date Nov 75

Note—81p.; Some pages of the original document are copyrighted articles and therefore not available. They are not included in the pagination.

Available from—World Without War Publications, 110 South Dearborn, Chicago, Illinois 60603 ($1.50, 40 percent discount for 10 or more)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Developing Nations, Economic Disadvantagement, Elementary Secondary Education, *Food, *Global Approach, *Hunger, Instructional Materials, Resource Materials, Social Studies, *World Problems

This booklet introduces the problem of world hunger and provides information, facts, and perspectives about the crisis. Section one presents the reader with the basic facts of the hunger crisis through a self-survey, a statistical study of the developed Oil Producing Export Countries (OPEC), and a one-page indication of what one would have to give up to move from an American suburb to the fourth world. Section two gives contending perspectives on the problem. These selections help the reader understand the current argument for and against action, while section four presents a wide range of substantive and specific legislative proposals now being considered as aids in resolving the crisis. The kit concludes with a number of resources which can help individuals, organizations, or classes become more aware of this global problem. (Author/DE)

ED 142 481 SO 010 184

Education for a Global Society: A Resource Manual for Secondary Education Teachers.

Jane Addams Peace Association, Philadelphia, Pa.; Women's International League for Peace and Freedom, Philadelphia, Pa.

Note—53p.; Not available in hard copy due to marginal legibility of original

Available from—Jane Addams Peace Association, 1213 Race Street, Philadelphia, Pennsylvania 19107 ($2.50 paper cover)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—*Bibliographies, Ecological Factors, *Environmental Education, Films, *Global Approach, Human Geography, Human Relations, International Education, *Peace, *Resource Guides, Secondary Education, *Social Problems

Over four hundred books, articles, and resource materials on the topic of global education are identified in this resource manual. It is designed for secondary school teachers to use in selecting reading and audio-visual resources to supplement courses with a global approach. Approximately 90% of the entries have been published since 1970. Material is arranged under four main headings called "world order values," which are seen to be the antitheses of major problems which bring stress, conflict, and human suffering to the world society. The four world order values are peace, economic equity, social justice, and ecological balance. Within each of the four content sections, entries are further characterized as books, articles, or resource materials. Most of the resource materials are films, which include information about length and color or black white. Entries are listed alphabetically by author. Additional bibliographic information is given on title, publisher and date. The guide concludes with additional lists of 40 related resource manuals and bibliographies, 67 periodicals which provide information on education for global interdependence, 102 agencies involved in concerns of peace and justice, and publishers' addresses for entries in the main section. (AV)

ED 155 069 95 SO 010 422

Your State in the World. Experimental Edition.

Social Studies Development Center, Bloomington, Ind.

Spons Agency—Council of Chief State School Officers, Washington, D.C.; Office of Education (DHEW), Washington, D.C.

Pub Date [76]

Note—167p.; Pages 61, 63, 77, 84-5, 108, 137-8, 149-204 of the original document are copyrighted and therefore not available. They are not included in the pagination. Not available in hard copy from EDRS due to variety in type size and ink density of original document

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Business, Community Involvement, *Community Role, *Cultural Awareness, Curriculum Development, Economic Factors, Elementary Secondary Education, Ethnicity, *Global Approach, Instructional Materials, Learning Activities, Map Skills, Relationship, Skill Development, *Social Studies, Student Participation, Teaching Methods, *Units of Study, World Affairs

The goals of the 30 activities in this booklet are to help students become aware and to understand the increasing interdependence of nations in modern society. Three introductory sections explain how the pamphlet can be used by department chairpersons and by state education department personnel, as well as by social studies teachers. For example, department chairpersons might use the activities as in-service training units for teachers. Each activity is self-contained, with objectives, materials, and suggested teaching procedures. They represent a range of levels of difficulty and topics. Students are involved in identifying imported household products, ethnic restaurants in their own town, local business firms involved in foreign trade, and international links of local civic, religious, and service organizations. In other activities, students interview foreign exchange students and immigrants. Several activities explore international problems such as unequal production and consumption of economic products such as coffee and oil. Most of the activities encourage development of student skills in research, map reading, language arts, and interpreting data. Concluding sections explain how to develop additional activities and list sources of information, materials, and services. (AV)

ED 156 593 SO 011 001

Lawa, Kevin

Changing Land Use: Peachtree Street, Atlanta. A Case Study in Sequent Occupance [And] Student Work Book.

Georgia Univ., Athens. Geography Curriculum Project.

Pub Date Jan 78

Note—157p.; For related documents, see SO 011 002-003. Figures 10, 12, 17-40 (many photographs) may not reproduce clearly in hard copy

Available from—Geography Curriculum Project, 107 Dudley Hall, University of Georgia, Athens, Georgia 30602 ($3.00 set, paper covers, 15% discount 20 sets or more)

EDRS Price MF-$0.83 HC-$8.69 Plus Postage.

Descriptors—Case Studies, Change Strategies, Communication (Thought Transfer), *Community Change, Economic Education, Elementary Secondary Education, Geographic Concepts, Geography, *Geography Instruction, History Instruction, Human Geography, Instructional Materials, Land Settlement, *Land Use, *Local History, Population Trends, Social Change, *Social History, Social Structure, *Social Studies Units, Technology, Transportation, Trend Analysis, United States History

Identifiers—*Georgia (Atlanta)

A social studies unit and student workbook explore the historical geography of the area of Peachtree Street in Atlanta, Georgia. The unit deals with sequent occupance, a type of historical geography in which students study the same area, the changes in culture, and the changing land use in the area during certain time periods. For each period, students examine developments in technology, social organization, economy, population, settlement pattern, and transportation and communications. Chapter I explores Indian prehistory and early history in the Atlanta area. During this period, nomadic hunting of large animals gave way to settled cultivation of crops and hunting of local small game. Chapter II characterizes Indian life prior to European contact as including cultivation of corn and alteration of the physical environment by fire to expand villages and fields. Chapter III shows how contact with Europeans led the Indians to become dependent upon trade with white men and to ignore crop cultivation. Chapter IV explores pioneer white settlement from 1821-1860. The first settlers in the Atlanta area lived by subsistence farming. The area grew quickly once a railroad terminus was established there. Chapter V reviews growth of the Peachtree Street area from 1860-1920. The period saw industrial growth, destruction during the Civil War, and reconstruction into a commercial and residential street. Chapter VI explains how stores, offices, and apartments took over Peachtree Street during 1920-1977. The student workbook contains activities and questions to enhance student comprehension of each chapter. (AV)

ED 156 594 SO 011 002

Lawa, Kevin

Changing Land Use: The Fens of England. A Case Study in Land Reclamation [And] Students Work Book.

Georgia Univ., Athens. Geography Curriculum Project.

Pub Date Apr 78

Note—131p.; For related documents, see SO 011 001-003. Picture following title page and figures 1, 2, 6-15, 18, 20, 22-23 (some photographs) may not reproduce clearly in hard copy

Available from—Geography Curriculum Project, 107 Dudley Hall, University of Georgia, Athens, Georgia 30602 ($3.00 set, paper cover, 15% discount 20 sets or more)

EDRS Price MF-$0.83 HC-$7.35 Plus Postage.

Descriptors—*Agriculture, Area Studies, Case Studies, *Change Strategies, Conservation (Environment), Economic Education, Elementary Secondary Education, Foreign Countries, Geographic Concepts, Geography, *Geography Instruction, History Instruction, Instructional Materials, Land Settlement, *Land Use, Local History, *Physical Environment, Population Trends, *Social Studies Units, Soil Science, Technology, Transportation, United States History, Water Resources

Identifiers—*England

A social studies unit and student workbook explore changes in land use that have occurred in the Fenlands of England since the time it was first inhabited. Fens are lowlying land which is partially or completely covered with water. The English Fens are located on the eastern side of the British Isles and cover a total area of about 2,000 square miles. Chapter I reviews the nature and uses of the Fens during pre-Medieval times, from the Stone Age through Roman conquest and Danish invasions. During this time, land use in the Fens changed from infrequent visits by people to gather fuel and to catch fish and birds, to a settled existence combining cultivation and grazing. Chapter II explains that during the Middle Ages, monasteries controlled land use in the Fens, and the economy was based upon native products (peat and reeds) and agricultural products. Some reclamation and drainage was carried out, financed by the monasteries. Chapter III shows how large scale reclamation was undertaken from 1700-1850. Drainage and subsequent lowering of the land surface resulted in flooding problems, which pumping technology partially solved. Chapter IV examines modern times in which the Fens have become one of the richest farming

areas in England with a highly developed transport system for moving produce. The student workbook contains activities and questions to enhance student comprehension of each chapter. (AV)

ED 156 595 SO 011 003
Laws, Kevin
Changing Land Use: The Back Lachlan District of Australia. A Case Study of Land Use in a Semi-Arid Area [And] Student Work Book.
Georgia Univ., Athens. Geography Curriculum Project.
Pub Date May 78
Note—134p.; For related documents, see SO 011 001-002; Figures 1-4, 6-8, 14-16, 18-20, 22 (some photographs) may not reproduce clearly in hard copy
Available from—Geography Curriculum Project, 107 Dudley Hall, University of Georgia, Athens, Georgia 30602 ($3.00 set, paper cover, 15% discount 20 sets or more)
EDRS Price MF-$0.83 HC-$7.35 Plus Postage.
Descriptors—Animal Science, Area Studies, Case Studies, *Change Agents, Climatic Factors, Conservation (Environment), Economic Education, Elementary Secondary Education, Foreign Countries, Geographic Concepts, Geography, *Geography Instruction, History Instruction, Instructional Materials, Land Settlement, *Land Use, Livestock, Local History, *Physical Environment, Population Trends, *Social Studies Units, Technology, Transportation, Water Resources
Identifiers—*Australia
A social studies unit and student workbook explore changes in land use that have occurred over time in a semiarid area of eastern Australia, the Back Lachlan District (Part of the "outback," the District consists of a huge level plain with low rainfall, only one river, and vegetation ranging from timber to grass and shrub. Chapter I elaborates on its physical characteristics. Chapter II explains that it was inhabitated by Aborigines from 30,000 years ago until the 19th century. They roamed in small nomadic groups, looking for edible plants and animals, camping near water. They had a Stone Age technology. Chapter III characterizes the white pioneer grazing stage from 1820-1866 as a period of increasing cattle grazing. Graziers moved cattle into the District from northern breeding areas to use it as a fattening area before the stock was driven south to market. Chapter IV relates a stage of deteriorating environmental conditions from 1866-1900 due to overgrazing sheep raising replaced cattle grazing, expensive technological apparatus were required, operating costs increased, rabbits overran the land, and the human population decreased. Chapter V describes 20th century subdivision of the sheep-raising properties into smaller single-family farms. The government has introduced controlled stocking policies to prevent further environmental deterioration. The student workbook contains activities and questions to enhance student comprehension of each chapter. (AV)

ED 159 106 SO 011 119
Global Education Guidelines.
Michigan State Dept. of Education, Lansing.
Pub Date [77]
Note—75p.; Not available in hard copy from EDRS due to poor reproducibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Annotated Bibliographies, Classroom Materials, *Curriculum Development, Definitions, Elementary Secondary Education, *Global Approach, *Guidelines, Interdisciplinary Approach, Objectives, Resource Materials, World Affairs, World Problems
This publication provides guidelines to help school districts in Michigan initiate or strengthen global education programs. A definition of and rationale for global education are included in part I. Global education is defined as a lifelong growth in understanding, through study and participation, of the world community and the interdependency of its people and ecological, social, economic, and technological systems. Part 2 lists the goals of a global education program. An interdisciplinary approach is highly encouraged. A brief discussion of implementation, with an emphasis on school community interaction, is [illegible] in Part 3. Part 4 contains criteria for program development. The last part contains a bibliography of global education resources. The bibliography, which comprises about half of the publication, cites teacher resource material, and print and non-print materials for classroom use at all levels. (Author/RM)

ED 160 528 SO 011 218
Fowler, Kathryn Mercuri
Population Growth: The Human Dilemma, An NSTA Environmental Materials Guide.
National Science Teachers Association, Washington, D.C.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—77
Note—93p.
Available from—National Science Teachers Association, 1742 Connecticut Avenue, N.W., Washington, D.C. 20009 ($3.50 paper copy)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Annotated Bibliographies, Birth Rate, Elementary Secondary Education, *Environmental Education, Films, Futures (of Society), Global Approach, Immigrants, Instructional Materials, Migration, Politics, *Population Education, *Population Growth, Reading Materials, Resource Guides, Teacher Education, Urbanization, World Problems
This annotated bibliography lists more than 100 books about population growth. The books are intended for students in kindergarten through grade 12 and their teachers. The books were selected on the basis of their appropriateness to the interests of classroom teachers and students, and on the basis of readability and accuracy. Most were published during the late 1960s or 1970s. Parts I and II present resources for teachers and high school students, respectively. Entries are grouped in the following categories: basic general references, world population, population of the United States, people on the move (urbanization, migration, immigration), fertility control, consequences of population growth, growth versus no growth, and population policies, strategies for the future. Parts III-V present resources for junior high, grades three through six, and kindergarten through grade four. All entries give information on title, author or editor, publisher, date, length, and price. Annotations are detailed and lengthy. Three appendices offer additional information about films, curriculum materials, and organizational sources of information and materials related to the population issue. (AV)

ED 162 885 SE 025 387
Environmental Education: Food - The Coming Crisis (Grades K-12).
New Jersey Education Association, Trenton. New Jersey State Council for Environmental Education, Upper Montclair.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—[71]
Grant—G007501293;
Note—91p.
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—*Activity Units, Ecology, Economics, *Elementary Secondary Education, Energy, *Environmental Education, *Food, Interdisciplinary Approach, Land Use, Objectives, Resource Allocations, Units of Study, *World Problems
This publication presents classroom activities for teaching about the world food shortage. These activities are organized by objectives, are multidisciplinary and cover the K-12 grade levels. The objectives listed include 1) Describe some food chains, (2) Appraise the effect of soil conditions, geographic and climatic factors on the food industry, (3) Describe the role of transportation in the distribution of food, (4) Explain the relationship between food and population, (5) Relate food production and processing to energy use, (6) Suggest some solutions to alleviate world hunger, (7) Analyze the relationship between food and economies, (8) Investigate the political aspects of food distribution, (9) Analyze the relationship between agriculture and land use, and (10) Identify factors causing worldwide concern about food. The activities are organized under each objective by problem area, grade level, and subject or course of study. This publication is a part of the "Environment and Quality of Life" series of Computer Based Resource Units that have been developed under the Elementary and Secondary Education Act, Title III. (MR)

ED 162 886 SE 025 390
An Educator's Introduction to Energy Concepts: Overview Packets.
Maine Audubon Society, Falmouth
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Nov 77
Grant—G007602036
Note—68p.; Pages 9, 10 of "Consumption Lifestyles" section removed due to copyright restrictions. Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Conservation (Environment), *Energy Conservation, *Environmental Education, Information Sources, Instructional Materials, Natural Resources, Physics, Social Studies, *Sociocultural Patterns, *Teaching Guides
Identifiers—*Energy Education
This publication provides a broad overview of energy and related issues for teachers and others who want to improve their understanding of these issues. Included in this publication are discussions of: (1) elementary physics related to energy, (2) energy sources, including topics such as renewable and non-renewable resources and fossil fuels, (3) energy uses in the U.S., (4) thermodynamics, (5) space heating, (6) energy conservation; and (7) socioeconomic aspects of the energy crisis. The last section entitled Consumption Life Style is designed for social science teachers and discusses the effects of population increases on natural resources and social values. Diagrams and tables are provided to illustrate, among other things (1) energy consumption rates of various electric appliances, (2) energy uses by economic sector, (3) U.S. energy flow from source to work and waste, and (4) the flow of energy to and from earth. (MR)

ED 183 456 SO 012 382
Mehlinger, Howard D. And Others
Global Studies for American Schools.
National Education Association, Washington, D.C.
Spons Agency—Indiana Univ., Bloomington. Social Studies Development Center.; Office of Education (DHEW), Washington, D.C.
Pub Date—80
Note—85p.
Available from—National Education Association, 1201 16th Street, N.W., Washington, DC 20036 ($4.50)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Civil Liberties, *Cultural Awareness, Curriculum Evaluation, Discussion (Teaching Technique), Educational Objectives, Educational Resources, Elementary Secondary Education, Energy, Environment, Evaluation, *Global Approach, Industrialization, *Learning Activities, *Lesson Plans, Life Style, Role Playing, Teaching Guides, Teaching Techniques, Verbal Communication, *World Problems
The book provides a rationale for teaching global studies, offers six model lessons, suggests how teachers can assess their own global studies programs, and cites additional resources for global studies. It is presented in four chapters. Chapter I states the rationale as the need to develop a global perspective in order to understand and function effectively in the world today. Schools have the primary responsibility for this development. Chapter II offers six lessons, which are designed for junior high school students but can be adapted for elementary or secondary students. Topics cover the relationship between human society and the natural environment, communication, benefits and problems of industrialization, energy, differing cultural lifestyles, and human rights. Each lesson requires one to two or more class periods and includes an introduction, objectives, suggested procedures, and student materials. Techniques include reading, discussion, role play, research, simulation, debate, and gaming. Chapter III discusses program evaluation and provides a checklist. It also discusses student evaluation, offering suggestions for establishing objectives in four areas: knowledge, abilities, valuing, and social participation. The final chapter lists selected resources for global studies, citing general publications, organizations, catalogs, guides, and directories. It provides checklists for helping teachers to identify possible resources in their own community and to evaluate materials for classroom use. (JH/CK)

ED 187 606 SO 012 453
Patton, William E. Isaler, William W.
Dealing with Environmental Issues: The Use of Simulation. Environmental Education Occasional Paper No. 5.
Ohio State Dept of Education, Columbus Office of Environmental Education.
Pub Date—Sep 79
Note—28p.
Pub Type— Guides - Classroom - Teacher (052) — Opinion Papers (120)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Citizenship Education, *Critical Thinking, *Decision Making, Educational Objectives, Elementary Secondary Education, *Environmental Education, *Problem Solving, *Simulation, Social Action, *Social Problems, Social Studies, Teaching Methods
The paper provides a rationale for using a decision-making model in teaching environmental issues, outlines specific steps in creating a simulation, and illustrates its use in the classroom. The objectives of environmental education are to provide learning opportunities for students to know, think, choose, and act regarding pervasive social issues from local to global levels. The primary goal of social simulations is to involve students in approximations of real-life environmental issues. Ideally, simulations will encourage students to become actively involved in their own preparation to make political, social, and personal decisions. Procedures for a decision-making model include identifying a problem, defining the desired solution, identifying alternatives for accomplishing the desired outcomes, and selecting the best alternative. The hypothetical classroom situation which concludes the document involves applying decision-making procedures to the problem of storage of toxic chemicals near a school playground. (Author CK)

ED 193 410 UD 021 105
Garbarino, James Plantz, Margaret C.
Urban Environments and Urban Children.
ERIC Clearinghouse on Urban Education, New York, N.Y.
Spons Agency—National Inst. of Education (ED), Washington, D.C.
Pub Date—Aug 80
Contract—400-77-0071
Note—54p.; Published in a slightly different version as ERIC CUE Urban Diversity Series, Number 69, August 1980
Available from—Institute for Urban and Minority Education, Box 40, Teachers College, Columbia University, New York, NY 10027 ($5.00)
Pub Type— Information Analyses (070) — Reports - General (140) — Information Analyses - ERIC Information Analysis Products (071)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Child Development, *Children, Elementary Secondary Education, *Environmental Influences, *Family Role, *Neighborhoods, School Community Relationship, School Role, Socialization, Urban Areas, *Urban Environment, Urban Schools
Identifiers—*Bronfenbrenner (Urie)
This paper focuses on the distinctive characteristics of urban environments, the ways these environmental features affect city children, and the roles that schools can play in modifying these effects. Bronfenbrenner's multilevel framework for studying the ecology of human development is described. Recognizing the central role that families play in the lives of children, neighborhoods are examined as important environments for both families and their children. Unique characteristics of urban environments and the special ways in which their multiple levels and interacting systems pose risks and opportunities for child development are then discussed. New York, NY 10027 Data from a study on people's perceptions of "high risk" versus "low risk" urban neighborhoods are reviewed, showing that despite demographic similarities the high and low risk neighborhoods varied significantly in terms of social stresses and supports, adequacy of child care, and residents' attitudes toward the neighborhood. Finally, the school is hailed as an institution that, with proper moral, political, and economic resources, can protect environmentally-at-risk children, increase their opportunities, compensate for weaknesses in families and neighborhoods, and influence public policy related to children. (Author GC)

ED 198 017 SO 013 037
Population Education in Geography: Some Sample Lessons.
United Nations Educational, Scientific, and Cultural Organization, Bangkok (Thailand). Regional Office for Education in Asia and Oceania.
Pub Date—80
Note—29p.; For a related document, see SO 013 038
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Comparative Education, Demography, Elementary Secondary Education, Foreign Countries, *Geography, *Population Education, Teaching Guides, Units of Study
Identifiers—*Asia, *Oceania
This booklet contains sample lessons and learning materials from the countries of Asia and Oceania for teaching population education in geography courses. The booklet is one of a series of six, each of which brings out population education concepts as part of a particular subject area. The subject areas treated in the other booklets are home economics, health, social studies, science, and math. The purpose of the series is to provide teachers, curriculum developers, and educators with useful tools for disseminating population education concepts in the school setting. The population programs in this booklet on geography are mainly from Indonesia, India, Malaysia, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand, Fiji, and Papua New Guinea. In all these countries, population education concepts are integrated into various subject areas which are being taught in primary and secondary schools. There are two major parts to the booklet. The first part contains a scope and sequence chart of population education concepts consolidated from charts of the various countries. The chart indicates concepts, sub-concepts, objectives, and grade levels. The second part of the booklet contains illustrative samples of geography lessons. The population geographer is concerned with three areas (1) simple description of the location of population members and characteristics, (2) the explanation of the spatial configurations of these numbers and characteristics, and (3) the geographic analysis of population phenomena or interrelations among areal differences in population. Sample lessons include the following exercises. In one exercise entitled "A Model of the School," students make a model of the school building in straw or cardboard. In another exercise, "School History," students research the history of their school and record the information on a diagram with a time line. In a third exercise, students examine the effects of spatial distribution and interaction on housing needs of people. (Author/RM)

ED 198 018 SO 013 038
Population Education in Social Studies: Some Sample Lessons.
United Nations Educational, Scientific, and Cultural Organization, Bangkok (Thailand). Regional Office for Education in Asia and Oceania.
Pub Date—80
Note—46p.; For a related document, see SO 013 037. Cartoon photographs may not reproduce clearly from EDRS in microfiche.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Comparative Education, Demography, Elementary Secondary Education, Foreign Countries, Migration Patterns, *Population Education, *Social Studies, Teaching Guides, Units of Study
Identifiers—*Asia, *Oceania
This booklet contains sample lessons and learning materials from the countries of Asia and Oceania for teaching population education in social studies. The booklet is one of a series of six, each of which brings out population education concepts as part of a particular subject area. The subject areas treated in the other booklets are home economics, health, geography, science, and math. The purpose of the series is to provide teachers, curriculum developers, and educators with useful tools for disseminating population education concepts in the school setting. The population programs in this booklet on social studies are mainly from Indonesia, India, Malaysia, Pakistan, Philippines, the Republic of Korea, Sri Lanka, Thailand, Fiji, and Papua New Guinea. In all these countries population education concepts are integrated into various subject areas which are being taught in primary and secondary schools. There are two major parts to the booklet. The first part contains a scope and sequence chart of population education concepts consolidated from charts of the various countries. The chart indicates concepts, subconcepts, objectives, and grade levels. The second part of the booklet contains illustrative samples of social studies lessons. Population is one of the major problems on which social studies focuses. Issues examined include changes in the size of population; the character and structure of the population by sex, ethnicity, occupation, and class; movements of population within countries; urbanization; family structure, the status of women, and the relationship of population to the economy; to government policy; to the distribution of political power to affect the size and distribution of population. These issues are treated in the curriculum through a problem-oriented approach—the discussions and solutions of which are dealt with through the use of values clarification method. (Author/RM)

ED 200 418 SE 034 542
Conan, Elizabeth, Comp. And Others
Fairy Tales of the Sea [and] A Guide for Teachers.
Texas A and M Univ., College Station Sea Grant College Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Report No.—TAMU-SG-81-402, TAMU-SG-81-603
Pub Date—Feb 81
Note—167p.
Available from—Marine Information Service, Sea Grant College Program, Texas A&M Univ., College Station, TX 77843 ($3.40 for student guide and $2.00 for teacher's guide, bulk price on request)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Basic Skills, Elementary Secondary Education, *English Instruction, Environmental Education, *Folk Culture, *Language Arts, *Legends, Literature, *Marine Biology, Mythology, *Oceanography
Presented are 25 fairy tales from around the world that are related to the sea. Included in the teacher's guide are activities designed to serve as a catalyst to stimulate varied classroom uses for the tales. The curriculum outline provided follows the English Language Arts Curriculum Framework suggested by the Texas Education Agency and covers speaking, listening, reading, and writing. Among the recommended activities are listening to confirm predictions, playing a story, understanding literal and figurative language, and creating written interviews with story characters. (Author WB)

ED 201 561 SO 013 308
Kleinman, Elizabeth Taylor, Paula
Creating Futures Activity Cards and Teacher Guide.
Minneapolis Public Schools, Minn.
Spons Agency—Minnesota Council on Quality Education, St. Paul.
Pub Date—79
Note—244p.
Available from—Federal Programs Department, Minneapolis Public Schools, 807 Northeast Broadway, Minneapolis, MN 55413 ($9.75 plus $2.00 billing charge if payment does not accompany order).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Art Activities, Change, *Creative Thinking, Decision Making, Elementary Secondary Education, *Futures (of Society), Interdisciplinary Approach, Language Arts, Learning Activities, Mathematics, Planning, Problem Solving, Social Studies
Teachers can use these learning activities to teach about the future in elementary and secondary social studies, science, math, language arts, and arts courses. The purpose of the activities is to help students practice creative-thinking skills, investigate problems relevant to their personal futures, experience the concept of change, and evaluate alternatives and make decisions. The learning activities are presented on cards intended for student use. A teacher's guide accompanies the cards. Activity topics,

which are color coded on the cards, are futurist's tools, personal futures, home-school, and community, populations, environment and transportation, energy, and future products and inventions. Each card lists materials, step-by-step directions, and discussion questions. Most of the activities are designed for individual students or small groups. Activities are many and varied. For example, students develop a time line of important things that have happened to them in their lifetime and then extend their time line into the future. Students trace the history of their school and chart the changes that have occurred since their school was built. In other activities, students plan a house of the future, make a family tree, analyze census records, do an experiment with snow to see how clean it is, and make a chart comparing different modes of transportation and fuel consumption. (Author/RM)

ED 206 517 SO 013 392
Population Education: A Source Book on Content and Methodology.
United Nations Educational, Scientific, and Cultural Organization, Bangkok (Thailand). Regional Office for Education in Asia and Oceania.
Pub Date—80
Note—140p.
Pub Type— Opinion Papers (120)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—Adult Education, *Comparative Education, Concept Teaching, Curriculum Development, Developing Nations, *Educational Trends, Elementary Secondary Education, Family Planning, Foreign Countries, Interdisciplinary Approach, Material Development, *Population Education, Program Evaluation, *Research Methodology
Identifiers—*Asia, *Oceania
A collection of 12 essays provides an overview of population education in Asia and Oceania with regard to concepts, status, approaches in curriculum and materials development, methodologies, and research and evaluation. The collection is presented in five sections. Section I explores general definitions of population education, its role as part of national or independent programs, relationships between population growth, national development, resource utilization, and environment, and population education as a means to promote family planning. Section II outlines interdisciplinary approaches in several countries and gives examples of population education content of school subjects including home economics, science, and social studies. Section III reviews various approaches to teaching population education (i.e., discovery, expository teaching), presents sample units and identifies relevant ethical issues in areas including distributive justice, politics, and economic development. Section IV suggests various research and evaluation designs. Section V discusses out-of-school population education in terms of program development and materials production. (AV)

ED 210 182 SE 035 929
Murphy, Elaine M.
World Population: Toward the Next Century.
Population Reference Bureau, Inc., Washington, D.C.
Pub Date—Nov 81
Note—21p.; Contains shaded charts and graphs and small print which may not reproduce well.
Available from—Population Reference Bureau, 1337 Connecticut Ave., N.W., Washington, DC 20036 (single copy $1.00, two or more copies $0.75).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Developed Nations, Developing Nations, Elementary Secondary Education, *Environmental Education, Global Approach, *Interdisciplinary Approach, *Learning Activities, *Population Education, *Population Trends, *World Problems
The information and activities presented are designed to help teachers, students, and others better understand: (1) current and projected population patterns throughout the regions of the world, (2) ways in which populations change, (3) consequences of population change for individuals, families, societies, and the environment, and (4) the complexity of developing policies to deal with problems associated with population change. An essay, glossary of terms, and data sheet provide information for answering the questions and doing the activities included. Suggestions for further reading are provided. (Author/DC)

ED 215 921 SO 013 977
Lamy, Steven L. And Others
Comparative World Issues for Grades 1-12. Comparative Studies Series.
Denver Univ., Colo. Center for Teaching International Relations.
Spons Agency—Denver Univ., Colo. Graduate School of International Studies., Denver Univ., Colo. School of Education.
Pub Date—81
Note—123p.; Colored pages may not reproduce clearly.
Available from—Center for Teaching International Relations, University of Denver, Denver, CO 80208 ($12.95 plus $2.00 postage and handling).
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Advantaged, Civil Liberties, Comparative Analysis, Developing Nations, Disadvantaged, Economic Development, Educational Games, Elementary Secondary Education, Ethnic Groups, *Global Approach, Individual Needs, International Relations, International Studies, Learning Activities, Quality of Life, Teaching Guides, *World Problems
This teaching guide on global issues contains 20 activities for students in grades K-12. The global activities focus on the themes of inequality, development and technology, human rights, and basic human needs. For example, an activity called "Human Rights" shows students the distribution of land in South Africa as compared to the number of black and white inhabitants. A game, "A Simple Roll of the Dice," shows students how chance plays an important role in the concept of inequality. An activity called "Limited World Model" demonstrates the effect that the arms race, foreign aid, and technology have on both rich and poor countries. A game, "Help or Hinder: How to Give Good Aid," helps students explore whether the country receiving or the country giving foreign aid should determine the method of assistance. Each activity includes an introduction and a list of objectives. Specified are the grade level, time required for the activity, and materials needed. Information is given on procedure to follow and there are debriefing questions. Often there is a list of optional or additional procedures and references and resources. A major portion of the guide provides handout materials for teaching the activities. (Author/NE)

ED 215 939 SO 014 023
Collins, H. Thomas; Zakariya, Sally Banks
Getting Started in Global Education: A Primer for Principals and Teachers.
National Association of Elementary School Principals, Arlington, VA.
Spons Agency—Office of International Education (ED), Washington, DC.
Pub Date—82
Note—28p.
Available from—National Association of Elementary School Principals, 1801 North Moore Street, Arlington, VA 22209 ($4.00).
Pub Type— Guides - Classroom - Teacher (052) — Guides - Non-Classroom (055)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Curriculum Development, Educational Needs, Educational Objectives, Elementary Secondary Education, *Global Approach, Position Papers, Professional Associations, Research Utilization, Resource Materials, *Social Studies
The articles and background information in this publication will be useful to K-12 principals and teachers interested in starting a global education program. The material presented is drawn from a variety of sources, including "Principals," the journal of the National Association of Elementary School Principals, from which a number of articles included are reprinted. Goals and objectives in global education are discussed and outlined. The need for a global perspective on citizenship is presented. What research says about where to teach global education is examined. For example, research strongly suggests that schools should begin emphasizing a global perspective during the elementary school years. Also, recent research asserts that the period from age 7 to 12 is optimal both for education directed toward attitudinal objectives and for openness about the world. One article answers some commonly asked questions about global education—e.g. How can I tell if what we're doing now is global education?, and Doesn't global education mean increased costs? Position statements on global education from educational organizations are provided in another article. The publication concludes with a bibliography of resource materials in global education. (RM)

ED 218 094 SE 037 891
Litter Control Achievement - Ohio 4-H Club Score Sheet [and] Activity Guides 1 through 7. 4-H Pilot Program 918.
Ohio State Univ., Columbus. Cooperative Extension Service.
Spons Agency—Ohio State Dept. of Natural Resources, Columbus.
Pub Date—Feb 82
Note—24p.; May be some marginal legibility due to colored paper. Best copy available.
Pub Type— Guides - Non-Classroom (055)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Elementary Secondary Education, *Environmental Education, Guidelines, *Learning Activities, Pilot Projects, Pollution, *Waste Disposal, *Wastes
Identifiers—*4 H Clubs, *Litter Education Programs, Ohio
Seven activity guides, evaluation sheet, and club scoresheet have been prepared for Ohio 4-H clubs' litter education program. Topics of the seven activity guides include: (1) general guidelines and types of activities; (2) little known facts about waste/litter; (3) guidelines for a walking tour; (4) fact sheet (questionnaire) related to garbage; (5) roadside litter survey; (6) roadside litter clean-up campaign; and (7) how to organize a paper drive. The scoresheet is in checklist format and includes types of activities (with point values) and spaces to indicate total club membership, number of members participating in a given activity, and total point values. The evaluation sheet lists eight items to be answered and returned to the developers of this pilot program. (JN)

ED 218 204 SO 014 158
Ogilvie, A. Barretto
Developing Global Education Teaching Skills.
Washington Office of the State Superintendent of Public Instruction, Olympia. Office for Equity Education.
Pub Date—Feb 82
Note—70p.; Not available in paper copy due to print on colored paper. Some pages may not reproduce clearly in microfiche.
Available from—Office for Equity Education, Office of the State Superintendent of Public Instruction, 7510 Armstrong St., S.W., Tumwater, WA 98504 (free).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Cross Cultural Studies, *Curriculum Development, Definitions, Educational Needs, Educational Objectives, Educational Trends, Elementary Secondary Education, *Global Approach, Skill Development, Social Attitudes, *Social Studies
This publication provides a framework for the development of global education teaching skills, K-12. There are seven major sections. Section I very briefly describes the contents of the publication. Section II examines the need for global education. Discussed are forces creating the global age, global issues, major trends in the international field, the neglected aspect of foreign affairs, lack of teacher education competencies, the need for internationalism in American education, and how American education must change. Section III, "What is Global Education?" presents various definitions and descriptions of global education. Section IV outlines attitudes, knowledge, and skills that can be taught through global education. The goals of education are the topic of Section V. How to establish a global education framework is discussed in section VI. Included is a discussion of dimensions of global leadership, organizing themes for social studies, a proposal for a nationally and internationally oriented curriculum, and global education goals. The concluding chapter discusses how to teach culture in the classroom. Included among the topics examined are cross-cultural approaches and skills, goals of cross-cultural education, and strategies and techniques for teaching about culture. (RM)

Multidisciplinary

Elementary/Middle

ED 045 375 SE 009 756

Vousso, Frank

The Sea, An Interdisciplinary Approach to Marine Science for Elementary School Children.

Newport-Mesa Unified School District, Newport Beach, Calif.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date [70]

Note—20p.

Available from—Newport-Mesa Unified School District, Space Science Learning Program, Mrs Fay Harbison, 1601 16th St., Newport Beach, Calif. 92660

EDRS Price MF-$0.25 HC-$1.10

Descriptors—Conservation Education, *Elementary School Science, Environment, *Environmental Education, *Instructional Materials, Natural Resources, *Oceanology, Outdoor Education, *Teaching Guides

Identifiers—ESEA Title III

This teacher's guide develops an interdisciplinary approach to marine science for elementary school children. The lessons are concerned with food chains, interdependencies, physical characteristics, comparative dissections, and student involvement in political issues dealing with water and air pollution. For each activity, suggestions are provided regarding objectives, materials needed, procedure, evaluation, and follow-up. This work was prepared under an ESEA Title III contract. (BL)

ED 045 436 SE 010 422

Environmental Education Instructional Activities, K-6.

New York State Education Dept., Albany.

Pub Date 70

Note—58p.

EDRS Price MF-$0.50 HC-$3.00

Descriptors—Curriculum, Ecology, *Elementary Education, *Environmental Education, Instruction, *Instructional Materials, *Learning Activities, Natural Resources, Resource Materials, *Teaching Guides

As one in a series of two teacher's guides dealing with environmental education, this publication for grades K-6 contains basic concepts, activities, and questions designed to emphasize the primary role of man as a participant in, rather than master of, his natural surroundings. Topics covered include survival, interdependence, scarcity, recyclement, right vs. responsibility, planning, valuing, social forces, and optimism. For each concept or generalization, activities which the teacher might conduct are suggested accompanied by several probing questions. Activities are not intended to reflect a subject matter orientation. Three appendices provide useful information as to (1) a list of subject headings and topics pertinent to the environment, (2) periodical, general, and film indexes featuring environmental concerns, (3) individuals, groups, and government agencies that may serve as resources of information or as classroom speakers on the environmental issue. (BL)

ED 056 873 SE 012 585

Pratt, Cay Nelson, Redgy

Eagle Heights Woods: Man's Use of Land.

Madison Public Schools, Wis.

Pub Date [71]

Note—17p.

EDRS Price MF-$0.65 HC-$3.29

Descriptors—Audiovisual Aids, *Ecology, *Elementary Grades, Environmental Education, Filmstrips, Instructional Materials, *Land Use, Outdoor Education, *Semantics, *Teaching Guides

Identifiers—ESEA Title III

This teacher's guide for use in the elementary grades was prepared as a result of the 1970 Local Materials Workshop on Outdoor Education, Madison, Wisconsin. It develops the concept of a land ethnic as expressed by Aldo Leopold in "A Sand County Almanac". A filmstrip is employed to discover the meaning of several words pertinent to ecology--environment, ecosystem, community, habitat, niche, food chain or web, primary producers, consumers, decomposers, predators, camouflage, and succession. Settings for such discovery include the schoolyard, going to and from school, home, a nearby field, and Eagle Heights Woods. The filmstrip is explained in its entirety, illustrating each frame and its accompanying script. The filmstrip is not included. This work was prepared under an ESEA Title III contract. (BL)

ED 058 049 SE 013 118

Major, James M. Cissell, Charles A.

Environmental Education, Objectives and Field Activities, Fourth Edition.

Paducah Public Schools, Ky.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date 71

Note—379p.

EDRS Price MF-$0.65 HC-$13.16

Descriptors—Curriculum Enrichment, *Environmental Education, *Field Instruction, Interdisciplinary Approach, *Learning Activities, *Natural Resources, Objectives, Outdoor Education, *Teaching Guides

Identifiers—ESEA Title III

Contained in this teacher's guide are educational objectives and numerous field activity suggestions for environmental education. Part One deals with the total environmental education program, primarily developed for fifth grade students, but adaptable to any level, age six to adult. Sample objectives of an environmental education program, general educational objectives, school objectives, and subject areas of study objectives are outlined in addition to a suggested instructional approach and philosophy of environmental education. Part Two describes 125 field activities developed for elementary and high school students using the Youth Activity Station, Land Between the Lakes, Kentucky. These are in the areas of life science, earth science, art, astronomy, weather, conservation, ecology, social studies, and language arts. A bibliography, sample program schedule, checklists, and section on writing behavioral objectives are also included. This work was prepared under an ESEA Title III contract. (BL)

ED 059 085 SE 013 282

Island Natural Science School.

Toronto Board of Education (Ontario).

Pub Date 70

Note—135p.

EDRS Price MF-$0.65 HC-$6.58

Descriptors—Conservation Education, *Ecology, *Grade 6, *Instructional Materials, Learning Activities, *Manuals, Natural Resources, *Outdoor Education, Student Projects, Units of Study (Subject Fields)

Prepared for students in grade six attending the Island Natural Science School, Toronto, Ontario, Canada, this booklet offers information and suggests activities in the areas of ecology, conservation, natural resources, and outdoor recreation. Introductory material describes island lore, its formation and significant features, followed by units of study on conservation, ecology, biology, plants, animals, pond ecology, birds, bees, weather, geology, and farming. The workbook format allows students to write in answers to questions asked or note observations gained from the learning activities. General background information on the subject is also provided. Outdoor pursuits, the final unit, offers ideas for orienteering, bait casting, archery, target shooting, and survival. Follow-up activities, references, equipment lists, and general statements about ecology conclude this student manual. (BL)

ED 059 947 SO 002 611

Lundgren, Laurie L.

A "Save Our Trees" Project for Primary Grades.

Western Washington State Coll., Bellingham. Huxley Coll. of Environmental Studies.

Spons Agency—Office of Education (DHEW), Washington, D.C.

Bureau No—BR-0-0848

Pub Date Oct 71

Grant—OEG-0-70-5039

Note—49p.

EDRS Price MF-$0.65 HC-$3.29

Descriptors—*Activity Learning, Community Action, Concept Teaching, *Conservation Education, Ecology, Elementary Grades, *Environmental Education, Environmental Influences, Forestry, *Interdisciplinary Approach, Junior High Schools, Natural Resources, Outdoor Education, Pollution, Program Descriptions, *Recycling, School Community Programs, Secondary Grades

Identifiers—*Ecosystems, Sedro Woolley Project

This idea-generating description of a successful class project tells how second grade students, through viewing a film on ecology were motivated toward involving teachers, schools, parents and community in a cooperative effort to collect used paper for recycling. Objectives of the project were to, 1) enable students to identify environmental concepts, 2) activate pupils toward solving environmental problems, 3) encourage pupils in discovering the causes of environmental problems, 4) develop ways, means, and materials for incorporating environmental education into existing curriculum, and, 5) involve the adult community in treating environmental problems. Activity learning, in which students had primary responsibility for performing daily and weekly tasks, was combined with a multidisciplinary approach relating the project to the total curriculum. Money earned was to go toward an arboretum at the school. It was concluded that decisions need to be made as to the integration, scope, and sequence of environmental education

in the existing curriculum. It is requested that users of the report share their results with the project staff. Follow-up activities include continuation of paper recycling and the possible start of a center for recycling bottles and cans. SD 002 612 is a related report. (Author/SJM)

ED 059 948 SO 002 612
Floyd, Susan
A Study of Patterns and Tree Succession as Environmental Education for Intermediate Grades.
Western Washington State Coll., Bellingham. Huxley Coll. of Environmental Studies
Spons Agency—Office of Education (DHEW), Washington, D.C.
Bureau No—BR-0-0848
Pub Date Oct 71
Grant—OEG-0-70-5039
Note—44p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Art Education, Conservation Education, *Ecology, Elementary Grades, *Environmental Education, Humanities, *Interdisciplinary Approach, Intermediate Grades, Language Arts, Mathematics Curriculum, Music Education, Science Curriculum, Social Studies, Teaching Guides
Identifiers—Ecosystems, Sedro Woolley Project
Presented here are ideas for multidisciplinary environmental education. The suggestions are examples of ways in which environmentally beneficial learnings can be incorporated into the existing curriculum, and are intended to assist in the development of learning packages. Among the five overall objectives listed are 1) to develop personal patterns of behavior and attitudes reflecting and personalizing observation of natural patterns, learning to value objects through perception of their place in patterns, and, 2) to provide specific environmentally significant learnings in math, social studies, art, science, music, and language arts. The concepts of Pattern and Tree Succession are taught within the framework of the above subject areas in a three-step sequence: an introduction within the classroom (pre-site work); observation site work; and, application to student values (post-site work). One of the post-site activities suggested for the concept of tree succession in social studies is to imagine the development of a forest community around the tree represented by your wood slab, and draw pictures of how this community might have looked during five-year intervals. Then, compare the growth of the forest community with the growth of your community on the time continuum represented by the tree. (Author/JLB)

ED 059 949 SO 002 615
Hillier, Dwight
Developing Environmental Awareness In a Fifth Grade Class of "Below-Average" Achievement Level.
Western Washington State Coll., Bellingham. Huxley Coll. of Environmental Studies.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Report No—SW-PR-10
Bureau No—BR-0-0848
Pub Date Nov 71
Grant—DEG-0-70-5039
Note—20p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Activity Learning, Concept Teaching, Conservation Education, *Ecology, Elementary Grades, *Environmental Education, Field Instruction, Grade 5, *Interdisciplinary Approach, Mathematics Curriculum, Outdoor Education, *Perception, Program Descriptions, *Slow Learners
Identifiers—Ecosystems, *Sedro Woolley Project
The ideas presented are ways in which teachers can incorporate environmental education into 5th grade general or slow learner curriculum. Objectives of the project were to provide the teacher with an aid in teaching about environment, and to help the student 1) perceive and develop an awareness of the environment, 2) relate to his environment, 3) manipulate and change the environment, 4) realize that mathematics is a useful tool for studying environment, and, 5) conduct within the classroom experiments on environmental projects. A concept, objective, method, and evaluation is stated for each of the five major student objectives. The project classroom was self contained, and most of the work was field-oriented with very little student research or written work. It was concluded that changes of student attitudes occurred. Lists of supplemental methods are included which provoke high student interest, create good learning situations, and are possible on a limited budget. Related documents are SO 002 611, SO 002 612, and SD 002 616. (Author/SJM)

ED 061 118 SO 002 613
Shafer, Angelyn K.
An Environmentally Related Program for the First Grade.
Western Washington State Coll., Bellingham. Huxley Coll. of Environmental Studies.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Report No—P-R-7
Bureau No—BR-0-0848
Pub Date Nov 71
Grant—DEG-0-70-5039
Note—34p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Creative Activities, Creative Writing, Dance, Elementary Grades, *Environmental Education, Grade 1, Grade 3, Interdisciplinary Approach, *Outdoor Education, Photography, Reports, Teaching Guides, Teaching Techniques
Identifiers—Learning Activity Packets, *Sedro Woolley Project
This narrative description of the author's participation in an environmental education program is intended to provide first grade teachers with ideas for incorporating multidisciplinary environmental education into the existing curriculum. Environmental education, within this publication, is broadly conceived. In addition to the more traditional focus on experience with and respect for living things, a variety of attitudes and techniques for humanizing the classroom experience are also discussed. An appendix includes three learning activity packages: 1) a program using cameras to increase environmental awareness; 2) an expression in movement program to enhance awareness of shapes and motion; and, 3) a creative writing activity (for the third grade) that centers around the theme of the pupil in his environment. Each package is outlined in terms of objectives, activities, the author's own experience with the package, and books and materials required. A bibliography of books, films, and other aids for teachers and students is included. (Author/AWW)

ED 067 218 SE 009 291
Foster, Albert B. Fox, Adnan C.
Teaching Soil and Water Conservation: A Classroom and Field Guide.
Soil Conservation Service (USDA), Washington, D.C.
Report No—PA-341
Pub Date Aug 70
Note—32p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Conservation Education, *Elementary Grades, Environmental Education, Field Studies, Instructional Materials, *Learning Activities, Natural Resources, *Soil Conservation, Teaching Guides, *Water Resources
Compiled in this booklet are 22 activities designed to develop awareness of the importance of conservation and the wise use of soil and moisture on croplands, grasslands, and woodlands. They have been selected by Soil Conservation Service (SCS) personnel and consultants to show that the way we manage our basic natural resources, soil and water, and their products, is important in determining our present and future welfare. The practical suggestions will aid teachers in carrying out activities and observations in the classroom and out-of-doors, mostly on the school grounds or in the community. Each activity is presented in two parts: a how-to-do-it part and an interpretation. The first is written in a language and style for presentation to students, outlining steps to follow to carry out the activity. The second part, interpretation, gives background information and explanation of procedures where necessary. Numerous pictures and diagrams supplement the narrative material. This guide is recommended for use with "An Outline for Teaching Conservation in Elementary Schools," SE 014 226 (BL)

ED 067 241 SE 014 499
Environment, Teacher Manual, Primary, Idea 1, Land.
Environmental Education Project, Grafton, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [72]
Note—57p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Environmental Education, Instructional Materials, *Land Use, Learning Activities, Natural Resources, *Primary Grades, *Teaching Guides, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
The Environmental Education Project Center has developed these guidelines for teaching a unit in environmental studies. It is their intention that the teacher and student cooperatively plan the approach and content to be used during the course of study. In this unit about land, teacher resource information and student material are combined to form a teacher's manual for use in the primary grade levels. Project objectives, behavioral objectives, and pre- and post-test questions introduce the unit sections followed by ideas, actions, and/or activities to develop awareness of land and its uses. Major topics of discussion range from plants and animals associated with soil to litter, control measures, and resource use. Field trips emphasizing concepts previously learned are suggested, and additional sources of information and materials for both students and teachers are listed. This work was prepared under an ESEA Title III contract for the project Operation Survival Through Environmental Education." (BL)

ED 067 242 SE 014 500
Environment, Teacher Manual, Intermediate, Idea 1, Land.
Environmental Education Project, Grafton, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [72]
Note—51p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Environmental Education, Instructional Materials, *Intermediate Grades, *Land Use, Learning Activities, Natural Resources, *Teaching Guides, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
The Environmental Education Project Center has developed these guidelines for teaching a unit in environmental studies. It is their intention that the teacher and student cooperatively plan the approach and content to be used during the course of study. In this unit about land, teacher resource information and student material are combined to form a teacher's manual for use in the intermediate grade levels. Project objectives, behavioral objectives, and pre- and post-test questions introduce the unit sections followed by ideas, actions, and/or activities to develop awareness of land and its uses. Major topics of discussion range from plants and animals associated with soil to litter, control measures, and resource use. Field trips emphasizing concepts previously learned are suggested and additional sources of information and materials for both students and teachers are listed. This work was prepared under an ESEA Title III contract for the project "Operation Survival Through Environmental Education." (BL)

ED 067 246 SE 014 504
Environment, Teacher Manual, Intermediate, Idea 2, Air.
Environmental Education Project, Grafton, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [72]
Note—43p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Air Pollution Control, *Environ-

mental Education. Instructional Materials. *Intermediate Grades. Learning Activities. Natural Resources. *Teaching Guides. Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III. ESEA Title III
The Environmental Education Project Center has developed these guidelines for teaching a unit in environmental studies. It is their intention that the teacher and student cooperatively plan the approach and content to be used during the course of study. In this unit about air, teacher resource information and student material are combined to form a teacher's manual for use in the intermediate grade levels. Project objectives and behavioral objectives introduce the unit followed by ideas, actions, and or activities to develop awareness of air qualities and pollution effects. Major topics of discussion range from identifying sources and symptoms of air pollution to testing air quality and developing constructive action to combat pollution. Field trips emphasizing concepts previously learned are suggested and additional sources of information and materials for both students and teachers are listed. This work was prepared under an ESEA Title III contract for the project "Operation Survival Through Environmental Education." (BL)

ED 070 680 SE 015 554
Environment, Teacher Manual, Primary, Idea 3, Water.
Environmental Education Project, Grafton, Ill
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date 72
Note—54p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Behavioral Objectives, *Environmental Education, Instructional Materials, Learning Activities, Natural Resources, *Primary Grades, Student Teacher Relationship, *Teaching Guides, Units of Study (Subject Fields), Water Resources
Identifiers—ESEA Title III
The Environmental Education Project Center has developed these guidelines for teaching a unit in environmental studies. It is their intention that the teacher and student cooperatively plan the approach and content to be used during the course of study. In this unit about water, teacher resource information and student material are combined to form a teacher's manual for use in the primary grade levels. Project objectives, behavioral objectives, and pre- and post-test questions introduce the unit sections followed by ideas, actions, and/or activities to develop awareness of water qualities and pollution effects. Major topics of discussion range from uses of water, farmlot drainage, and watershed litter to the effects of sewage on streams and treating wastewater. Field trips emphasizing concepts previously learned are suggested and additional sources of information and materials for both students and teachers are listed. This work was prepared under an ESEA Title III contract for the project "Operation Survival Through Environmental Education." (BL)

ED 070 681 SE 015 555
Environment, Teacher Manual, Intermediate, Idea 3, Water.
Environmental Education Project, Grafton, Ill
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date 72
Note—61p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Behavioral Objectives, *Environmental Education, Instructional Materials, *Intermediate Grades, Learning Activities, Natural Resources, Student Teacher Relationship, *Teaching Guides, Units of Study (Subject Fields), *Water Resources
Identifiers—ESEA Title III
The Environmental Education Project Center has developed these guidelines for teaching a unit in environmental studies. It is their intention that the teacher and student cooperatively plan the approach and content to be used during the course of study. In this unit about water, teacher resource information and student material are combined to form a teacher's manual for use in the intermediate grade levels. Project objectives, behavioral objectives, and pre- and post-test questions introduce the unit sections followed by ideas, actions, and/or activities to develop awareness of water qualities and pollution effects. Major topics of discussion range from uses of water, farmlot drainage, and watershed litter to the effects of sewage on streams and treating wastewater. Field trips emphasizing concepts previously learned are suggested and additional sources of information and materials for both students and teachers are listed. This work was prepared under an ESEA Title III contract for the project "Operation Survival Through Environmental Education." (BL)

ED 073 923 SE 015 690
Childress, Ronald B.
Investigations for a Mobile Environmental Education Laboratory.
Kingsport City Schools, Tenn
Spons Agency—Tennessee Valley Authority, Knoxville.
Pub Date 72
Note—230p.
EDRS Price MF-$0.65 HC-$9.87
Descriptors—*Elementary Grades, *Environmental Education, Instructional Materials, *Investigations, Learning Activities, Natural Resources, *Secondary Grades, Student Projects, *Teaching Guides
Environmental investigations in this compilation were developed in conjunction with the establishment of a mobile environmental education laboratory, a demonstration project of the Kingsport (Tennessee) City School System. The 56 activities are divided into five categories: basic resources, environmental problems, living organisms, community relationship, and in-service activities. Within each category, investigations are further sub-divided into lower elementary, upper elementary, and secondary grade levels. Covering a wide range of subjects—air, water, soil, land use, geology, noise, vegetation, animals, forestry, weather, chemical reactions, recycling, population, communities, effects of man, etc.—each investigation outlines suggested grade level, physical study area, equipment needed, theme and/or scope of the activity, objectives, procedures to follow, and interpretations or finding based on the research completed. Space is provided for completing data sheets and charts and answering questions. Thus, the manual may be used by both teachers and students, depending on the grade level. A related document is "Mobile Environmental Education Laboratory," SE 015 689. (BL)

ED 080 291 SE 014 476
Abrahamson, Gloria
A Year-Long Environmental Project for Primary Grades.
Western Washington State Coll., Bellingham Huxley Coll of Environmental Studies
Spons Agency—National Center for Educational Research and Development (DHEW/OE), Washington, D C
Report No—SWEPR-8
Bureau No—BR-0-0848
Pub Date Nov 71
Grant—OEG-0-70-5039
Note—41p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Curriculum Development, *Environmental Education, Instructional Materials, Interdisciplinary Approach, *Learning Activities, *Perceptual Development, *Primary Grades, Program Descriptions, *Teaching Guides
Increasing the opportunities for young children to become perceptive of the environment around them is the goal of a year-long environmental project for primary grade students described in this booklet. An environmental encounter approach is adopted, focusing all of one's senses on the particular environment he is experiencing at the moment, analyzing how he perceives it and how he feels about it. The ideas presented are examples of incorporating environmental learnings into the treatment of subject matter already being dealt with. Several encounters are briefly annotated for use in developing perception of self

For learning about the world through the use of the senses and as an aid in achieving the goal of self-perception, three units from TA series are also summarized. Activities in many curriculum areas that could be used to help develop and deepen the children's environmental perception are explained. These activities make particular use of cameras and environmental encounters. Some of the problems characteristic to this educational approach are related together with recommendations regarding follow-up programs. Appended material includes examples of students' original poems. (BL)

ED 081 602 SE 016 608
Teaching Environmental Pollution, Grades 4-6.
Phoenix Union High School District, Ariz.
Spons Agency—Arizona State Dept of Education, Phoenix. Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C.
Report No—Proj-12-69-0015
Pub Date [73]
Note—67p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Elementary Grades, *Environmental Education, Learning Activities, *Lesson Plans, Perception, *Pollution, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This guide is actively oriented and designed to provide environmental experiences for children in grades four through six which will involve them in making value judgments relative to their own community. Content covers problems dealing with air pollution, water pollution, solid wastes, and the aesthetics of visual pollution. Five to fourteen lessons are suggested for each major area indicating the individual topic to be studied, aim of the lesson, approach or key questions, outline (of information), activities, and resource materials. Diagrams, charts, and maps are drawn when appropriate. The material may be used independently or integrated into the existing curriculum. This work was prepared under an ESEA Title III contract for Project Outreach, Phoenix, Arizona. (BL)

ED 083 117 SO 006 445
All Around You, An Environmental Study Guide
Bureau of Land Management (Dept of Interior), Washington, D C
Pub Date Mar 73
Note—148p
Available from—Superintendent of Documents, U S Government Printing Office, Washington, D C 20402 ($2.35 Stock number 2411-00003)
EDRS Price MF-$0.65 HC-$6.58
Descriptors—*Activity Units, Bibliographies, *Ecological Factors, Elementary Grades, *Environmental Education, Intermediate Grades, Natural Resources, Outdoor Education, Perception, Population Education, *Study Guides
This study guide for environmental education focuses on development of knowledge and attitudes concerning environmental factors and inter-relationships. The activities designed for use in elementary and intermediate grades begin in the classroom and move outside to the schoolyard, the town, and natural or rural areas. Three units dealing with environmental awareness, the urban ecosystem, and nature's ecosystem are detailed. Appendices include a vocabulary list and bibliographies of related reading materials. (SHM)

ED 085 247 SE 016 981
McLaughlin, Dennis
Art/Environmental Aesthetics: A Guide for Elementary Teachers.
Milwaukee Public Schools, Wis. Div. of Curriculum and Instruction.
Pub Date 73
Note—69p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Activity Learning, Art Activities, *Art Education, Curriculum, *Environmental Education, *Guides, *Instructional Materials, *Interdisciplinary Approach, Objectives
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This guide attempts to provide an overview of environmentally-related art experiences already in various curriculum guides, to introduce new es-

periences, and generally to emphasize the vital interrelationship that exists between environmental concern and the art process. There is a division into three main areas: our natural environment, our man-made environment, and our inner environment. Concepts and objectives are listed with suggested activities and materials to be used. Addresses where audio-visual and other instructional material may be obtained are also given. This document is a product of the Milwaukee Public Schools' Master Plan for Environmental Education. Development of curriculum materials to achieve integration of environmental education into the existing curriculum is a goal of one of the eight components of the Master Plan. For further details of this plan, see SE 016 978 and SE 016 979. This work was prepared under an ESEA Title III contract. (JP)

ED 086 499 SE 016 948
Sterling, Vicki And Others
Nature's Art.
Chester Area Schools, S Dak. Interlakes Environmental and Outdoor Education Program
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 1 Sep 72
Note—132p.
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Art, *Art Education, *Elementary Grades, *Environmental Education, Guides, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Resource Materials
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
Over 60 art activities, designed to enhance environmental awareness and incorporate environmental concepts, are outlined in this document. A sample of the activities presented are: decorated notepaper and cards with feathers or weeds, wall plaques of prairie plants, methods of flower preservation; water plant prints; construction of dolls, fairies, Christmas ornaments, and birds from milkweeds; bottle decorations, insect drawings; and driftwood decorations. These activities are an outgrowth of an outdoor studies program of Chester Area Schools (South Dakota). This work was prepared under an ESEA Title III contract. (JP)

ED 086 500 SE 016 949
Sterling, Vicki, Hyland, Barb
Nature's Bulletin Board Ideas.
Chester Area Schools, S Dak. Interlakes Environmental and Outdoor Education Program
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [73]
Note—73p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Bulletin Boards, *Elementary School Science, Instructional Materials, Resource Guides, *Visual Aids
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This is a collection of over 50 bulletin board displays suggested for use in the elementary (K-8) science classroom. The recommended grade level for each is given, purpose stated, and relation to units in the curriculum given. Also included are general tips on making effective bulletin board displays. This work was prepared under an ESEA Title III contract. (LS)

ED 092 389 SE 017 960
Environmental Learning Experiences for Kindergarten Through Second Grade.
Ohio State Dept of Education, Columbus. Willoughby-Eastlake School District, Willoughby, Ohio.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 73
Note—68p. For related documents, see SE 017 961 and 962
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—*Elementary School Science, *Environmental Education, Grade 1, Grade 2, Instructional Materials, Interdisciplinary Approach, *Learning Activities, *Resource Materials, *Teaching Guides
Identifiers—*Elementary Secondary Education Act Title III, ESEA Title III
This collection of teaching units is one of three volumes designed to assist teachers in bringing relevant, interdisciplinary, environmental learning experiences to elementary students. This first volume is aimed at the K-2 level and deals with the immediate environment of the student. Titles of the nine units presented are: Preparing for Seasonal Change; Fall, The Terrarium; Food Chains, Food Web, Birds in Our Lives; Trees; Trash, Dirt and Stuff; and Kittens. For each unit, objectives are specified, a series of learning activities is described, and appendixes giving teacher background information and listing references (including books and periodicals, films, transparencies, duplicating masters, picture sets, pamphlets, and records) are provided. (DT)

ED 092 390 SE 017 961
Environmental Learning Experiences for Grades Three and Four.
Ohio State Dept of Education, Columbus.; Willoughby-Eastlake School District, Willoughby, Ohio
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 73
Note—114p., For related documents, see SE 017 960 and 962
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—*Elementary School Science, *Environmental Education, Grade 3, Grade 4, Instructional Materials, Interdisciplinary Approach, *Learning Activities, *Resource Materials, *Teaching Guides
Identifiers—*Elementary Secondary Education Act Title III, ESEA Title III
This second of three volumes designed to bring relevant, interdisciplinary, environmental learning experiences to elementary students is written for grades 3 and 4 and is concerned with the student's local environment. Titles of the 10 units included in this volume are: The School Lawn, The Vacant Lot, Giants on the Land: Trees in Our Environment, Wild Ideas with Wild Plants; The Endangered Predator; The Cemetery, An Environmental Quality Index for the School and Neighborhood, Poetry in the Environment; Water, and The Breath of Life--or Death: Air Pollution. For each unit, objectives are specified, a series of learning activities are described, and appendixes giving teacher background information and listing references for teaching resources are provided. (DT)

ED 092 391 SE 017 962
Environmental Learning Experiences for Grades Five and Six.
Ohio State Dept. of Education, Columbus.; Willoughby-Eastlake School District, Willoughby, Ohio
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 73
Note—84p., For related documents, see SE 017 960 and 961
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Elementary School Science, *Environmental Education, Grade 5, Grade 6, Instructional Materials, Interdisciplinary Approach, *Learning Activities, *Resource Materials, *Teaching Guides
Identifiers—*Elementary Secondary Education Act Title III, ESEA Title III
The third of this series of three volumes on interdisciplinary environmental learning experiences for elementary students is aimed at grades 5 and 6 and deals with the community environment of the student. Titles of the eight units included in this volume are: Problem Solving, How to Plan a Clean-up Campaign in the Local Community, Sears upon the Land, Water, Life Blood of the Earth; Noise Pollution; Succession and the Pond Community, Animals and Their Habitat, and Our Native Lands Conserve and Preserve. Objectives are specified for each unit, a series of learning activities is described, and appendixes giving teacher background information and listing references and teaching resources are provided. (DT)

ED 093 634 SE 017 210
Sights and Sounds 4-6. Kentucky's Environmental Education Program.
Kentucky State Dept of Education, Frankfort, Div of Program Development.
Pub Date [73]
Note—80p.; See SE 017 209 for another unit in this series
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Behavioral Objectives, Curriculum, *Elementary School Science, *Environmental Education, Instruction, Instructional Materials, Science Education, *Teaching Guides, Units of Study (Subject Fields)
Identifiers—KEEP, *Kentucky Environmental Education Program
This unit of instruction for grades 4-6 is one of a series of curriculum units referred to as the Interdisciplinary Unit. Its purpose is to allow the individual teacher to expose the students to many experiences, ideas, and applications based on their environment (in this case, Kentucky). Each lesson is built on two basic concepts, each balancing the other. One concept is a positive statement and the other, its opposite. Behavioral objectives are given for each lesson. Each lesson is developed in a three-part sequence--showing, discussing, and applying the ideas and concepts of that lesson. The unit is considered as a model on which to build and expand, both for teachers and students. The basic concepts for this unit include those related to sights and sounds as they affect the quality of the environment. (EB)

ED 093 673 SE 017 818
Jamason, Barry W.
Living Within Our Means: Energy and Scarcity, Environmental Education Instructional Activities K-6.
New York State Education Dept, Albany. Office of Instructional Services.
Pub Date [74]
Note—83p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Activity Learning, *Elementary Grades, *Environmental Education, *Instructional Materials, Language Arts, Mathematics, *Objectives, Sciences, Social Studies, *Teaching Guides
This booklet is a source of activities and instructional materials for teaching environmental education concepts in grades K-6. Contents are organized into the areas of language arts, mathematics, science, and social studies and are subdivided by suggested grade level. A listing of basic environmental understandings is referenced with the various activities. (LS)

ED 097 219 88 SE 018 227
Planning for the Future on Spaceship Earth, Environmental Ecological Education Project. Revised.
Parkway School District, Chesterfield, Mo
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Jun 72
Note—73p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—*Conservation Education, Curriculum Guides, *Ecology, *Environmental Education, Instructional Materials, Interdisciplinary Approach, *Intermediate Grades, Learning Activities, Natural Resources, Teaching Guides, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This unit, designed for upper elementary school students, examines the role of the individual in society in determining the status of the environment. Viewing the earth as an ecosystem, it looks at past and present human events that have influenced the quality of the environment and attempts to provide students with an awareness of the knowledge necessary to plan for the future. Seven general ecological concepts are presented for use with the total group. There is an additional group of concepts that are suggested for in-

dividual projects with such topics as: major forms of government, farming methods, educational changes, and city planning to increase understanding of how these factors influence human life and the environment. The unit includes the behavioral objectives and the expected student criteria for evaluation, pretests and posttests, suggested methodologies for teaching each concept, suggested student data sheets, and a bibliography of both teacher and student resources. (MLB)

ED 097 221 88 SE 018 229
The Living Forest. Environmental Ecological Education Project. Revised.
Parkway School District, Chesterfield, Mo.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Jun 72
Note—68p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Biology, *Conservation Education, *Curriculum Guides, *Ecology, Elementary School Science, *Environmental Education, *Forestry, Instructional Materials, Intermediate Grades, Learning Activities, Natural Resources, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This unit, designed for intermediate grades of elementary schools, focuses on the living forest by presenting such concepts as succession, forest communities, adaptation, ecological interrelationships, animal populations, the impact of man on forests, and job opportunities in the forest industry. The unit includes the behavioral objectives and the expected student criteria for evaluation, pretests and posttests, suggested methodologies for teaching each concept, relevant background information, suggested student data sheets, and a bibliography of both student and teacher resources. (MLB)

ED 099 216 95 SE 018 289
A Multidisciplinary Process Curriculum in Environmental Education, Grade 1.
Edmonds School District 15, Lynnwood, Wash.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 73
Grant—OEG-0-72-5436
Note—135p.
EDRS Price MF-$0.75 HC-$6.60 PLUS POSTAGE
Descriptors—*Conservation Education, *Curriculum Guides, *Elementary Education, *Environmental Education, Field Trips, Grade 1, Instructional Materials, Learning Activities, Outdoor Education, Primary Education, *Science Education, Teaching Guides
This first grade curriculum guide is based on a multidisciplinary approach to environmental education. The guide includes activities, guidelines for field trip planning and a resource section. The guide deals with the subjects of animals, air, water, and litter. Each subject section includes activities based on the physical characteristics, man's use, and man's misuse of the subject. These activities may be used individually or in sequence, and aim to promote the development of positive attitudes toward the environment. Each activity lesson provides the teacher with objectives, teacher background information, a materials list, a preactivity, the activity, a postactivity, supplemental activities, and illustrations intended for copying. Guidelines for conducting a field trip are included to facilitate the teacher in teaching in the out-of-doors. The guidelines cover pre-field trip, field trip, and post-field trip planning. A resource section includes speakers, films, free and inexpensive materials, pamphlets, and conservation and environmental groups which may be contacted for information on environmental topics. (TK)

ED 099 217 95 SE 018 290
A Multidisciplinary Process Curriculum in Environmental Education, Grade 2.
Edmonds School District 15, Lynnwood, Wash.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 73
Grant—OEG-0-72-5436
Note—147p.
EDRS Price MF-$0.75 HC-$6.60 PLUS POSTAGE
Descriptors—*Conservation Education, *Curriculum Guides, *Elementary Education, *Environmental Education, Field Trips, Grade 2, Instructional Materials, Learning Activities, Natural Resources, Outdoor Education, *Science Education, Teaching Guides
This second grade curriculum guide is based on a multidisciplinary approach to environmental education. The guide includes activities, guidelines for field trip planning, and a resource section. The guide deals with the subjects of plants, soil, and litter. Each subject section includes activities based on the physical characteristics, man's use, and man's misuse of the subject. Activities may be used individually or in sequence, and aim to promote the development of positive attitudes toward the environment. Each activity provides the teacher with objectives, teacher background information, a materials list, a preactivity, the activity, a postactivity, supplemental activities, and illustrations intended for copying. Guidelines for conducting a field trip are included to facilitate the teacher in teaching her students in the out-of-doors. The guidelines cover pre-field trip, field trip, and post-field trip planning. A resource section includes speakers, films, free and inexpensive materials, pamphlets, and conservation and environmental groups which may be contacted for information on environmental topics. (TK)

ED 099 218 95 SE 018 291
A Multidisciplinary Process Curriculum in Environmental Education, Grade 3.
Edmonds School District 15, Lynnwood, Wash.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 73
Grant—OEG-0-72-5436
Note—111p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—*Conservation Education, *Curriculum Guides, *Elementary Education, *Environmental Education, Field Trips, Grade 3, Instructional Materials, Outdoor Education, Primary Education, *Science Education, Teaching Guides
This environmental curriculum guide is designed for teacher use in the third grade. A collection of multidisciplinary activities, guidelines for conducting field trips, and a resource section are included. The activities are organized within three categories--awareness, man's use, and problem solving. They are designed to provide the student with opportunities to make observations, collect and record data, interpret the data, and summarize. The use of these activities, either individually or in sequence, aims to establish a climate of pupil participation, discussion, and interaction. Each activity is classified by topic, subject, completion time, and grade level. All activities include objectives, a materials list, teacher background information, a preactivity, the activity, a postactivity, and additional activities. Guidelines for conducting a field trip are included to facilitate the teacher in teaching her students in the out-of-doors. The guidelines cover pre-field trip, field trip, and post-field trip planning. The resource section lists speakers, films, free and inexpensive materials, pamphlets, and conservation and environmental groups which may be contacted for information about environmental topics. (TK)

ED 099 219 95 SE 018 292
A Multidisciplinary Process Curriculum in Environmental Education, Grade 4.
Edmonds School District 15, Lynnwood, Wash.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 73
Grant—OEG-0-72-5436
Note—118p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—*Conservation Education, *Curriculum Guides, *Elementary Education, *Environmental Education, Field Trips, Grade 4, Instructional Materials, Learning Activities, Natural Resources, Outdoor Education, *Science Education, Teaching Guides
This environmental education curriculum guide is designed for teacher use in the fourth grade. A collection of multidisciplinary activities, guidelines for conducting field trips, and a resource section are included. The activities are organized within three categories--awareness, man's use, and problem solving. They are designed to provide the student with opportunities to make observations, collect and record data, interpret the data, and summarize. The use of these activities, either individually or in sequence, aims to establish a climate of pupil participation, discussion, and interaction. Each activity is classified by topic, subject, completion time, and grade level. All activities include objectives, a materials list, teacher background information, a preactivity, the activity, a postactivity, and additional activities. Guidelines for conducting a field trip are included to facilitate the teacher in teaching her students in the out-of-doors. The guidelines cover pre-field trip, field trip, and post-field trip planning. The resource section lists speakers, films, free and inexpensive materials, pamphlets, and conservation and environmental groups which may be contacted for information about environmental topics. (TK)

ED 099 220 95 SE 018 293
A Multidisciplinary Process Curriculum in Environmental Education, Grade 5.
Edmonds School District 15, Lynnwood, Wash.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 73
Grant—OEG-0-72-5436
Note—144p.
EDRS Price MF-$0.75 HC-$6.60 PLUS POSTAGE
Descriptors—*Conservation Education, *Curriculum Guides, *Elementary Education, *Environmental Education, Field Trips, Grade 5, Instructional Materials, Learning Activities, Natural Resources, Outdoor Education, *Science Education, Teaching Guides
This environmental curriculum guide is designed for teacher use in the fifth grade. A collection of multidisciplinary activities, guidelines for conducting field trips, and a resource section are included. The activities are organized within three categories--awareness, man's use, and problem solving. They are designed to provide the student with opportunities to make observations, collect and record data, interpret the data, and summarize. The use of these activities, either individually or in sequence, aims to establish a climate of pupil participation, discussion, and interaction. Each activity is classified by topic, subject, completion time, and grade level. All activities include objectives, a materials list, teacher background information, a preactivity, the activity, a post activity, and additional activities. Guidelines for conducting a field trip are included to facilitate the teacher in teaching her students in the out-of-doors. The guidelines cover pre-field trip, field trip, and post-field trip planning. The resource section lists speakers, films, free and inexpensive materials, pamphlets, and conservation and environmental groups which may be contacted for information about environmental topics. (TK)

ED 099 221 95 SE 018 294
A Multidisciplinary Process Curriculum in Environmental Education, Grade 6.
Edmonds School District 15, Lynnwood, Wash.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 73
Grant—OEG-0-72-5436
Note—157p.
EDRS Price MF-$0.75 HC-$7.80 PLUS POSTAGE
Descriptors—*Conservation Education, *Curriculum Guides, *Elementary Education, *Environmental Education, Field Trips, Grade 6, Instructional Materials, Natural Resources, Outdoor Education, *Science Education, Teaching Guides
This environmental curriculum guide is designed for teacher use in the sixth grade. A collection of multidisciplinary activities, guidelines for conducting field trips, and a resource section are included. The activities are organized within

three categories--awareness, man's use, and problem solving. They are designed to provide the student with opportunities to make observations, collect and record data, interpret the data, and summarize. The use of these activities either individually or in sequence aims to establish a climate of pupil participation, discussion, and interaction. Each activity is classified by topic, subject, completion time, and grade level. All activities include objectives, a materials list, teacher background information, a preactivity, the activity, a postactivity, and additional activities. Guidelines for conducting field trips are included to facilitate the teacher in teaching her students in the out-of-doors. The guidelines cover pre-field trip, field trip, and post-field trip planning. The resource section lists speakers, films (free and inexpensive materials, pamphlets, and conservation and environmental groups which may be contacted for information about environmental topics. (TK)

ED 100 654 88 SE 018 345
Grade Two, Environmental Education Guide.
Project I-C-E. Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74].
Note—105p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—*Conservation Education, *Elementary Education, *Environmental Education, Grade 2, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Natural Resources, Outdoor Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This second grade environmental education guide is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design. It is the teacher's decision when the concepts, objectives, activities, and resources may best be integrated into the existing classroom curriculum. This guide contains a series of episodes (minilesson plans), each having a number of suggested in- and out-of-class learning activities. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels. The second grade guide focuses on aspects such as graphs, personal responsibility, simple machine, fuels, and land use. Each of the 12 concepts is covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. An appendix containing related game is included. (Author/TK)

ED 100 655 88 SE 018 346
Grade Three, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—121p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—*Conservation Education, *Elementary Education, *Environmental Education, Grade 3, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Natural Resources, Outdoor Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This third grade environmental education guide is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design. It is the teacher's decision when the concepts, objectives, activities, and resources may best be integrated into the existing classroom curriculum. This guide contains a series of episodes (minilessons), each having a number of suggested in- and out-of-class learning activities. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels. The third grade guide focuses on aspects such as food/clothing/shelter, family and roles, water quality, desert regions, and sound. Each of the 12 concepts is covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. An appendix containing related games is included. (Author/TK)

ED 100 656 88 SE 018 347
Grade Four, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—115p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—Conservation Education, *Elementary Education, *Environmental Education, Grade 4, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Natural Resources, Outdoor Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title, ESEA Title III, *Project I C E
This fourth grade environmental education guide is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design. It is the teacher's decision when the concepts, objectives, activities, and resources may best be integrated into the existing classroom curriculum. This guide contains a series of episodes (minilessons), each having a number of suggested in- and out-of-class learning activities. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels. The fourth grade guide focuses on aspects such as soil and organisms, water purification, poetry, and design. Each of the 12 concepts is covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. An appendix containing related games is included. (Author/TK)

ED 100 657 88 SE 018 348
Grade Five, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—146p.
EDRS Price MF-$0.75 HC-$6.60 PLUS POSTAGE
Descriptors—*Conservation Education, *Elementary Education, *Environmental Education, Grade 5, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Natural Resources, Outdoor Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This fifth grade environmental education guide is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design. It is the teacher's decision when the concepts, objectives, activities, and resources may best be integrated into the existing classroom curriculum. This guide contains a series of episodes (minilessons), each having a number of suggested in- and out-of-class learning activities. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels. The fifth grade guide focuses on aspects such as sun, energy, ecosystems, industrial growth, speech, and urban aesthetics. Each of the 12 concepts is covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. An appendix containing related games is included. (Author/TK)

ED 100 658 88 SE 018 349
Grade Six, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—106p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—*Conservation Education, *Elementary Education, *Environmental Education, Grade 6, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Natural Resources, Outdoor Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This sixth grade environmental education guide is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design. It is the teacher's decision when the concepts, objectives, activities, and resources may best be integrated into the existing classroom curriculum. This guide contains a series of episodes (minilessons), each having a number of suggested in- and out-of-class learning activities. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as energy, air-graphing, natural resources, and a political convention turned environmental. Each of the 12 concepts is covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. An appendix containing related games is included. (Author/TK)

ED 100 665 88 SE 018 356
Language Arts 7-8, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—75p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, *Language Arts, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E

This language arts guide, for use in grades 7 and 8, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum The guides are supplementary in design, containing a series of episodes (minilessons) that relate various skills (reading, writing, listening, and speaking) to environmental concepts. The episodes are built around 12 major environmental concepts that form a framework for each grade to subject area, as well as for the entire K-12 program Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as discussion, creative writing, and role playing The 12 concepts are covered in one of the episodes contained in the guide Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives and suggests references and resource materials useful to teachers and students. (Author/TK)

ED 100 668 88 SE 018 359
Mathematics 7, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—44p.
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, Grade 7, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Mathematical Applications, Mathematics Education, Natural Resources, Outdoor Education, Science Education, Secondary Education, *Secondary School Mathematics, *Teaching Guides
Identifiers—Computation, Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E, Proportion
This seventh grade mathematics guide is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum The guides are supplementary in design, containing a series of episodes (minilessons) that reinforce the relationships between ecology and mathematics It is the teacher's decision when the episodes may best be integrated into the existing classroom curriculum. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or subject levels This guide focuses on aspects such as proportion, computation, and percent. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 669 88 SE 018 360
Mathematics 8, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—48p.
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, Geometry, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Mathematical Applications, Mathematics Education, Natural Resources, Outdoor Education, *Science Education, Secondary Education, *Secondary School Mathematics, *Teaching Guides
Identifiers—Computation, Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This eighth grade mathematics guide is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum The guides are supplementary in design, containing a series of episodes (minilessons) that reinforce the relationships between ecology and mathematics It is the teacher's decision when the episodes may best be integrated into the existing classroom curriculum The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or subject levels This guide focuses on aspects such as radius, geometry, and average and percent. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 686 88 SE 018 584
Art K-3, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—62p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—*Art Education, Conservation Education, *Elementary Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Primary Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E
This art education guide, for use in grades K-3, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that are designed to wake students to sights of beauty and harmony in their environment. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as design in nature, kites, and block printing. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 687 88 SE 018 585
Art 4-6, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—74p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—*Art Education, Conservation Education, *Elementary Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E
This art education guide, for use in grades 4-6, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that are designed to wake students to sights of beauty and harmony in their environment. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as shading, paper sculpture, and ceramic mosaic. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggests references and resource materials useful to teachers and students. (Author/TK)

ED 100 693 88 SE 018 591
Music K-3, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—47p.
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Conservation Education, *Elementary Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Music Education, Natural Resources, Outdoor Education, *Primary Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E
This music guide, for use in grades K-3, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that reinforce environmental concepts and theories by developing ecology-related aesthetic values. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as creative movement, dramatization, and word composition. Most of the 12 concepts are covered in one of the episodes contained in the guide Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggests references and resource materials useful to teachers and students. (Author/TK)

ED 100 694 88 SE 018 592
Music 4-6, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—58p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Conservation Education, *Elementary Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Music Education, Natural Resources, Outdoor Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E
This music education guide, for use in grades 4-6, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that reinforce environmental concepts and theories by developing ecology-related aesthetic values. The episodes are

built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as music appreciation and listening. Most of the 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggests references and resource materials useful to teachers and students. (Author/TK)

ED 100 695 88 SE 018 593
Physical Education K-6, Environmental Education Guide.
Project I-C-E. Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—74p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Conservation Education, *Elementary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, , *Physical Education, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E
This physical education guide, for use in grades K-6, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that focus on the growth of both mind and body, and the work these two must do to protect the environment. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as tumbling, dance, and cycling. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 101 941 95 SE 018 114
[East Syracuse-Minoa Schools Environmental Education Materials, Middle School Package. Grade 6—Science and Social Studies.]
East Syracuse - Minoa Central Schools, East Syracuse, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date [73]
Grant—OEG-0-71-4621
Note—100p.; Best copy available; occasional marginal legibility
EDRS Price MF-$0.76 HC-$4.43 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, *Ecology, *Elementary Education, *Environmental Education, Grade 6, Interdisciplinary Approach, Natural Resources, Science Education, *Social Studies, Teaching Guides, Units of Study [Subject Fields]
Identifiers—MACOS, *Man A Course of Study
These two environmental education units were designed for use at the sixth-grade level. The first unit focuses on science and is a five-week study which emphasizes ecology along a creek. The unit is designed around the idea that a creek and its surrounding area serve as a suitable focus for environmental study because they illustrate many ecological principles. The objectives, teaching strategies, materials, and evaluation techniques reinforce the base creek theme. A flowchart, s, supplementary materials, illustrations, tables, and maps are included. The second unit, a social studies unit, illustrates the environmental concepts which are inherent in the program Man A Course of Study (MACOS) and are designed to be used in conjunction with the MACOS program. The unit is developed around three environmental generalizations, interdependency, adaptation, and recycling. Objectives, activities and strategies, materials, and evaluation techniques are identified for each generalization. The unit also contains a flowchart to help the teacher coordinate the unit and MACOS program. quizzes, vocabulary words, and graphs. (TK)

ED 101 944 95 SE 018 117
[East Syracuse-Minoa Schools Environmental Education Materials, Middle School Package. Middle School Crossover Units.]
East Syracuse - Minoa Central Schools, East Syracuse, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date [73]
Grant—OEG-0-71-4621
Note—160p.; Best copy available; occasional marginal legibility
EDRS Price MF-$0.76 HC-$8.24 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, *Environmental Education, *Interdisciplinary Approach, Language Arts, Learning Activities, Mathematics Education, Middle Schools, Natural Resources, Outdoor Education, Science Education, *Secondary Education, Social Sciences, Social Studies, Units of Study (Subject Fields)
This interdisciplinary series of five environmental education units is designed for teacher use at the middle school level. The two crossover units are designed to span a period of six to eight weeks at the beginning of the eighth grade. Each unit is developed around several organizing ideas or concepts, objectives, activities and strategies, materials, and expected outcomes are identified for each idea or concept. The first unit involves a social studies to science crossover and focuses on environmental aspects of the community. The science to social studies crossover unit takes a brief scientific look at the environment of a particular community. The Language Arts Skills unit focuses on research skills, pertinent to environmental investigations and communications such as outlining, editing, writing, and indexing. The Mathematics Skills unit, designed for wide ranges of ability, includes such activities as mapping, graphing, and data collection. Outdoor Education in Camping and Other Activities includes objectives, goals and activities, and evaluation criteria for outdoor education experiences plus guidelines for teaching relationships and environmental health and disease. Appendixes are included with each unit. (TK)

ED 103 242 SE 018 523
Nature's Part In Art, An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis.; National Wildlife Federation, Washington, D. C.
Pub Date 72
Note—20p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79178, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—*Art Education, Elementary Education, Elementary Grades, *Environmental Education, Instructional Materials, Investigations, *Learning Activities, Natural Resources, *Science Education, Teaching Guides
This environmental unit is one of a series designed for integration within the existing curriculum. The unit is self-contained, requiring little teacher preparation. The philosophy of the units is based on an experience-oriented process encouraging self-paced independent student work. In this unit, elementary school children explore the use of natural items for art projects. As they collect these items, the students have an opportunity to observe and experience their environment. The art activities include work with plant dyes, printings, collages, centerpieces, terrariums, sand casting, mobiles, sand and soil paintings, and dried plant arrangements. In many cases, there is an attempt to relate an art experience to a science experience. Included in the unit is a list of materials needed and directions for the 27 art projects. (MA)

ED 104 639 SE 017 747
Schroeder, Florence *Thompson, Benjamin*
An Environmental Education Resource Activity Kit for Fifth and Sixth Grade Pupils.
Eau Claire Area Public Schools, Wis.
Pub Date 73
Note—102p.; The activity cards in the kit have been reproduced on 8 1/2 x 11 paper with the permission of the author
Available from—Eau Claire Area Public Schools, 1222 Mappa Street, Eau Claire, Wisconsin 54701 (Attn. Mr. Warren Randall ($20.00 for actual kit containing 5 x 8 activity cards)
EDRS Price MF-$0.76 HC-$5.70 PLUS POSTAGE
Descriptors—*Conservation Education, *Elementary Education, *Environmental Education, Grade 5, Grade 6, *Instructional Materials, Learning Activities, Natural Resources, *Outdoor Education, Resource Units, Science Education, *Teaching Guides, Unit Plan
This environmental education resource activity kit provides an open-ended structure for fifth- and sixth-grade pupils to pursue the study of environmental topics and problems. The design of the kit concentrates on nine types of learning activities (called encounter activities) to enable pupils to learn about the natural resources, the biophysical environment, and the cause-effect relationships in the environment. The encounter activities provide diversified learning modes in addition to various strategies that involve social, scientific, political, legal, economic and managerial skills and knowledge. Each of the encounter activities—library research, field research, investigations, environmental projects, surveys of environmental problems, social awareness, environmental political action, environmental action groups, and careers related to the environment,—has numerous activity cards which in most cases suggest an environmental topic and a problem to study. Environmental encounter activity contracts provide guidance and direction for the pupil's study. Contract evaluation forms also accompany the contracts. This kit contains the procedures for the use of the activity cards, the contracts, the contract evaluation forms, and all needed materials. (TK)

ED 106 057 SE 016 964
Rat Control Lesson Plan for Fourth, Fifth and Sixth Grades.
Media Learning Corp., Rochester, N.Y.
Spons Agency—Monroe County Health Dept., Rochester, N.Y.; New York State Dept. of Health, Albany
Pub Date [73]
Note—26p.
EDRS Price MF-$0.76 HC-$1.95 PLUS POSTAGE
Descriptors—Community Involvement, Elementary Education, *Elementary Grades, *Environment, Instructional Materials, Lesson Plans, Public Health, *Rats, Science Education, Slums, *Teaching Guides, *Urban Environment
Identifiers—Pests, Vermin
This teacher guide was developed to assist teachers of elementary children in their preparation to teach some lessons on rat control. The overall objectives include determining the level of student understanding about rats, developing student attitudes toward rats, developing the student's ability to identify the rat's weaknesses, identifying those items that rats must have to live, identifying specific acts which students are able to understand to get rid of rats, discriminating between items rats will eat and items they can not eat, identifying and correcting rat conditions in the neighborhood, communicating the existence of a rat control problem to the parental group and reinforcing and testing of the overall program. The plan development includes overall objectives, specific objectives, teacher

procedures, support materials, and learner responses and conclusions. A pretest and evaluation key conclude this lesson plan. (BT)

ED 106 087 SE 018 504
Valuing the Environment. Elementary.
Charlotte-Mecklenburg Public Schools, Charlotte, N.C.
Spons Agency—North Carolina State Dept. of Public Instruction, Raleigh. Div. of Development.
Pub Date [74]
Note—67p.; A large portion of the text is printed on colored paper and may not reproduce clearly
EDRS Price MF-$0.76 HC-$3.32 PLUS POSTAGE.
Descriptors—Conservation Education, *Elementary Education, *Environmental Education, *Instructional Materials, Learning Activities, *Natural Resources, Outdoor Education, Science Activities, Science Education, Urban Environment, *Values
Identifiers—Value Clarification Strategies
This guide was developed for use in grades K-6 as an enrichment program based on clarifying values. The program, designed by teachers, aims to develop in the student a greater awareness and understanding of the community, themselves and the earth. The program includes environmental encounters and a chart of topical themes and conceptual themes. Topical themes lead teachers and students through main areas of awareness: Plants and Animals, Water, Air, Energy, Natural Resources, Land Use and Aesthetics, and Pollution. The conceptual schemes under each area of awareness increase in complexity according to the development level of the students. The activities in the encounters are action-oriented, student-centered activities which provide "hands-on" learning experiences. Each encounter provides background information, behavioral objectives, activities, a resource reference listing, and value clarification strategies. Value clarification strategies are included because the development of attitudes and a lifestyle compatible to the natural environment is related to environmental awareness, understanding decision-making, and action. Instructions for use of the value clarification strategies contained in the program are included. (TK)

ED 113 214 SO 008 427
Man's Effect on the Environment, Teacher's Guide. Environmental Education Unit, Sixth Grade Science.
Little Rock School District, Ark.
Pub Date [74]
Note—85p.; Not available in hard copy due to marginal legibility of original document. For related documents, see SO 008 428, e29, and 652
EDRS Price MF-$0.76 Plus Postage. HC Not Available from EDRS.
Descriptors—Curriculum Guides, *Ecology, Elementary Education, *Environmental Education, Field Trips, Grade 6, Interdisciplinary Approach, Learning Activities, *Local Issues, Pollution, Population Education, *Science Education, Short Courses, *Social Studies Units, Student Centered Curriculum, Technology
Identifiers—*Environmental Education Project, ESEA Title III
Part of a sequential series of curriculum units in environmental education for grades 4 through 12, this sixth grade curriculum guide focuses on man's effect upon the environment. Extensive classroom activities and field trips introduce the student to population, technology, pollution, natural resources, responsibility, career opportunities, and an urban encounter field trip in which students investigate various types of pollution in their own community. The following components are included in the unit: an overview, major concepts, behavioral objectives, daily schedule, lesson plans for classroom activities and field trips, career opportunities in environmental education, pretest and posttest, and student and teacher evaluation forms. The unit requires three weeks of class time, is multidisciplinary in nature, and is structured around student-centered activities in which emphasis is placed upon the study of the local environment. (Author/JR)

ED 114 268 SE 019 340
Euston, Carol
A Better Place to Be. A Guide to Environmental Learning in Your Classroom.
Department of the Interior, Washington, D.C.
Pub Date [75]
Note—43p.
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (Stock No. 2400-00805, $1.25)
EDRS Price MF-$0.76 HC-$1.95 Plus Postage
Descriptors—Air Pollution Control, *Ecology, *Elementary Grades, Energy Conservation, *Instructional Materials, Interdisciplinary Approach, Learning Activities, Resource Materials, *Science Education, Water Pollution Control
This booklet, designed for elementary teachers, contains ideas for involving students in firsthand experience with their environment and practical suggestions for preservation and improvement of their own homes and neighborhoods. The goals of this booklet are to increase environmental awareness and to help the students become responsible citizens. Among the topics discussed are: Environmental Learning in Your Classroom; Getting Started; Ecosystems and Classroom Activities; Environmental Problems and Activities; Environmental Learning and the Total Curriculum; School Site Development, Family Participation, Schoolwide Programs, and Awards and Recognition. A listing of environmental organizations, materials and sources, suggested readings and audiovisual aids concludes this booklet. (BT)

ED 121 568 88 SE 019 335
Bennett, Dean B Willink, Wesley H
Environmental Education Teacher's Guide: Composite K-6.
Maine Environmental Education Project, Yarmouth.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 75
Note—210p.; For related documents, see SE 019 332-334; Occasional Marginal Legibility
Available from—Maine Environmental Education Project, Intermediate School, Yarmouth, Maine 04096 (free)
EDRS Price MF-$0.83 HC-$11.37 Plus Postage
Descriptors—Concept Formation, *Curriculum Guides, *Elementary Grades, Environment, *Environmental Education, Field Trips, Instructional Materials, *Learning Activities, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This Environmental Education Teacher's Guide, developed for use at the K-6 level, is designed to familiarize teachers with how an environmental education program can help in their teaching and in achieving the goals of the school. This program focuses on developing attitudes towards study environments and associated environmental problems. The study environments have been selected to provide a means of expanding the scope and complexity of understandings. At the kindergarten/grade one level, the school environment is emphasized; grades two and three, the neighborhood, grades four and five, the community, and grade six, the region. The guide is divided into three sections. Section I, The Big Ideas, contains major concepts and attitudes, teaching roles and student skills, process teaching examples, and general concept emphasis. Section II, Examples of Activities and Pre-Post Tests, contains core experiences, concepts, and pre- and post-tests for kindergarten through grade six. Section III, Other Useful Information, includes information on planning and conducting field trips, environmental evaluation and identification of improvement opportunities, evaluation of the Man-Made Environment and environmental problem-solving and improvement activities. (BT)

ED 130 821 SE 020 263
Environmental Education. Energy - Transportation, Grades K-8.
New Jersey State Council for Environmental Education, Upper Montclair.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [75]
Grant—OEG-0-71-1754(290)
Note—55p.; For related documents, see SE 020 264 and SE 020 739; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—Conservation Education, *Elementary Education, *Energy Conservation, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Resource Materials, Science Education
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
The activities in this publication are taken from one of the thirteen units comprising the "Environment and the Quality of Life" series in New Jersey. This book is one of three containing energy-related student activities at various grade levels. The topic of this particular book is energy transportation. The activities correspond to a number of behavioral objectives and are further grouped according to suitability for pupils in grades K-8. Interdisciplinary in approach, the activities are taken from the subjects of science, art, social studies, mathematics, language arts, English, manual arts, health, and guidance. The book contains some charts and illustrations, as well as a listing of supplementary references. (MA)

ED 134 415 SE 021 482
Samuel, Barry C.
Our Environment - A Collection of Lessons.
Council on the Environment of New York City, N.Y.
Pub Date 73
Note—72p.
Available from—Council on the Environment of New York City, 51 Chambers Street, New York, New York 10007 ($1.50)
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Elementary Education, *Elementary School Science, *Environment, *Environmental Education, *Instructional Materials, *Teaching Guides, Urban Areas
The lessons in this publication present a concrete approach to the teaching of environmental science for grades 3 through 8. The ideas presented are geared for use in an urban setting. The material is structured so that it can be used as an entire unit or parts of it can be adapted for use with on-going classroom activities. Twenty-seven lessons are included. Each activity includes suggestions for motivation, procedures to follow, questions to raise, and answers to many of the questions. Sketches for overhead transparencies are included for many of the lessons. (RH)

ED 134 448 SE 021 919
Valuing the Environment, K-6.
Charlotte-Mecklenburg Public Schools, Charlotte, N.C.
Spons Agency—North Carolina State Dept. of Public Instruction, Raleigh. Div. of Development
Pub Date [75]
Note—143p.; For related documents, see SE 021 920 and ED 106 087; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—Conservation Education, *Elementary Education, *Environmental Education, *Instructional Materials, Learning Activities, *Natural Resources, Outdoor Education, Science Activities, Science Education, *Values
This guide was developed for use in grades K-6 as an enrichment program based on clarifying values. The program, designed by teachers, aims to develop in the student a greater awareness and understanding of the community, themselves, and the earth. The program includes a number of environmental encounters. Topical themes lead teachers and students through main areas of awareness: Plants and Animals, Water, Air, Energy, Natural Resources, Land Use, and Aesthetics and Pollution. The conceptual schemes under each area of awareness increase in complexity ac-

cording to the development level of the students The activities in the encounters are action-oriented, student-centered activities which provide "handsnon" learning experiences. Each encounter provides background information, behavioral objectives, activities, a resource reference listing, and value clarification strategies Instructions for use of the value clarification strategies contained in the program are included (Author/RH)

ED 134 535 95 SO 009 820

King, David C. De La Sota, Ann

Suggestions for Curriculum Development [And] Handbook Primary Grades. Part A, K-3, Environmental Education Interdependence: A Concept Approach, Revised.

Center for Global Perspectives, New York, N.Y

Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.

Pub Date Sep 76

Note—64p.; For related documents, see SO 009 821-823

Available from—Center for Global Perspectives, 218 East 18th Street, New York, New York 10003 (guide $1.50, handbook $2.00)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Bibliographies, Concept Formation, *Concept Teaching, Curriculum Development, Educational Objectives, Elementary Education, *Environmental Education, Global Approach, *Interdisciplinary Approach, Learning Activities, *Lesson Plans, Primary Education, Relationship, *Teaching Methods

Identifiers—*Interdependence

Two booklets, a guide and handbook, comprise the K-3 component of a series of guides for incorporating environmental education into the existing curriculum The materials emphasize a multidisciplinary approach, use the concept of interdependence as an organizing theme, and offer suggestions for using the local community as a resource. The guide outlines eight objectives, including understanding of the relationship of parts of a system to the whole and using skills from many subject areas to explore the student's environment. Activities and bibliographic resources are provided for helping children learn about families and cities as systems, interdependence of people and plants, and use of tools to help people interact with the land. The handbook contains 12 lessons which are either concept-building exercises or activities in which students use the concept to explore various content areas. For each lesson, the goal, objective, materials, procedure, follow-up activities, and alternative learning activities are presented. Students examine the workings of a retractable ball-point pen, try to perform normal class activities with thumbs taped down, identify all the systems each student belongs to at any particular moment, and explore problems of overcrowded systems. (AV)

ED 134 536 95 SO 009 821

King, David C. Long, Cathryn J.

Suggestions for Curriculum Development [And] Handbook Upper Elementary Grades, Part B, 4-6, Environmental Education Interdependence: A Concept Approach, Revised.

Center for Global Perspectives, New York, N.Y.

Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education

Pub Date Sep 76

Note—102p.; For related documents, see SO 009 820-823

Available from—Center for Global Perspectives, 218 East 18th Street, New York, New York 10003 (guide $1.50, handbook $2.00)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Bibliographies, Concept Formation, *Concept Teaching, Curriculum Development, Educational Objectives, Elementary Education, *Environmental Education, Global Approach, Grade 4, Grade 5, Grade 6, *Interdisciplinary Approach, Learning Activities, *Lesson Plans, Relationship, Social Studies, *Teaching Methods

Identifiers—*Interdependence

Two booklets comprise the grades 4-6 component of a series of guides for incorporating environmental education into the existing curriculum. Both the guide and handbook emphasize a multidisciplinary approach, use the concept of interdependence as an organizing theme, and offer suggestions for using the local community as a resource to study the individual's relationship to the total environment Among eight objectives are understanding the meaning of systems and interdependence, recognizing that people use and shape their environments, and appreciating relationships between one's immediate surroundings and the natural systems of the planet. In the guide, activities and related readings are suggested for achieving the objectives in specific subject areas social studies, art, science, mathematics, U.S. and state history, reading, and writing For example, students use a globe to calculate how much of the planet is land and how much land is habitable The handbook contains 11 lessons, many based on readings which emphasize comparison of human and environmental systems, the role of microbes, and environment-dependent communities such as a river town Some activities involve the exploration of students' familiar surroundings; others focus on global issues Each lesson contains goals, objectives, activities, and follow-up activities. (AV)

ED 141 141 SE 022 663

Water for Fun. A Learning Experience for Coastal and Oceanic Awareness Studies, No. 104, [Project COAST].

Delaware Univ., Newark Coll. of Education.

Spons Agency—Office of Education (DHEW), Washington, D.C.

Pub Date 74

Note—17p.; For related documents, see SE 022 662-687. Contains occasional light type

EDRS Price MF-$0.83 HC-$1.67 Plus Postage.

Descriptors—*Elementary Education, *Instructional Materials, *Language Arts, *Oceanology, Reading, *Recreation, *Teaching Guides, *Vocabulary Development

Identifiers—Project COAST

This teaching guide for students in grades K-4 provides suggestions for 2 class periods of instruction related to recreational use of water areas Some supplementary language arts activities and a suggested book list are also included (RH)

ED 142 427 SE 022 815

Environmental Studies Center Teacher Books, Kindergarten - Your Environment.

Martin County Schools, Jensen Beach, Fla. Environmental Studies Center.

Pub Date 76

Note—33p.; For related documents, see SE 022 816-823. Not available in hard copy due to colored pages throughout entire document

Available from—Environmental Studies Center, 2900 NE Indian River Dr., Jensen Beach, Florida 33457 ($1.00, all 9 books $20.00)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Curriculum Development, Elementary Education, *Elementary Grades, Environment, *Environmental Education, *Instructional Materials, Kindergarten, Learning Activities, Nature Centers, *Oceanology, Outdoor Education, *Teaching Guides

Identifiers—Estuaries, Florida

This teacher's guide, one of nine teacher packages developed for use in the sequential, hands-on, field-oriented, K-8 environmental education program of the Martin County Schools in Florida, was developed for use with kindergarten children prior to and after a visit to an environmental studies center located near an estuarine area. This kindergarten program includes a variety of activities designed to acquaint the student with the term "Environment." The guide contains teacher instructions, scripts, tests with answer key, and a copy of all student materials. Flash cards, a felt board story, and slide/tape program are not included. General and specific program objectives are stated and a program outline, including learning activities to be completed at the school and the environmental studies center, is detailed (BT)

ED 142 429 SE 022 817

Environmental Studies Center Teacher Books, 2nd Grade - Communities.

Martin County Schools, Jensen Beach, Fla. Environmental Studies Center.

Pub Date 76

Note—52p.; For related documents, see SE 022 815-823. Not available in hard copy due to marginal legibility of original document

Available from—Environmental Studies Center, 2900 NE Indian River Dr., Jensen Beach, Florida 33457 ($1.50, all 9 books $20.00)

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—Curriculum Development, *Ecology, Elementary Education, *Elementary Grades, *Environmental Education, Grade 2, Instructional Materials, Learning Activities, Nature Centers, *Oceanology, Outdoor Education, *Teaching Guides

Identifiers—*Estuaries, Florida

This teacher's guide, one of nine teacher packages developed for use in the sequential, hands-on, field-oriented, K-8 environmental education program of the Martin County Schools in Florida, was developed for use with elementary children in grade two prior to and after a visit to an environmental studies center located near an estuarine area. The grade two program centers around the concept of "Communities" and is designed to stimulate the students' use of all their senses in discovering more about their surroundings This guide contains teacher instructions, scripts, tests with answer keys, and a copy of all student materials Flash cards and five slide/tape programs are not included. General and specific program objectives are stated and a program outline, including learning activities to be completed at the school and environmental studies center, is detailed (BT)

ED 144 786 SE 022 922

Suggested Activities for Environmental Education in the Elementary Schools.

Texas Education Agency, Austin Div of Curriculum Development

Pub Date 77

Note—41p.; For related document, see SE 022 923. Not available in hard copy due to colored print throughout entire document

EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.

Descriptors—*Classroom Materials, Curriculum Enrichment, *Curriculum Guides, *Elementary Education, *Environmental Education, *Instructional Materials, Learning Activities, Resource Materials, Science Education

Identifiers—Texas Education Agency

This publication is designed as a model to assist elementary teachers in developing environmental education activities in all subject areas Both public school and college educators developed this guide to help make children aware of the value of the environment and of the responsibility they have for conserving it Discussions of the curriculum model for the guide and the program format and criteria are included for the teacher The curriculum model demonstrates the interrelationships of personal concerns, environmental concerns, and educational process A multidisciplinary approach is an important component in every suggested activity topic Some of the areas covered are environmental ethics types of pollution, population, urbanization, transportation, and energy Each topic includes a short overview and a listing of generalizations and suggested pupil activities The educational experiences and activities are designed to individualize student learning, emphasize community involvement, and encourage exploratory and investigative learning A companion guide is also available for secondary grades (Author/MA)

ED 147 581 CE 014 021

Lawson, Jane And Others

Travel On! Mini-Units and Learning Activities on Transportation for Grades K-3.

Abt Associates, Inc Cambridge, Mass

Spons Agency—Office of Consumer Affairs, Washington, D.C.

Pub Date 77

Contract—DOT-OS-30086, DOT-OS-50026

Note—422p.; For related documents see CE 014 021-032

EDRS Price MF-$0.83 HC-$22.09 Plus Postage.

Descriptors—Basic Skills, Curriculum Guides, Elementary Education, *Elementary School Curriculum, Energy Conservation, Environmental Education, Group Activities, Independent

Study, Kindergarten, *Learning Activities, Lesson Plans, Motor Vehicles, Pedestrian Traffic, Pollution, Primary Education, Resource Materials, *Safety Education, Service Vehicles, Skill Development, Traffic Regulations, *Traffic Safety, Traffic Signs, *Transportation, *Vehicular Traffic

One of a series of eleven curriculum manuals which cover the four transportation topics of public transportation, transportation and the environment, transportation safety, and bicycles for elementary, secondary, and adult levels, this manual for grades K-3 covers all four topics Materials in the thirteen mini-units present different aspects of the four topics Each mini-unit consists of a lesson plan component, which provides a suggested sequence of learning activities, and an individual learning activities component which describes in detail how to implement the exercises Typical mini-units focus on street signs, emergency vehicles, learning to ride a bike, and an introduction to the concepts of pollution and energy conservation Most units provide opportunity to exercise basic skills in language arts, mathematics, and social interaction and thus may be integrated with other parts of the K-3 curriculum. Supplementary activities are included for each topic which offer additional learning activities for independent use, quizzes for activity or mini-unit evaluation are also included. Also included are instructions for selecting and conducting the activities and references for further study resources Masters are included for reproduction of role profiles, game boards, maps, and other distributable materials A curriculum guide, CE 014 028, is also available for use with the manuals. (TA)

ED 147 582 CE 014 022

Lawson, Jane And Others

Travel On! Mini-Units and Learning Activities on Transportation for Grades 4-6.

Abt Associates, Inc Cambridge, Mass

Spons Agency—Office of Consumer Affairs, Washington, D C.

Pub Date 77

Contract—DOT-OS-30086, DOT-OS-50026

Note—456p., For related documents see CE 014 021-032

EDRS Price MF-$0.83 HC-$24.77 Plus Postage.

Descriptors—Basic Skills, Curriculum Guides, Elementary Education, Elementary School Curriculum, Energy Conservation, Environmental Education, Group Activities, Independent Study, Intermediate Grades, *Learning Activities, Lesson Plans, Motor Vehicles, Pedestrian Traffic, Pollution, Resource Materials, *Safety Education, Service Vehicles, Skill Development, Traffic Regulations, *Traffic Safety, Traffic Signs, *Transportation, *Vehicular Traffic

One of a series of eleven curriculum manuals which cover the four transportation topics of public transportation, transportation and the environment, transportation safety, and bicycles for elementary, secondary, and adult levels, this manual for grades 4-6 covers all four topics Materials in four chapters comprising fourteen mini-units cover different aspects of each of the four topics Each mini-unit consists of a lesson plan component, which provides a suggested sequence of learning activities, and an individual learning activities component, which describes in detail how to implement each exercise Typical elementary mini-units focus on street signs, emergency vehicles, learning to ride a bike, and an introduction to the concepts of pollution and energy conservation Most units provide opportunity to exercise basic skills in language arts, mathematics, and social interaction Supplementary activities are included at the end of each chapter which offer additional learning activities for independent use, Also included are readings on transportation and the environment, a list of references for further study resources, and masters for reproduction of role profiles, game boards, maps, and other distributable materials. (A curriculum guide, CE 014 028, is also available for use with the manuals.) (TA)

ED 147 589 CE 014 029

Finn, Peter And Others

Transportation and the Environment in Harmony: Mini-Units and Learning Activities for Grades 6 through 9.

Abt Associates, Inc Cambridge, Mass

Spons Agency—Office of Consumer Affairs, Washington, D.C

Pub Date 77

Contract—DOT-OS-30086, DOT-OS-50026

Note—240p; For related documents see CE 014 021-032

EDRS Price MF-$0.83 HC-$12.71 Plus Postage.

Descriptors—Consumer Education, Curriculum, Curriculum Guides, *Environmental Education, Group Activities, Independent Study, Junior High Schools, *Learning Activities, Lesson Plans, Middle Schools, *Motor Vehicles, Pollution, Resource Materials, Safety Education, Secondary Education, Skill Development, Traffic Safety, *Transportation, *Vehicular Traffic

One of a series of eleven curriculum manuals which cover the four transportation topics of public transportation, transportation and the environment, transportation safety, and bicycles for elementary, secondary, and adult levels, this manual covers the transportation and the environment topic for grades 6-9. It contains thirty-nine learning activities grouped into seven mini-units. Each mini-unit consists of a lesson plan component, which provides a suggested sequence of learning activities, and an individual learning activities component, which describes in detail how to implement each exercise The first mini-unit provides a survey of issues related to transportation and the environment; the rest are as follows learning about the interrelations between transportation and the environment, learning about the automobile's effects on the environment, identifying solutions to conflicts between transportation and the environment, taking personal action to resolve conflicts between transportation and the environment, exploring how citizen participation can help resolve conflicts between transportation and the environment, and researching issues related to transportation and the environment A final section offers additional activities that may be used to evaluate or supplement evaluation of an activity or mini-unit. Also included are references for further study resources, and for reproduction of role profiles, game boards, maps, and other distributable materials (A curriculum guide, CE 014 028, is also available for use with the manuals.) (TA)

ED 149 843 PS 009 731

Language, Ecology, and Families (L.E.A.F.): A Guide to K-3 Language/Ecology Activities.

Janesville Joint District 1, Wis

Spons Agency—Bureau of School Systems (DHEW/OE), Washington, D.C

Pub Date 77

Note—262p.

EDRS Price MF-$0.83 HC-$14.05 Plus Postage.

Descriptors—*Communication Skills, Composition Skills (Literary), *Curriculum Guides, *Ecology, *Environmental Education, Grade 1, Grade 2, Grade 3, Kindergarten, *Language Development, Learning Activities, Outdoor Education, Parent Participation, *Primary Education, Science Activities, Vocabulary Development

This Project L.E.A.F. guide to ecology and language development activities for the primary grades consists of separate sections for kindergarten and grade 1 and a combined section for grades 2 and 3. Project L.E.A.F.—Language, Environment (Ecology) and Families—involved 270 Wisconsin primary school students in a model program with three main goals (1) to stimulate the development of oral and written communication skills through the study of ecology, (2) to involve parents and children in ecology-oriented activities, and (3) to create a greater awareness of ecology among elementary school children. Each grade section of the guide is divided into subject units geared to seasons of the year, with lesson plans within each unit providing a variety of suggested learning activities and lists of resource materials. Activities include art and construction projects, observation walks, gardening, caring for animals, field trips and experiments, as well as language development activities. The kindergarten and first grade sections (23 and 17 units) cover plants, insects, animals and weather. Grade 1 units are designed for one or more weeks. The second and third grade section consists of 9 units, with 6 to 14 lesson plans per unit and a 23-plan unit on environmental writing Subject areas for grades 2-3 are forest, prairie, pond and wetland, desert and jungle environments, and pollution problems. (BF)

ED 149 979 SE 023 448

Environmental Education. Values for the Future: Curriculum. Population. Environmental Ethics. Environmental Decisions. Economics, Ecosystems, Energy, and Technology. Packet K-2.

Illinois State Office of Education, Springfield.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date 77

Grant—IOE-551-2-75

Note—233p., For related documents, see SE 023 449-457 and SE 023 459-465; Contains occasional light and broken type

EDRS Price MF-$0.83 HC-$12.71 Plus Postage.

Descriptors—*Curriculum Guides, Elementary Education, *Environmental Education, *Instructional Materials, *Learning Activities, Population Education, *Primary Education, Resource Materials, Science Education, *Teaching Guides, Values

Identifiers—Elementary Secondary Education Act Title III

This booklet is one of a series in environmental education for students in grades K-12. Scientific literacy, a major goal of the program, is divided into seven concept areas Economics, Ecosystems, Energy, Technology, Population, Environmental Ethics, and Environmental Decisions Each of these areas represents a separate unit in the program An introductory section gives the structure, goals, and guidelines of this program. Each of the sections is color-coded for the appropriate concept area. These sections contain behavioral objectives, appropriate subject areas, and activity options Each option gives a listing of materials and resources, procedures, and discussion questions. There are numerous illustrations to assist the teacher This booklet is designed for grades K-2. (MA)

ED 149 980 SE 023 449

Environmental Education. Values for the Future: Curriculum. Population. Environmental Ethics, Environmental Decisions, Economics, Ecosystems, Energy, and Technology. Packet 3-5.

Illinois State Office of Education, Springfield.

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date 77

Grant—IOE-551-2-75

Note—266p.; For related documents, see SE 023 448-457 and SE 023 459-465, Pages 6, 7, and 21 of the Technology section removed prior to being shipped to EDRS due to copyright restrictions

EDRS Price MF-$0.83 HC-$14.05 Plus Postage.

Descriptors—*Curriculum Guides, *Elementary Education, *Environmental Education, *Instructional Materials, *Learning Activities, Population Education, Resource Materials, Science Education, *Teaching Guides, Values

Identifiers—Elementary Secondary Education Act Title III

This booklet is one of a series in environmental education for students in grades K-12. Scientific literacy, a major goal of the program, is divided into seven concept areas Economics, Ecosystems, Energy, Technology, Population, Environmental Ethics, and Environmental Decisions. Each of these areas represents a separate unit in the program An introductory section gives the structure, goals, and guidelines of this curriculum program Each of the sections is color-coded for the appropriate concept area. These sections contain behavioral objectives, appropriate subject areas, and activity options Each option gives a listing of materials and resources, procedures, and discussion questions There are illustrations to assist the teacher. This particular booklet is designed for grades 3-5. (MA)

ED 149 982 SE 023 451

Environmental Education. Values for the Future: Population. Grades 6-8.

Illinois State Office of Education, Springfield

Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C

Pub Date 77

Grant—IOE-551-2-75

Note—58p., For related documents, see SE 023

448-457 and SE 023 459-465.
EDRS Price MF-$0.83 HC-$3.06 Plus Postage.
Descriptors—*Elementary/Secondary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Middle Schools, Natural Resources, *Population Education, Resource Materials, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III
This booklet on population is one of a series in environmental education for grades K-12. The activities contained within develop the concept of origin of life and the role of culture in determining population interactions. Four basic concepts are listed and the behavioral objectives, associated subject areas, and key words and definitions are included for each. Three activity options are given for each concept. Information for the teacher includes materials and resources needed for the activity, the procedure, discussion questions, further activities, and sample worksheets. These activities are interdisciplinary in nature and designed for students in grades 6-8. (MA)

ED 149 984 SE 023 453
Environmental Education. Values for the Future: Environmental Decisions. Grades 6-8.
Illinois State Office of Education, Springfield
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—56p.; For related documents, see SE 023 448-457 and SE 023 459-465. Page 21 "Auto Data" marginally legible. Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Decision Making, *Elementary Secondary Education, Environment, *Environmental Education, *Instructional Materials, Middle Schools, Natural Resources, Pollution, *Problem Solving, Teaching Guides, *Values
Identifiers—Elementary Secondary Education Act Title III
This booklet on environmental decisions is one of a series in environmental education for grades K-12. The activities contained in this booklet are designed to identify components of complex decision making and to develop the idea of responsibility for decisions. Six basic concepts are listed, along with the behavioral objectives, subject areas, key words and definitions associated with each. Three activity options are given for each concept. Information for these activities includes materials and resources, procedures, discussion questions, further activities, and sample worksheets. The activities are interdisciplinary and designed for students in grades 6-8. (MA)

ED 149 987 SE 023 456
Environmental Education. Values for the Future: Energy. Grades 6-8.
Illinois State Office of Education, Springfield
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—47p.; For related documents, see SE 023 448-457 and SE 023 459-465. Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Elementary Secondary Education, *Energy, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Middle Schools, Natural Resources, Resource Materials, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III
This booklet on energy is one of a series in environmental education for grades K-12. The activities contained within address the effect of culture in determining energy needs, energy loss, and forms of energy. Four basic concepts are listed, along with behavioral objectives, subject areas, key words, and definitions for each. The three activity options associated with each concept include the following information: materials and resources, procedures, discussion questions, [illegible] activities, and sample worksheets. These interdisciplinary activities are designed for students in grades 6-8. (MA)

ED 149 988 SE 023 457
Environmental Education. Values for the Future: Technology. Grades 6-8.
Illinois State Office of Education, Springfield
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—48p.; For related documents, see SE 023 448-456 and SE 023 459-465. Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Ecology, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Middle Schools, Natural Resources, Science Education, *Teaching Guides, *Technology
Identifiers—Elementary Secondary Education Act Title III
This booklet on technology is one of a series in environmental education for grades K-12. It is concerned with the relationship of technology to the use of resources and the effect of technology on the environment. Four basic concepts are listed, along with behavioral objectives, subject areas, key words, and definitions for each. The three activity options developing each concept include the following information: materials and resources, procedures, discussion questions, further activities, and sample worksheets. These activities include surveys, filmstrips, role play, and collages for students in grades 6-8. (MA)

ED 153 819 SE 024 108
Oklahoma Energy Awareness Education, Energy Education Activities. Grades K-3.
Oklahoma State Dept of Education, Oklahoma City.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Note—176p.; For related documents, see SE 024 109-110. Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activity Units, *Elementary Education, *Energy, Energy Conservation, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Natural Resources, *Primary Education, Units of Study
Identifiers—*Oklahoma
This publication contains energy education activities for grades K through 3 and is part of a set of three publications. These activities are organized under five energy concepts: (1) energy is so basic that nothing moves without it, (2) conservation of energy, (3) there are other energy alternatives, (4) our society depends on energy, and (5) the production and distribution of energy have environmental and economic consequences. This publication is constructed in a looseleaf fashion to facilitate the reproduction of activities. Purpose, concept or objective, materials, and activity description are given for each activity. Activities involve students in games, values clarifications, and independent investigations. Activities may be selected and used in the curriculum as desired to achieve an interdisciplinary approach. (MR)

ED 153 845 SE 024 171
Bloch, Lenore And Others
Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy: 5. Community Workers and the Energy They Use, Grade 2.
National Science Teachers Association, Washington, D.C.
Spons Agency—Bureau of Intergovernmental and Institutional Relations (DOE), Washington, D.C. Office of Education, Business and Labor Affairs
Report No—EDM-1030
Pub Date Oct 77
Contract—EX-76-C-10-3841
Note—77p.; For related documents, see SE 024 167-172 and SE 024 218
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee 37830 (no price quoted)
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—Economics, Elementary Education, *Energy, Environment, Grade 2, *Instructional Materials, *Science Education, *Social Studies, *Teaching Guides
This instructional unit for the second grade is intended to stimulate the child's curiosity to know more and to grasp relationships through a blending of ideas about energy with a study of the effect of the use of energy on the livelihood of people in the community. There are four lessons in the unit. The first, Introduction to Energy, deals with the question, "What is energy and energy conservation?" The second lesson, Community Workers Who Work Directly With the Sources of Energy, discusses farmers, grocers, food processors, oil workers, gas station attendants, and meter readers. The third lesson is entitled Community Workers Whose Work Depends on a Continual Supply of Energy. The fourth lesson is Community Workers Who Make Decisions About Energy. Each lesson contains complete teacher and student materials including background readings, objectives, teaching strategies, and suggestions for extending the learning outside the classroom. (BB)

ED 153 846 SE 024 172
Bloch, Lenore And Others
Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy: 6. The Energy We Use, Grade 3.
National Science Teachers Association, Washington, D.C.
Spons Agency—Bureau of Intergovernmental and Institutional Relations (DOE), Washington, D.C. Office of Education, Business and Labor Affairs
Report No—EDM-1029
Pub Date Oct 77
Contract—EX-76-C-10-3841
Note—47p.; For related documents, see SE 024 167-171 and SE 024 218
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee 37830 (no price quoted)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Curriculum Guides, Elementary Education, Elementary School Science, *Energy, Environmental Education, *Grade 3, *Lesson Plans, Science Education, *Science Units, Unit Plan
This instructional unit contains a set of nine lessons on energy for grade one. Each lesson contains complete teacher and student materials. Reading skills and language experiences are reinforced in each activity. The lessons cover such topics as energy from food, energy from the sun, fossil fuels, the wind moving water and energy conservation. The children examine things such as cereal grains to learn about food energy, make clay dinosaurs to get some idea about the formation, time of coal, oil, and natural gas, and become part of a pinwheel parade showing the energy in wind. (BB)

ED 153 859 SE 024 218
Johnson, Bette Swanson, Olivia
Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy. Networks: How Energy Links People, Goods and Services, Grades 4, 5.
National Science Teachers Association, Washington, D.C.
Spons Agency—Bureau of Intergovernmental and Institutional Relations (DOE), Washington, D.C. Office of Education, Business and Labor Affairs
Report No—HCP/U-3841-0005
Pub Date Feb 78
Contract—EX-76-C-10-3841
Note—107p.; For related documents, see SE 024 167-172; Not available in hard copy due to marginal legibility of original document
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee 37830 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Electricity, *Elementary Education, *Energy, Grade 4, Grade 5, *Instructional Materials, Integrated Curriculum, *Science Education, *Social Studies, *Teaching Guides
The purpose of this unit is to investigate a sim-

ple energy network and to make an analogy with similar mutually supporting networks in the natural and man-made worlds. The lessons in this unit develop the network idea around a simple electrical distribution system that we depend on and also into further consideration of electrical energy itself. The network idea in the later lessons emphasizes the interdependence of the man-made network for producing and distributing electrical energy and the natural ecological network. In the final lesson, the consuming end of the network is examined and some strategies for consuming electrical energy are examined. Students should learn that energy networks such as the electrical circuits are a necessary part of modern life. They are also expected to learn about sources, conversions, and uses of electrical energy. There are six lessons in this fourth- and fifth-grade unit. Complete teacher and student materials are provided. (BB)

ED 157 682 SE 022 841
Tully, Randolph R., Jr., Ed.
A Curriculum Activities Guide to Interdisciplinary Environmental Studies.
Project KARE, Blue Bell, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 76
Grant—OEG-71-1775
Note—195p.; For related documents, see SE 022 840-842
Available from—Project KARE, Colony Office Bldg., Route 73 & Butler Pike, Blue Bell, Pa. 19422 (no price quoted)
EDRS Price MF-$0.83 HC-$10.03 Plus Postage.
Descriptors—Curriculum Guides, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, *Learning Activities, Natural Resources, Resource Materials, Science Education, *Teacher Developed Materials
Identifiers—Project KARE
This guide contains a variety of interdisciplinary learning activities in environmental education. It was developed by teachers and intended for use in elementary or junior high school programs. The contents are divided into six sections according to subject (1) Art and Sensitivity, (2) Language Arts, (3) Mathematics; (4) History; (5) Social Studies, and (6) Science. Each activity includes introduction, equipment list, procedure, and questions. There are over 80 activities total, and each content subject has activities that are related to other subject areas by topic. An appendix explains the development work done in writing this guide. (MA)

ED 157 683 SE 022 842
Sexton, Alan D., Ed.
A Curriculum Activities Guide to Selected Environmental Topics for Use With Elementary and Junior High School Students.
Project KARE, Blue Bell, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 74
Grant—OEG-71-1775
Note—133p.; For related documents, see SE 022 840-841
Available from—Project KARE, Colony Office Bldg., Route 73 & Butler Pike, Blue Bell, Pa. 19422 (no price quoted)
EDRS Price MF-$0.83 HC-$7.35 Plus Postage.
Descriptors—*Curriculum Guides, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, *Learning Activities, Natural Resources, Pollution, Population Education, Science Education
Identifiers—Project KARE
This guide contains learning activities in environmental education developed by teachers and intended for use at the elementary or junior high school levels. Topics covered include water, esthetics, air, soil and sediment, solid waste, energy, noise, population, and transportation. Generally, each activity contains an introduction, a listing of materials, the statement of procedure, and several appropriate questions to ask the students. Activities are interdisciplinary and include pond studies, poetry writing, and art work. The appendix contains information about the development and writing of this curriculum guide. (MA)

ED 157 760 SE 024 762
Graham, Phyllis And Others
Population as Conservival: A Guide to Activities and Strategies in Environmental Education, Grades 6-8.
Florida State Dept. of Education, Tallahassee. Office of Environment Education
Pub Date Aug 76
Note—184p.; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$10.03 Plus Postage.
Descriptors—Conservation Education, Ecology, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, *Natural Resources, Sciences, *Teaching Guides
This teaching guide contains a variety of environmental education activities divided by grade level. A general objective is stated, followed by as many as 25 related activities. Each activity is short, and many are followed by discussion questions. This guide should prepare students for critical appraisal and responsible decision-making in utilizing the earth's resources. (Author/RH)

ED 157 762 SE 024 764
Arith, Judy, Comp.
Man and Mather Nature: A Balance.
Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date 76
Note—115p.; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$6.01 Plus Postage.
Descriptors—Biological Sciences, *Conservation Education, Ecology, *Elementary Education, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, Outdoor Education, Pollution, *Teaching Guides
This series of interdisciplinary activities, some of which are done outside the classroom, promotes awareness of the relationship between nature and man. The booklet contains student worksheets, resource lists, a bibliography, and units on ecology and tree conservation. Lessons, which are short and varied, cover topics such as awareness, pollution, conservation recycling, and balance. Most of the lessons follow the same format: objective, materials, introduction, activity, discussion, and follow-up activity. The materials are designed for primary school students. (Author/RH)

ED 157 763 SE 024 765
Abbott, Cleo And Others
Hoppergrass and Stickerbush: A Beginning. A Guide to Activities and Strategies in Environmental Education, Grades K-5.
Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date 75
Note—52p.; Contains occasional light type
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Biological Sciences, Conservation Education, Earth Science, Ecology, *Elementary Education, *Environmental Education, *Instructional Materials, *Teaching Guides
This publication serves as a guide to activities and strategies in environmental education. Lesson plans include objectives and suggested procedures in dealing with the following environmental concepts. (1) The earth is a vast but limited natural system; (2) The total environment is in constant change. (3) A living thing is the product of its heredity and environment; and (4) All living things, including man, are interdependent with one another and with their environment. The activities vary in complexity and amount of student activity. (Author/RH)

ED 157 764 SE 024 766
Courregés, Eugene Scudder, Elizabeth
Ecology of the City: Urban Environmental Awareness Teacher's Guide, Intermediate Level.
Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date 76
Note—224p.; Pages 92 and 144 missing from document prior to being shipped to EDRS for filming; Best copy available
EDRS Price MF-$0.83 HC-$11.37 Plus Postage.
Descriptors—Ecology, *Elementary Education, *Environmental Education, *Instructional Materials, Intermediate Grades, *Teaching Guides, *Urban Environment
This guide was developed for teachers to use in helping students understand components of the urban ecosystem. The guide is based on sequentially arranged performance objectives for each concept. Organization of the guide includes activities designed to link the urban units with the forest ecology unit which overlap in concepts and philosophy. A pre/post-test is also included. (Author/RH)

ED 158 301 CS 204 285
Palmer, Cynthia
Indian River County Environmental Education Instructional Guide: Language Arts, Seventh Grade, Pilot Edition.
Indian River County Board of Public Instruction, Vero Beach, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education
Pub Date 75
Note—42p.; For related documents, see CS204285-287
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Conservation (Environment), *Discovery Learning, English Curriculum, *English Instruction, *Environmental Education, Grade 7, Junior High Schools, *Language Arts, *Learning Activities, *Responsibility, Teaching Guides
As part of a language arts series for kindergarten through grade nine, this seventh grade guide examines environmental values, concepts, and problems, according to a common conceptual scheme all living things, including humans, are interrelated and interdependent; heredity and environment interact to determine the characteristics of an organism and therefore a population, living things and environments are in a continuous state of change, the world has finite resources and almost infinite demands are made on these resources, and each individual, as an agent of change, has a responsibility to the environment. The guide emphasizes the discovery process of observation and offers a series of environmental activities in the language arts areas of biography, creative writing, journalism, oral communication, poetry, reading, the short story, and spelling. The guide includes background information, a teacher outline, and task sheets for the students. (MAI)

ED 158 302 CS 204 286
Green, Nurva And Others
Indian River County Environmental Education Instructional Guide: Language Arts, Eighth Grade, Pilot Edition.
Indian River County Board of Public Instruction, Vero Beach, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date 75
Note—45p.; For related documents, see CS204285-287
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Conservation (Environment), *Discovery Learning, English Curriculum, *English Instruction, *Environmental Education, Grade 8, Group Discussion, Junior High Schools, *Language Arts, *Learning Activities, Reading Skills, *Responsibility, Teaching Guides, Writing Skills
As part of a language arts series for kindergarten through grade nine, this eighth grade guide examines environmental values, concepts, and problems, according to a common conceptual scheme all living things, including humans, are interrelated and interdependent, heredity and environment interact to determine the characteristics of an organism and therefore a population; living things and environments are in a continuous state of change, the world has finite resources and almost infinite demands are made on these resources, and each individual, as an agent of change, has a responsibility to the environment. The guide offers a series of environmental activities that stress the development of reading, writing, and discussion skills and emphasize the discovery method of observation. The guide includes background information, a teacher's outline, and task sheets for the students. (MAI)

ED 164 283 SE 025 380
Energy: Pennsylvania's Energy Curriculum for the Middle Grades.
Governor's Energy Council, Harrisburg, Pa.; Penn-

sylvania State Dept of Education, Harrisburg
Pub Date—77
Note—217p.; Drawings may not reproduce well
EDRS Price MF-$0.83 HC-$11.37 Plus Postage.
Descriptors—*Activity Units, Curriculum Design, *Curriculum Guides, *Energy Conservation, *Environmental Education, Experiential Learning, Instructional Materials, *Interdisciplinary Approach, *Junior High Schools, Objectives, Student Attitudes, Surveys
Identifiers—Energy Education, *Pennsylvania Department of Education
This publication is an energy curriculum for grades 7 through 9. In each of the six modules a number of activities are provided. The module titles are: (1) Energy: What is it About?; (2) Energy: Where Does it Go?; (3) Energy Its Present Sources; (4) Energy, Policy and Prospects; (5) Energy: Is There Another Way?; and (6) Energy: How Can I Help? Objectives, explanations of what to do, and teacher's notes are given for each activity. Where needed, diagrams, tables and other teaching aids are provided for direct copying. The types of activities range from simple lab experiments to group discussions. Other features of this publication include a bibliography, a list of possible audio-visual aids, and an attitude survey to help measure the effect of these energy education materials. This curriculum is designed to be an interdisciplinary and fairly complete energy education program which ultimately brings students to energy conserving lifestyles. However, teachers may easily adapt modules and activities to fit their own designs. (MR)

ED 164 341 SE 026 313
Dowd, Patricia
An Urban Environmental Education Curriculum Guide for a Sixth-Grade Teacher in Irvington.
Pub Date—Jun 78
Note—78p.; M.A. Dissertations, Kean College of New Jersey; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Curriculum, *Curriculum Guides, Environment, *Environmental Education, Health Education, Science Education, Urban Areas, *Urban Education, *Urban Environment, Urban Studies
The study investigates a strategy for integration of a comprehensive urban environmental education program into an existing school curriculum. It reviews data on the development of environmental education programs now in operation, and data on the subject community of Irvington, New Jersey. A product of the investigation was the development of a curriculum guide for environmental education for use in the sixth grade classes of the Irvington schools. The curriculum guide supplies background material, lessons, and sources for further research. The study concludes that there is a need for intervening environmental education into existing curricula, a need for preparation by teachers before implementing urban environmental education, and a need for a curriculum that will help students understand their social, physical and cultural interaction with the environment. (RE)

ED 166 009 SE 025 393
Jones, John, Ed.
Energy and Man's Environment: Activity Guide. An Interdisciplinary Teacher's Guide to Energy and Environmental Activities.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—76
Note—36p.; For related documents, see SE 025 393-399; Not available in hard copy due to copyright restrictions
Available from—Energy and Man's Environment, 0224 SW Hamilton, Suite 301, Portland, OR 97201 ($25.00 a set)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Activity Units, *Conceptual Schemes, Curriculum Development, Energy, *Energy Conservation, *Environmental Education, Experiential Learning, *Instructional Materials, Interdisciplinary Approach, *Objectives
This publication provides the goals, concepts, objectives, and rationale for the six activity guides in this series of energy education materials. The organization of this series, as presented in this publication, centers around six goals which correspond to the activity guides. Under each goal are several concepts, which in turn, have several objectives. These concepts and goals are referenced above the activities included in the guides. The six goals are: (1) It is essential that each person know that there are many sources of energy, (2) It is essential that each person know that people are dependent upon energy, (3) It is essential that each person know that energy can be converted from one form to another; (4) It is essential that each person know how man's use of energy creates an impact on the environmental and economic systems, (5) It is essential that each person know that the earth's resources are limited; and (6) It is essential that each person know that new energy sources and more efficient systems, accompanied by different consumption practices, may alter the world energy dilemma. This conceptual outline may be of use to teachers, curriculum specialists, and researchers. (MR)

ED 166 010 SE 025 394
Jones, John, Ed.
Energy and Man's Environment Activity Guide: An Interdisciplinary Teather's Guide to Energy and Environmental Activities, Section One - Sources of Energy.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—76
Note—44p.; For related documents, see SE 025 393-399; Not available in hard copy due to copyright restrictions
Available from—Energy and Man's Environment, 0224 SW Hamilton, Suite 301, Portland, OR 97201 ($25.00 a set)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Activity Units, Conceptual Schemes, Energy, *Energy Conservation, *Environmental Education, Instructional Materials, *Interdisciplinary Approach, Junior High Schools, Middle Schools, Natural Resources, *Objectives
Identifiers—*Energy Education
This publication presents the activities pertaining to the first goal of this activity guide series. The activities in this publication focus primarily on the availability of resources, forms of energy, natural laws, and socioeconomic considerations. These materials are appropriate for middle school and junior high school students. These activities, organized by objective under the concepts listed, are interdisciplinary and can be used in a variety of ways. The activities are simply ideas of things that students can do to help them understand the concepts. It has been left to the teacher to choose and implement these ideas as desired. Activities range from an energy unit "treasure hunt" to dramatizing an Inca coronation. (MR)

ED 166 011 SE 025 395
Jones, John, Ed.
Energy and Man's Environment Activity Guide: An Interdisciplinary Teacher's Guide to Energy and Environmental Activities, Section Two - Uses of Energy.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—76
Note—56p.; For related documents, see SE 025 393-399; Not available in hard copy due to copyright restrictions
Available from—Energy and Man's Environment, 0224 SW Hamilton, Suite 301, Portland, OR 97201 ($25.00 a set)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Activity Units, Conceptual Schemes, *Conservation (Environment), *Energy Conservation, Environmental Education, Instructional Materials, Interdisciplinary Approach, *Junior High Schools, *Middle Schools, *Objectives
This publication presents the activities pertaining to the second goal of this activity guide series. The activities in this publication focus primarily on awareness, conservation, and planning. These materials are appropriate for middle school and junior high school students. These activities, organized by objective under the concepts listed, are interdisciplinary and can be used in many ways. The activities are simply ideas of things that students can do to help them understand the concepts. It has been left for the teacher to choose and implement these ideas as desired. Activities range from writing a story that details the impact on members of a food chain when one member is removed to conducting a community survey to determine how people are trying to conserve energy. (MR)

ED 166 012 SE 025 396
Jones, John, Ed.
Energy and Man's Environment Activity Guide: An Interdisciplinary Teacher's Guide to Energy and Environmental Activities, Section Three - Conversion of Energy.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—76
Note—55p.; For related documents, see SE 025 393-399; Not available in hard copy due to copyright restrictions
Available from—Energy and Man's Environment, 0224 SW Hamilton, Suite 301, Portland, OR 97201 ($25.00 a set)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Activity Units, Conceptual Schemes, *Decision Making Skills, *Energy Conservation, Environmental Education, Instructional Materials, *Interdisciplinary Approach, *Junior High Schools, *Middle Schools, Objectives
This publication presents the activities pertaining to the third goal of this activity guide series. The activities in this publication focus on understanding conservation processes, efficiencies, socioeconomic costs, and personal decision-making. These materials are appropriate for middle school and junior high school students. These activities, organized by objective under the concepts listed, are interdisciplinary and can be used in many ways. The activities are simply ideas of things that students can do to help them understand the concepts. It remains for the teacher to choose and implement these ideas as desired. Activities range from stating the first and second laws of thermodynamics so the students' parents can understand them to designing a house which runs entirely on solar energy. (MR)

ED 166 013 SE 025 397
Jones, John, Ed.
Energy and Man's Environment Activity Guide: An Interdisciplinary Teacher's Guide to Energy and Environmental Activities, Section Four - Impacts of Energy.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—76
Note—83p.; For related documents, see SE 025 393-399; Not available in hard copy due to copyright restrictions
Available from—Energy and Man's Environment, 0224 SW Hamilton, Suite 301, Portland, OR 97201 ($25.00 a set)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Conceptual Schemes, *Energy Conservation, Environmental Education, Instructional Materials, *Interdisciplinary Approach, *Junior High Schools, *Middle Schools, Objectives, *Socioeconomic Influences
This publication presents the activities pertaining to the fourth goal of this activity guide series. The activities in this publication focus on the socioeconomic effects of energy uses and crises and the understandings needed to assess those effects. These materials are appropriate for middle school and junior high school students. These activities, organized by objective under the concepts listed, are interdisciplinary and can be used in many ways. The activities are simply ideas of things students can do to help them understand the concepts. It remains for the teacher to choose and implement those ideas as desired. Activities range from an experiment measuring sulphur dioxide in automobile exhaust to mapping the major sea lanes between oil producing countries and oil importing countries. (MR)

ED 166 014 SE 025 398
Jones, John, Ed.
Energy and Man's Environment Activity Guide: An Interdisciplinary Teacher's Guide to Energy and Environmental Activities, Section Five - Limits of Energy.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—76
Note—50p.; For related documents, see SE 025 393-399; Not available in hard copy due to copyright restrictions

Available from—Energy and Man's Environment, 0224 SW Hamilton, Suite 301, Portland, OR 97201 ($25.00 a set)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Conceptual Schemes, *Energy Conservation, *Environmental Education, High Schools, Instructional Materials, *Interdisciplinary Approach, *Junior High Schools, Middle Schools, Objectives, *Policy Formation
This publication presents the activities pertaining to the fifth goal of this activity guide series. The activities in this publication relate to understanding nature and the natural limits to growth, personal consumption practices, and the social and technological implications of rapidly depleting the world's natural resources. These materials are appropriate for middle school and junior high school students. These activities, organized by objective under the concepts listed, are interdisciplinary and can be used in a variety of ways. The activities are simply ideas of things students can do to help them understand the concepts. It remains for the teacher to choose and implement these ideas as desired. Activities range from writing a story explaining what the earth's energy resources will be like by the year 2000 to role playing an election to illustrate how the class can get their views into the government. Some of these activities may be suitable for high school students as well. (MR)

ED 166 015 SE 025 399
Jones, John. Ed.
Energy and Man's Environment Activity Guide: An Interdisciplinary Teacher's Guide to Energy and Environmental Activities, Section Six - Future Sources of Energy.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—76
Note—43p.; For related documents, see SE 025 393-398; Not available in hard copy due to copyright restrictions
Available from—Energy and Man's Environment, 0224 SW Hamilton, Suite 301, Portland, OR 97201 ($25.00 a set)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activities, Conceptual Schemes, *Energy Conservation, *Environmental Education, Instructional Materials, Interdisciplinary Approach, *Junior High Schools, *Middle Schools, Objectives, *Technology
This Publication presents the activities pertaining to the sixth goal of this activity guide series. The activities in this publication relate principally to the more advanced technologies and the implications of their development. These materials are appropriate for middle school and junior high school students. These activities, organized by objective under the concepts listed, are interdisciplinary. The activities are simply ideas of things students can do to help them understand the concepts. It remains for the teacher to use these ideas as desired. Activities range from preparing and delivering an energy briefing to the class using the style of Walter Cronkite and information collected from the news media to listing the various kinds of educational requirements needed to pursue a career in technology. (MR)

ED 167 355 SE 025 404
Gillespie, Judith A.
A Plan for an Energy Curriculum for the Elementary Grades.
Indiana Univ., Bloomington. Social Studies Development Center
Spons Agency—Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum
Pub Date—Jun 78
Note—48p.
Pub Type - Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors - Conservation Education, *Curriculum Development, *Elementary Education, *Energy, *Energy Conservation, Environmental Education, Evaluation, Information Dissemination, Science Education
This document is an outline of a project to develop, evaluate, and disseminate a set of curriculum materials for use in the elementary (K-6) grades. This paper sketches the role of schools in the energy problem, outlines goals and objectives for curriculum activities, and develops a plan for the content and use of the materials. Strategies for both dissemination and evaluation are discussed. Finally, it points out some links between this project and other efforts in the field, both in and outside of schools. (TM)

ED 167 402 SE 026 789
Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy: Energy and Transportation, Grade 3, Draft Copy.
National Science Teachers Association, Washington, D.C.
Spons Agency—Department of Energy, Washington, D.C.
Report No.—HCP/U-3841-0001
Pub Date—Dec 77
Contract—EX-76-C-10-3841
Note—118p.; Contains light and broken type
Available from—U. S. Department of Energy, Technical Information Office, P O Box 62, Oak Ridge, Tennessee 37830 (no price quoted)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 HC-$6.01 Plus Postage.
Descriptors—*Curriculum Enrichment, Elementary Education, Energy, *Energy Conservation, Environmental Education, *Grade 3, Interdisciplinary Approach, Pollution, *Transportation
Identifiers—*Energy Education, *Project for an Energy-Enriched Curriculum
This publication is part of a series of instructional units produced by NSTA's Project for an Energy-Enriched Curriculum. This unit presents the variety of transportation modes and tries to assist students in understanding the effects of transportation on their world. The main concern of the unit is with fossil fuel consumption. The seven activities presented here also include topics of pollution and transportation history. (MR)

ED 167 449 SO 011 523
Energy and Conservation Education: Activities for the Classroom, Grades 1-3.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—78
Note—366p.; For related documents, see SO 011 524-529
Available from—Energy and Man's Environment, 0224 S.W. Hamilton, No 301, Portland, Oregon 97201 ($24.00)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Class Activities, Classroom Games, Concept Teaching, *Conservation Education, Depleted Resources, Educational Objectives, Elementary Education, *Energy, *Energy Conservation, *Environmental Education, Environmental Influences, Fuels, Futures (of Society), Grade 1, Grade 2, Grade 3, Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Social Studies, Student Evaluation, Teacher Developed Materials, Teaching Guides
The instructional materials and classroom activities described in the document are intended to aid teachers in grades one through three develop and implement educational programs dealing with energy-related issues. The document is presented in four sections. Section I explains the organization of the document and summarizes how teachers should implement activities and assess student performance. Section II consists of a matrix of activities described in the document. Information is presented on grade level, time required, and subject matter. Section III describes learning activities in six areas. (1) sources of energy, (2) uses of energy, (3) conversion of energy from one form to another, (4) impact of energy use on the environment, (5) limits of the earth's resources, and (6) the future. For each activity, information is presented on title, concept, time, implementation, materials, and optional activities. Activities involve students in posing and answering questions, role playing, viewing and discussing films, comparing samples of energy sources, completing handouts, coloring, defining terms, playing educational games, and writing stories. The final chapter presents information on student assessment. Topics discussed include suggested test items, how to use suggested test items, and origin of test items. (DB)

ED 167 450 SO 011 524
Energy and Conservation Education: Activities for the Classroom, Grades 4-6. Implementation Handbook.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—78
Note—433p.; For related documents, see SO 011 523-529
Available from—Energy and Man's Environment, 0224 S.W. Hamilton, No. 301, Portland, Oregon 97201 ($24.00)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Class Activities, Classroom Games, Concept Teaching, *Conservation Education, Depleted Resources, Educational Objectives, Elementary Education, *Energy, *Energy Conservation, *Environmental Education, Environmental Influences, Fuels, Futures (of Society), Grade 4, Grade 5, Grade 6, Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Social Studies, Student Evaluation, Teacher Developed Materials, Teaching Guides
The instructional materials and classroom activities described in the document are intended to aid teachers in grades four through six develop and implement educational programs dealing with energy-related issues. The document is presented in four sections. Section I explains the organization of the document and summarizes how teachers should implement activities and assess student performance. Section II consists of a matrix of activities described in the document. Information is presented on grade level, time required, and subject matter. Section III describes learning activities in six areas. (1) sources of energy, (2) uses of energy, (3) conversion of energy from one form to another, (4) impact of energy use on the environment, (5) limits of the earth's resources, and (6) the future. For each activity, information is presented on title, concept, time, implementation, materials, and optional activities. Activities involve students in working crossword puzzles, completing handouts, discussing energy issues in class, comparing energy sources, working on library research projects, designing and testing kits and windmills, defining energy terms, playing educational games involving energy conversion systems and pollution, and performing simple scientific experiments dealing with wind power, solar energy, and soil types. The final chapter presents information on student assessment. Topics discussed include suggested test items, how to use suggested test items, and origin of test items. (DB)

ED 168 725 PS 010 504
Braun, Bonnie Wilson, Elaine
Energy Education: The MIZER Series.
Oklahoma State Univ., Stillwater. Div. of Home Economics.
Pub Date—78
Note—67p.; Special funding was provided by the Presidential Challenge Grant of Oklahoma State University.
Available from—Student Union Bookstore, Oklahoma State University, Stillwater, Oklahoma 74074 ($3.00)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Early Childhood Education, *Energy, *Energy Conservation, Home Programs, Kindergarten Children, *Learning Activities, Parent Participation, Preschool Children
This preschool curriculum guide for energy education provides concepts and activities designed to develop an awareness of energy, an interest in understanding energy and a sense of ability and responsibility to use energy wisely. The guide provides language, science, math, social studies, art, physical education and music experiences appropriate for small or large groups of children. An ageless non-sexist MIZER sun-symbol (a puppet or bulletin board figure) is essential to the program as a means of personifying abstract concepts and integrating diverse activities. The guide has five major sections organized around the ideas of understanding basic energy transfer, using energy wisely and sources of energy. Letters from MIZER are included in the fifth section as a means of extending the school-based program to activities and games for the family at home. Field testing suggests that progress through the curriculum should be slow in order to

give the children and their families time to acquire and respond to the energy education ideas and activities. Simple activities and basic materials proved better than more elaborate implementations for instructing young children. A Household Energy Management Checklist and a family survey letter are included in the guide. (Author/RH)

ED 169 256 CE 020 083
Brayton, Pat Tutton, Joyce
My Environment. Grade 2. One in a Series of Career Development Curriculum Units for the Elementary Classroom. (Second Edition).
Coloma Community Schools, Mich.
Spons Agency—Michigan State Dept. of Education, Lansing.
Pub Date—75
Contract—300-77-0303
Note—63p.; For related documents see ED 161 102 and CE 020 072-101
Available from—Project CDCC Clearinghouse, P.O. Box 218, Coloma Community Schools, Coloma, Michigan 49038 ($2.25; set of 27 units, $55.00)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Behavioral Objectives, *Career Development, *Career Education, *Environment, Grade 2, *Instructional Materials, *Learning Activities, *Perceptual Development, *Self Concept, Validated Programs
Identifiers—Career Development Centered Curriculum Project, Education Amendments 1974, Michigan (Coloma)
Focusing on self awareness (environment), this unit entitled "My Environment" is one of four grade 2 units which are part of a total set of twenty-seven career development curriculum units for grades K-6. This unit is organized into four sections. Section 1 identifies one career development/centered curriculum (CDCC) element (realistic self-concept formulation), one career development theme (the student will become more aware of his/her own uniqueness as a result of learning, growth, and maturation), one unit goal (the student will become more acutely aware of his/her environment through his/her senses), and five performance objectives (e.g., given four sets of pictures of two items each, the student will identify one item from each set by using only the sense of touch). Also included in Section I are evaluation procedures, five student evaluation sheets, and evaluation tabulation forms for the unit. Section II describes teaching strategies for five unit subtopics (capsules) and includes suggested resources for teaching each one. Example capsule titles are awareness of our environment through hearing, and awareness of our environment through seeing. Section III contains two teacher reference sheets, and section IV contains seven student activity sheets. (JH)

ED 170 151 SE 027 629
Schaefer, Larry, Ed. Hungerford, Nancy, Ed.
Earthwatch: Designing Environmental Education Into the Curriculum, Volume I, Grades 3-5.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Connecticut State Dept of Environmental Protection, Hartford.; Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—78
Note—438p.; For related document, see SE 027 630. Contains occasional light and broken type
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC18 Plus Postage.
Descriptors—*Activity Units, Curriculum, Ecology, Elementary Education, Energy, *Environmental Education, Instructional Materials, Intermediate Grades, *Language Arts, Mathematics, Population Education, *Science Activities, *Social Sciences, Technology, Values
This environmental education activities package for grades 3-5 contains activities in the following curriculum areas: (1) social science, (2) science; (3) language arts; and (4) mathematics. The activities are divided into seven sections based on seven environmental topics: (1) ecosystems, (2) population, (3) energy and resources, (4) economics, technology and culture, (5) environmental quality; (6) environmental policy; and (7) environmental ethics. Each activity gives the curriculum topic, the environmental topic, a list of skills exercised in the activity, the subject, grade level, the location necessary to carry out the activity, the author, the objective, background information for the teacher, materials, a vocabulary list, and some related activities and resources. (BB)

ED 170 152 SE 027 630
Schaefer, Larry, Ed. Hungerford, Nancy, Ed.
Earthwatch: Designing Environmental Education Into the Curriculum, Volume II, Grades 6-8.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Connecticut State Dept of Environmental Protection, Hartford.; Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—78
Note—643p.; For related document, see SE 027 629; Contains occasional light and broken type; Pages 456-458 and 480-481 removed due to copyright restrictions
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF03/PC26 Plus Postage.
Descriptors—*Activity Units, Curriculum, Ecology, Elementary Secondary Education, Energy, *Environmental Education, Instructional Materials, Junior High School Students, *Language Arts, Mathematics, Population Education, *Science Activities, *Social Sciences, Technology, Values
The environmental education activities package for grades 6-8 contains activities in the following curriculum areas: (1) social science, (2) science, (3) language arts and (4) mathematics. The activities are divided into seven sections based on seven environmental topics: (1) ecosystems; (2) population, (3) energy and resources, (4) economics, technology and culture, (5) environmental quality, (6) environmental policy, and (7) environmental ethics. Each activity gives the curriculum topic, the environmental topic, a list of skills exercised in the activity, the subject, grade level, the location necessary to carry out the activity, the author, the objective, background information for the teacher, materials, a vocabulary list, and some related activities and resources. (BB)

ED 171 807 UD 019 197
Salter, Christopher L. And Others
Scoring Los Angeles Landscapes: Environmental Education in an Urban Setting.
California Univ., Los Angeles Urban Environmental Education Project.
Spons Agency—National Endowment for the Humanities (NFAH), Washington, D.C.
Pub Date—78
Note—112p.; Not available in hard copy due to marginal reproducibility of original document
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Activity Units, *Elementary Education, *Environmental Education, *Institutes (Training Programs), Teacher Education, *Urban Areas, *Urban Education
Identifiers—*California (Los Angeles)
This notebook serves as a guide for learning activities in environmental education. Twelve themes are treated in four groups. (1) sense of place includes history and landscape, (2) the natural environment covers air, water, energy, and landforms, (3) the built environment includes architecture, transportation, and housing, and (4) the social environment covers population, politics, and planning. Each unit contains a theme sheet and a topic outline. Many units also contain worksheets and activity guidelines. (MC)

ED 173 086 SE 027 871
Gillespie, Judith A.
An Energy Curriculum for the Elementary Grades, Unit I - Energy and You, Unit II - Energy and Your Community, Unit III - Energy in Action.
Indiana State Dept of Commerce, Indianapolis Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—May 79
Grant—DOE-EW-78-G-45-0042
Note—519p.; For related document, see ED 167 355; Contains occasional light and broken type
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF02/PC21 Plus Postage.
Descriptors—Community Problems, *Elementary Education, *Energy, *Energy Conservation, *Environmental Education, *Life Style, Problem Solving
Identifiers—*Energy Education
The collection of materials is intended to provide for the needs of elementary school teachers who have needs for resources for energy education. The document is divided into three sections. The first section discusses human energy, energy use in home and school, and the relationship of the individual to the energy problem. A second section discusses the role of energy in the community, the consumer's role in energy production, and the existence of energy use patterns. The third section covers the production of energy, some approaches to solving energy problems, and the impact of energy decisions on the social and physical environment of the future. Each lesson includes suggested adaptations for grade level, language arts instruction, and mathematics instruction. (RE)

ED 174 432 SE 028 248
Bense, Beverly And Others
First Steps in Ecology: A Guide for the Elementary Grades.
Berkeley Unified School District, Calif.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—75
Note—127p.; Document prepared by the Ecology Center
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—*Class Activities, Conservation (Environment), *Conservation Education, *Ecology, *Elementary Education, *Environment, Environmental Education, *Instructional Materials
Each of the 18 units in this collection addresses a different environmental problem. An introduction precedes the collection of activities and appendices provide lists of forest animals and plants and lists of food webs. A glossary is provided as is a bibliography. Each unit includes: (1) a list of objectives, (2) a summary, (3) a discussion of advance preparations including lists of materials, (4) teaching suggestions, (5) procedures, (6) alternative methods, and (7) suggestions for further activities involving various subject areas where appropriate. (RE)

ED 174 479 SE 028 615
Hack, Nancy And Others
Selected Energy Education Activities for Pennsylvania Middle School Grades, Draft.
Pennsylvania State Dept. of Education, Harrisburg.
Spons Agency—Governor's Energy Council, Harrisburg, Pa.
Pub Date—79
Note—108p.
Available from—The Pennsylvania State Univ., 336 Agricultural Administration, University Park, PA 16802 (no price quoted)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—Art Education, *Class Activities, *Elementary Secondary Education, *Energy, *Energy Conservation, *Environmental Education, Health Education, *Interdisciplinary Approach, Language Arts, Mathematics Education, Science Education, Social Studies
Identifiers—*Energy Education
These activities are intended to help increase awareness and understanding of the energy situation and to encourage students to become energy conservationists. The document is divided into sections according to discipline areas. A final section is devoted to interdisciplinary activities involving several discipline areas integrated with the energy lesson. Each activity description contains (1) discussion of grade level; (2) energy learning objective; (3) discipline area learning objective, (4) materials; (5) background information, (6) activity description, and (7) contact organizations for further assistance and information. (Author/RE)

ED 177 013 SE 029 133
Have You Ever Been to the Shore Before? A Marine Education Infusion Unit. Northern New England Marine Education Project.
Maine Univ., Orono. Coll. of Education.; Maine Univ., Orono. Sea Grant Program
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program
Pub Date—78
Note—54p.; For related documents, see SE 029 132-135. Not available in hard copy due to copyright restrictions
Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Art Education. *Class Activities, *Earth Science. Ecology. Elementary Education. *Environmental Education. *Interdisciplinary Approach. Language Arts, Marine Biology, Mathematics Education. *Music Education. *Oceanology. Science Education. Social Studies
Identifiers—*Sea Grant
This unit presents the teacher with guidelines and suggestions for a field trip to a shore. It contains information about what organisms and habitat to expect and appropriate activities. Also suggested are discussions of the people who live and work near the shore. A pre-trip planning section is presented. Sections relating to each of several disciplines are presented, including objectives, materials, and procedures relating to the field trip and designed to portray concepts of the discipline. Appendices of resources and sites in northern New England are provided along with a bibliography. (RE)

ED 178 335 SE 029 270
Manual for the CBE Environmental Education Kit for the Middle Grades. Draft Edition.
Brookdale Community Coll., Lincroft, N.J. Committee for a Better Environment, Inc., Holmdel, N.J.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—78
Grant—G007700522
Note—143p. Contains occasional light and broken type, several pages removed due to copyright restrictions
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—Class Activities, *Conservation Education, *Ecology, Elementary Secondary Education, Environment, *Environmental Education, Environmental Influences, Interdisciplinary Approach, Natural Resources, *Pollution, *Resource Materials, Science Education
The primary goal of this collection of classroom activities is to produce environmentally-aware citizens. The skills and concepts taught through use of the kit are intended to permit the teacher to integrate diverse concepts of the environment into classroom teaching. Activities are divided into three main segments. The first segment, Ecological Concepts, considers an ecosystem. The second segment, Focus on Activities, deals with the impact of human energy on an ecosystem. The third segment, Outdoor Activities, suggests a set of problems which students can investigate outdoors. (Author/RE)

ED 179 351 SE 028 428
Lendsey, Jacqueline L. And Others
Two Energy Gulfs. Grades 6-7. Interdisciplinary Student Teacher Materials in Energy, the Environment, and the Economy.
National Science Teachers Association, Washington, D.C.
Spons Agency—Bureau of Intergovernmental and Institutional Relations (DOE), Washington, D.C. Office of Education, Business and Labor Affairs.
Report No.—HCP/U3841-03
Pub Date—Mar 79
Contract—EX-76-C-10-3841
Note—94p.
Available from—U.S. Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830 (no price quoted)
Pub Type—Collected Works - Serials (022) — Guides - General (050)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Economics, Elementary School Science, *Energy, Environmental Education, Fuel Consumption, *Interdisciplinary Approach, *Intermediate Grades, Maps, Science Curriculum, *Science Instruction, *Social Studies, Worksheets
This text, which focuses on coastal oil production, the countries and the people involved, is designed for use in upper elementary science, social studies, or math courses concerned with energy-related topics. The first half of the text is the Teacher's Guide. It presents an overview of the main ideas for each lesson, strategies for implementation, objectives, materials, and answer keys to student worksheets. The second half is the Student's Guide, including maps, graphs, worksheets, vocabulary, and articles to read. The unit introduces the methods by which oil is extracted from the Persian Gulf region and the Gulf of Mexico region. Transportation by supertankers, energy needs of the people of both regions, and oil production is discussed. A comparative approach to the people of each region stresses the diversity of cultures and is intended to expand children's views of culture. The interdependence of people and energy is emphasized. (SA)

ED 181 417 CS 005 193
Canipe, Stephen L.
Crisis Game.
Pub Date—77
Note—17p.
Pub Type—Reports - Descriptive (141) — Guides - Classroom - Learner (051)
EDRS Price - MF01 PC01 Plus Postage.
Descriptors—Educational Games, Elementary Education, *Energy Conservation, Motivation, *Reading Games, *Reading Instruction, *Reading Materials, *Vocabulary Development
The "Crisis" game that is described in this paper is designed to present children with a vocabulary of terms commonly heard when people discuss the energy problem, and to provide an immediate use and reinforcement of those terms in a low-risk game situation. Included in the description are the directions for playing the game, an illustration of the board, "crisis" and "dilemma" card statements, and five vocabulary activities with answer keys. (RL)

ED 182 180 SE 029 975
Johnson, Bette Swinton, Olivia
Networks: How Energy Links People, Goods and Services. Grades 4, 5. Interdisciplinary Student-Teacher Materials in Energy, the Environment, and the Economy.
National Science Teachers Association, Washington, D.C.
Spons Agency—Department of Energy, Washington D.C. Office of Education. Business and Labor Affairs.
Report No.—HCP/U3841-0005
Pub Date—Jun 79
Contract—EX-76-C-10-3841
Note—94p. For related document, see ED 153 859
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, TN 37830 (no price quoted)
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01, PC04 Plus Postage.
Descriptors—Electricity, *Elementary Education, *Energy, Grade 4, Grade 5, *Instructional Materials, Integrated Curriculum, *Science Education, *Social Studies, *Teaching Guides
The purpose of this unit is to investigate a simple energy network and to make an analogy with similar mutually supporting networks in the natural and man-made worlds. The lessons in this unit develop the network idea around a simple electrical distribution system that we depend on and also lead to further consideration of electrical energy itself. The network idea in the later lessons emphasizes the interdependence of the man-made network for producing and distributing electrical energy and the natural ecological network. In the first lesson, the consuming end of the network is examined and some strategies for consuming electrical energy are examined. Students should learn that energy networks such as the electrical circuits are a necessary part of modern life. They are also expected to learn about sources, conversions, and uses of electrical energy. There are six lessons in this fourth- and fifth-grade unit. Complete teacher and student materials are provided. (BB)

ED 182 763 CS 205 426
Bagnall, Norma
Children's Literature—Passage to the Sea.
Texas A and M Univ., College Station.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Report No.—TAMU-SG-80-401
Pub Date—Feb 80
Grant—NA79AA-D-00127
Note—62p.
Available from—Sea Grant College Program, Texas A & M University, College Station, TX 77843 ($2.00)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Childrens Literature, Ecology, Elementary Education, *Learning Activities, *Literature Appreciation, Teaching Guides, Teaching Methods
Identifiers—*Marine Education
Focusing on books that use the sea as their theme, this booklet provides guidelines for teachers on how to integrate marine-related children's literature into the classroom. The first section of the booklet presents brief synopses of eight sea-related books while the second section contains 39 learning center activities, including knot tying, model building, soap carving, weaving, wood construction, and wood painting. Each activity is related to a specific grade level and book and includes a list of required materials, preparatory suggestions for the teacher, and instructions for the students. Appendices contain worksheets and illustrations for use with the activities, lists of sources for free and low cost materials, and a bibliography of marine-related books. (FL)

ED 187 554 SE 030 940
An Energy Curriculum for the Middle Grades. Unit One: Energy and World Cultures With Adaptations for Science, Language Arts, Practical Arts.
Indiana State Dept. of Commerce, Indianapolis. Energy Group, Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Apr 80
Grant—DE-FG-45-79R510071
Note—229p.; For related document, see SE 030 941. Contains occasional broken type
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC10 Plus Postage.
Descriptors—Conservation Education, Curriculum Development, Economics, Elementary Secondary Education, *Energy, *Energy Conservation, Environment, Environmental Education, Fuel Consumption, *Fuels, Geography, Instructional Materials, Interdisciplinary Approach, *Language Arts, *Middle Schools, Natural Resources, Petroleum Industry, *Science Education, Social Studies, Technology, World Problems
Identifiers—*Energy Education
This guide is intended to help teachers integrate energy education into middle schools or junior high schools. A teacher's section includes an introduction, bibliography, and glossary. Thereafter, teacher materials sections and student materials sections are paired under topical headings addressing worldwide energy issues. Energy issues are addressed for Africa, Asia, Europe, and the Middle East. Instructions are provided for adapting lessons within the topical headings for integration into science, language arts, and practical arts curricula. (RE)

ED 188 009 CE 025 816
Ecology and Energy Action Pack.
Dayton Museum of Natural History, Ohio. McDonald's Corp., Oak Brook, Ill.
Pub Date—77
Note—36p. For related documents see CE 025 302 and CE 025 817-819
Available from—Mazer Corp., 2501 Neff Rd., Dayton, OH 45414 ($3.00)
Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Conservation (Environment), *Ecology, Elementary Education, *Energy, *Environmental Education, Instructional Materials, Learning Activities, *Natural Resources, Recycling, Waste Disposal, Water Pollution
One of five McDonald's Action Packs, these elementary school-level instructional materials are for use as an introduction to existing units of study, supplements to a textbook, or a source of special projects for environmental education. Contents include these six units: Make Your Own Ecology Mini-spinner, Let's Look at a Food Chain, Drip the Water Drop and Save Me, A Very Short History of Trash and How Paper Is Recycled, Be an Ecology Champion, and Buzzy Bee's Easy Guide to Energy. Each unit may include some or all of the following: background ideas that discuss purpose of the following activity, discussion of the activity, suggestions for use of the student activity sheets, and additional activities. Reference is made within the units to activity sheets provided at the back, which are suitable

for reproduction. A copy of a transparency recommended for use in one unit is also provided. (YLB)

ED 190 344 SE 030 975

Berkheimer, Wendy And Others

BTU (Better Than Usual) Teacher Developed Energy Materials for Elementary & Middle Schools. Draft.

Michigan State Univ., East Lansing. Cooperative Extension Service; Michigan State Univ., East Lansing. Science and Mathematics Teaching Center.

Spons Agency—Department of Energy, Washington, D.C.; Michigan Dept. of Commerce, Lansing; Michigan State Energy Extension Service, Lansing.

Pub Date—79

Grant—EC-77-6-01-5092

Note—169p.; For related documents, see SE 030 976-985 and ED 180 774. Contains occasional light and broken type

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC07 Plus Postage.

Descriptors—*Class Activities, Curriculum Development, *Elementary Secondary Education, *Energy, *Energy Conservation, Environmental Education, Fuel Consumption, Fuels, *Interdisciplinary Approach, Middle Schools, Natural Resources, Public Policy, *Science Education, Technological Advancement, Technology

Identifiers—*Energy Education

This draft collection of energy education units is intended for use from elementary grades through middle school grades. It contains 17 units addressing current energy issues. Each activity includes an activity description, objectives, content, materials list, vocabulary list, energy concepts, and further information to aid the teacher in incorporating the information into the overall curriculum. Patterns and copy masters are included. (RE)

ED 190 346 SE 030 977

Berkheimer, Glenn D; Caldwell, John

It Isn't What You've Got, but How You Use It or Energy and Efficiency. Teacher's Guide and Student Guide. Net Energy Unit. Draft.

Michigan State Univ., East Lansing. Cooperative Extension Service; Michigan State Univ., East Lansing. Science and Mathematics Teaching Center

Spons Agency—Department of Energy, Washington, D.C.; Michigan Dept. of Commerce, Lansing

Pub Date—28 Mar 79

Grant—EC-77-6-01-5092

Note—22p.; For related documents, see SE 030 975-985 and ED 180 774.

Pub Type—Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC01 Plus Postage.

Descriptors—*Class Activities, *Curriculum Development, Decision Making, Elementary Education, *Energy, *Energy Conservation, Environmental Education, *Interdisciplinary Approach, Natural Resources, Physics, Public Policy, *Science Education, Science Instruction, Social Studies, Technology

Identifiers—*Energy Education

This unit is intended to introduce the ideas of interaction and systems and their relationship to energy. The concept of energy is developed to introduce energy sources, energy receivers, energy transfer, energy chains, and efficiency. The unit is intended for use in two class periods and relates to concepts of science and social science. Numerous charts, tables, and illustrations are provided. (RE)

ED 193 053 SE 032 954

Reading via Environment.

Lee County School District, Fort Myers, Fla.

Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.

Pub Date—77

Note—107p.

Pub Type—Guides - Classroom - Learner (051)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—*Basic Skills, *Elementary Education, *Environment, Environmental Education, *Language Skills, Outdoor Education, Reading Games, *Reading Instruction, Reading Skills, Vocabulary Skills, *Writing Instruction, Writing Skills

Described are over 100 activities designed to improve students' reading and writing skills by using the environment as a stimulus. The school, local community, family, and inner self serve as lesson topics. Learning strategies include word games, poetry, art projects, peer-produced mini-texts, and gardening. Also used are a word builder booklet and set of student reading cards, which can constitute complete lessons, supplementary lessons, or parts of other lessons. A graph for estimating reading level is provided so that teachers can adapt activities for students of different abilities. (WB)

ED 193 058 SE 032 960

Maier, Joseph T. And Others

Environmental Education Interdisciplinary Concepts and Activities Guide, Grade 2.

Pinellas County School Board, Clearwater, Fla.

Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education

Pub Date—76

Note—103p.; For related documents, see SE 032 961-962.

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—*Art Activities, *Ecology, Elementary Education, *Elementary School Science, *Environmental Education, Fundamental Concepts, Grade 2, Interdisciplinary Approach, Natural Resources, *Resource Materials, Science Education, Science Instruction

Presented are environmental education lessons designed for use in the second-grade classes of Pinellas County, Florida. Many examples are drawn from the surrounding area. Six conceptual schemes provide the guide's organizational framework. Interrelationships between society and environment, change, effects of population growth, finite resources, and individual responsibility. Following a discussion of each scheme are outlines of related activities. These learning experiences include art projects, science experiments, class discussions, and three student worksheets. Also provided are illustrated test sheets with accompanying questions for the teacher to ask. (WB)

ED 193 059 SE 032 961

Maier, Joseph T. And Others

Environmental Education Interdisciplinary Concepts and Activities Guide, Grade 3.

Pinellas County School Board, Clearwater, Fla.

Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.

Pub Date—76

Note—104p.; For related documents, see SE 032 960-962. Contains occasional light and broken type

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—Art Activities, *Ecology, Elementary Education, *Elementary School Science, *Environmental Education, Fundamental Concepts, Grade 3, Interdisciplinary Approach, Natural Resources, Outdoor Education, *Resource Materials, Science Education, Science Instruction

Presented are environmental education lessons designed for use by third-grade teachers in Pinellas County, Florida. Six conceptual schemes provide the framework for organizational framework interrelationships between society and environment, change, effects of population growth, finite resources, and environmental responsibility. Following a discussion of each scheme are outlines of related activities. These learning experiences utilize outdoor studies, class discussions, audiovisual materials, and games to help students understand some ecological concepts and environmental management problems. Several examples are drawn from local situations. (WB)

ED 193 060 SE 032 962

Maier, Joseph T. And Others

Environmental Education Interdisciplinary Concepts and Activities Guide, Grade 8.

Pinellas County School Board, Clearwater, Fla.

Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.

Pub Date—76

Note—104p.; For related documents, see SE 032 960-962. Parts may be marginally legible

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—*Ecology, *Environmental Education, Fundamental Concepts, Grade 8, Junior High Schools, Natural Resources, Resource Materials, Science Education, Science Instruction, Secondary Education, *Secondary School Science, *Social Studies

Presented are environmental education lessons adapted for use in the junior high schools of Pinellas County, Florida. This manual is organized according to six conceptual schemes: interrelationships, relationships between society and environment, change, effects of population growth, finite resources, and environmental responsibility. Outlines of related activities follow a discussion of each scheme. In many instances, these learning experiences illustrate concepts with examples of local environmental concerns. (WB)

ED 193 062 SE 032 964

Brennan, Matthew J.

Energy and My Environment: K-6 Teachers' Guide. Draft.

Governor's Energy Office, Tallahassee, Fla.

Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education

Pub Date—Nov 79

Note—142p.; For related document, see SE 032 965. Contains occasional light and broken type.

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC06 Plus Postage.

Descriptors—Elementary Education, *Elementary School Science, *Energy, Energy Conservation, *Environmental Education, *Resource Materials, Science Education, Social Studies

Identifiers—*Energy Education

One hundred energy education activities comprise this manual for elementary school teachers. Two or three lessons which deal with each of seven energy-related conceptual schemes are provided for every grade level. These experience-oriented activities emphasize questions, observations, and class discussion. Lesson plans include directions for introducing and developing the activity, suggestions for extending the learning experience, and a listing of the lesson's concept and objective. (WB)

ED 194 382 SE 033 196

Krukowski, Pat, Ed. And Others

Energywatch: Designing Energy Education into the Curriculum. Volume I - Grades K-6.

Area Cooperative Educational Services, New Haven, Conn.; Connecticut State Dept. of Education, Hartford.

Pub Date—Nov 80

Grant—NESEC-EG-77-G-01-4044

Note—262p.; For related document, see SE 033 197. Some copyrighted cartoons deleted. Funding received from the Northeast Solar Energy Center

Available from—Dr. Sigmund Abeles, Connecticut State Dept. of Education, Box 2219, Hartford, CT 06115 (no price quoted)

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC11 Plus Postage.

Descriptors—Conservation Education, Elementary Education, *Elementary School Science, *Energy, Energy Conservation, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Science Education, Science Instruction, Social Studies

Contained in this teacher's manual are over 40 energy education activities for elementary school students. Lessons are designed for science, social studies, mathematics, and language arts classes. This approach is intended to allow teachers to provide students with energy-related learning opportunities throughout the school program as parts of courses that are already being taught. Activities are organized under six major topic headings: (1) Energy - The Concept, (2) Energy Sources, (3) Energy Uses, (4) Energy Conservation, (5) Energy and Economics, and (6) Energy and the Environment. Learning strategies employed range from class discussions and values clarification experiences to model building, performing experiments, and using resource materials. Lesson plans include objectives, skills, background information for the teacher, required preparation, references, student handouts, and step-by-step procedures for carrying out the activities. (WB)

ED 196 724 SE 033 934

The Litter Problem. Environmental Education Supplementary Instructional Guide, Elementary Level.

Hawaii State Dept. of Education, Honolulu. Office of Instructional Services.

Report No.—RS-79-8218

Pub Date—Sep 79

Note—77p.; For related document, see SE 033 935.

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC04 Plus Postage.

Descriptors—Community Action, *Community

Problems. Elementary Education. *Environmental Education. Instructional Materials. Social Studies. Student Projects. Student Responsibility. *Waste Disposal. *Wastes

Presented is a guide for helping elementary school students become aware of the litter problem, acquire litter control skills, and develop an anti-litter ethic. The manual contains a hierarchy of learning objectives, a pretest posttest instrument, background information on litter, and 12 lessons designed to promote attainment of the learning objectives. Each lesson includes brief outlines of content, instructional activities, and assessment tasks. A glossary, several supplementary learning activities, and a list of additional resources comprise the appendix. (WB)

ED 198 005 SE 034 291

Melcher, Joan And Others

Connections: A Curriculum in Appropriate Technology for the Fifth and Sixth Grades.

National Center for Appropriate Technology, Butte, Mont.

Spons Agency—Community Services Administration (DHEW), Washington, D.C.

Pub Date—80

Note—114p.; Oversize chart "Appropriate Technology - Ideas to Grow With" removed due to irreproducibility.

Available from—National Center for Appropriate Technology, P.O. Box 3838, Butte, MT 59701 ($5.00).

Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—*Energy, *Environmental Education, Interdisciplinary Approach, Intermediate Grades, *Life Style, Recycling, *Science Education, Science Instruction, Social Studies, *Technology

Identifiers—Alternative Energy Sources, *Appropriate Technology

Appropriate technology is an approach to meeting human needs which stresses local solutions using small-scale decentralized technologies that have minimal environmental impact. Presented in this manual are 10 lessons for upper elementary students that consider such topics as recycling, solar energy, transportation, and nutrition. Each lesson includes teacher background information, class activities, homework, discussion topics, and a brief quiz. Accompanying these materials are illustrated student handouts that may be duplicated. Also provided are suggested student readings, and a list of other sources of teaching materials. (WB)

ED 199 096 SE 034 447

Allen, Rodney F., Ed.

Hardee County Energy Activities - Middle School Level.

Tri-County Teacher Education Center, Sebring, Fla.

Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.

Pub Date—[81]

Note—59p.; Contains occasional light and broken type.

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 PC03 Plus Postage.

Descriptors—*Basic Skills, Elementary Secondary Education, *Energy, Energy Conservation, *Environmental Education, Interdisciplinary Approach, Junior High School Students, *Middle Schools, Science Education, Social Studies, *Writing Exercises, Writing Instruction, *Writing Skills

Described are over 70 activities designed to help students develop writing skills by examining energy issues. Intended for middle school students, the lessons were developed by Hardee County, Florida teachers. Learning strategies employed include class discussions, analogies, word puzzles, letter writing, sentence completions, vocabulary building challenges, and related writing assignments. A list of energy information sources is appended. (WB)

ED 199 146 SO 013 202

You and the Ocean.

Ocean Education Project, Washington, D.C.

Pub Date—78

Note—27p.

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 PC02 Plus Postage.

Descriptors—Ecology, *Elementary Education, Food, Global Approach, Interdisciplinary Approach, *Oceanography, Pollution, *Science Instruction, *Social Studies, Units of Study

This multidisciplinary unit of study introduces the law of the sea to students in grades one through six. The unit, which takes three weeks to complete can be taught in science and social studies courses. Concepts taught include the following: there are many things in the sea that are of value to humankind, people need products from the sea, people need to share together the ocean's wealth, and man is part of the marine ecosystem. The unit involves the students in many activities. In one activity children work in small groups and cut pictures about the sea out of magazines. They create posters by pasting these pictures under headings, 'Good Things About the Oceans,' and 'Bad Things About the Oceans.' A classroom discussion follows. The students learn that oil comes from the ocean floor and that many things we use are made from fish or plant products. They also learn about pollution. In another activity, students examine maps of Africa which show landlocked countries. They are then asked to assign ocean areas equally to all of the African countries. They draw or color the maps to show how they solved the problem. In one part of the unit the teacher guides the class in experiments to see if vegetable seeds will grow in salt water. Children choose from several kinds of seeds and attempt to grow one in a cup of soil watered by fresh water and one in a cup watered by salt water. In other activities students take a field trip to a fish market, draw murals showing undersea life, read stories and poems about the sea, build models to show how oil is taken from the sea, produce a puppet show about the manganese nodule, and view films. (Author/RM)

ED 200 407 SE 034 [illegible]

Pennsylvania's Energy Curriculum for the Primary Grades.

Pennsylvania State Dept. of Education, Harrisburg.

Spons Agency—Pennsylvania State Governor's Energy Council, Harrisburg.

Pub Date—80

Note—226p. For related documents, see SE 034 451-457.

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 PC10 Plus Postage.

Descriptors—Elementary Education, *Elementary School Science, *Energy, Energy Conservation, *Environmental Education, Interdisciplinary Approach, Physics, *Science Activities, *Science Education, Science Instruction, Social Studies

Presented are approximately 100 energy-related lessons for elementary school students. Among the topics addressed are the importance of energy, future energy sources, energy conservation, forms of energy, and electricity. Most activities relate to science and or social studies and include illustrated handouts to duplicate for students. Listed in each lesson plan are objectives, subject area, notes to the teacher, and teaching suggestions. (WB)

ED 200 450 SE 034 605

Lampert, Seymour, And Others

A Solar Energy Curriculum for Elementary Schools. Kindergarten Through Grade Six. Field Test Copy.

Department of Energy, Washington, D.C. Office of Solar Applications.

Report No—DOE/CS-0128

Pub Date—Feb 80

Note—349p.; Not available in hard copy due to colored pages throughout entire document which may not reproduce well.

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.

Descriptors—Curriculum Development, Elementary Education, *Elementary School Science, *Energy, Energy Conservation, *Environmental Education, Science Education, *Science Instruction, Social Studies, *Solar Radiation

Identifiers—Alternative Energy Sources

Presented is the field test version of an elementary school solar energy curriculum consisting of nearly 50 activities and demonstration experiments. Developed by a team of teachers and subject matter specialists, these materials are grouped under seven content area headings: (1) Solar Technologies, (2) Energy and Life, (3) Sun and Earth, (4) Energy Phenomena, Forms of Energy, (5) Energy Phenomena, Energy Measurements, (6) Energy and Society, and (7) Energy Systems. Introductory background readings for teachers and or students accompany each section. Lesson plans list the grade level, objectives, evaluation strategies, vocabulary words, and procedure. (WB)

ED 202 729 SE 035 167

Ayers, Jerry B., Ed.

Ideas and Activities for Energy/Environmental Education: Grades 4-6.

Tennessee Technological Univ., Cookeville.

Spons Agency—National Science Foundation, Washington, D.C.

Pub Date—Apr 81

Grant—NSF-SPI-8001215

Note—230p.; Prepared by students and staff of the NSF sponsored institute entitled 'Man's Energy Needs and Related Environmental Problems.' Contains occasional light and broken type.

Pub Type— Guides - Classroom - Teacher (052) — Reference Materials - Bibliographies (131)

EDRS Price - MF01/PC10 Plus Postage.

Descriptors—*Energy, Energy Conservation, *Environmental Education, Interdisciplinary Approach, *Intermediate Grades, Language Arts, *Resource Materials, *Science Education, Science Instruction, Social Studies

Presented is a compendium of activities and reference materials in environmental education and energy education that was developed by participants in a year-long institute conducted by Tennessee Technological University and sponsored by the National Science Foundation. The manual is divided into three sections. The first consists of 111 activities, categorized by subject area, for students in grades four through six. The second section is an annotated bibliography of 239 resource materials related to energy and environmental education and available through ERIC. An annotated listing of several hundred free materials for classroom use comprises the third section. (Author/WB)

ED 206 465 SE 035 506

Koski, Carol And Others

Discovery: A Study Guide for Kindergarten. Alaska Sea Week Curriculum Series, Draft.

Alaska Univ., Fairbanks. Alaska Sea Grant Program.

Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.

Pub Date—Jun 80

Grant—NOAA-NA79AA-D-00138

Note—126p.; For related documents, see SE 035 507-512. Contains occasional light and broken type.

Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC06 Plus Postage.

Descriptors—Animals, Discovery Processes, *Ecology, *Environmental Education, Interdisciplinary Approach, Kindergarten, *Language Arts, *Marine Biology, Oceanography, Outdoor Education, *Science Education

Presented are a combination of classroom activities and sea shore field trips to help kindergarten students develop an awareness of the ocean and the life it supports. Among the multidisciplinary lessons included are those involving arts and crafts, mathematics, science, and language arts. Through studying the sea and its inhabitants, students can learn to make comparisons, count objects, and make careful observations. A 30-page student activity book and a list of teacher references are provided. (Author/WB)

ED 206 470 SE 035 511

Smid, Tamara

Fish: A Study Guide for the Fifth Grade. Alaska Sea Week Curriculum Series, Draft.

Alaska Univ., Fairbanks. Alaska Sea Grant Program.

Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.

Pub Date—Jun 80

Grant—NOAA-NA79AA-D-00138

Note—85p.; For related documents, see SE 035 506-512. Contains occasional light and broken type.

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC04 Plus Postage.

Descriptors—Art, Ecology, Elementary Education, *Environmental Education, *Fisheries, Grade 5, Language Arts, *Marine Biology, Mathematics, Natural Resources, *Oceanography, Outdoor Education, *Science Education, *Social Studies

The history, management, and importance of

Alaska's fisheries are the focus of this elementary school unit. Through the science, social studies, English, mathematics, and art activities included, students investigate Alaskan fisheries and the biology and ecology of commercially important fish species. Among the topics covered are tides, life cycles, fishing methods, and sea legends. A bibliography and set of field trip suggestions are provided. (WB)

ED 206 471 SE 035 512
Maier, Judy
Man's Influence on the Sea: A Study Guide for the Sixth Grade. Alaska Sea Week Curriculum Series. Draft.
Alaska Univ., Fairbanks. Alaska Sea Grant Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program
Pub Date—Jun 80
Grant—NOAA-NA79AA-D-00138
Note—84p.; For related documents, see SE 035 506-511. Contains occasional light and broken type.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Conservation (Environment), *Conservation Education, Ecology, Elementary Secondary Education, *Environmental Education, Grade 6, *Land Use, *Oceanography, Outdoor Education, *Science Education, *Social Studies
Presented are activities designed to help students understand and investigate relationships between people and the marine environment. Topics include personal values, coastal development and management, environmental laws, and beach community monitoring. General considerations are handled through simulations, class discussions, interviews, student writing exercises, and other classroom activities. Specific local studies involve field work as well as in-class preparation and evaluation. A bibliography, student worksheets, and field trip suggestions are included. (Author/WB)

ED 210 171 SE 035 855
Young, Donald B. And Others
Water: A Vital Resource. Environmental Education Supplementary Instructional Guide, Sixth Grade Level.
Hawaii State Dept. of Education, Honolulu. Office of Instructional Services.
Report No.—RS-81-1095
Pub Date—Jun 81
Note—232p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC10 Plus Postage.
Descriptors—*Conservation Education, *Elementary School Science, Environmental Education, Grade 6, Instructional Materials, *Interdisciplinary Approach, Intermediate Grades, Learning Activities, *Science Activities, Science Education, Teaching Guides, *Water Resources
Water-related activities for sixth-grade students are presented as one possible way to incorporate environmental education into the existing curriculum of Hawaii schools. Designed as an interdisciplinary approach, the activities integrate numerous thematic and subject areas to teach that fresh water is a limited but vital natural resource. Topics include water in nature, use and control, distribution, purification, issues, and alternatives and consequences. Lessons are self-explanatory, allowing for independent student work. They involve a wide range of activities including experimentation, creative writing, interviewing, oral reports, field trips, art work, map work, research, and simulations. Each of the seven sections contains a list of instructional goals, objectives with an indication of subject area taught, performance expectations, essential competencies, and section objectives as well as the activities and teacher digest of the activity. A summary chart for the sections indicate the subject areas, teaching approach, resources, and time requirements for each lesson. (DC)

ED 211 389 SE 036 222
Hoppe, Catherine C.
Coastal Livelihoods and Crafts, Project CAPE Teaching Module.
Dare County Board of Education, Manteo, N.C.
Spons Agency—Bureau of Elementary and Secondary Education (ED), Washington, D.C.
Pub Date—Feb 82
Note—109p.; Not available in paper copy due to copyright restrictions
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Career Awareness, *Elementary Education, Environmental Education, Grade 5, Grade 6, *Handicrafts, *Interdisciplinary Approach, *Learning Activities, Marine Biology, *Oceanography
Identifiers—Coastal Zones, *Marine Education
Twelve multidisciplinary activities for upper elementary students comprise this unit on occupations and crafts associated with the distinctive lifestyle of the people of North Carolina's coast and the Outer Banks. Some topics included are fishing, seafood, real estate, development, careers, crafts, and boats. Activities involve playing games, cooking, reading a play, making things, and discussing issues. Each lesson indicates skills used, lesson concepts, competency goals, objectives, materials, vocabulary, background information, teacher and student preparation, and activity procedures. Supplemental materials are provided for handouts and for constructing games and other items for the lessons. (DC)

ED 212 411 RC 013 143
Schwarz, Richard H.
Teaching Global Issues Through Mathematics. Development Education Paper No. 20.
United Nations Children's Fund, New York, N.Y.
Pub Date—81
Note—10p.; For related documents, see RC 013 135-144.
Available from—UNICEF, 866 UN Plaza, New York, NY 10706.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Cultural Awareness, Developed Nations, Developing Nations, Economic Development, *Elementary School *Mathematics, *Futures (of Society), *Global Approach, Instructional Materials, Interdisciplinary Approach, Intermediate Grades, International Education, Learning Activities, *Mathematical Enrichment, Mathematics Materials, Rural Development, *World Affairs, *World Problems
Identifiers—*Development Education
The document shows how teachers can use mathematics problems to teach fourth, fifth, and sixth grade students about critical global issues. The problems are arranged according to development topics. For each problem, the solution, reference source, and mathematical skills to be strengthened are given; global issues related to each problem are also briefly discussed. The first two mathematical problems relate to "Population." The other global issues included are "Poverty and Effects," "Waste in Affluent Nations," "The Arms Race," and "Global Hunger." Using these and similar mathematical problems, teachers can introduce interesting and valuable information and concepts. More important than the specific information in any problem, however, is the process of inquiry students gain from discussions of the significance of the results for their world's future. In effect, calculating the answer to one of the sample math problems raises a host of other related questions: "Are we running out of natural resources?" "What impact does the arms race have on the meeting of human needs?" "How serious is the population explosion?" Concepts of interdependence, change, communication, and conflict can be used as organizing themes for discussion and as a context for information gathering and further inquiry. (Author)

ED 212 458 SE 035 427
Safe Drinking Water for Alaskan Curriculum for Grades 1-6.
South East Regional Resource Center, Juneau, Alaska.
Spons Agency—Alaska Dept. of Environmental Conservation, Juneau.
Pub Date—Feb 80
Note—98p.; For related document, see SE 035 428.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Elementary Education, Elementary School Science, *Environmental Education, Health Education, *Public Health, *Science Education, Science Instruction, *Social Studies, Water Pollution, *Water Resources
Presented is a set of 10 lessons on safe drinking water in Alaska for use by elementary school teachers. The aim is to provide students with an understanding of the sources of the water they drink, how drinking water can be made safe, and the health threat that unsafe water represents. Although this curriculum relates primarily to science, health, and social studies lessons, the follow-up activities also involve skills developed in art and English classes. Among the topics covered are the water cycle, microscopic organisms, water treatment, and pollution. Each lesson includes a materials list, vocabulary, questions, procedure, and recommendations for additional activities. Teacher resources are listed. (Author/WB)

ED 212 460 SE 035 429
Clean Air for Anchorage and Fairbanks: Curriculum for Grades 1-6.
South East Regional Resource Center, Juneau, Alaska.
Spons Agency—Alaska Dept. of Environmental Conservation, Juneau.
Pub Date—Feb 80
Note—67p.; For related document, see SE 035 430.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Air Pollution, Elementary Education, Elementary School Science, *Environmental Education, Health Education, Public Health, *Science Education, Science Instruction, *Social Studies, *Urban Problems, Weather
Through the 10 lessons in this guide, elementary school students can be introduced to the characteristics of air, methods of air pollution control, air movement, and the health effects of polluted air. A directory of field trip sites and a list of teacher resources is included. Contained in each lesson plan are a materials list, general introduction, questions, and activities. The materials can be used in conjunction with studies in health, science, social studies, and government. Suggested follow-up activities include skills developed in art and English classes. (Author/WB)

ED 212 492 SE 036 241
Payne, Cindy L.
Studying Arkansas' Valuable Energy (S.A.V.E.): An Energy Curriculum for Arkansas' Schools, Grades K-3.
Arkansas State Dept. of Education, Little Rock.
Spons Agency—Ozarks Regional Commission, Little Rock, Ark.
Pub Date—81
Grant—10-GR-0-147
Note—200p.; For related documents, see SE 036 242-243.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC08 Plus Postage.
Descriptors—*Conservation Education, Depleted Resources, Electricity, *Energy, *Energy Conservation, Environmental Education, Fuels, *Interdisciplinary Approach, *Learning Activities, Natural Resources, Primary Education, Solar Radiation, State Curriculum Guides
Identifiers—Alternative Energy Sources, Arkansas, *Energy Education
Designed for grades K-3, this guide contains 16 interdisciplinary lessons on energy which were developed to assist Arkansas teachers in incorporating energy education into existing curricula. Program objectives are listed under four broad categories: (1) energy sources, alternatives, and conversion, (2) energy uses, (3) conservation, and (4) limits and impacts. Each lesson follows a uniform format which includes category of objectives, title, related subject areas, energy types, grade level, time, materials, learning objectives, task analysis (prerequisite knowledge and skills), and procedure (preparation, steps in lesson, evaluation and follow-up activities). A section on teacher background information and student worksheets follow each lesson. A glossary, list of selected references, and program evaluation forms are provided. (DC)

ED 212 [illegible] SE 036 242
McAfee, [illegible] S.
Studying [illegible]nsas' Valuable Energy (S.A.V.E.): An En[illegible] Curriculum for Arkansas' Schools, Grades [illegible]
Arkansas State Dept. of Education, Little Rock.
Spons Agency—Ozarks Regional Commission, Lit-

. tle Rock, Ark.
Pub Date—81
Grant—10-GR-0-147
Note—172p.; For related documents, see SE 036 241-243.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Conservation Education, Depleted Resources, Electricity, *Energy, *Energy Conservation, Environmental Education, Fuels, *Interdisciplinary Approach, Intermediate Grades, *Learning Activities, Natural Resources, Solar Radiation, State Curriculum Guides
Identifiers—Alternative Energy Sources, Arkansas, *Energy Education
Designed for grades four through six, this guide contains 21 interdisciplinary lessons on energy which were developed to assist Arkansas teachers in incorporating energy education into existing curricula. Program objectives are listed under four broad categories: (1) energy sources, alternatives, and conversion; (2) energy uses; (3) conservation; and (4) limits and impacts. Each lesson follows a uniform format which includes category of objectives, title, related subject areas, energy types, grade level, time, materials, learning objectives, task analysis (prerequisite knowledge and skills), and procedure (preparation, steps in lesson, evaluation and follow-up activities). A section on teacher background information and student worksheets follow each lesson. A glossary, list of selected references, and program evaluation forms are provided. (DC)

ED 213 580 **SE 036 093**
Sly, Carolie Rose, Larry
Environmental Education Guide, Volume 1: An Environmental/Energy Education Primer for Kindergarten through Grade Three, 1981-1984.
Alameda County Superintendent of Schools, Hayward, Calif.; California State Dept. of Education, Sacramento.
Pub Date—81
Note—254p.; For related documents, see SE 036 094-096. Contains colored print which may not reproduce well.
Available from—Office of the Alameda County Superintendent of Schools, 685 "A" St., Hayward, CA 94541 ($7.00, $25.00 for complete set of 4 volumes).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Conservation Education, *Curriculum Development, Decision Making, Elementary Education, Elementary School Curriculum, Energy, Energy Conservation, *Environmental Education, Institutions, *Interdisciplinary Approach, *Learning Activities, Natural Resources, Physical Environment, Primary Education, Urban Environment
Identifiers—*California, *Energy Education, Environmental Management
As one of four volumes in a K-12 series, this teaching guide contains classroom and outdoor activities pertaining to the environment and energy for kindergarten through third grades. The guide was developed based upon the understanding that environmental education can serve as an instructional umbrella covering many topics (conservation, marine education, city planning, population, etc.) and that it is not a specific subject but an interdisciplinary theme. The activities are organized around four major topics: natural environment, built environment, social institutions and decision making, and energy and environmental resource management. Each section begins with a summary of issues related to that topic followed by a listing of major concepts and their associated objectives. One activity is presented to teach each objective (approximately 40). Objectives correspond with those contained in the California "Course of Study" guide for 1981-84. Each activity provides a brief description, the objective, purpose, time, topics, location, materials, lead-up and preparation procedures, and follow-up activities. Appendices list the sources for the activities, California resource agencies, and teaching materials available from these agencies. In the beginning of the guide, a procedure is outlined for planning an environmental education program. (DC)

ED 213 581 **SE 036 094**
Sly, Carolie Rose, Larry
Environmental Education Guide, Volume 2: An Environmental/Energy Education Primer for Grades Four through Six, 1981-1984.
Alameda County Superintendent of Schools, Hayward, Calif.; California State Dept. of Education, Sacramento.
Pub Date—81
Note—273p.; For related documents, see SE 036 093-096. Contains colored print which may not reproduce well.
Available from—Office of the Alameda County Superintendent of Schools, 685 "A" St., Hayward, CA 94541 ($7.00; $25.00 for complete set of 4 volumes).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Conservation Education, *Curriculum Development, Decision Making, Elementary Education, Elementary School Curriculum, Energy, Energy Conservation, *Environmental Education, Institutions, *Interdisciplinary Approach, Intermediate Grades, *Learning Activities, Natural Resources, Physical Environment, Urban Environment
Identifiers—*California, *Energy Education, Environmental Management
As one of four volumes in a K-12 series, this teaching guide contains classroom and outdoor activities pertaining to the environment and energy for fourth through sixth grades. The guide was developed based upon the understanding that environmental education can serve as an instructional umbrella covering many topics (conservation, marine education, city planning, population, etc.) and that it is not a specific subject but an interdisciplinary theme. The activities are organized around four major topics: natural environment, built environment, social institutions and decision making, and energy and environmental resource management. Each section begins with a summary of issues related to that topic followed by a listing of major concepts and their associated objectives. One activity is presented to teach each objective (approximately 40). Objectives correspond with those contained in the California "Course of Study" guide for 1981-84. Each activity provides a brief description, the objective, purpose, time, topics, location, materials, lead-up and preparation procedures, and follow-up activities. Appendices list the sources for the activities, California resource agencies, and teaching materials available from these agencies. In the beginning of the guide, a procedure is outlined for planning an environmental education program. (DC)

ED 214 792 **SE 036 497**
Temple, Bonnie K.
Cape Hatteras Lighthouse, Project CAPE Teaching Module, Publication 3-4a.
Dare County Board of Education, Manteo, N.C.
Pub Date—Feb 82
Note—84p.
Available from—Project CAPE, Dare County School Board, P.O. Box 640, Manteo, N.C. 27954, $3.00, and $2.50 Color Filmstrip.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Elementary Education, *Elementary School Science, *Environmental Education, Grade 3, Grade 4, *Interdisciplinary Approach, *Learning Activities, *Navigation, Oceanography, *Science Activities, Science Education
Identifiers—Cape Hatteras Lighthouse, Marine Education
Twelve interdisciplinary lessons with supplementary materials for grades three and four comprise this teaching guide about the Cape Hatteras Lighthouse. An introduction explains how the lighthouse is threatened by erosion, alternatives for saving it, the need for the lighthouse, and its history. Each lesson includes subject area, skills, lesson concepts, competency goals, objectives, materials, background information, teacher preparation, procedures for student activities and enrichment activities. The lighthouse, seashore, shipwrecks, sand dunes, lifesaving, and weather are explored through art, reading, writing, map skills, demonstrations, simulations, acting, and math skills. (DC)

Middle/Secondary

ED 045 437 SE 010 423
Environmental Education Instructional Activities, 7-12.
New York State Education Dept., Albany.
Pub Date 70
Note—59p.
EDRS Price MF-$0.50 HC-$3.05
Descriptors—Curriculum, Ecology, *Environmental Education, Instruction, *Instructional Materials, *Learning Activities, Natural Resources, Resource Materials, *Secondary Education, *Teaching Guides

As one in a series of two teacher's guides dealing with environmental education, this publication for grades 7-12 contains basic concepts, activities, and questions designed to emphasize the primary role of man as a participant in, rather than master of, his natural surroundings. Topics covered include survival, interdependence, scarcity, recycelement, right vs. responsibility, planning, valuing, social forces, and optimism. For each concept or generalization, activities which the teacher might conduct are suggested accompanied by several probing questions. Activities are not intended to reflect a subject matter orientation. Three appendices provide useful information as to (1) a list of subject headings and topics pertinent to the environment; (2) periodical, general, and film indexes featuring environmental concerns; (3) individuals, groups, and government agencies that may serve as resources of information or as classroom speakers on the environmental issue. (BL)

ED 063 162 SE 013 807
Budde, Dugne
Mounds View Environmental Education Project, Report #1.
Pub Date 71
Note—58p.; Prepared for the National Science Teachers Association Meeting, Washington, D.C., 1971
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Curriculum Development, *Curriculum Guides, *Environmental Education, *Interdisciplinary Approach, Language Arts, Learning Activities, Sciences, *Secondary Grades, Social Studies

Prepared for the 1971 National Science Teachers Association (NSTA) Annual Meeting, this collection of ideas, activities, and unit plans from the Mounds View Environmental Education Project would be useful for junior and senior high school teachers and curriculum planners. Content includes: (1) a senior high course outline and daily lesson plans for "Environmental Problems and the Future of Man," dealing with population explosion, food supply, natural resources, water and air pollution, and pesticides; (2) units for junior high environmental studies—soil conservation, animal poetry, pollution solution/communication, you as an environmentalist, and air pollution; (3) environmental activities particularly successful in the classroom; (4) a description of high school science courses relevant to the natural environment; (5) a junior high model for curriculum implementation; (6) suggestions on how the environmental education curriculum can be integrated with the social studies curriculum in the junior high school; (7) ideas for an interdisciplinary approach to the environmental education curriculum in grades 10-12; (8) various evaluation forms for faculty reaction, district assessment, and feedback; and (9) suggested proposals for environmental study sites. An interdisciplinary approach, primarily stressing science, social studies, and language arts is evident throughout the work. (BL)

ED 067 243 SE 014 501
Environment, Teacher Manual, Junior High, Idea 1, Land.
Environmental Education Project, Grafton, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [72]
Note—58p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Environmental Education, Instructional Materials, *Land Use, Learning Activities, Natural Resources, *Secondary Grades, *Teaching Guides, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

The Environmental Education Project Center has developed these guidelines for teaching a unit in environmental studies. It is their intention that the teacher and student cooperatively plan the approach and content to be used during the course of study. In this unit about land, teacher resource information and student material are combined to form a teacher's manual for use in the junior high grade levels. Project objectives, behavioral objectives, and pre- and post-test questions introduce the unit sections followed by ideas, actions, and/or activities to develop awareness of land and its uses. Major topics of discussion range from plants and animals associated with soil to litter control measures, and resource use. Field trips emphasizing concepts previously learned are suggested and additional sources of information and materials for both students and teachers are listed. This work was prepared under an ESEA Title III contract for the project "Operation Survival Through Environmental Education." (BL)

ED 081 595 SE 016 594
Environmental Education Games.
Pennsylvania State Dept. of Education, Harrisburg. Bureau of General and Academic Education.
Pub Date 72
Note—41p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Classroom Games, Conservation Education, *Educational Games, Elementary Grades, *Environmental Education, Instructional Materials, Models, *Natural Resources, Secondary Grades, *Simulation, *Teaching Guides

Six environmental education simulation games are presented in this manual, developed by Project SESAME G (Susquehanna ESEA Synergetic Activities for Maximal involvement via Education Games). The simulations are models of social situations which provide an opportunity for social interaction in the classroom, maximize student involvement, and change the roles of both teacher and student. Background information and instructions are given for each game and include an overview of the game, objectives, materials and game components, procedures, win criteria, debriefing, and a space for results of a game tryout. Additional material pertinent to the individual game is appended after each description. The games are titled: Re-Con, Forest Adventure, Camp-O-Rama, Conserv-O, and Specimens and Categories. Suggested uses are for elementary grades (4-8) and high school social studies and general science classes, although many may be adapted for several subject areas. Both role-playing and board games are covered and emphasize decision-making, awareness, identification, classification, and map reading skills. (BL)

ED 085 248 SE 016 984
Cooper, Marilyn *Theoret, Marie*
Environmental Education Activities for the English Language Arts Program in the Junior and Senior High Schools.
Milwaukee Public Schools, Wis. Div. of Curriculum and Instruction.
Pub Date 72
Note—49p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Activity Learning, Curriculum, *Environmental Education, *Guides, Instructional Materials, *Interdisciplinary Approach, *Language Arts, Objectives, *Secondary Grades
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

Nineteen environmental education objectives are listed to be incorporated into the junior and senior high school Language Arts Program. Under each objective there are suggested activities that integrate environmental concepts into appropriate language arts activities. This document is a product of the Milwaukee Public Schools' Master Plan for Environmental Education. Development of curriculum materials to achieve integration of environmental education into the existing curriculum is a goal of one of the eight components of the Master Plan. For further details of this plan, see SE 016 978 and SE 016 979. This work was prepared under an ESEA Title III contract. (JP)

ED 085 249 SE 016 985
Waldner, Suzanne *Evret, Michael T.*
Junior High Mathematics Activities and Problems in Environmental Education: A Teacher's Guide.
Milwaukee Public Schools, Wis. Div. of Curriculum and Instruction.
Pub Date 72
Note—56p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Curriculum, Environment, *Environmental Education, *Guides, Instructional Materials, *Interdisciplinary Approach, Junior High Schools, Mathematical Applications, *Mathematics Education, Problem Solving, *Secondary School Mathematics
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

As its primary function, this publication is to provide ideas and suggestions for ways that junior high school mathematics teachers can include environmental concepts as a meaningful component of the ongoing instructional program in mathematics. It includes suggestions for activities and projects as well as environmentally-oriented problems which correlate with the mathematics concepts of the junior high program. Some activities require work outside of the classroom, but many may be used in presenting mathematical concepts. This work was prepared under an ESEA Title III contract. (JP)

ED 092 378 SE 017 916
Pollution, Environmental Education Instructional Unit, Final Edition.
North Carolina State Dept. of Public Instruction, Raleigh. Div. of Science Education.
Pub Date 73
Note—45p.; For related documents, see SE 017 915 and 917
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Air Pollution Control, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, *Intermediate Grades, Mathematics Education, *Pollution, Science Education, Secondary Grades, Social Studies, Unit Plan, Wastes, Water Pollution Control, Worksheets
Identifiers—*Noise Pollution

This unit on pollution is one in a series of three prepared for use in the classroom. An interdisciplinary approach encompassing mathematics, science, and social studies is utilized in these environmental units. The material is designed for middle grades and above. Many activities are open-ended with each activity in this unit emphasizing the pollution crisis. The unit is divided into mini-units dealing with air, litter, noise, and water pollution. For some of the mini-units, student worksheets are provided which can be easily duplicated. Thought questions are presented to facilitate logical thinking based on skills and knowledge of mathematics, science, and social studies. (JP)

ED 092 379 SE 017 917
Natural Resources, Environmental Education Instructional Unit, Final Edition.
North Carolina State Dept. of Public Instruction, Raleigh. Div. of Science Education.
Pub Date 73
Note—56p.; For related documents, see SE 017 915 and 916
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, *Intermediate

Grades, Mathematics Education, *Natural Resources, Science Education, Secondary Grades, Social Studies, Soil Conservation, Unit Plan, Water Resources, Wildlife Management, Worksheets

This unit on natural resources is one in a series of three prepared for use in the classroom An interdisciplinary approach encompassing mathematics, science, and social studies is utilized in these environmental units This material is designed for middle grades and above Many of the activities are open-ended with each activity in this unit emphasizing the use of our natural resources. The unit is divided into mini-units dealing with forests, soil and minerals, water, and wildlife. For some of the mini-units student worksheets are provided which can be easily duplicated. Thought questions are presented to facilitate logical thinking based on skills and knowledge of mathematics, science, and social studies. Role-playing situations are included to stimulate the students' imaginations. (JP)

ED 099 233 88 SE 018 436
Junglas, Mary R And Others
Other Curriculum Areas.
Willoughby-Eastlake School Distrct, Willoughby, Ohio.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C.
Pub Date 74
Note—90p
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Art, Conservation Education, *Curriculum Guides, Environment, *Environmental Education, Instructional Materials, *Interdisciplinary Approach, Learning Activities, Leisure Time, Literature, Mathematics, Music, Natural Resources, *Secondary Education, Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This environmental education curriculum guide was developed for teacher use at the junior high school and senior high school levels. The guide deals with the integration of environmental education into curricular areas not normally associated with environmental education The guide is divided into the following eight units: Me and My Environment People and Things, explores means of communication, Art and Architecture, deals with the relationship between one's personal environment and the physical environment; Music in the Environment, looks at sounds in the environment, Leisure/Work, explores leisure and work in one's environment, The Visual Reflections of our Cultural Environment, involves communication through photography, The Performing Arts, an action approach, develops skills in aesthetic and sensory perception, Leisure/Work, looks at the changes in leisure/work patterns, and Mathematics, explores math in the environment. Each unit contains an introduction, stating the purpose and background, instructional objectives, experiences, and references. The experiences of each unit are based on an objective which relates to the subject of the unit Several activities, which reflect and reinforce the objective, are included in each experience. (Author/TK)

ED 100 661 88 SE 018 352
Art 7-9, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—92p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Art Education, *Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E

This art education guide, for use in grades 7-9, is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum The guides are supplementary in design, containing a series of episodes (minilessons) that are designed to wake students to sights of beauty and harmony in their environment. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different subject areas. This guide focuses on aspects such as college, enameled jewelry, and linear design. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 671 88 SE 018 362
Music 7-9, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—47p.
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Music Education, Natural Resources, Outdoor Education, *Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E

This music education guide, for use in grades 7-9 is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum The guides are supplementary in design, containing a series of episodes (minilessons) that reinforce environmental concepts and theories by developing ecology-related aesthetic values The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas This guide focuses on aspects such as dramatization, instruments, and singing The 12 concepts are covered in one of the episodes contained in the guide Further, each episode offers area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggests references and resource materials useful to teachers and students (Author/TK)

ED 100 689 88 SE 018 587
Business Education 9-12, Environmental Education Guide.
Project I-C-E, Green Bay, Wis
Spons Agency—Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—131p.
EDRS Price MF-$0.75 HC-$6.60 PLUS POSTAGE
Descriptors—*Business Education, Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E

This business education guide, for use at the secondary level, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that help to meet the growing need for environmental awareness through business communications. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in subject areas. This guide focuses on aspects such as living space, private ownership, and recycling paper. The 12 concepts are covered in one of the episodes contained in the guide Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students (Author/TK)

ED 100 690 88 SE 018 588
Home Economics 7-12, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—114p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, *Home Economics Education, Instructional Materials, *Interdisciplinary Approach, Learning Activities, *Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E

This home economics guide, for use at the secondary level, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes that develop a sense of family and personal responsibility toward the environment and help the student learn to use and preserve natural resources. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or subject levels. This guide focuses on aspects such as the consumer, housing, and family living. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 691 88 SE 018 589
Industrial Arts 7-12, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—104p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—*Conservation Education, *Environmental Education, *Industrial Arts, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E

This industrial arts guide, for use in grades 7-12, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that focus on the economical use of materials and resources and the problems of economic gain versus environmental loss. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of

each concept at different grade levels or in different subject areas. This guide focuses on aspects such as wood working, drafting, and electricity. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 696 88 SE 018 594
Physical Education 7-12; Environmental Education Guide.
Project I-C.E. Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—58p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, *Physical Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E
This physical education guide, for use in grades 7-12, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that bridge the gap between physical education and the environment, since all physical education begins with, reflects, and depends on the environment. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or subject areas. This guide focuses on aspects such as camping, skiing, and fitness. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 101 959 SE 018 625
Jamason, Barry W
Living Within Our Means: Energy and Scarcity. Environmental Education Instructional Activities 7-12.
New York State Education Dept., Albany. Office of Instructional Services.
Pub Date [74]
Note—112p.; For the K-6 booklet, see ED 093 673
EDRS Price MF-$0.76 HC-$5.70 PLUS POSTAGE
Descriptors—Conservation Education, *Energy, *Environmental Education, Fuel Consumption, Instructional Materials, Interdisciplinary Approach, Language Arts, *Learning Activities, Natural Resources, Objectives, Science Education, Sciences, *Secondary Grades, Social Studies, *Teaching Guides
This manual is a source of learning activities and instructional materials for teaching environmental education concepts in grades 7-12. Contents are organized into the areas of consumer education, English language arts, home economics, mathematics, science and social studies, and are subdivided by suggested grade level or subject area where applicable. Supplementary activities are included. An appendix containing reference books and articles, periodicals, films and multimedia materials concludes this manual. (BT)

ED 103 236 SE 018 517
Contour Mapping, An Environmental Investigation.
Minnesota Environmental Sciences Foundation, Inc., Minneapolis; National Wildlife Federation, Washington, D. C.
Pub Date 72
Note—24p.; Related documents are SE 018 514-534
Available from—National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79212, $1.50)
EDRS Price MF-$0.76 HC-$1.58 PLUS POSTAGE
Descriptors—Elementary Grades, *Environmental Education, Instructional Materials, Intermediate Grades, Junior High Schools, *Learning Activities, *Mathematics Education, *Science Education, Secondary Grades, Teaching Guides
Identifiers—*Mapping
This environmental unit is one of a series designed for integration within an existing curriculum. The unit is self-contained and requires little teacher preparation. The philosophy of this series is based on an experience-oriented process that encourages self-paced independent student work. This particular unit is designed to involve students in contour mapping activities that demonstrate certain principles of geometry. Preliminary activities include directions for building contour mapping equipment. The remaining activities are concerned with the use of this equipment in constructing a contour map. At the end of the unit are six pages of graphic information that can be duplicated and distributed to the students. Teacher information includes materials needed, directions for assembling equipment, background information, and additional topics. This unit is designed for students, grades 4-9. (MA)

ED 113 148 SE 019 535
Environmental Education: Problems, Projects and Exercises (Grades 4-10).
North Carolina State Dept. of Public Instruction, Raleigh. Div. of Science Education
Pub Date Feb 72
Note—50p.; Adapted from a similar Wisconsin publication, ED 046 746
EDRS Price MF-$0.76 HC-$1.95 Plus Postage
Descriptors—Curriculum Guides, *Ecological Factors, Elementary Secondary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Mathematical Concepts, Natural Resources, *Pollution, Population Trends, *Problem Solving, Student Projects, Teaching Guides
This sourcebook is an example of how environmental concepts can be introduced into various areas of the school curriculum. Included are a series of problems, projects, and exercises for students in grades four through ten. They are concerned primarily with pollution, population, individual needs, industrial needs, and consumption, on both a community and national scale. Each of the activities presents a particular problem, and students are asked to utilize their computational skills and/or suggest alternatives. The various problems and exercises aim to challenge students' problem-solving abilities in dealing with whole numbers, rational numbers, real numbers, percent and proportion, measurement, statistical measures, and graphs. Through generation of projects, students examine problems and suggest ways to improve environmental conditions. (BP)

ED 130 822 SE 020 264
Environmental Education, Energy - Technology, Grades 7-12.
New Jersey State Council for Environmental Education, Upper Montclair.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [75]
Grant—OEG-0-71-1754(200)
Note—53p.; For related documents, see SE 020 263 and SE 020 739. Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Conservation Education, *Energy Conservation, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Resource Materials, Science Education, *Secondary Education
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This publication is one of three books containing energy-related student activities at various grade levels. This particular book is concerned with energy technology. The activities correspond to a number of behavioral objectives and are further grouped according to suitability for pupils in grades 7-9. Interdisciplinary in approach, the activities are taken from the disciplines of science, art, social studies, mathematics, music, language arts, English, and manual arts. The book contains some charts and illustrations, as well as a listing of supplementary references. (MA)

ED 130 831 SE 020 739
Environmental Education, Energy - Society, Grades 4-12.
New Jersey State Council for Environmental Education, Upper Montclair.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [75]
Grant—OEG-0-71-1754(290)
Note—52p.; For related documents, see SE 020 263-264
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Conservation Education, *Energy Conservation, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Science Education, *Secondary Education, Social Attitudes
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This publication is one in a series of three energy-related units selected from the "Environment and the Quality of Life" environmental education series. It contains numerous student learning activities for various grade levels, based on a number of behavioral objectives. Each activity provides the purpose, suitable grade level, related subjects, and methods. Subjects covered by the activities include language arts, social studies, science, mathematics, art, English, industrial arts, music, and home economics. A final resource lists supplementary references including books, films, and kits. (MA)

ED 134 449 SE 021 920
Valuing the Environment, 7-12.
Charlotte-Mecklenburg Public Schools, Charlotte, N.C.
Spons Agency—Department of Health, Education, and Welfare, Washington, D.C.
Report No—PL-91-516
Pub Date Jun 75
Grant—OEG-0-74-7362
Note—139p.; For related documents, see SE 021 919 and ED 106 087; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Conservation Education, *Curriculum, *Environment, *Environmental Education, Instructional Materials, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, Social Problems, *Teaching Guides, *Values
This document is a pilot program of an interdisciplinary nature that complements the existing curriculum utilizing value clarification strategies. Included in this publication are a variety of value encounters. The value encounters are divided into four broad conceptual areas: (1) Environmental Management, (2) Environmental Quality; (3) Environmental Ecology; and (4) Sociocultural Environment. For each encounter, there is an introductory section, behavioral objectives, activities, values strategies, and a bibliography of useful resources. The activities are graded for applicability, grades 7-9, 10-12, or 7-12. (RH)

ED 134 537 95 SO 009 822
King, David C.; Stillman, Peter R
Suggestions for Curriculum Development [And] Handbook, Part C, 7-9, Environmental Education Interdependence: A Concept Approach, Revised.
Center for Global Perspectives, New York, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date Sep 76
Note—100p.; For related documents, see SO 009

820-823
Available from—Center for Global Perspectives, 218 East 18th Street, New York, New York 10003 (guide $1.50, handbook $2.00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Activity Units, Bibliographies, Concept Formation, *Concept Teaching, Curriculum Development, *Environmental Education, Grade 7, Grade 8, Grade 9, *Interdisciplinary Approach, Junior High Schools, Learning Activities, Objectives, Relationship, Secondary Education, Simulation, *Teaching Methods
Identifiers—*Interdependence
Two booklets, a guide and a handbook, comprise the grades 7-9 component of a series of guides for incorporating environmental education into the existing curriculum. The materials emphasize a multidisciplinary approach, use the concept of interdependence as an organizing theme, and offer suggestions for using the local community as a resource. Eight objectives, based on knowledge of systems, include understanding how population changes influence all other environmental issues, developing constructive attitudes toward one's surroundings, and comparing ways in which diverse human groups interact with their environment. The guide presents ideas and bibliographic suggestions for multidisciplinary study. For example, science classes could research major sources of pollutants, such as carbon monoxide, and report their effects on natural systems. English and art classes could study folk art of various cultures and note the ways that people use art to express their feelings about the world in terms of food sources, homes, gods, and landforms. The handbook contains four activity units in which students study effects of a nationwide airline strike and analyze the role of noise as a by-product of some systems and a necessary component of others. A simulation challenges students to identify and devise systems necessary for subsistence on a five-acre plot of land. (AV)

ED 137 056 SE 021 163
Environmental Education Curriculum Infusion Units for Grades 7-12.
New York State Education Dept., Albany.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date [75]
Grant—PL-91-516
Note—247p.; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$12.71 Plus Postage.
Descriptors—Curriculum Guides, *Environmental Education, Instruction, *Instructional Materials, *Interdisciplinary Approach, Learning Activities, Resource Materials, *Secondary Grades, *State Curriculum Guides, Teacher Developed Materials
Identifiers—*New York
This manual, developed with a grant from the United States Office of Education, Office of Environmental Education, contains ten interdisciplinary environmental education teaching units developed by teachers from the state of New York for use in the secondary grades. The units are referenced to the syllabuses of New York State and are designed to supplement or supplant some of the units normally used in instructional programs. The format of this publication is designed to facilitate the duplication of subject matter segments, individual worksheets, or single units. Units are provided for consumer education, English language arts, environmental studies, fine arts, health, industrial arts, mathematics, sciences, and social studies. Learning activities within individual units contain syllabus and environmental references, objectives, procedures, related activities and resource materials. The appendices consist of: (1) a schematic of a curriculum design process; (2) categories of environmental issues; (3) environmental education instructional objectives; (4) environmental concepts defined; (5) environmental understandings; (6) an annotated list of other New York State Education Department environmental materials; and (7) a list of New York City curriculum references for the units in this manual. (BT)

ED 137 100 SE 022 303
Wert, Jonathan And Others
Ideas and Activities for Teaching Energy Conservation Grades 7-12.
Tennessee Univ., Knoxville Environment Center.
Spons Agency—Tennessee State Dept of Education, Nashville; Tennessee Univ., Knoxville State Agency for Title I.
Pub Date Jan 77
Note—223p.; Not available in hard copy due to colored pages throughout entire document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Conservation Education, *Energy, *Instructional Materials, Interdisciplinary Approach, Language Arts, *Natural Resources, Sciences, *Secondary Education, Social Studies, Teaching Guides
This publication contains a variety of ideas and materials for teaching about energy in grades 7-12. Topic areas include: (1) Historical Perspective on Energy, (2) Energy Resources, (3) Energy Conservation; (4) Ideas and Activities, and (5) Appendices. The first three sections provide background information on energy and conservation. The activities include ideas to use in science, social studies, language arts, and multidisciplinary areas. The appendices include a variety of useful tables of data, basic information on energy, a glossary, and a bibliography. (RH)

ED 144 787 SE 022 923
Suggested Activities for Environmental Education in the Secondary Schools.
Texas Education Agency, Austin. Div of Curriculum Development.
Pub Date 77
Note—47p.; For related document, see SE 022 922; Not available in hard copy due to colored print throughout entire document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Classroom Materials, Curriculum Enrichment, *Curriculum Guides, *Environmental Education, *Instructional Materials, Learning Activities, Resource Materials, Science Education, *Secondary Education
Identifiers—Texas Education Agency
This publication is designed as a model to assist middle school and high school teachers in developing environmental education activities in all subject areas. Both public school and college educators developed this guide to help make young people aware of the value of the environment and of the responsibility they have for conserving it. Discussions of the curriculum model for the guide and the program format and criteria are included for the teacher. The curriculum model demonstrates the interrelationships of personal concerns, environmental concerns, and educational process. A multidisciplinary approach is an important component in every suggested activity topic. Some of the areas covered are environmental ethics, government and law, land use, pollution, population, energy, and economics. Each topic includes a short overview and a listing of generalizations and suggested pupil activities. The educational experiences and activities are designed to individualize student learning, emphasize community involvement, and encourage exploratory and investigative learning. A companion guide is also available for elementary grades. (Author/MA)

ED 149 981 SE 023 450
Environmental Education, Values for the Future: Curriculum, Grades 6-8 and 9-12.
Illinois State Office of Education, Springfield.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—IOE-551-2-75
Note—6Fp.; For related documents, see SE 023 448-457 and SE 023 459-465
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Curriculum, Curriculum Guides, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, *Learning Activities, Resource Materials, Science Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III
This booklet on curriculum is one of a series in environmental education for grades K-12. In this section, four basic concepts are listed and the behavioral objectives, associated subject areas, and key words and definitions are included for each. Three activity options are given for each concept. Information for the teacher includes materials and resources needed for the activity, the procedure, discussion questions, further activities, and sample worksheets. These activities are interdisciplinary in nature and are designed for students in grades 6-8 and 9-12. (MA)

ED 153 820 SE 024 109
Oklahoma Energy Awareness Education, Energy Education Activities, Grades 4-12.
Oklahoma State Dept. of Education, Oklahoma City.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Note—220p.; For related documents, see SE 024 108-110; Page 163 missing from document prior to its being shipped to EDRS for filming. Contains occasional small, light and broken type
EDRS Price MF-$0.83 HC-$11.37 Plus Postage.
Descriptors—Activity Units, *Elementary Secondary Education, *Energy, *Energy Conservation, Environmental Education, *Experiential Learning, *Instructional Materials, *Interdisciplinary Approach, Natural Resources, Units of Study
Identifiers—*Oklahoma
This publication contains energy education activities for grades 4 through 12 and is part of a set of three publications. These activities are organized under five energy concepts: (1) energy is so basic that nothing moves without it, (2) conservation of energy, (3) there are other energy alternatives; (4) society depends on energy, and (5) the production and distribution of energy have environmental and economic consequences. This publication is constructed in a looseleaf fashion to facilitate the reproduction of activities. Grade level, objective, materials, and a description are given for each activity. The variety of activities include laboratory experiments, values clarification exercises, simulations, games, and independent student investigations. Activities are included that may be used in one or more subject areas so that an interdisciplinary approach to energy education is achieved. (MR)

ED 153 843 SE 024 169
Childs, Barbara And Others
Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy: 3, Energy, Engines, and the Industrial Revolution, Grades 8, 9.
National Science Teachers Association, Washington, D.C.
Spons Agency—Bureau of Intergovernmental and Institutional Relations (DOE), Washington, D.C. Office of Education, Business and Labor Affairs.
Report No—EDM-1032
Pub Date Oct 77
Contract—EX-76-C-01-3841
Note—80p.; For related documents, see SE 024 167-172 and SE 024 218; Not available in hard copy due to marginal legibility of original document
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee 37830 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Economic Education, *Energy, History, Industrialization, *Instructional Materials, Integrated Curriculum, *Science Education, *Secondary Education, *Social Studies, *Teaching Guides
This instructional unit for grades 8-9 combines science and social studies in a look at the broad social and economic upheavals that took place during the industrial revolution, giving special emphasis to the role of energy. The invention and development of the steam engine is highlighted in one lesson. Other lessons show how the industrial revolution affected the location and growth of cities around sites of energy sources, and give greater understanding of the effects of technology on the daily lives of people. There are five lessons in all, two relating to science and three to social studies. Complete teacher and student materials are included. (BB)

ED 153 844 SE 024 170
Childs, Barbara And Others
Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy: 4. Transportation and the City. Grades 8, 9.
National Science Teachers Association, Washington, D.C.
Spons Agency—Bureau of Intergovernmental and Institutional Relations (DOE) Washington, D.C. Office of Education, Business and Labor Affairs
Report No.—EDM-1031
Pub Date-Oct 77
Contract—EX-76-C-10-3841
Note—44p. For related documents, see SE 024 167-172 and SE 024 218. Not available in hard copy due to marginal legibility of original document
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee 37830 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Civics, *Energy, Environmental Education, History, *Instructional Materials, *Secondary Education, *Social Studies, *Teaching Guides, United States History, Urbanization
Identifiers—*Automobiles
This instructional unit for grades eight and nine tells why and how American small towns declined as a result of the availability and acceptance of automobiles, and it tells of the growth of suburbs and their effect on the city. The learning activities also relate the story of the demand for cars and explain the drain on the cities' sense of space, clean air, and safe streets. In one of the lessons, the students simulate a court trial on the charge "The Car Has Done Permanent Injury to Humanity." There are four lessons in this unit. They are designed to fit into existing segments of instruction in U.S. history and civics courses. Complete teacher and student materials are provided. (BB)

ED 157 765 SE 024 767
Jones, Russ, And Others
Columbia County Environmental Resource Guide, Grades 7-12.
Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date 77
Note—113p.; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Conservation Education, Curriculum Guides, Energy, *Environmental Education, *Instructional Materials, Natural Resources, Pollution, *Population Education, *Secondary Education, Teaching Guides
This environmental resource guide consists of objectives for grades 7-12 and activities for juniors and seniors in high school. The environmental objectives include understanding the following concepts: (1) interdependency in nature, (2) finite resources; (3) wise use of resources; (4) change, and (5) man's environmental responsibility. The activities are divided into two sections: (1) natural resources - water, air, land, and energy, and (2) population patterns - population problems, pollution. Each activity consists of a title, objectives, procedures, suggestions for teachers, and a reading list. (Author/RH)

ED 167 401 SE 026 787
Brown, Evelyn And Others
Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy: Mathematics in Energy, Grades 8-9.
National Science Teachers Association, Washington, D.C.
Spons Agency—Department of Energy, Washington, D.C.
Report No.—HCP/U-3841-02
Pub Date—Nov 78
Contract—EX-76-C-10-3841
Note—105p.; Not available in hard copy due to marginal legibility of original document
Available from—U.S. Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, Tennessee 37830 (no price quoted)
Pub Type—Guides - Classroom - Teacher (052) — Guides - Classroom - Learner (051)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Curriculum Enrichment, Decimal Fractions, *Energy, Fractions, *Junior High School, *Mathematical Applications, *Mathematics Education, Percentage, Problem Solving, Ratios (Mathematics)
Identifiers—*Energy Education, National Science Teachers Association, *Project for an Energy-Enriched Curriculum
This publication is part of a series of instructional units produced by NSTA's Project for an Energy-Enriched Curriculum. The teacher's manual and the student guide for a mathematics unit in this series are presented here. This unit attempts to teach students some necessary mathematical skills needed to understand quantitative facts about energy. A pre/post test is given in the teacher's manual. Five activities are given along with problems in: (1) fractions; (2) decimals; (3) percents; (4) graphing; and (5) energy applications. (MR)

ED 167 413 SE 026 823
Clinard, Lil Collins, Nancy
Energy Conservation in the Home: An Energy Education/Conservation Curriculum Guide for Home Economics Teachers.
Tennessee Univ., Knoxville. Coll. of Home Economics.
Spons Agency—Department of Energy, Washington, D.C.
Report No.—EDM-1028
Pub Date—Oct 77
Contract—EY-76-S-05-5049
Note—302p.
Available from—U.S. Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, Tennessee 37830 (no price quoted)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 HC-$16.73 Plus Postage.
Descriptors—Bibliographies, Educational Objectives, *Energy, Energy Conservation, Home Economics, *Home Economics Education, *Home Management, *Information Sources, *Instructional Materials, Secondary Education
Identifiers—*Energy Education
This guide was designed for Home Economics teachers as a source of information, instructional materials and suggested references about the energy situation. The contents in this loose-leaf guide are organized according to the most common divisions in home economics curricula. Educational objectives are provided for decisions as well as for each activity. Energy basics are provided at the end of the guide and energy facts and statistics are footnoted for further reading. A bibliography is also provided which gives publisher address and publication cost for each entry. Some of the "activities" merely present information. (MR)

ED 167 451 SO 011 525
Energy and Conservation Education: Activities for the Classroom, Grades 7-9.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—78
Note—308p.; For related documents, see SO 011 523-529. Photographs throughout document may not reproduce clearly
Available from—Energy and Man's Environment, 0224 S.W. Hamilton, No. 301, Portland, Oregon 97201 ($24.00)
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Class Activities, Classroom Games, Concept Teaching, *Conservation Education, Depleted Resources, Educational Objectives, *Energy, *Energy Conservation, *Environmental Education, Environmental Influences, Fuels, Futures (of Society), Grade 7, Grade 8, Grade 9, Instructional Materials, Interdisciplinary Approach, Junior High Schools, *Learning Activities, Natural Resources, Secondary Education, Social Studies, Student Evaluation, Teacher Developed Materials, Teaching Guides
The instructional materials and classroom activities described in the document are intended to aid teachers in grades seven through nine develop and implement educational programs dealing with energy-related issues. The document is presented in four sections. Section I explains the organization of the document and summarizes how teachers should implement activities and assess student performance. Section II consists of a matrix of activities described in the document. Information is presented on grade level, time required, and subject matter. Section III describes learning activities in six areas: (1) sources of energy; (2) uses of energy; (3) conversion of energy from one form to another; (4) impact of energy use on the environment; (5) limits of the earth's resources; and (6) the future. For each activity, information is presented on title, concept, time, implementation, materials, and optional activities. Activities involve students in performing and observing energy-related experiments such as starting fires with magnifying glasses, debating the merits of various fuels, compiling lists of energy sources used in industrial and commercial production, discussing energy issues with classmates and resource people, defining terms, and completing handouts. The final chapter presents information on student assessment. Suggested test items are presented along with suggestions on how to use them and an explanation of the origin of test items. (DB)

ED 169 563 CS 204 802
Environmental Education Guide; Language Arts 7-8.
Project I-C-E, Green Bay, Wis.
Spons Agency—Office of Education (DHEW), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date—[74]
Note—106p.; For related document, see CS 204 803; Best copy available
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—Behavioral Objectives, Ecology, *English Curriculum, *English Instruction, *Environmental Education, *Interdisciplinary Approach, Junior High Schools, *Language Arts, Listening Skills, Pollution, Reading Skills, Speech Skills, Validated Programs, Writing Skills
Identifiers—National Diffusion Network Programs, *Project ICE
Written for use with junior high school students, this handbook links natural ecological issues with language arts instruction. It contains a series of lesson plans, each offering a number of suggested learning activities for use both in and out of class. The lessons are built around 12 major environmental concepts that form a framework for each subject area. In addition, each lesson offers subject area integration, multidisciplinary activities, cognitive and affective behavioral objectives, and suggested reference and resource materials for both the teacher and student. (FL)

ED 175 722 SE 028 805
O'Neal, Allan M., Jr., Ed.
Environmental Education Curriculum Materials (7-12).
Bear Creek Watershed Environmental Education Project, Russellville, Ala.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—74
Grant—G007407358
Note—191p.; Contains colored pages which may not reproduce well
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Art Education, *Curriculum Planning, English Education, *Environmental Education, *Interdisciplinary Approach, Mathematics Education, Outdoor Education, Physical Education, Science Education, *Secondary Education, Social Studies
Identifiers—Energy Education
This collection of teacher-developed material is designed to integrate environmental education into various disciplines taught in public schools. Units contain an overview, list of needed materials and equipment, background information, description of the activity, and discussion of related activity or a list of questions pertinent to the unit. (RE)

ED 178 350 SE 029 287
Norman, John, Ed. And Others
Environmental Education Activities, 7th-12th Grades, Project RENEW.
Wayne State Univ., Detroit, Mich.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—78
Grant—G007701226

Note—165p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Air Pollution Control. *Class Activities. Environment. *Environmental Education. Environmental Influences. Interdisciplinary Approach. *Land Use. Planning. Pollution. Science Education Secondary Education. *Water Pollution Control
This collection of environmental education minunits presents class activities of a multi-disciplinary nature appropriate for a variety of secondary-level grades Each lesson of a mini-unit includes specified objectives. list of materials. and Procedures The procedure segment sometimes provides several activities. including instructions. from which a student may choose Concluding the lesson are references or discussion questions. (RE)

ED 179 374 SE 028 822
Brown, Evelyn And Others
Energy Transitions in U.S. History, Grades 8-9, Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy.
National Science Teachers Association, Washington, D.C.
Spons Agency—Department of Energy, Washington, D.C. Office of Education, Business and Labor Affairs.
Report No—HCP/U-3841-0004
Pub Date—Jun 79
Contract—EX-76-C-10-3841
Note—114p.
Available from—U.S Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830 (no price quoted)
Pub Type— Guides - Classroom - Learner (051) — Collected Works - Serials (022)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—*Energy, *Energy Conservation. Environmental Education. *Fuel Consumption. *Fuels. History. *Interdisciplinary Approach. Mathematics Education. *Natural Resources. Science Education. Secondary Education. Social Studies
Identifiers—*Energy Education
This unit is intended to give students an understanding of the influence that various sources of energy have had on culture and on understanding of the effects of energy change. Physical properties of wood, coal, and oil are examined, and the ability of these substances to give heat is considered. Students practice the mathematics necessary to understand energy conversion. (Author/RE)

ED 179 792 CE 023 547
Humtr, Barbara
Mathematics and Solar Energy. Solar Energy Education Project.
Howell Township Board of Education, N.J.
Spons Agency—New Jersey State Dept. of Education, Trenton. Div. of Vocational Education.
Pub Date—[79]
Note—21p.; Not available in paper copy due to light and broken type: For related documents see CE 023 548-550
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Career Awareness. *Energy. Junior High Schools. Learning Modules. *Mathematics Materials. Secondary Education. Secondary School Mathematics. Solar Radiation
This learning module for use with junior high school students offers some basic career awareness in the energy field while covering some basic principles and aspects of energy use, such as vocabulary, basic electricity, energy efficiency and home utility meter reading Math problems are offered in volume and surface area, energy efficiency, electrical circuits, and work units (horsepower), accompanied by general commentary on occupations that might need such skills (CP)

ED 180 826 SE 029 698
Jedlicka, Ella, Ed.
Energy Conservation Teaching Activities for Home Economics Classrooms.
University of Northern Iowa, Cedar Falls. Dept. of Home Economics Education.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Jun 79
Note—58p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Class Activities. Consumer Education. Curriculum. *Energy. *Energy Conservation. Fuel Consumption. Fuels. *Home Economics. Home Economics Education. Home Management. Interdisciplinary Approach. Natural Resources. Nonformal Education. Recycling. Solar Radiation. Waste Disposal
Identifiers—*Energy Education
This collection of home economics activities is intended to meet the special needs of home economics teachers who wish to include energy education activities in their curricula. The 45 activities can be used as presented, or can be modified to individual needs or local conditions. Each activity includes: (1) title, (2) objective, (3) activity description, (4) variations or extensions, and (5) resources. Additionally, each activity delineates appropriate grade levels, sets out the skills to be stressed, and lists the concepts taught during the activity. (Author/RE)

ED 182 131 SE 029 772
Burkhart, Phil And Others
Idaho Energy Conservation Resource Guide for Career Education, Grades 7-12.
Idaho State Dept. of Education, Boise.; Idaho State Office of Energy, Boise
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Feb 79
Note—30p.; For related documents, see SE 029 773-778. Printed on colored background.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Career Education. Depleted Resources. *Energy Conservation. Environment. *Environmental Education. Natural Resources. *Resource Guides. *Secondary Education. Social Values. *Teaching Guides
This manual is a resource guide on energy education for teaching career education from grades seven to twelve. It contains 18 student activities which are grouped into four goal oriented units The main objectives of the project are to increase the student's understanding that (1) Natural laws limit energy availability, (2) Energy consumption affects both man and his environment, (3) Human values and attitudes affect energy usage, and (4) Energy consumption is necessary to maintain our life style. (SB)

ED 182 134 SE 029 775
Armitage, Colleen And Others
Idaho Energy Conservation Resource Guide for Environmental Education, Grades 7-12.
Idaho State Dept of Education, Boise.; Idaho State Office of Energy, Boise.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Feb 79
Note—42p.; For related documents, see SE 029 772-778. Printed on colored background
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Depleted Resources. *Energy Conservation. *Environmental Education. *Natural Resources. *Resource Guides. Science Education. *Secondary Education. Social Values. *Teaching Guides
This manual is a resource guide on energy conservation for teaching environmental education in grades seven to twelve It contains 25 student activities which are grouped into four goal oriented units. The main objectives of the project are to increase the student's understanding that: (1) Natural laws limit energy availability; (2) Energy consumption affects both man and his environment; (3) Human values and attitudes affect energy usage; and (4) Energy consumption is necessary to maintain our lifestyle. (SB)

ED 182 136 SE 029 777
McCurry, Niki And Others
Idaho Energy Conservation Resource Guide for Language Arts, Grades 7-12.
Idaho State Dept. of Education, Boise.; Idaho State Office of Energy, Boise
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Feb 79
Note—78p.; For related documents, see SE 029 772-778 Printed on colored background
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Art. Depleted Resources. *Energy Conservation. Environment. *Environmental Education. *Language Arts. Natural Resources. Reading. *Resource Guides. *Secondary Education. Social Values. *Teaching Guides. Writing
This manual is a resource guide on energy conservation for teachers of language arts from grades seven to twelve. It contains a multitude of student activities which are classified into 7 thematically oriented units. The aim of all the activities is to increase the student's awareness and knowledge of energy conservation The four basic goals of the project are to increase the student's understanding that (1) Natural laws limit energy availability; (2) Energy consumption affects both man and his environment; (3) Human values and attitudes affect energy usage; and (4) Energy conservation is necessary to maintain our lifestyle. (SB)

ED 193 061 SE 032 963
Agan, John E. And Others
Computations About the Sources and Conservation of Energy.
Spons Agency—Florida State Dept of Education, Tallahassee. Office of Environment Education
Pub Date—79
Note—76p.; Contains occasional light and broken type.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Elementary Secondary Education. *Energy. Energy Conservation. Environmental Education. *Interdisciplinary Approach. Junior High Schools. *Mathematics Education. Mathematics Instruction. *Resource Materials. *Secondary School Mathematics. Secondary School Science
Identifiers—*Energy Education
Energy-related concepts are the subject of mathematics problems in this supplementary workbook for secondary school students Exercises involving light heat, motion and energy conservation assist students in understanding whole numbers, decimals, fractions, ratios proportions, percents, and the creation and interpretation of graphs The individual energy topics and the associated calculations are described together in order to facilitate comprehension of both mathematical operations and scientific concepts For teachers each problem is coded according to the type of math skill required Also provided are a glossary and an answer key. (WB)

ED 193 063 SE 032 965
Brennan, Matthew J.
Energy and My Environment: 7-9 Teachers' Guide. Draft.
Governor's Energy Office, Tallahassee, Fla
Spons Agency—Florida State Dept of Education, Tallahassee Office of Environment Education
Pub Date—Nov 79
Note—160p.; For related document see SE 032 964 Contains occasional light and broken type
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC07 Plus Postage.
Descriptors—*Energy *Energy Conservation *Environmental Education Junior High Schools Physics *Resource Materials Science Education. Science Instruction. Secondary Education *Secondary School Science. Social Studies
Over 60 energy education activities comprise this manual for junior high school teachers These lessons are experience-oriented and emphasize questioning, the use of reference materials, data collection, and discussion For every grade level, three activities dealing with each of seven recurring conceptual schemes are included Lesson plans include directions for implementing and developing the activity, suggested extensions of the learning experience, and a listing of the lesson's concept and objective. (WB)

ED 194 353 SE 033 197
LaSalle, Donald P., Ed And Others
Energywatch: Designing Energy Education Into the Curriculum. Volume 2--Grades 7-12.
Connecticut State Dept. of Education, Hartford. Talcott Mountain Science Center, Avon, Conn.
Pub Date—Nov 80
Grant—NESEC-EG-**-G-01-4044
Note—289p.; For related document, see SE 033 196. Funding received from the Northeast Solar Energy Center
Available from—Dr Sigmund Abeles, Connecticut State Dept. of Education, Box 2219, Hartford, CT 06115 (no price quoted)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC12 Plus Postage.
Descriptors—Conservation Education, *Energy, *Energy Conservation, Environmental Education, *Instructional Materials, Interdisciplinary Approach, Mathematics Education, *Physical Sciences, *Science Education, *Science Instruction, Secondary Education, Secondary School Science, Social Studies, Solar Radiation

Presented in this teacher's manual are more than 40 energy-related discussions and projects for use in conjunction with secondary school courses in mathematics, science, social studies, and language arts. Designed to help students discover ways to study and conserve energy, the activities also stress alternate energy sources and their applications. Lessons are organized under four categories (1) energy conservation, (2) solar energy concepts, (3) solar energy applications, and (4) alternate energy sources. Typical among these activities are constructing a solar collector, debating offshore drilling proposals, tracking the sun by computer, and investigating the effects of thermal pollution. Included in the lesson plans are teacher background material, suggestions for lesson preparation, lists of related activities, student handouts, and step-by-step procedures for conducting the activities. (WB)

ED 195 399 SE 033 225
Carpenter, James C. Fraser, Kathryn M.
Environmental Approaches to Prehistory/Archaeology. Activities Designed to Supplement a Course in North American Prehistory/Archaeology at the Junior High or High School Level. Curriculum Series, Number 2.
Murray State Univ., Ky. Center for Environmental Education.
Pub Date—Sep 80
Note—65p.; Not available in hard copy due to copyright restrictions.
Available from—Center for Environmental Education, Murray State University, Murray, KY 42071 ($2.00).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Anthropology, *Archaeology, Art Activities, *Cultural Education, Environmental Education, Instructional Materials, *North American History, Outdoor Education, Science Education, Secondary Education, Social Studies

Presented are 17 activities designed to supplement junior or senior high school studies in prehistory and archaeology. Stressed throughout the manual is the changing relationship between humans and the environment. The learning experiences fall into three categories: (1) how we study prehistoric cultures, (2) how prehistoric peoples lived, and (3) why we value prehistory. Activity plans list the concept and objectives, describe the procedure, provide discussion questions, and present suggestions for related activities and references. Typical among the lessons are "Trash Can Dig," an excavation of a trash can using archaeological materials, "Mammoth Hunt," in which students act out a prehistoric hunt, and "Bandelier," a simulation game that investigates issues in cultural resources management. Also included is an annotated bibliography of resource materials and teacher aids. Several listings relate to the archaeology and prehistoric peoples of Kentucky, Illinois and surrounding states. (WB)

ED 199 109 SE 034 677
Simonis, Doris G
Iowa Developed Energy Activity Sampler (IDEAS). Grades 7-12. Introduction.
Iowa Energy Policy Council, Des Moines; Iowa State Dept. of Public Instruction, Des Moines.
Pub Date—80
Note—188p.; For related documents, see SE 034 678-683. Pages 85-89 removed due to copyright restrictions. This introduction is the same for all modules, and will need to be used in conjunction with each module
Pub Type— Guides - Classroom - Teacher (052) — Reference Materials (130)
EDRS Price - MF01/PC08 Plus Postage.
Descriptors—*Energy, Energy Conservation, *Environmental Education, *Fused Curriculum, Home Economics, *Interdisciplinary Approach, Science Education, *Secondary Education, Social Studies
Identifiers—Energy Consumption

Presented is the Introduction for the Iowa Developed Energy Activity Sampler (IDEAS), a multidisciplinary energy education program designed for infusion into the curriculum of grades 7-12. Included in the program are activity sets for Home Economics (SE 034 678), Industrial Arts (SE 034 679), Language Arts (SE 034 680), Mathematics (SE 034 681), Science (SE 034 682), and Social Studies (SE 034 683). This introductory section is intended for use with each of the subject-matter activity samplers. Provided is teacher background information on energy topics such as heat capacity, energy production and consumption, energy resources, exponential growth, and energy use in agriculture. Also presented are a glossary of energy-related terms and an annotated bibliography of about 300 selected materials on energy. (Author/WB)

ED 207 851 SE 035 729
Henry, Richard E., Ed.
A Sourcebook of Marine Activities Developed in the Milwaukee Great Lakes Summer Education Program, 1977 and 1978.
Sponsoring Agency—Wisconsin Univ., Madison. Sea Grant Program.
Pub Date—[79]
Note—99p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Environmental Education, Field Trips, *Interdisciplinary Approach, *Learning Activities, *Science Activities, Science Education, Secondary Education, Secondary School Science, Social Studies, *Teaching Guides, *Water Resources
Identifiers—*Great Lakes, Marine Education

Twenty-seven activities dealing with the marine environment of the Great Lakes are presented. Designed for junior and senior high school students, these activities develop awareness of the biological, physical, social, economical, and aesthetic dimensions of the Great Lakes. Field trips, films, discussion, and hands-on activities are used to teach the students about a variety of topics including ports, shipping, wastewater treatment, sunken treasure, geography, recreational and occupational skills, energy, pollution, fish, and ecology. The format for the activities varies, but information may include objectives, materials, learning activity, student directions and handouts, contact person for field trips, and background information. (DC)

ED 211 374 SE 036 056
Butzow, John W. And Others
How Do People Use Lighthouses and Navigational Charts? A Marine Education Infusion Unit. Revised Edition.
Maine Univ., Orono. Coll. of Education.
Sponsoring Agency—National Science Foundation, Washington, D.C.
Pub Date—80
Grant—NSF-SER-8008177
Note—71p.; For related documents, see SE 036 055-059 and ED 177 014. Produced through the Northern New England Marine Education Project. Contains colored print which may not reproduce well.
Available from—Northern New England Marine Education Project, Univ. of Maine at Orono, 206 Shibles Hall, Orono, ME 04469 ($3.00).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Activity Units, Elementary Secondary Education, Environmental Education, *Interdisciplinary Approach, Intermediate Grades, Junior High School Students, *Map Skills, Marine Biology, Mathematics Education, *Navigation, *Oceanography, Seafarers
Identifiers—*Marine Education

Activities concerning navigational charts and aids are presented to help fifth- through ninth-grade students learn about the shape of the sea, its coast, and contours, and about the road signs of the sea which warn against danger and help mariners locate their positions. Teacher background information includes information on marine charts, navigational aids, lighthouses, and navigation. The multidisciplinary activities involve identifying lighthouse characteristics and chart symbols, reading about lighthouse keepers, writing poetry and log entries, and doing navigational problems. Lists of marine charts, government publications, books and articles, and places to visit are provided for the unit. Informational sheets and student handouts are included. (DC)

ED 211 375 SE 036 057
Butzow, John W. And Others
Is Our Food Future in the Sea? A Marine Education Infusion Unit on Aquaculture and Sea Farming. Revised Edition.
Maine Univ., Orono. Coll. of Education.
Sponsoring Agency—National Science Foundation, Washington, D.C.
Pub Date—81
Grant—NSF-SER-8008177
Note—53p.; For related documents, see SE 036 055-059 and ED 177 014. Produced through the Northern New England Marine Education Project. Contains colored print which may not reproduce well.
Available from—Northern New England Marine Education Project, Univ. of Maine at Orono, 206 Shibles Hall, Orono, ME 04469 ($3.00).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Activity Units, Agriculture, Elementary Secondary Education, Environmental Education, *Fisheries, Instructional Materials, *Interdisciplinary Approach, Intermediate Grades, Junior High School Students, *Marine Biology, Oceanography, Science Activities, Science Education, *Water Resources
Identifiers—*Aquaculture, *Marine Education

Designed to introduce middle and junior high school teachers and students to aquaculture and sea farming, the information and lessons in this unit focus on the biology, economics, and gastronomics of these fresh and salt water activities. An extensive section containing teacher background information describes how to farm shellfish and finfish, summarizes major developments in aquaculture in the northern New England area, and discusses specific shellfish and other species. Five multidisciplinary activities focus on mussels, crayfish, and seaweed; culture equipment. The unit concludes with a simulation game about the oyster culture industry. Lists of organizational and commercial resources are provided as well as bibliographies of technical materials, general books, and cook books. (Illustrations and student worksheets are included. (DC)

ED 212 459 SE 035 428
Safe Drinking Water for Alaska: Curriculum for Grades 7-12.
South East Regional Resource Center, Juneau, Alaska.
Sponsoring Agency—Alaska Dept. of Environmental Conservation, Juneau.
Pub Date—Feb 80
Note—204p.; For related document, see SE 035 427. Contains occasional light and broken type.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC09 Plus Postage.
Descriptors—*Environmental Education, Health Education, *Public Health, Science Education, Science Instruction, Secondary Education, *Secondary School Science, Social Studies, Utilities, *Water Pollution, *Water Resources

The 10 lessons in this manual for secondary school teachers address concerns ranging from water sources and pollutants to government programs and water treatment methods. The materials are intended to help students understand the sources of drinking water, how water can be made safe for drinking, and the health threat that contaminated water represents. Although this curriculum relates primarily to science, health, and social studies lessons, the follow-up activities also involve skills developed in art and English classes. Each lesson plan contains a materials list, general introduction, vocabulary, instructional activities, and suggested supplementary activities. Included with the lesson entitled "Alaska's Water Sources and Problems," are detailed data from each of the state's regions. (Author/WB)

ED 212 461 SE 035 430
Clean Air for Anchorage and Fairbanks: Curriculum for Grades 7-12.
South East Regional Resource Center, Juneau, Alaska.
Spons Agency—Alaska Dept. of Environmental Conservation, Juneau.
Pub Date—Feb 80
Note—89p.; For related document, see SE 035 429. Contains light and broken type.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Air Pollution, *Environmental Education, Health Education, Public Health, *Science Education, Science Instruction, Secondary Education, Secondary School Science, *Social Studies, *Urban Problems, Weather

Ten lessons on air and air pollution comprise this guide for secondary school teachers. Among the topics addressed are pollutants, health effects, weather inversions, personal involvement, and automobile emissions. Particular emphasis is placed upon problems in Alaskan cities. Lesson plans contain a materials list, background information, questions, and activities. The materials can be used in conjunction with classes in health, government, science, and social studies; suggested follow-up activities involve skills developed in art, English, drama, and library classes. A list of field trip sites and teacher resources is included. (Author/WB)

ED 212 494 SE 036 243
Hargis, Elizabeth And Others
Studying Arkansas' Valuable Energy (S.A.V.E.): An Energy Curriculum for Arkansas' Schools, Grades 7-12.
Arkansas State Dept. of Education, Little Rock.
Spons Agency—Ozarks Regional Commission, Little Rock, Ark.
Pub Date—81
Grant—10-GR-0-147
Note—621p.; For related documents, see SE 036 241-242.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF03/PC25 Plus Postage.
Descriptors—*Conservation Education, Depleted Resources, Electricity, *Energy, *Energy Conservation, Environmental Education, Fuels, *Interdisciplinary Approach, *Learning Activities, Natural Resources, Secondary Education, Solar Radiation, State Curriculum Guides
Identifiers—Alternative Energy Sources, Arkansas, *Energy Education

Designed for grades seven through twelve, this guide contains 50 interdisciplinary lessons on energy which were developed to assist Arkansas teachers in incorporating energy education into existing curricula. Program objectives are listed under four broad categories: (1) energy sources, alternatives, and conversion; (2) energy uses; (3) conservation; and (4) limits and impacts. Each lesson follows a uniform format which includes category of objectives, title, related subject areas, energy types, grade level, time, materials, learning objectives, task analysis (prerequisite knowledge and skills), and procedure (preparation, steps in lesson, evaluation, and follow-up activities). A section on teacher background information and student worksheets follow each lesson. A glossary, list of selected references, and program evaluation forms are provided. (DC)

ED 213 582 SE 036 095
Sly, Carolie Rose, Larry
Environmental Education Guide, Volume 3: An Environmental/Energy Education Primer for Grades Seven through Nine, 1981-84.
Alameda County Superintendent of Schools, Hayward, Calif.; California State Dept. of Education, Sacramento.
Pub Date—81
Note—301p.; For related documents, see SE 036 093-096. Contains colored print which may not reproduce well.
Available from—Office of the Alameda County Superintendent of Schools, 685 "A" St., Hayward, CA 94541 ($7.00; $25.00 for complete set of 4 volumes).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Conservation Education, *Curriculum Development, Decision Making, Energy, Energy Conservation, *Environmental Education, Institutions, *Interdisciplinary Approach, Junior High Schools, *Learning Activities, Natural Resources, Physical Environment, Secondary Education, Secondary School Curriculum, Urban Environment
Identifiers—*California, *Energy Education, Environmental Management

As one of four volumes in a K-12 series, this teaching guide contains classroom and outdoor activities pertaining to the environment and energy for seventh through ninth grades. The guide was developed based upon the understanding that environmental education can serve as an instructional umbrella covering many topics (conservation, marine education, city planning, population, etc.) and that it is not a specific subject but an interdisciplinary theme. The activities are organized around four major topics: natural environment, built environment, social institutions and decision making, and energy and environmental resource management. Each section begins with a summary of issues related to that topic followed by a listing of major concepts and their associated objectives. One activity is presented to teach each objective (approximately 40). Objectives correspond with those contained in the California "Course of Study" guide for 1981-84. Each activity provides a brief description, the objective, purpose, time, topics, location, materials, lead-up and preparation procedures, and follow-up activities. Appendices list the sources for the activities, California resource agencies, and teaching materials available from these agencies. In the beginning of the guide, a procedure is outlined for planning an environmental education program. (DC)

ED 214 841 SO 013 973
Gore, Patrick D. And Others
Teaching Energy Awareness. Environmental Education Series.
Denver Univ., Colo. Center for Teaching International Relations.
Spons Agency—Denver Univ., Colo. Graduate School of International Studies.; Denver Univ., Colo. School of Education.
Pub Date—Aug 80
Note—192p.; Colored pages and small print type may not reproduce clearly in microfiche.
Available from—Center for Teaching International Relations, University of Denver, Denver, CO 80208 ($12.95 Plus $2.00 postage and handling).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Basic Skills, Conservation Education, Elementary Secondary Education, *Energy, *Energy Conservation, Futures (of Society), Learning Activities, Prediction, Student Attitudes, Teaching Guides, Teaching Methods
Identifiers—*Energy Education

The major objective of the 32 activities in this teaching guide is to make students aware of energy issues. Although the activities are designed for students in grades 4-12, they can be adapted for younger students and for adults. Departing from the standard expository approaches found in most curriculum materials, these teaching strategies include starter exercises to spur interest in and discussion of topics on energy, data gathering, and using community resources. The first of the six sections contains activities for identifying student attitudes about energy issues. Section two provides activities for teaching vocabulary, map reading, comparison/contrast skills, interdependence concepts, and math skills pertaining to energy topics. Presenting data for studying energy issues is the goal of section three. Activities focus on teaching students how much energy appliances use and alternatives to this kind of energy use. In section four, students are asked to think about what may happen with energy in the future, what people could do to affect energy in the future, and what ideas students would place in an energy platform. The fifth section provides activities for demonstrating, creating, and displaying ideas for energy alternatives. Examples of these special activities are to have students design a T-shirt with a picture of energy, build a solar hot dog cooker, and conduct a poster contest. Each activity contains an introduction; a list of objectives; and information about grade level, time required, and materials needed. The general teaching procedure has a basic skills focus. Often there is a debriefing and question section. The last section contains handouts. (Author/NE)

Secondary

ED 017 377 RC 002 319
AN OUTLINE FOR TEACHING CONSERVATION HIGH SCHOOLS.
Department of Agriculture, Washington, D.C.
Report Number PA-201
Pub Date 52
Note—23p
EDRS PRICE MF-$0.25 HC-$1.00
Descriptors—*CONSERVATION EDUCATION, *CURRICULUM, *HIGH SCHOOLS, *TEACHING, ART, BIOLOGY, CHEMISTRY, ECONOMICS, ENGLISH, GENERAL SCIENCE, GEOGRAPHY, HISTORY, HYGIENE, MATHEMATICS, PHYSICS, PUBLIC SPEAKING, SOCIAL SCIENCES.
This outline has been organized in a form which permits the teaching of conservation to the greatest number of students, by interweaving the subject with the physical and social sciences commonly taught in high schools. The conservation of natural resources is an integral part of these sciences and becomes more meaningful to students when the interrelationship is accomplished. Not all the possibilities of integrating conservation into the related subjects have been explored, but most of the obvious relationships between current subject matter and conservation are pointed out. The entire field of natural resources is covered, with particular emphasis on soil and water. (ES)

ED 055 015 SO 001 947
Project Canada West. Canadian Environmental Concepts.
Western Curriculum Project on Canada Studies, Edmonton (Alberta).
Pub Date Jun 71
Note—42p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Biology, City Problems, Concept Teaching, Curriculum Development, *Ecology, *Environmental Education, *Human Geography, *Inquiry Training, Interdisciplinary Approach, Natural Sciences, *Pollution, Projects, Secondary Grades, Social Sciences, Urban Environment
Identifiers—Canada, *Project Canada West
The overall objective of the curriculum development project is to develop a general high school level interdisciplinary course on environment studies. This potential five to ten month course is outlined as follows: ecology, water pollution, air pollution, noise pollution, population, socioeconomic implications, and resource management. The general intended learning outcomes listed are: 1) to understand the changing role of man in Canada with respect to his relationship with the ecosystem, 2) to have a better understanding of the natural and unnatural state of the environment, 3) to understand how an excess or deficiency of materials affects man and the ecosystem, 4) to understand the geographic implication of pollution with reference to physical and political boundaries, 5) to form an inquiry approach to modern simulations, 6) to develop an understanding of the need for a balance between economic and recreational needs of man, 7) to understand the attitudes of people, 8) to learn laboratory techniques applicable, 9) to understand the effect of urbanization in creating an unnatural ecosystem; and, 10) to have the student examine and develop his own value system. The course outlines, concepts, and intended outcomes are included for only the first two units on ecology and water pollution, along with a project status report and the evaluation intentions. (Author/SBE)

ED 055 864 SE 012 495
Ecology and Human Values.
Pub Date [70]
Note—65p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Behavior Development, *Course Content, Ecology, Environment, *Grade 12, Human Dignity, *Interdisciplinary Approach, *Natural Sciences, *Social Studies, Sociocultural Patterns, Values
"Ecology and Human Values" is an interdisciplinary course designed for senior year high school students in social studies and or science. Its main thrust is the investigation of human values as they relate to the environment, although rooted in the natural sciences as a means of understanding the complexities inherent in the environment. Use is made of the case study approach to environmental issues (controversial questions) together with participatory research in the community. Multi-text, small group instruction, individual projects, and simulation techniques are also incorporated to develop an understanding and a corresponding value and behavior change in the inter-relationship of man to his biophysical and sociocultural environment. The course is outlined in eight units. (1) An Introduction To Crisis, (2) Ecology, (3) The Nature of Man, (4) Historical Perspective of Ecology, (5) Population, (6) Science-Technology, (7) Concerns Caused by Scientific-Technology, and (8) What is the Proper Role of the Scientist, Citizen, Industrialist, and Administrator? Each unit indicates the subtopics to be covered, objectives, generalizations, methodology, culminating activities, evaluation, resources, and supplementary information where appropriate. (BL)

ED 055 940 SO 001 859
Buchanan, John And Others
A Teachee Guide for the Course: "Toward the Year 2000" (A Multi-Disciplinary Approach).
Cherry Creek High School, Englewood, Colo
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date 70
Note—178p
EDRS Price MF-$0.65 HC-$6.58
Descriptors—City Problems, Communication Skills, Computer Assisted Instruction, Decision Making Skills, *Environmental Education, Human Geography, Instructional Materials, *Interdisciplinary Approach, *Problem Solving, Secondary Grades, Simulation, *Social Planning, Social Problems, Social Studies Units, Teaching Guides, *Team Teaching, Technological Advancement
Identifiers—*Futurology
This guide was developed jointly by members from the Departments of social studies, mathematics, English, and science. It sets forth the methods, materials and procedures of operation for the interdisciplinary teaching of this course. The overall objectives of the course are: 1) to teach the elements and process of decision-making, 2) to improve the process of communication, 3) to develop an awareness of the interaction between society and technology, and, 4) to develop an awareness of the present level of technology and the directions technology may take in the future. Student centered problem solving groups will deal with relevant real life situations. Small, medium, and large groups will be randomly selected and flexibly scheduled. The units are: Elements of Decision-Making, Communications, Nation Building, International Simulation including Computer Instruction, The Environmental Crisis: Labor vs Management; and, Major Urban Problems. (Author/SBE)

ED 058 127 SO 002 229
Lee, Leroy And Others
Planning for an Ecology Action Unit/Course.
Madison Public Schools, Wis.
Pub Date 70
Note—27p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Activity Learning, Affective Objectives, *Biology, Community Action, Community Resources, Curriculum Guides, *Ecology, *Environmental Education, Interdisciplinary Approach, Secondary Grades, *Social Studies, *Student Centered Curriculum, Student Participation, Student Projects, Teacher Developed Materials, Values
The purpose of these plans, developed by biology teachers, social studies teachers, and high school students, are: 1) to develop a systematic method of becoming informed on issues not solely based within traditional disciplines, 2) to provide students with an opportunity to help determine the direction and content of their studies, 3) to aid in expanding the traditional view of learning as a classroom activity, and, 4) to redefine teaching-learning roles to allow individual goal setting, self evaluation, and use of community resources. An introduction sets out the general context of ecological study, the assumptions on which the unit is based, and the general purpose of the course. The unit is lab and problem centered, and is built around an issue of the individual student's selection. The course is structured into two separate phases, the second one optional but highly desirable. Possible objectives of the course are listed, the framework of the course is discussed, and several pages show the suggested organizational frameworks in chart form. They include: an interdisciplinary course, a unit within biology or social studies, an interdisciplinary unit taught in both biology and social studies courses. Some ideas are discussed for differentiating between an area of environmental concern and specific environmental problems. (JLB)

ED 066 298 SE 014 181
Handbook of Environmental Education Strategies.
New York State Education Dept., Albany.
Pub Date 72
Note—28p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Educational Strategies, *Environmental Education, Instructional Materials, Learning Activities, Motivation Techniques, Relevance (Education), *Secondary Grades, *Teaching Guides
The educational approach of this guide involves instructional strategies for integrating environmental concerns into subject matter areas. Its objective is to enumerate and illustrate numerous interdisciplinary strategies, showing how they and other teaching devices may serve environmental education goals within the operative instructional mode. Strategies suggested include use of concept-centered activity packages, common denominators, those environmental concepts showing multi-faceted curricular potential, as survival, interdependence, scarcity, recycling, planning, valuing, optimism, interaction, right vs. responsibility, social forces, and change, the printed media of newspapers, editorials, and cartoons; student involvement in community problems and projects, case studies, readings and quotations as learning activities to improve reading skills and provide incentive for future study; student environment/ecology clubs, out-of-classroom experiences; student projects, and family participation activities. Examples were prepared as resources for teacher use primarily at the middle school, junior and senior high school levels. However, the strategies focusing upon base environmental concepts, family participation activities, student projects, and out-of-classroom experiences are adaptable to lower elementary grades. (BL)

ED 067 244 SE 014 502
Environment, Teacher Manual, Senior High, Idea 1, Land.
Environmental Education Project, Grafton, Ill.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [72]
Note—54p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Environmental Education, Instructional Materials, *Land Use, Learning Activities, Natural Resources, *Secondary Grades, *Teaching Guides, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
The Environmental Education Project Center has developed these guidelines for teaching a unit in environmental studies. It is their intention that the teacher and student cooperatively plan the approach and content to be used during the course of study. In this unit about land, teacher resource information and student material are

combined to form a teacher's manual for use in the senior high grade levels Project objectives, behavioral objectives, and pre- and post-test questions introduce the unit sections followed by ideas, actions, and/or activities to develop awareness of land and its uses Major topics of discussion range from plants and animals associated with soil to litter control measures, and resource use Field trips emphasizing concepts previously learned are suggested and additional sources of information and materials for both students and teachers are listed This work was prepared under an ESEA Title III contract for the project "Operation Survival Through Environmental Education." (BL)

ED 067 245 SE 014 503
Environment, Teacher Manual, Primary, Idea 2, Air.
Environmental Education Project, Grafton, Ill
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D C
Pub Date [72]
Note—58p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Air Pollution Control, *Environmental Education, Instructional Materials, Learning Activities, Natural Resources, *Primary Grades, *Teaching Guides, Units of Study (Subject Fields)
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
The Environmental Education Project Center has developed these guidelines for teaching a unit in environmental studies It is their intention that the teacher and student cooperatively plan the approach and content to be used during the course of study in this unit about air, teacher resource information and student material are combined to form a teacher s manual for use in the primary grade levels Project objectives and behavioral objectives introduce the unit followed by ideas, actions, and/or activities to develop awareness of air qualities and pollution effects Major topics of discussion range from identifying sources and symptoms of air pollution to testing air quality and developing constructive action to combat pollution Field trips emphasizing concepts previously learned are suggested and additional sources of information and materials for both students and teachers are listed This work was prepared under an ESEA Title III contract for the project "Operation Survival Through Environmental Education" (BL)

ED 068 337 SE 014 908
Grass, Franklin *Carso, Dennis*
To Save the Earth. A Tool Kit to Our Environmental Quality Index.
National Wildlife Federation, Washington, D C
Pub Date 71
Note—16p
Available from—National Wildlife Federation, 1412 Sixteenth Street, N W , Washington, D C 20036 (Free)
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Ecology, *Environmental Education, Instructional Materials, Learning Activities, *Program Development, Quality Control, *Secondary Grades, *Student Projects, *Teaching Guides
Based on an exemplary case study, this booklet illustrates a program for improving environmental quality. Designed for teacher use, it explains how to start a program for learning about environmental quality, as well as action to take regarding environmental improvement The approach is interdisciplinary, stressing skills involving questioning, gathering and evaluating data, meeting and interviewing people, translating information into statistics, and making presentations It is an attempt to lead students from research and discussion to constructive action associated with environmental issues (BL)

ED 070 635 SE 015 199
Carlton, S. Mell
Environmental Studies. The Construction of an "A" Level Syllabus.
National Foundation for Educational Research in England and Wales, London.
Pub Date 71
Note—157p
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Content Analysis, *Curriculum Development, *Curriculum Guides, *Environmental Education, Foreign Countries, Reports, *Secondary Education
Identifiers—England
In response to the increasing social concern for the quality of the environment and its conservation, and the need to ensure that all pupils in their final years of schooling be brought to share that concern, teachers in Hertfordshire, England, have constructed an 'A' level curriculum or syllabus of environmental studies for the sixth form. Based on an interdisciplinary approach, the studies enable students to examine the ecological interrelatedness of the environment and the place of man, the impact of human society on the environment, and the possibilities of management and control. Presented in this report is a review of the emergence and present state of environmental studies in Britain followed by an assessment of the theme or content of environmental studies/sciences. The approach to such studies is discussed from various points of view: sociological, biological, urban-rural, and world conservation problems Subject information and teaching notes for the syllabus are developed in four sections (1) processes and systems of the natural environment and the limits of the resource base, (2) the ecosystem, (3) the interaction of man and the environment, and (4) environmental conflicts and planning a field study Criteria for examinations and an extensive list of resource materials are also included (BL)

ED 077 723 SE 016 280
Strand IV Environmental and Community Health. Ecology and Epidemiology of Health. Grades 10, 11, and 12.
New York State Education Dept., Albany Bureau of Secondary Curriculum Development.
Pub Date 70
Note—59p
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Community Health, Comprehensive Programs, *Curriculum Guides, *Ecology, *Environmental Education, Instructional Materials, Learning Activities, Models, *Secondary Grades, Teaching Guides
Identifiers—Epidemiology
A frame of reference concerning health implications based on the interaction of numerous factors in the physical, social, and biological environments, is provided in this prototype curriculum for grades 10-12 Development of sound techniques in problem solving is encouraged; resulting from the need to understand the nature and complexities of multiple effect and multiple causation Specific curriculum content studies (1) definitions of epidemiology and ecology, (2) epidemiological method, (3) factors which influence the occurrence, distribution, development, control, and prevention of disease, disability, defect, and death, and (4) modern public health problems with ecological implications Appended material includes bibliographies of multimedia resources and a health behavior model. This publication is one in a series of health curriculum materials devoted to environmental and community health (Strand IV) Four other strands deal with physical and mental health, sociological health problems, and education for survival The format consists of four columns intended to provide teachers with (1) a basic content outline, (2) major understandings and fundamental concepts, (3) teaching aids and learning activities, and (4) information about resource materials, sources, and personnel Because of the comprehensive nature of the total curriculum, teachers are advised to become familiar with all strands presently in print Related documents in Strand IV are ED 037 738-9, ED 049 477-8, and SE 016 280-6 (BL)

ED 081 601 SE 016 607
Student Action for the Valley Environment (SAVE).
Phoenix Union High School District, Ariz.
Spons Agency—Arizona State Dept of Education, Phoenix, Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Report No—Proj-12-69-0015
Pub Date [73]
Note—159p.
EDRS Price MF-$0.65 HC-$6.58
Descriptors—City Planning, *Curriculum Guides, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Learning Activities, *Secondary Grades, *Simulation, Unit Plan, *Urban Studies
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
A multi-disciplinary approach to environmental studies for high school students, combining the areas of earth science, social science, and health education, is developed in this guide. Student Action for the Valley Environment (SAVE) is primarily a simulation program concerned with a serious problem of today -the survival of life in the cities. It encourages student awareness, role playing, and problem-solving by having students propose and decide on alternate ways of structuring a new city, with their final plan compared to that of the actual city of Phoenix, Arizona The nine-lesson approach outlines for each lesson its aim, procedure, materials needed, time allotment, supplementary materials, and future assignments Lessons concentrate on a study of the urban environment through "Conflict," a simulation game; city features, city design, the concept of change, population, land use, and, the development of a model city Numerous enrichment activities are suggested and elaborated upon, greatly enhancing the unit and promoting its usefulness in an interdisciplinary instructional program. These cover a wide variety of environmental factors and considerations. A data bank or background information about Phoenix is also included This work was prepared under an ESEA Title III contract for Project Outreach (BL)

ED 086 473 SE 016 098
McCabe, Robert H.
Man and Environment for Secondary Schools: A Curriculum in Environmental Studies for High Schools.
National Association for Environmental Education, Miami, Fla
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date Nov 72
Note—96p.; Developed by a Workshop in Environmental Studies for Secondary Schools (Las Vegas, Nevada, November 13 through 17, 1972)
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Air Pollution Control, *Curriculum, *Curriculum Guides, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Land Use, Pollution, Secondary School Science, Technology, Urbanization, Water Pollution Control
This curriculum guide contains 20 modules for an integrated environmental study in the secondary schools. Each module, two to four pages in length, includes an overview, a list of concepts and a list of student objectives. In addition, an appendix has suggestions for initiating and implementing the program in the regular school curriculum. References and possible resources are given. (LS)

ED 086 507 SE 016 982
Cooper, Marilyn
The Elective Program in English, Course Title: Writers and the Environments.
Milwaukee Public Schools, Wis. Div. of Curriculum and Instruction.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 73
Note—32p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Curriculum, English Education, *Environmental Education, Guides, *Instructional Materials, Interdisciplinary Approach, *Language Arts, Learning Activities, Objectives, *Secondary Grades
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This document is a guide for a half-year elective course offering secondary students the opportunity to examine writers' insights on environments in a variety of literary types. In addition, language and composition experiences are developed utilizing the communications media. Though representative literary selections are suggested for convenience, the teacher can select

materials dependent upon the abilities of the students. The suggested activities are applicable to many different literary forms. This work was prepared under an ESEA Title III contract. (JP)

ED 098 096 SO 007 866
Resource Recovery Overview (Teacher's Guide); Resource Recovery and You (Student Book). Resource Recovery Education Program.
National Association of Secondary School Principals, Washington, D.C.; National Center for Resource Recovery, Inc., Washington, D.C.
Pub Date 74
Note—46p.; Related documents are SO 007 867, 868, and 870
Available from—National Association of Secondary School Principals, 1904 Association Drive, Reston, Virginia 22091 ($12.00 for kit, 20 percent discount on orders of five or more)
EDRS Price MF-$0.75 HC Not Available from EDRS. PLUS POSTAGE
Descriptors—Career Education, *Conservation (Environment), *Ecology, Energy, *Environmental Education, Futures (of Society), Interdisciplinary Approach, *Natural Resources, *Program Descriptions, Recycling, Resource Materials, Secondary Education, Teaching Methods, *Waste Disposal
The Resource Recovery Education Program contains a variety of ideas, approaches, and learning aids for teaching about solid waste disposal at the secondary level. The program kit consists of a teacher's guide which provides an overview, separate teacher's guides for social studies, science, and industrial arts, a student booklet of readings, and a wall chart. Each of the components can be used independently of the other. The program is intended to introduce students to the problem of solid waste disposal and to involve them in doing something about it. Teaching strategies involve the student in community studies, research, and classroom discussion. The teacher's guide and the student book are available in this document. For other components of the program see the related documents listed in the descriptive note. The teacher's guide discusses the need for teaching about solid waste disposal and the approach to content used in the program. It also describes the six components of the program, the unit topics, and specific objectives and presents information on environmental careers and industrial resources. The student booklet contains a fictional story followed by a section on basic environmental principles, a list of organizations that make available free and low-cost materials, and a glossary of terms. (Author/RM)

ED 099 186 95 SE 017 048
Tanner, R. Thomas
Man and Nature—A Literature Course. Project Reports, Volume 1, The Rachel Carson Project.
Corvallis School District 509J, Oreg.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Bureau No—BR-1-0839
Pub Date Sep 72
Grant—OEG-0-71-4623
Note—104p.; Related documents are SE 017 047-054
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, *Environmental Education, Instructional Materials, *Interdisciplinary Approach, Learning Activities, *Literature Guides, Natural Resources, *Secondary Education, Teaching Guides
Identifiers—*Rachel Carson Project
This document is the first of seven volumes included in the Rachel Carson Project. The project attempts to introduce environmental education lessons and units into existing courses of study within a high school rather than to implement environmental education through the introduction of new courses. This volume focuses on English literature by emphasizing the environment through Edward Abbey's DESERT SOLITAIRE. The unit concludes with examples of student reactions to the thoughts presented that specifically related to environmental ethics. The volume includes an introduction to the teacher; the DESERT SOLITAIRE unit, related poetry, essays, stories, contemporary music, and films, suggested appropriate field trips, an annotated bibliography of books about wildlife, and a summation by the teacher who tried the course. (MLB)

ED 099 189 95 SE 017 051
Tanner, R. Thomas
Environmental Studies in Several Science Courses. Project Reports, Volume 4, The Rachel Carson Project.
Corvallis School District 509J, Oreg.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Bureau No—BR-1-0839
Pub Date Sep 72
Grant—OEG-0-71-4623
Note—84p.; Related documents are SE 017 047-054
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Conservation Education, Curriculum Guides, Ecology, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, Learning Activities, Natural Resources, *Natural Sciences, *Program Content, Secondary School Science, Teaching Guides
Identifiers—*Rachel Carson Project
This document is the fourth of seven accompanying volumes included in the Rachel Carson Project. The project attempts to introduce environmental education lessons and units into existing courses of study within a high school curriculum rather than to implement environmental education through the introduction of new courses. This volume reports the environmental education activities implemented in the following four special science courses: human ecology, science and society, marine biology, and natural history of Oregon. Course descriptions and objectives, possible topics for research, suggested lecture topics, field trips, annotated film lists, examples of student projects, tests, examples of student handouts, and bibliographies are among the instructional materials included in the report. (MLB)

ED 099 190 95 SE 017 052
Tanner, R. Thomas
Case Studies of Conservation "Battles." Project Reports, Volume 5, The Rachel Carson Project.
Corvallis School District 509J, Oreg.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Bureau No—BR-1-0839
Pub Date Sep 72
Grant—OEG-0-71-4623
Note—106p.; Related documents are SE 017 047-054
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—Attitudes, Behavior, *Case Studies (Education), *Conservation Education, Curriculum Guides, *Environmental Education, Instructional Materials, *Interdisciplinary Approach, Learning Activities, Natural Resources, Program Content, *Secondary Education, Teaching Guides, Values
Identifiers—*Rachel Carson Project
This document is the fifth of seven accompanying volumes included in the Rachel Carson Project. The project attempts to introduce environmental lessons and units into existing courses of study within a high school curriculum rather than to implement environmental education through the introduction of new courses. This volume consists of two case studies of conservation organizations that were developed in an effort to help students gain understanding of ways the ordinary citizen can exercise his rights other than in the voting booth. Among the concepts covered during this developmental process were ecological concepts relating to ways man can alter an entire ecosystem, political concepts relating to understanding our political system and the decision-making processes, social-cultural concepts relating to ways our decisions reflect our values, and communication concepts demonstrating such subjective matters as "benefits" and "costs." Suggested questions for discussion and activities are included at the end of each case study. (MLB)

ED 099 191 95 SE 017 053
Tanner, R. Thomas
Environmental Studies in Nine Courses at Crescent Valley High. Project Reports, Volume 6, The Rachel Carson Project.
Corvallis School District 509J, Oreg.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Bureau No—BR-1-0839
Pub Date Sep 72
Grant—OEG-0-71-4623
Note—75p.; Related documents are SE 017 047-054
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Conservation Education, Curriculum Guides, Ecology, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, Learning Activities, Natural Resources, *Program Content, *Secondary Education, Teaching Guides, Units of Study (Subject Fields)
Identifiers—*Rachel Carson Project
This document is the sixth of seven accompanying volumes included in the Rachel Carson Project. The project attempts to introduce environmental education lessons and units into existing courses of study within a high school curriculum rather than to implement environmental education through the introduction of new courses. This volume includes examples of the units and activities developed and implemented in the following high school courses: psychology, typing, architecture; modern foreign languages including French, Spanish, and German, algebra, world studies, and home economics. The framework of each course is described, student goals are stated, the organization of the environmental unit is presented, and examples of student work are included. Suggested projects, materials needed, and suggested methodologies are among the contents of each course report. (MLB)

ED 099 192 95 SE 017 054
Tanner, R. Thomas
Environmental Studies: Five Miscellaneous Reports, Project Reports, Volume 7, The Rachel Carson Project.
Corvallis School District 509J, Oreg.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Bureau No—BR-1-0839
Pub Date Sep 72
Grant—OEG-0-71-4623
Note—52p.; Related documents are SE 017 047-053
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Conservation Education, Curriculum Guides, Ecology, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, Learning Activities, Natural Resources, Pollution, *Program Content, *Secondary Education, Teaching Guides, Units of Study (Subject Fields)
Identifiers—*Rachel Carson Project
This document is the last of seven volumes included in the Rachel Carson Project. The project attempts to introduce environmental education lessons and units into existing courses of study within a high school curriculum rather than to implement environmental education through the introduction of new courses. Included in this volume is a report demonstrating methods by which environmental education can be implemented in a course on futuristics, an illustration of cooperation between a segment of the community (specifically a conservation organization) and a high school biology class which provides environmental learning experiences for both groups, an extracurricular project involving the study of a nearby creek as a potential spawning site for anadramous fishes, a proposal to utilize industrial waste material for projects in a high school industrial arts class, and a paper developed specifically for the project by an agricultural economist concerning the economics of environmental quality. Descriptions of the projects, lists of available resource materials, and suggested study outlines are among the contents of the various reports. (MLB)

ED 099 199 SE 017 349
McDermott, John J., Ed.
A Teacher's Guide for the Environmental Impact of Electrical Power Generation: Nuclear and Fossil. A Minicourse for Secondary Schools and Adult Education. Teacher's Guide.
Pennsylvania State Dept of Education, Harrisburg Bureau of Curriculum Services
Spons Agency—Atomic Energy Commission, Oak Ridge, Tenn Div of Nuclear Education and Training
Report No—WASH-1262
Pub Date 73
Note—167p; For the text, see SE 017 350
EDRS Price MF-$0.75 HC-$7.80 PLUS POSTAGE
Descriptors—Adult Education, Conservation Education, Economics, *Energy, *Environmental Education, Environmental Influences, Fuels, *Instructional Materials, Interdisciplinary Approach, Pollution, Science Education, *Secondary Grades, *Teaching Guides
Identifiers—Atomic Energy, *Electric Power Generation, Nuclear Energy
According to this guide, the major goal of this minicourse, developed for secondary and adult education, is to have the student gather pertinent information relative to the generation of electrical energy and to draw his own conclusions concerning the need for this energy supply. If in his mind such a need exists, he should make a judgment as to the methods by which the energy should be produced. The job of the teacher is to "tell it like it is" and then to encourage the student to make his own judgments based on the evaluation of this information. Each chapter of this teacher's guide corresponds to a chapter in the text. There are five sections in each chapter dealing with behavioral objectives, suggested activities for that chapter, audiovisual aids, references, and selected readings to provide background material for the teacher. At the end of the teacher's guide is a decision-making model to help the reader analyze the information he has received. There are three appendixes, the first concerning laboratory safety rules for working with radioactive substances, the second containing names and addresses of environmental action organizations, and the third an achievement test. (BT)

ED 099 200 SE 017 350
McDermott, John J., Ed.
The Environmental Impact of Electrical Power Generation: Nuclear and Fossil. A Minicourse for Secondary Schools and Adult Education. Text.
Pennsylvania State Dept of Education, Harrisburg Bureau of Curriculum Services.
Spons Agency—Atomic Energy Commission, Oak Ridge, Tenn. Div. of Nuclear Education and Training.
Pub Date 73
Note—97p.; For the teacher's guide, see SE 017 349
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Adult Education, Conservation Education, Economics, *Energy, *Environmental Education, Environmental Influences, Fuels, *Instructional Materials, Interdisciplinary Approach, *Natural Resources, Pollution, Science Education, *Secondary Grades
Identifiers—Atomic Energy, *Electric Power Generation, Nuclear Energy
This course, developed for use in secondary and adult education, is an effort to describe the cost-benefit ratio of the various methods of generation of electrical power in an era when the requirement for additional sources of power is growing at an ever-increasing rate and environmental protection is a major concern. This course was written and compiled by an independent committee drawn from educators, engineers, health physicists, members of industry and conservation groups, and environmental scientists. Among the topics discussed are the increasing need for electrical power and methods for meeting this need, nuclear power and fossil fueled plants, the biological effects of nuclear and fossil fueled plants, waste in the production of electric power, plant site considerations, energy conservation, and the environmental effects of electrical power generation. The appendixes include a glossary of terms, a bibliography, a decision-making model and a brief outline of the procedures which must be followed by a utility in order to construct and operate a nuclear power plant. (BT)

ED 099 234 SE 018 447
[Air Pollution Unit, Edmonds School District.]
Edmonds School District 15, Lynnwood, Wash.
Pub Date [73]
Note—96p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Air Pollution Control, Chemistry, Conservation Education, Ecology, Educational Programs, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, *Pollution, Science Education, *Secondary Grades, Social Studies
This interdisciplinary program, developed for secondary students, contains 16 air pollution activities that can either be used directly in, or as a supplement to, curriculum in Science, Photography, Mathematics, English, Social Studies, Industrial Arts and Home Economics. The topics to be investigated include pollutants from automobiles, exhaust collection, lead in lichens, sources of air pollution, the effect of air pollution on synthetics, solid particles, lead, sulfur dioxide and carbon monoxide analysis. Each learning activity includes subject area and grade level for which it can be used, level VI objectives, time schedule for prelab and performance of the activity, background information for the teacher and a listing of materials needed. Where applicable, a listing of audio-visual aids included and an air pollution bibliography is attached (BT)

ED 099 235 SE 018 448
[Land Use Unit, Edmonds School District.]
Edmonds School District 15, Lynnwood, Wash.
Pub Date [73]
Note—125p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—Biological Sciences, Conservation Education, Ecology, Educational Programs, *Environmental Education, Games, *Instructional Materials, Interdisciplinary Approach, *Land Use, *Learning Activities, Natural Resources, Outdoor Education, Population Education, Science Education, *Secondary Grades, Simulation
Identifiers—Land Use Planning
This interdisciplinary program, developed for secondary students, contains 18 land use activities that can either be used directly in, or as a supplement to, curriculum in Science, Biology, Horticulture, Mathematics, Social Studies, English, Industrial Arts and Physical Education. The topics to be investigated include: land use simulation games, land-use planning and decision making, small area plots, land use alternatives, microclimates, flood management and local population control. Each learning activity includes: subject area and grade level for which it can be used, level VI objectives, time schedule for prelab and performance of the activity, background information for the teacher and a listing of materials needed. A land use bibliography and a listing of audio-visual materials are included. (BT)

ED 099 240 88 SE 018 489
Project Q. U. E. S. T. (Quality, Urban, Environmental Studies Training). An Environmental Studies Curriculum for High School.
Worcester Public Schools, Mass.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 74
Note—180p.; Page 86 is missing from this document
EDRS Price MF-$0.75 HC-$9.00 PLUS POSTAGE
Descriptors—*Conservation Education, *Curriculum Guides, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Mathematics, Natural Resources, Science Education, Sciences, *Secondary Education, Social Sciences, *Urban Environment
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This interdisciplinary environmental education curriculum guide provides a series of environmental encounters for high school students. The purpose of the encounters is to develop an awareness and understanding of community environmental problems. The guide utilizes math, science and social studies in the study of urban environmental problems. Although the guide focuses on a specific community, the urban problems that are explored are common to most communities. The guide is divided into six cycles, each containing math, science and social studies activities. Each cycle is designed to be covered in seven days, the first six devoted to teaching and the seventh for testing. The cycles contain objectives and lessons which utilize math, science, and social studies, some cycles contain tests and bibliographical materials. The lessons reinforce the lesson objectives, and include completion time, equipment lists, location, and procedure. The lessons within the guide make use of such activities as mapping and measuring, discussion, and sample analysis. (TK)

ED 100 659 88 SE 018 350
Agriculture, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—107p.
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—*Agricultural Education, Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides, *Vocational Education
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I-C-E
This agriculture guide, for use at the secondary level, is one of a series of guides, K-12, which were developed by teachers to help introduce environmental education into the total curriculum. Environmental problems are present in every community where agriculture education is offered, and therefore many agriculture teachers have included some environmental concepts in their curriculum. This supplementary guide is designed to serve as a basis for inclusion of major environmental concepts within the agriculture curriculum. The guide contains a series of episodes which are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. The agriculture guide focuses on aspects such as crop rotation, pesticides, and woodlot management. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 100 664 88 SE 018 355
General Math 9-12, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—87p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Mathematical Applications, Mathematics Education, Natural Resources, Outdoor Education, Science Education, Secondary Education, *Secondary School Mathematics, *Teaching Guides
Identifiers—Elementary Secondary Education Act

Title III, ESEA Title III. *Project I C E
This general mathematics guide, for use in grades 9-12, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. Since the nature of mathematics is abstract, students do not learn mathematics from ecology, nor ecology from mathematics. But, by observation and manipulation of environmental data, the student may inductively discover a principle in mathematics which can be teached deductively. The purpose of this booklet is to make an attempt to bridge mathematics and ecology. The guide is a supplementary handbook of ecologically-oriented mathematics exercises designed to be self-contained and complete with answers. The exercises are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Each exercise is indexed by mathematical area and major mathematical concept and cross indexed by environmental concepts. Each lesson deals with a mathematical concept and its applications to an environmental problem. Further, each lesson offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials. (Author/TK)

ED 100 666 - 88 SE 018 357
Language Arts 9-12, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—80p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, *Language Arts, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This language arts guide, for use in grades 9-12, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that relate various English skills (reading, writing, listening, and speaking) to environmental concepts. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as debate, interviews, and analysis. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggests references and resource materials useful to teachers and students. (Author/TK)

ED 100 670 88 SE 018 361
Mathematics 9-12, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Education, Madison.
Pub Date [74]
Note—78p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—Conservation Education, *Ecology, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Mathematical Applications, Mathematics Education, Natural Resources, Outdoor Education, Science Education, Secondary Education, *Secondary School Mathematics, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This mathematics guide, for use in grades 9-12, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. Since the nature of mathematics is abstract, students do not learn mathematics from ecology, nor ecology from mathematics. But, by observation and manipulation of environmental data, the students may inductively discover a principle in mathematics which can be reached deductively. The purpose of this booklet is to make an attempt to bridge mathematics and ecology. The guide is a supplementary handbook of ecologically-oriented mathematics exercises, designed to be self-contained and complete with answers. The exercises are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. The problems and exercises are designed to be integrated into algebra, geometry, advanced algebra, probability, statistics, trigonometry, and analysis. Each lesson deals with a mathematical concept and its applications to an environmental problem. Further, each lesson offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials. (Author/TK)

ED 100 672 88 SE 018 363
Music 10-12, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C., Wisconsin State Dept. of Education, Madison.
Note—24p.
EDRS Price MF-$0.75 HC-$1.50 PLUS POSTAGE
Descriptors—Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, *Music Education, Natural Resources, Outdoor Education, *Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Project I C E
This music education guide, for use in grades 10-12, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that reinforce environmental concepts and theories by developing ecology-related aesthetic values. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as acoustics and concert programing. Most of the 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral concepts, and suggests references and resource materials useful to teachers and students. (Author/TK)

ED 100 688 88 SE 018 586
Art 10-12, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—75p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Art Education, Conservation Education, *Environmental Education, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E
This art education guide, for use in grades 10-12, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that are designed to wake students to sights of beauty and harmony in their environment. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as graphics, photography, and weaving. Most of the 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggests references and resource materials useful to teachers and students. (Author/TK)

ED 100 692 88 SE 018 590
Industrial Arts 9-12, Environmental Education Guide.
Project I-C-E, Green Bay, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.
Pub Date [74]
Note—86p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Conservation Education, *Environmental Education, *Industrial Arts, Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Outdoor Education, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, Instruction Curriculum Environment, *Project I C E
This industrial arts guide, for use in grades 9-12, is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design, containing a series of episodes (minilessons) that focus on the economical use of materials and resources and the problems of economic gain versus environmental loss. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels or in different subject areas. This guide focuses on aspects such as plastics, power mechanics, and graphic arts. The 12 concepts are covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. (Author/TK)

ED 103 201 SE 016 987
Martin, F. H. And Others
Man and Environment, A Multidisciplinary Teachers Guide.
Arkansas State Dept. of Education, Little Rock.
Pub Date 73
Note—47p.
EDRS Price MF-$0.76 HC-$1.95 PLUS POSTAGE
Descriptors—Conservation Education, Ecology, Environment, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, Learning Activities, Natural Resources, Pollution, Science Education, *Secondary Grades, *Teaching Guides
Identifiers—*Man and Environment
This multidisciplinary guide, developed for teachers in the secondary schools, stresses the use of Man and Environment in Arkansas. The guide illustrates how teachers in social studies, the arts, English, science, physical education and health, home economics, and mathematics can implement these materials into their present classroom situations. A brief summary of each topic is included. Among the programs summarized are En-

vironmental Imperativet. Air Pollution. Water Scenic Pollution--Solid Waste. Conservation of Vital Resources. Energy. Population Dynamics. Urbanization. Value Systems. Concepts of Change. and Individual Involvement The basic concepts contained in the modules are identified This material was developed to offer teachers the opportunity to obtain insight into the teaching objectives of the modules and panel discussions. A listing of free films is appended. (BT)

ED 106 095 SE 018 629
Fulton, William L., Ed.
The Farkleberry Cookbook in Environmental Education. An Activity Guide for Creative Teachers.
Arkansas State Dept. of Education, Little Rock Environmeutal Education Office
Pub Date [74]
Note—61p
EDRS Price MF-$0.76 HC-$3.32 PLUS POSTAGE
Descriptors—*Conservation Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Population Education, Problem Solving, Science Education, *Secondary Education, *Teaching Guides
Identifiers—Environmental Awareness, Solid Waste
This interdisciplinary environmental education guide, developed by teachers, focuses on the creative teacher. Presenting him/her an approach for involving all types of students in junior and senior high schools in activities which would cause them to evaluate values and give them an opportunity to express their own thoughts The guide includes six topics problem solving, solid waste, energy, population, awareness and the Farkleberry Question Problem solving includes land use, politics and prescriptive thinking Solid waste examines family garbage methods of solid waste disposal and includes the garbage game, and supportive materials, role playing, data collection, and observation are used Energy considers such topics as energy conservation, gasoline consumption, economic costs, and utility management Population focuses on crowding space, limited resources, population growth, and solutions, a population game is included Awareness aims to help the student become emotionally involved with his environment, included are field trips, creative writing activities, and discussion topics The Farkleberry Question is a simulation game which involves an environmental hearing on a project and its environmental impact. (TK)

ED 107 480 SE 018 604
Wert, Felton E
The Devil's Millhopper: A Resource for Developing Field Studies. Resource Monograph No. 2.
Florida Univ., Gainesville. P. K. Yonge Lab. School.
Pub Date Nov 73
Note—74p., Related documents are ED 086 489, ED 103 220, SE 018 605 and 606. Best Copy Available, Occasional marginal legibility
Available from—P. K. Yonge Laboratory School, University of Florida, College of Education, Gainesville, Florida 32611
EDRS Price MF-$0.76 HC-$3.32 PLUS POSTAGE
Descriptors—*Environmental Education, Field Studies, Field Trips, *Learning Activities, Natural Resources, *Resource Guides, *Science Education, Secondary Education, Teaching Guides
Identifiers—*Florida
This resource monograph is one of a series designed as a teaching guide for field studies. Each guide centers around the exploration, observation, and interpretation of a field site in one of the four geological areas of Florida Incorporated into the guides are many of the subject-matter schemes of the Earth Science Curriculum Program (ESCP), and three major process schemes: science as inquiry, comprehension of scale, and prediction. These guides also give the teacher information on the planning and execution of the field trip, as well as educational objectives, learning activities, and teaching materials available The primary site for field study in this guide is the Devil's Millhopper, a collapse sink near Gainesville. Incorporated into the investigation of the area are activities in geology, history mathematics, art, language arts, and environmental studies. The major theme for all these is change Also included in this field trip is a stream study of Hogtown Creek. This guide contains directions for the activities, data sheets, and evaluation sheets With some modification, these activities can be used at primary or secondary grade levels (MA)

ED 116 914 SE 019 783
Environmental Education Teaching Resources: Projects for Environmental Problem-Solving.
National Education Association, Washington, D.C. Teacher Rights Div.
Pub Date 75
Note—23p.; Printed on light brown background with dark brown ink
Available from—NEA Publications, Order Department, The Academic Building, Saw Mill Road, West Haven, Connecticut 06516 (Stock Number 1364-6-00)
EDRS Price MF-$0.76 Plus Postage. HC Not Available from EDRS.
Descriptors—*Environmental Education, Instructional Materials, *Learning Activities, *Problem Solving, Secondary Education, *Student Projects, *Teaching Guides
This publication is a guide for the design of student projects in environmental education A few advantages of problem-focused projects are, easy incorporation into the ongoing curriculum; opportunity for joint student/teacher use of knowledge, information, and skills in action-oriented activities related to local environmental concerns; identifying, weighing, and clarifying values; research and technical reporting skills, and development of divergent and convergent thinking skills The student project provides a method for student involvement and inquiry-based learning The five instructional objectives presented are based on the above-mentioned advantages Under each objective are teaching strategies, specific instructional procedures, and some sample questions to raise. The objectives, strategies, and procedures serve as the basis for process activities and outcomes that can be realized through all problem-solving projects. Three projects that can be utilized and adapted by secondary and college students in their study of communication on environmental issues are outlined. Two of the projects concern environmental impact; the third, environmental research. Each project is sub-divided into objectives, focus, suggested approaches, project design, and evaluation. Appendiced information pertaining to organizations of environmental concern, expanded problems for study, and a bibliography of materials is to be used in conjunction with the projects. (BP)

ED 121 565 SE 019 332
Bennett, Dean B. Willink, Wesley H.
Environmental Education Teacher's Guide. Senior High School. A Core Experience Study of the Maine Land Use Challenge.
Maine Environmental Education Project, Yarmouth, Maine Univ., Portland-Gorham, Center for Research and Advanced Study.
Pub Date 74
Note—148p.; For related documents, see SE 019 333-335
Available from—Maine Environmental Education Project, Intermediate School, Yarmouth, Maine 04096 (free)
EDRS Price MF-$0.83 HC-$7.35 Plus Postage
Descriptors—Decision Making, Environment, *Environmental Education, Films, *Instructional Materials, *Land Use, Planning, *Secondary Grades, *Teaching Guides, Values
Identifiers—*Maine
This Environmental Education Teacher's Guide is designed for use with the Maine Land-Use Challenge, a mini-course designed for use in the secondary schools. The mini-course itself grew out of a day-long land-use conference in 1971, sponsored by the Allagash Institute, in the coastal town of Phippsburg, Maine. The conference was filmed and edited against the background of the Phippsburg peninsula, into a 30-minute sound and color film, MAINELAND, which serves as the basis for this unit of study. The major goal of this mini-course is to help students acquire an understanding of the need for land-use planning and to help them acquire the motivation and ability to participate in sound land-use decision making. The guide is divided into six parts: Land-Use Values Clarification, The History of Land-Use, A Community Land-Use Case Study (slide presentation), Simulation of a Community Land-Use Issue, Follow-up Considerations, and Selected Bibliography. The Appendices include pre- and post-tests, MAINELAND film outline, a community attitude survey, and charts. (BT)

ED 133 207 SE 021 869
Struefer, Larry, Ed.
A Citizen's Guide to Information on Land Use Decision Making.
Area Cooperative Educational Services, New Haven, Conn Environmental Education Center
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date [75]
Note—42p.; For related documents, see SE 021 868-882, Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Community Planning, *Environment, Environmental Education, Higher Education, *Instructional Materials, *Land Use, Resource Materials, Secondary Education, *Units of Study (Subject Fields)
These materials are designed to provide a compact listing of sources of information as well as a collection of tested formats for collecting resource information for a town or city It provides supplementary materials for the Land Use Decision Making Kit Among materials included are listings of federal agencies involved in water and land use programs, a town level checklist/questionnaire designed to assemble data needed for evaluation of land use plans, a census data form, and a community survey form to determine the desires and the attitudes of the community The program is designed to be used with secondary school students, college students, and interested citizens. (RH)

ED 133 208 SE 021 870
Haakonsen, Harry O., Ed Scharfe, Larry, Ed.
Introduction to Land Use Decision Making Kit and Economics of Land Use. [2 Units].
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—73p., For related documents, see SE 021 868-882, Not available in hard copy due to marginal legibility of original documents
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($22.50 - price includes tape and slides)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Community Planning, *Economics, *Environment, Environmental Education, Higher Education, *Instructional Materials, *Land Use, Secondary Education, *Units of Study (Subject Fields)
Included in this set of materials are two units: (1) Introduction to Land Use Decision Making Kit, and (2) Economics of Land Use Each unit includes student guide sheets, reference material, and tape script. A set of 35mm slides and audiotapes are usually used with the materials. The introductory unit provides an overview of land use and suggested use of the materials. The unit on Economics of Land Use emphasizes economic as well as environmental and social factors in land use decisions Included are materials for determining property values, cost-benefit analyses, and considering the use of these various techniques. (RH)

ED 133 209 SE 021 871
Haakonsen, Harry O., Ed
Maps--Map Reading and Aerial Photography. [2 Units].

Area Cooperative Educational Services, New Haven, Conn Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—56p.: For related documents, see SE 021 868-882, Not available in hard copy due to marginal legibility of original documents
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($22 50 - price includes tape and slides)
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—*Community Planning, Environment, Higher Education, *Instructional Materials, *Land Use, *Maps, *Photography, Secondary Education, *Units of Study (Subject Fields)
Included in this set of materials are two units (1) Maps and Map Reading and (2) Aerial Photography Each unit includes student guide sheets, reference material, and tape script. A set of 35mm slides and audiotapes are usually used with the materials The unit on Maps and Map Reading is designed to develop map reading skills and the use of these skills in land use decision making The unit on Aerial Photography provides an introduction to the use of aerial photographs in the planning procets and assistance in the development of fundamental skills of photo interpretation. (RH)

ED 133 210 SE 021 872
Haakonsen, Harry O., Ed Schaefer, Larry, Ed.
Geosystems and Land Use Decision Making and Open Space and Land Use Decision Making. [2 Units].
Area Cooperative Educational Services, New Haven, Conn Environmental Education Center
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—116p. For related documents, see SE 021 868-882, Not available in hard copy due to marginal legibility of original documents
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($30.00 - price includes tape and slides)
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—*Community Planning, *Earth Science, *Environment, Environmental Education, Higher Education, *Instructional Materials, *Land Use, Secondary Education, *Units of Study (Subject Fields)
Included in this set of materials are two units: (1) Geosystems and (2) Open Space. Each unit includes student guide sheets, reference material, and tape script A set of 35mm slides and audiotapes are usually used with the materials. The unit on Geosystems introduces the student to geosystems and the role of geosystems in the land use decision making process The materials emphasize Connecticut situations, but can be adapted to other localities. The unit on Open Spaces provides several perspectives on the nature, function, and importance of open space areas, reviews agencies and laws that focus on man's need for open space, and includes a plan for action. (RH)

ED 133 211 SE 021 873
Prentman, Rob
Synthesis: Part I, Buildability.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—64p.; For related documents, see SE 021 868-882; Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($28 00 - price includes tape)
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—*Community Planning, Earth Science, Economics, *Environment, Higher Education, *Instructional Materials, *Land Use, Secondary Education, *Units of Study (Subject Fields)
This unit is designed to show the student how to pull together information on natural and man-managed systems to develop a coherent and environmentally sound plan of action. The material includes student guide sheets, reference material, and a tape script. Audiotapes are usually used with the materials. The unit assumes the student has studied a number of previous units. (RH)

ED 133 212 SE 021 874
Prentman, Rob
Synthesis: Part II, Land Use Attractiveness.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—63p.; For related documents, see SE 021 868-882; Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($25 00 - price includes tape)
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—Architecture, *Community Planning, *Economics, *Environment, Higher Education, *Instructional Materials, *Land Use, Secondary Education, *Units of Study (Subjects Fields), Values
This material includes student guide sheets, reference material, and tape script for the audiotutorial unit on the Synthesis Unit, Land Use Attractiveness An audiotape is used with the materials. The material is designed for use with Connecticut schools, but can be adapted to other localities. The unit is designed to build on skills and information obtained from previous units This unit emphasizes the development of a land use allocation map based on information on buildability, and land use attractiveness, Buildability emphasizes where development should not be; this unit emphasizes where specific land uses should be. (RH)

ED 133 213 SE 021 875
Smith, Dwight G.
Uplands and Land Use Decision Making.
Area Cooperative Educational Services, New Haven, Conn Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—58p.; For related documents, see SE 021 868-882; Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($25 00 - price includes tape and slides)
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—*Agriculture, Earth Science, Ecology, *Environment, Environmental Education, Higher Education, *Instructional Materials, *Land Use, *Secondary Education, *Units of Study (Subject Fields)
This material includes student guide sheets, reference material, and tape script for the audiotutorial unit on uplands. A set of 35mm slides and an audio tape are used with the materials. The material is designed for use with Connecticut schools, but can be adapted to other localities. The materials consider types of uplands, ecology of uplands, use of uplands, and human impact on uplands. (RH)

ED 133 214 SE 021 876
Smith, Dwight G.
Planning for People and Land Use Decision Making.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—80p.; For related documents, see SE 021 868-882, Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($28 00 - price includes tape)
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—*Environment, Environmental Education, Higher Education, *Instructional Materials, Land Use, Natural Resources, *Population Education, Population Growth, *Population Trends, *Secondary Education, *Units of Study (Subject Fields)
This material includes student guide sheets, reference material, and tape script for the audiotutorial unit on Planning for People An audio tape is used with the materials The material is designed for use with Connecticut schools, but can be adapted to other localities. The material in this unit considers population growth curves, factors that influence population trends, impact of population growth on the environment and resources, and community planning (RH)

ED 133 215 SE 021 877
Schaefer, Larry Prentman, Rob
Cultural Systems and Land Use Decision Making.
Area Cooperative Educational Services, New Haven, Conn Environmental Education Center
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—50p.; For related documents, see SE 021 868-882, Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($18 00 - price includes tape)
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—*Community Planning, Culture, *Environment, Environmental Education, Higher Education, *Instructional Materials, *Land Use, *Secondary Education, Social Sciences, *Units of Study (Subject Fields)
This material includes student guide sheets, reference material, and tape script for the audiotutorial unit on Cultural Systems An audio tape is used with the materials. The material is designed for use with Connecticut schools, but can be adapted to other localities. The materials in this unit consider components of cultural systems, land use categories, impact of cultural systems on land use, and community and regional planning. (RH)

ED 133 216 SE 021 878
Garlasco, Chris And Others
Local Implementation and Land Use Decision Making.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—45p.; For related documents, see SE 021 868-882, Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($18.00 - price includes tape)
EDRS Price MF-$0.83 Plus Postage, HC Not Available from EDRS.
Descriptors—*Community Planning, *Environment, Environmental Education, Higher Education, *Instructional Materials, *Land Use, Secondary Education, Social Sciences, *Units of Study (Subject Fields), *Zoning
This material includes student guide sheets, reference material, and tape script for the audiotutorial unit on Local Implementation. An audio tape is used with the materials The material is designed for use with Connecticut schools, but can be adapted to other localities The material in this unit emphasizes the role of planning and zoning in local land use decision making. Included are activities on zoning authority, zoning classifications, and zoning problems. (RH)

ED 133 217 SE 021 879
Schaefer, Larry

State and Federal Implementation.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—58p.; For related documents, see SE 021 868-882; Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($28.00 - price includes tape)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Community Planning, Economics, Higher Education, *Instructional Materials, *Land Use, Legislation, Natural Resources, Secondary Education, *Units of Study (Subject Fields)
This material includes student guide sheets, reference material, and tape script for the audio-tutorial unit on State and Federal Implementation. An audio tape is used with the materials. The material is designed for use with Connecticut schools, but can be adapted to other localities. This unit is designed to help answer the question of what kind of land use planning we should have as well as who should make the decisions. Activities focus on land use programs in selected states, federal programs that relate to land use, and components of land use strategy. (RH)

ED 133 218 SE 021 880
Schaefer, Larry, And Others
Hydrosystems and Land Use Decision Making.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 75
Note—53p.; For related documents, see SE 021 868-882; Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($22.50 - price includes tape and slides)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Community Planning, *Earth Science, Ecology, *Environment, Higher Education, *Instructional Materials, *Land Use, *Natural Resources, Secondary Education, Units of Study (Subject Fields), *Water Resources
This material includes student guide sheets, reference material, and tape script for the audio-tutorial unit on Hydrosystems. A set of 35mm slides and audio tape are used with the materials. The material is designed for use with Connecticut schools, but can be adapted to other localities. This unit is designed to present information on water and the hydrosystem which must be considered in land use decision making. Emphasized are the hydrologic cycle, ground water, watershed areas, and the effects of human use on the hydrosystem. (RH)

ED 133 219 SE 021 881
Inland Wetlands.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Pub Date 75
Note—57p.; For related documents, see SE 021 868-882; Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($22.50 - price includes tape and slides)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Biology, Community Planning, *Ecology, Environment, Higher Education, Instructional Materials, *Land Use, *Natural Resources, Secondary Education, *Units of Study (Subject Fields)
Identifiers—*Limnology, *Wetlands
This material includes student guide sheets, reference materials, and tape script for the audio-tutorial unit on Inland Wetlands. A set of 35mm slides and an audio tape are used with the material. The material is designed for use with Connecticut schools, but it can be adapted to other localities. The materials emphasize characteristics of inland wetlands, role of these areas for human use, and role of these areas in maintaining water quantity and quality, flood control, and sediment control. (RH)

ED 133 220 SE 021 882
Coastal Wetlands.
Area Cooperative Educational Services, New Haven, Conn. Environmental Education Center.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Pub Date 75
Note—62p.; For related documents, see SE 021 868-881; Not available in hard copy due to marginal legibility of original document
Available from—E-P Education Services, c/o ACES, 800 Dixwell Avenue, New Haven, CT 06511 ($22.50 - price includes tape and slides)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Biology, *Community Planning, *Ecology, Environment, Higher Education, *Instructional Materials, *Land Use, Natural Resources, *Oceanology, Secondary Education, *Units of Study (Subject Fields)
Identifiers—*Wetlands
This material includes student guide sheets, reference materials, and tape script for the audio-tutorial unit on Inland Wetlands. A set of 35mm slides and an audio tape are used with the materials. The material is designed for use with Connecticut schools, but it can be adapted to other localities. The unit materials emphasize the structure, function, and importance of the wetlands. Activities include information on various aspects of wetlands including food chains, cycles, organisms, and ecological areas. (RH)

ED 134 526 SO 009 783
The Land of Plenty. Materials for Using American Issues Forum in the American History Classroom, Topic II.
New York State Education Dept., Albany. Div of General Education.
Spons Agency—National Endowment for the Humanities (NFAH), Washington, D.C.
Pub Date 76
Note—67p.; For related documents, see ED 123 163, ED 129 661-662, and SO 009 782-785
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Case Studies, Classroom Techniques, Government Role, Grade 11, History Instruction, Instructional Materials, *Land Use, Policy, Public Opinion, Resource Materials, Secondary Education, *Simulation, *Social Studies, Teaching Methods, *United States History, Zoning
Identifiers—*American Issues Forum
Three secondary level learning modules provide perspective on U.S. history and current issues in terms of land-use problems and case studies. Teaching strategies for this topic are presented in booklet form as one of a set of materials based on topics identified by the American Issues Forum. Readings and questions guide students through three areas. In "Early American Experience in Land Use," students read documents which define provisions for postrevolutionary distribution of western lands. Then they consider effects of American land policy on the native American. For example, a speech by a Seneca chief indicates Indian concern about timber cutting by Americans on reservations in 1821. "Land Use Today. Whose Decision?" challenges students to examine government control of private land, the role of the public in shaping government land-use decisions, and zoning standards. In a simulation, students assume roles of a town board that determines land-use policy for a 16-acre tract. Alternative strategies are outlined. "A Case Study: Forest for Sale by Owner" presents a controversy based on proposed construction of a dam in the Adirondacks. Students evaluate the issue by reviewing present forest management policy, water needs of New York state, and materials from the hearings on the dam construction. The materials are in field-test condition. (AV)

ED 134 538 95 SO 009 823
King, David C. Wood, Jayne Millar
Suggestions for Curriculum Development [And] Handbook High School Grades, Part D, 10-12, Environmental Education Interdependence: A Concept Approach, Revised.
Center for Global Perspectives, New York, N.Y.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date Sep 76
Note—117p.; For related documents, see SO 009 820-822
Available from—Center for Global Perspectives, 218 East 18th Street, New York, New York 10003 (guide $1.50; handbook $2.00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Bibliographies, Concept Formation, *Concept Teaching, Curriculum Development, *Environmental Education, Global Approach, Grade 10, Grade 11, Grade 12, *Interdisciplinary Approach, Learning Activities, *Lesson Plans, Objectives, Population Growth, Relationship, Secondary Education, *Teaching Methods, World Problems
Identifiers—*Interdependence
Two booklets comprise the grades 10-12 component of a series of guides for incorporating environmental education into the existing curriculum. The guide and handbook emphasize a multidisciplinary approach, use the concept of interdependence as an organizing theme, and offer suggestions for using the local community as a resource. The guide outlines nine objectives, including awareness of relationships between seemingly local concerns and global networks, knowing that quality of life of individuals and communities is directly influenced by increasing worldwide interdependence, and recognizing that population and other environmental issues involve deep conflicts of interest. Multidisciplinary approaches for teaching these goals involve students in analyzing effects of the 1972-75 grain shortage in the USSR on U.S. food prices, labor unions and dock workers, and inflation in Japan and England. In another approach, students develop a television documentary perspective of rich and poor persons on environmental concerns. The handbook contains teaching strategies and student materials for nine lessons. These include studying population growth in countries with varied resources and examining oceans in terms of overfishing, pollution, and control questions. A concluding essay summarizes concerns of natural resources, human needs, and quality of life. (AV)

ED 135 656 SE 022 148
Investigating Your Environment: Teaching Materials for Environmental Education.
Forest Service (DOA), Washington, D.C.
Pub Date Sep 76
Note—109p.; For related document, see ED 103 209; Not available in hard copy due to marginal legibility of original document
Available from—U.S.D.A. Forest Service, P.O. Box 2417, Room 3233, Washington, D.C. 20013 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Community Involvement, Conservation Education, *Environmental Education, Higher Education, *Instructional Materials, *Natural Resources, *Science, *Secondary Education, Social Sciences, *Teaching Guides
Included in this set of environmental education materials for secondary school students are six lesson plans. Each lesson plan has six components: (1) suggestions for setting the stage, (2) individual or group activities, (3) task cards, (4) charts and tables to be used for data interpretation, (5) suggested questions, discussions, and summaries, and (6) a statement of anticipated behavioral outcomes. Lesson plans include the following topics: (1) soil investigation, (2) some water investigations, (3) some forest investigations, (4) investigating some animals and their environment, (5) a land use simulation, and (6) investigating a man-built community. (RH)

ED 137 064 SE 021 528
Lantz, H. B., Jr.

Water Pollution. Project COMPSEP.
Orange County School Board, Va.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Jun 75
Note—31p.; For related document, see SE 021 529; Not available in hard copy due to marginal legibility of original document
Available from—Title III Environmental Education Center, Orange County High School, Orange, Virginia 22960 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Environment, *Environmental Education, *Instructional Materials, *Natural Resources, Pollution, Science Education, *Secondary Education, *Teaching Guides, Water Pollution Control, *Water Resources
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III
This is an introductory program on water pollution. Examined are the cause and effect relationships of water pollution, sources of water pollution, and possible alternatives to effect solutions from our water pollution problems. Included is background information on water pollution, a glossary of pollution terminology, a script for a slide script program, actions that can be taken to reduce water pollution, and a few suggested activities. The materials are designed for students at the secondary school level. (RH)

ED 139 671 SE 022 615
Jamaxon, Barry W
An Environmental Syllabus: Grades 10, 11, 12.
New York State Education Dept., Albany. Bureau of General Education Curriculum Development
Pub Date [77]
Note—470p.
EDRS Price MF-$0.83 HC-$24.77 Plus Postage.
Descriptors—Conservation Education, Curriculum, *Curriculum Guides, *Environmental Education, Learning Activities, Natural Resources, Outdoor Education, Pollution, *Secondary Grades, State Curriculum Guides, *Teaching Guides, Units of Study
This syllabus is intended as a multi-purpose syllabus for environmental studies in the senior high school. Some units, or parts of units, are appropriate for use in the junior high school. The units in this syllabus are: (1) The Environmental Status Quo, (2) Natural Environments, (3) Food and People, (4) Population Dynamics; (5) Energy, Part I and II, (6) Land Use and Management, (7) Transportation, (8) Pollution; (9) Environmental Health, (10) Consumer "Environomics", (11) Global Resource Management; (12) Government, Politics, and the Environment; (13) The Environment and Careers, and (14) Summary. Each unit contains an introductory or background statement and numerous general understandings that should be developed by the conclusion of the unit. The main portion of each unit consists of procedures to be employed by the teacher. Many of these procedures are matched with one or more performance indicators to be used as guides in observing and evaluating student achievement. At the end of each unit is a list of resource materials. (Author/AJ)

ED 141 159 SE 022 681
The Ocean: Source of Nutrition for the Future. A Learning Experience for Coastal and Oceanic Awareness Studies, No. 305. [Project COAST].
Delaware Univ., Newark. Coll. of Education
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 74
Note—23p.; For related documents, see SE 022 662-687
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—Biological Sciences, *Food, Health, *Instructional Materials, *Natural Resources, Nutrition, *Oceanology, *Secondary Grades, Social Studies, *Teaching Guides, Units of Study
Identifiers—Project COAST
The question of future sources of food is posed with increasing frequency as the amount of arable land per person decreases with population growth. The role of the ocean as a food supplier is currently being explored. This learning experience is designed for secondary school students. It is divided into four major areas: (1) an overview, (2) marine plants, (3) fish protein concentrate, and (4) aquaculture. Each of the five lessons is intended for a daily 45-minute class period, but could be modified. (RH)

ED 144 788 SE 022 971
Aquaculture; A Course of Study for Sand Point Secondary School.
Alaska State Dept. of Education, Juneau. Office of Public Information and Publications
Pub Date Nov 75
Note—49p.
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Course Descriptions, *Curriculum, Curriculum Guides, Fisheries, Interdisciplinary Approach, *Marine Biology, Objectives, *Oceanology, Science Education, *Secondary Grades
Identifiers—*Alaska
This program is designed to involve students in the economy of their community. It combines an interdisciplinary educational program with practical field and laboratory experience. This program provides opportunities in the area of aquaculture, controlled cultivation of marketable species and the total ecological corrections necessary to maintain a viable fisheries in the Shumagin area. It involves all seventh through tenth grade students on a continuous basis. Included are units and topics in water quality, general biology, fisheries techniques, aquatic plant and insect studies, biological and physical oceanography and limnology, pathology, and aquaculture technology. Program philosophy and goals are stated. Planned course statements are given for fish husbandry, general biology, water resources, and fisheries science. Each statement includes the following: course description, goals, content outline, examples of learning activities, methods of evaluation, and learning materials. (AJ)

ED 147 590 CE 014 030
Finn, Peter And Others
Transportation and the Environment in Harmony: Mini-Units and Learning Activities for Grades 9 through 12.
Abt Associates, Inc., Cambridge, Mass.
Spons Agency—Office of Consumer Affairs, Washington, D.C.
Pub Date 77
Contract—DOT-OS-30086, DOT-OS-50026
Note—278p.; For related documents see CE 014 021-032
EDRS Price MF-$0.83 HC-$15.39 Plus Postage.
Descriptors—Consumer Education, Curriculum Guides, *Environmental Education, Group Activities, Independent Study, *Learning Activities, Lesson Plans, *Motor Vehicles, Pollution, Resource Materials, Safety Education, Secondary Education, Senior High Schools, Skill Development, Traffic Regulations, Traffic Safety, *Transportation, *Vehicular Traffic
One of a series of eleven curriculum manuals which cover the four transportation topics of public transportation; transportation and the environment, transportation safety, and bicycles for elementary, secondary, and adult levels, this manual covers the transportation and the environment topic for grades 9-12. It contains forty-four learning activities grouped into eight mini-units. Each mini-unit consists of a lesson plan component and an individual learning activities component. The first mini-unit provides a survey of issues related to transportation and the environment; the rest are as follows: learning about the interrelationships between transportation and the environment, learning about the automobile's effects on the environment, identifying solutions to conflicts between transportation and the environment, taking personal actions to resolve conflicts between transportation and the environment, examining the theory of and engaging in citizen participation to resolve conflicts between transportation and the environment; and researching issues related to transportation and the environment. A final section offers additional activities that may be used to evaluate or supplement evaluation of an activity or mini-unit. Also included are references for further study, resources and masters for reproduction of role profiles, game boards, maps, and other distributable materials. (A curriculum guide, CE 014 028, is also available for use with the manuals.) (TA)

ED 149 964 SE 022 843
Hershey, John T., Ed And Others
A Curriculum Activities Guide to Water Pollution and Environmental Studies, Volume I - Activities.
Institute for Environmental Education, Cleveland, Ohio
Pub Date 75
Note—231p.; For related documents, see SE 022 844 and ED 045 380
Available from—Institute for Environmental Education 8911 Euclid Avenue, Cleveland, Ohio 44106 (no price quoted)
EDRS Price MF-$0.83 HC-$12.71 Plus Postage.
Descriptors—Elementary Secondary Education, *Environmental Education, *Instructional Materials, Natural Resources, *Pollution, *Science Activities, *Science Education, *Secondary School Science, Social Sciences, Water Resources
This publication, Volume I of a two volume set, consists of many tested water pollution study activities. The activities are grouped into four headings: (1) Hydrologic Cycle, (2) Human Activities, (3) Ecological Perspectives, and (4) Social and Political Factors. Three levels of activities are provided: (1) those which increase awareness, (2) those which allow students and teachers to take actions related to particular concerns, and (3) those which are ongoing problem investigations. The activities are written with the same format of seven sections: (1) Introduction, (2) Questions, (3) Equipment, (4) Procedure, (5) Past Studies, (6) Limitations, and (7) Bibliographs and Resources. The introduction gives grade range, time required, setting, and some objectives for the activity. Questions include those to lead into, initiate, and continue the activity and evaluate student's performance. The bibliography and resources section includes books, films, and other teaching materials. These activities could be very useful in planning and teaching water resource management and water pollution considerations to students from elementary through high school levels in the classroom and outdoors, and urban and rural settings. (MR)

ED 149 965 SE 022 844
Hershey, John T., Ed And Others
A Curriculum Activities Guide to Water Pollution and Environmental Studies, Volume II - Appendices.
Institute for Environmental Education, Cleveland, Ohio.
Pub Date 75
Note—261p.; For related documents, see SE 022 843 and ED 045 380
Available from—Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, Ohio 44106 (no price quoted)
EDRS Price MF-$0.83 HC-$14.05 Plus Postage.
Descriptors—Annotated Bibliographies, *Computer Programs, *Environmental Education, *Instructional Materials, *Laboratory Techniques, Pollution, *Science Education, Secondary Education, *Secondary School Science, Water Pollution Control, Water Resources
This publication, Volume II of a two volume set of water pollution studies, contains seven appendices which support the studies. Appendix 1, Water Quality Parameters, consolidates the technical aspects of water quality including chemical, biological, computer program, and equipment information. Appendix 2, Implementation, outlines techniques dealing with cost, scheduling, and motivation. Appendix 3, Limitations, deals with problems of time and transportation, methods and equipment, and interpersonal relations. Appendix 4, Evaluation, deals with cognitive and affective behavioral objectives. Appendix 5 contains a comprehensive annotated bibliography which supplements the specific references in each activity in Volume I. Appendix 6 is a comprehensive water pollution and environmental glossary. Appendix 7 contains laboratory and field safety rules. This document is designed to serve as a teacher reference on water pollution. (MR)

ED 149 989 SE 023 459
Environmental Education, Values for the Future: Population, Grades 9-12.
Illinois State Office of Education, Springfield
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 77
Grant—OE-551-2-75

Note—104p.; For related documents, see SE 023 448-457 and SE 023 460-465; Contains numerous copyrighted materials
Available from—ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 (on loan)
Document Not Available from EDRS.
Descriptors—*Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, *Population Education, Science Education, *Secondary Education, *Teaching Guides, Values
Identifiers—Elementary Secondary Education Act Title III
This booklet on population is one of a series in environmental education for grades K-12. The activities focus on populations and their impacts, as modified by culture and resource needs. Six major concepts are listed, along with three activity options for each. The concepts each include behavioral objectives and a history of appropriate subject areas. Information given for each activity includes materials and resources, procedures, and discussion questions. Illustrations, sample forms, and readings are contained throughout the booklet. The activities are interdisciplinary and are designed for high school students, grades 9-12. (MA)

ED 153 841 SE 024 167
Brock, Phyllis And Others
Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy: Agriculture, Energy, and Society, Grades 10, 11, 12.
National Science Teachers Association, Washington, D.C.
Spons Agency—Bureau of Intergovernmental and Institutional Relations (DOE), Washington, D.C. Office of Education, Business and Labor Affairs
Report No—EDM-1034
Pub Date Feb 78
Contract—EX-76-C-10-3841
Note—102p.; For related documents, see SE 024 168-172 and SE 024 218; Not available in hard copy due to marginal legibility of original document
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee 37830 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Agricultural Education, Economics, *Energy, *Food, *Instructional Materials, Integrated Curriculum, Science Education, *Secondary Education, Social Sciences, *Teaching Guides
This interdisciplinary instructional unit contains eleven lessons for grades 10-12 which focus on the energy component of food production. There are lessons which contrast food production systems in various cultures and also lessons which look at different systems and techniques in use in this country. There are lessons dealing with organic farming and with the use of wild foods. Each lesson gives an overview, target audience, objectives, materials, time allotment, and teaching strategies, in addition to student worksheets. (HB)

EJ 154 986 SE 023 989
Hershey, John F. And Others
A Curriculum Activities Guide to Water Pollution and Environmental Studies: Activities, Appendices, Volume 1 and Volume 2.
Tilton School, N.H.
Spons Agency—Environmental Protection Agency, Washington, D.C. Office of Water Programs; Ford Foundation, New York, N.Y.
Pub Date 72
Grants—ITT1-WP-41-01
Note—490p.; For related document, see ED 045 380; Contains occasional light and broken type
Available from—Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (S/N 052-025)
EDRS Price MF-$1.00 HC-$26.11 Plus Postage.
Descriptors—*Curriculum Guides, Ecology, *Environmental Education, *Instructional Materials, Natural Resources, Outdoor Education, Pollution, *Secondary Education, *Water
This activity oriented guide is divided into four sections dealing with the Hydrologic Cycle, Human Activities: Ecological Perspectives, and Social and Political Factors. Each activity contains seven parts: (1) an introduction, (2) questions about the activity, (3) necessary equipment; (4) procedures, (5) results obtained by using the study; (6) limitations and problems encountered with the activity, and (7) an annotated bibliography. The appendices include a discussion of water quality parameters, aids to implementation, suggestions regarding limitations, suggestions for evaluation, a bibliography, a water pollution and environmental glossary, and comments about laboratory and field safety. (CS)

ED 157 757 SE 024 759
Brandt, Sandy, Ed. Walters, Casey, Ed.
S.T.E.P. - Students Toward Environmental Participation - Into Your Environment.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date 76
Note—59p.; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Activities, *Biological Sciences, Biology, *Ecology, *Educational Games, *Environmental Education, *Role Playing, *Secondary Education
This high school environmental guide uses the Students Toward Environmental Participation (S.T.E.P.) approach. Activities are designed to develop an awareness of the purpose, interrelationship, and wholeness of the earth through activities, games and role-playing. Sample activities include: trust walk, scavenger hunt, nature collage, and alphabet animals. As a guideline for teaching the concepts of the guide, lessons use the structure provided by the S.P.I.C.E. (Similarities and Varieties, Patterns, Interaction and Interdependence, Continuity and Change, and Evolution and Adaption) strands. (Author/RH)

ED 157 820 SO 011 030
U.S. Energy Policy - Which Direction? Grades 11 and 12. Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy.
National Science Teachers Association, Washington, D.C.
Spons Agency—Office of the Assistant Secretary for Intergovernmental and Institutional Relations (DOE), Washington, D.C. Education, Business and Labor Affairs.
Report No—HCP/U3841-0003
Pub Date Jan 78
Contract—EX-76-C-10-3841
Note—92p.; For related documents, see SO 011 027-029; Best copy available
Available from—U.S. Department of Energy, Technical Information Office, P.O. Box 62, Oak Ridge, Tennessee 37830 (free, paper cover)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Case Studies, Class Activities, Decision Making, *Energy, *Energy Conservation, Futurex (of Society), Grade 11, Grade 12, Interdisciplinary Approach, Lesson Plans, *Policy Formation, *Presidents, Sciences, Senior High Schools, Social Studies Units, Teacher Developed Materials
This instructional unit for use in 11th and 12th grade social studies and science courses contains six classroom lessons dealing with United States energy policy. The overall objective is to help students understand how circumstances, present and proposed legislation, political action, and the Constitution itself become linked in the development of a national policy. The lessons, developed by teachers, are: (1) The Nightmare Life Without Fuel, (2) How Can the United States Reduce Its Dependence on Foreign Oil?, (3) The President's Powers: Where They Come From and How They Are Used, (4) Advantages and Disadvantages of Coal, (5) Toward the Future: The Advantages of Having a National Energy Plan; (6) An Energy Policy Is Born. Activities in which students are involved include discussing the short reading selections, analyzing graphs and research, and analyzing a case study dealing with President Carter's energy policy. The time needed to teach each lesson varies from one to three classroom periods. All teacher and student materials are included. Also included for the teacher's reference is a brief summary of President Carter's energy policy. (Author/RM)

ED 158 303 CS 204 287
Green, Noeva And Others
Indian River County Environmental Education Instructional Guide: Language Arts, Ninth Grade, Pilot Edition.
Indian River County Board of Public Instruction, Vero Beach, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date 75
Note—56p.; For related documents, see CS204285-287
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—Conservation (Environment), *Discovery Learning, English Curriculum, *English Instruction, *Environmental Education, Grade 9, Group Discussion, Junior High Schools, *Language Arts, *Learning Activities, Reading Skills, *Responsibility, Teaching Guides, Writing Skills
As part of a language arts series for kindergarten through grade nine, this ninth grade guide examines environmental values, concepts, and problems according to a common conceptual scheme. All living things, including humans, are interrelated and interdependent, heredity and environment interact to determine the characteristics of an organism and therefore a population, living things and environments are in a continuous state of change; the world has finite resources and almost infinite demands are made on these resources; and each individual, as an agent of change, has a responsibility to the environment. The guide offers a series of environmental activities that stress the development of reading, writing, and discussion skills and emphasize the discovery method of observation. The guide includes background information, a teacher's outline, student task sheets, and appendixes containing various types of word puzzles for the students. (MA)

ED 165 991 SE 025 276
Sheridan, Jack
Investigating the Environment: Investigating Resource Acquisition and Use.
Harris County Dept. of Education, Houston, Tex.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.; Texas Education Agency, Austin.
Pub Date—77
Grant—ESEA-4-S-4-8-CO-1;
Note—176p.
Available from—Harris County Department of Education, 6515 Irvington Boulevard, Houston, Texas 77022 ($2.75)
EDRS Price MF-$0.83 HC-$10.03 Plus Postage.
Descriptors—*Decision Making Skills, *Environmental Education, *Instructional Materials, *Learning Activities, *Natural Resources, Petroleum Industry, Problem Solving, Science Education, *Secondary Education, Simulation
Identifiers—Texas (Harris County)
This unit provides the student with a simulated experience in the development of decision making skills. The acquisition of petroleum resources in a hypothetical republic provides the basic scenario around which the simulation develops. Students are supplied with specific information about petroleum geology, finances, and drilling. With this knowledge, students are asked to make economic and environmental decisions concerning the future of the republic. Over half of this publication is devoted to maps, charts, and illustrations that can be removed from the unit and duplicated. Background information, as well as activity development of the simulation, is included for the secondary teacher. (MA)

ED 166 060 SE 026 709
Albert, Harold E., Ed.
Putting "Energy" in Your Course: 1978. A Collection of Energy Teaching Units Designed by the Participants of the Energy Institute for Secondary Science and Social Science Teachers.
Clemson Univ., S.C. Dept. of Political Science.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—78
Contract—DOE-EU-78-G-05-5801
Note—180p.
EDRS Price MF-$0.83 HC-$10.03 Plus Postage.

Descriptors—Classroom Materials, *Energy, Energy Conservation, Environmental Education, *Instructional Materials, Science Activities, *Science Education, *Secondary Education, Social Sciences, *Teaching Guides

This collection of energy teaching units is the contribution of participants in a U.S. Department of Energy sponsored institute for secondary science and social studies teachers. The objectives of the Institute were to: (1) provide an overview of past, present, and future energy problems, and (2) stimulate teachers to use this information in their own courses. The units are for a broad range of disciplines and include topics such as: fossil fuels, energy conservation, nuclear power, economics of energy, coal mining, future trends, U.S. energy policy, electricity generation, and chemical aspects of energy production. Each unit includes objectives, daily activities and bibliography. (TM)

ED 167 368 SE 026 735

The Global Energy Situation on Earth. Student Guide. Computer Technology Program Environmental Education Units.

Northwest Regional Educational Lab., Portland, Oreg.

Spons Agency—National Inst. of Education (DHEW), Washington, D.C.

Pub Date—Oct 77

Note—28p.; For related documents, see SE 026 732-741; Contains light and broken type

Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland Oregon 97204 ($3.25)

Pub Type— Guides - Classroom - Learner (051)

EDRS Price MF-$0.83 HC-$2.06 Plus Postage.

Descriptors—*Computer Assisted Instruction, *Energy, *Environmental Education, Global Approach, Higher Education, Natural Resources, Secondary Education, *Simulation, *Social Studies, World Problems

Identifiers—*Energy Education

This is the student guide in a set of five computer-oriented environmental/energy education units. Contents of this guide are (1) Introduction to the unit, (2) The "EARTH" program, (3) Exercises and (4) Sources of information on the energy crisis. This guide supplements a simulation which allows students to analyze different aspects of energy conditions existing around the world. (MR)

ED 167 369 SE 026 736

A Computer Simulation of the U.S. Energy Crisis, Energy. Teacher Guide. Computer Technology Program Environmental Education Units.

Northwest Regional Educational Lab., Portland, Oreg.

Spons Agency—National Inst. of Education (DHEW), Washington, D.C.

Pub Date—Sep 75

Note—28p.; For related documents, see SE 026 732-741; Contains occasional light and broken type

Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland, Oregon 97204 ($3.25)

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price MF-$0.83 HC-$2.06 Plus Postage.

Descriptors—Annotated Bibliographies, *Computer Assisted Instruction, *Energy, *Environmental Education, Higher Education, *Instructional Materials, Pollution, Secondary Education, *Simulation, Social Studies

Identifiers—*Energy Education

This is the teacher's guide to accompany the student guide which together comprise one of five computer-oriented environmental/energy education units. The computer program, ENERGY, at the base of this unit, simulates the pattern of energy consumption in the United States. The total energy demand is determined by energy use in the various sectors such as the industrial sector, the transportation sector, the utilities sector, and so on. The demand for energy is shown to grow exponentially in each sector. Students are asked to balance supply of energy with demand by adjusting factors in each sector. This teacher's guide presents: (1) suggestions on introducing the unit, (2) student guide exercises and answers, (3) follow-up activities, and (4) an annotated source list. This unit is appropriate for social studies and environmental education courses grades 9 through 14. (MR)

ED 167 370 SE 026 737

A Computer Simulation of the U.S. Energy Crisis, Energy. Student Guide. Computer Technology Program Environmental Education Units.

Northwest Regional Educational Lab., Portland, Oreg.

Spons Agency—National Inst. of Education (DHEW), Washington, D.C.

Pub Date—Oct 77

Note—32p.; For related documents, see SE 026 732-741

Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland, Oregon 97204 ($3.25)

Pub Type— Guides - Classroom - Learner (051)

EDRS Price MF-$0.83 HC-$2.06 Plus Postage.

Descriptors—*Computer Assisted Instruction, Economics, *Energy, *Environmental Education, Higher Education, Natural Resources, Pollution, *Secondary Education, *Simulation, Social Studies

Identifiers—*Energy Education

This is the student guide in a set of five computer-oriented environmental/energy education units. Content of this guide: (1) introduce the unit, (2) describe the "ENERGY" simulation, (3) give instructions for running the simulation; (4) give exercises for the unit, and (5) present sources of information on the energy crisis. (MR)

ED 167 373 SE 026 740

A Computer Oriented Problem Solving Unit, Consume. Teacher Guide. Computer Technology Program Environmental Education Units.

Northwest Regional Educational Lab., Portland, Oreg.

Spons Agency—National Inst. of Education (DHEW), Washington, D.C.

Pub Date—Sep 75

Note—19p.; For related documents, see SE 026 732-741

Available from—Office of Marketing, Northwest Regional Educational Lab., 710 S.W. Second Ave., Portland, Oregon 97204 ($3.00)

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price MF-$0.83 HC-$1.67 Plus Postage.

Descriptors—*Computer Assisted Instruction, Ecology, *Energy, *Environmental Education, *Higher Education, Mathematics, Problem Solving, Resource Allocations, *Secondary Education, Social Studies

Identifiers—*Energy Education

This is the teacher's guide to accompany the student guide which together comprise one of five computer-oriented environmental/energy education units. This unit explores U.S. energy consumption, is applicable to Mathematics, Social Studies, and Ecology or Science Studies with Mathematics background; and is intended for use in grades 9 through 14. The unit is divided into five sections each dealing with a main issue such as: (1) growth in energy demand, (2) problems converting and distributing energy, (3) new energy sources; and (4) transportation and energy consumption. Each section is concluded with a set of exercises with which a computer may be used. This teacher's guide gives an introduction to the unit, unit goals and objectives, answers to exercises, and an annotated bibliography. (MR)

ED 167 482 SO 011 526

Energy and Conservation Education: Activities for the Classroom, Grades 10-12.

Energy and Man's Environment, Inc., Portland, Oreg.

Pub Date—78

Note—487p.; For related documents, see SO 011 523-529; Article on pages 46-54 by Business Week, January 20, 1975, entitled "Utilities, Weak Point in the Energy Future" has been removed by ERIC due to copyright law

Available from—Energy and Man's Environment, 0224 S.W. Hamilton, No. 301, Portland, Oregon 97201 ($24.00)

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price MF-$1.00 Plus Postage. HC Not Available from EDRS.

Descriptors—Class Activities, Classroom Games, *Concept Teaching, *Conservation Education, Educational Objectives, *Energy, *Energy Conservation, *Environmental Education, Environmental Influences, Fuels, Futures (of Society), Grade 10, Grade 11, Grade 12, Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Secondary Education, Social Studies, Student Evaluation, Teacher Developed Materials, Teaching Guides

The instructional materials and classroom activities described in the document are intended to aid teachers in grades 10 through 12 develop and implement educational programs dealing with energy-related issues. The document is presented in four sections. Section I explains the organization of the document and summarizes how teachers should implement activities and assess student performance. Section II consists of a matrix of activities described in the document. Information is presented on grade level, time required, and subject matter. Section III describes learning activities in six areas: (1) sources of energy, (2) uses of energy, (3) conversion of energy from one form to another, (4) impact of energy use on the environment, (5) limits of the earth's resources, and (6) the future. For each activity, information is presented on title, concept, time, implementation, materials, and optional activities. Activities involve students in library research, identifying energy sources used in food and clothing production, suggesting solutions to energy use problems, responding orally and in writing to articles on energy costs and energy use, analyzing energy impact statements, identifying sources of unwise energy use, and discussing energy-related topics with classmates and resource people. The final chapter presents information on student assessment. Suggested test items are presented along with suggestions on how to use them and an explanation of the origin of the test items. (DB)

ED 169 564 CS 204 803

Environmental Education Guide; Language Arts 9-12.

Project I-C-E, Green Bay, Wis.

Spons Agency—Office of Education (DHEW), Washington, D.C.; Wisconsin State Dept. of Public Instruction, Madison.

Pub Date—78

Contract—300-77-0105

Note—117p.; For related document, see CS 204 802

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.

Descriptors—Behavioral Objectives, Ecology, *English Curriculum, *English Instruction, *Environmental Education, *Interdisciplinary Approach, *Language Arts, Listening Skills, Pollution, Reading Skills, Secondary Education, Speech Skills, Validated Programs, Writing Skills

Identifiers—National Diffusion Network Programs, *Project ICE

Written for use with students in grades nine through twelve, this handbook links natural ecological issues with language arts instruction. It contains a series of lesson plans, each offering a number of suggested learning activities for use both in and out of class. The lessons are built around 12 major environmental concepts that form a framework for each subject area. In addition, each lesson offers subject area integration, multidisciplinary activities, cognitive and affective behavioral objectives, and suggested reference and resource materials for both the teacher and students. (FL)

ED 173 082 SE 027 842

Investigating Your Environment: Teaching Materials for Environmental Education, October 1978 Edition.

Forest Service (DOA), Washington, D.C.

Pub Date—Oct 78

Note—137p.; For related document, see ED 135 656; Not available in hard copy due to marginal legibility of original document

Available from—U.S.D.A. Forest Service, P.O. Box 2417, Room 3233, Washington, D.C. 20013 (free)

Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.

Descriptors—Earth Science, *Environmental Education, Forestry, *Instructional Materials, Land Use, *Natural Resources, *Pollution, Science Education, *Secondary Education, Sociology, Soil Science, *Teaching Guides, Water Pollution Control, Wildlife Management

Included are seven lesson plans for secondary school students: (1) soil investigation, (2) water investigations, (3) forest investigations, (4) investigating some animals and their environment, (5) a land use simulation, (6) investigating the human community, and (7) developing environmental investigations. Each lesson plan has seven components: (1) suggestions for setting the stage, (2) in-

dividual or group activities. (3) task cards for activities. (4) charts and tables for data interpretation. (5) suggested questions and discussion points. (6) anticipated behavioral outcomes, and (7) a list of equipment needs (RE)

ED 174 407 SE 027 838
Ecology and Human Values: A Course of Study. (Working Draft).
Wisconsin State Dept of Public Instruction, Madison.
Report No.—WDPI-Bull-3171
Pub Date—[72]
Note—61p.; For related document, see ED 055 864 ; Document prepared through the Dissemination Project
Pub Type— Guides - Classroom - Teacher (052) — Guides - Classroom - Learner (051)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Air Pollution Control, *Ecology, *Environmental Education, Land Use, *Natural Resources, Pollution, Population Education, Science Education, *Secondary Education, Social Problems, *Social Studies, Social Values, Technology, *Values, Waste Disposal, Water Pollution Control, Water Resources
This interdisciplinary course is designed for senior year high school students in social studies and/or science. Its main thrust is the investigation of human values as they relate to the environment, although rooted in the natural sciences as a means of understanding the complexities inherent in the environment. Use is made of the case study approach to environmental issues (controversial questions) together with participatory research in the community. Multi-text, small group instruction, individual projects, and simulation techniques are also incorporated to develop an understanding and a corresponding value and behavior change in the inter-relationship of man to his biophysical and sociocultural environment. The course is subdivided into seven sections. (1) An Introduction to Crises, (2) Ecology; (3) The Nature of Man; (4) Science-Technology, (5) Concerns Caused by Science-Technology; (6) Population; and (7) The Role of the Scientist, Citizen, Industrialist, and Administrator in Ecology. Each unit indicates the subtopics to be covered, objectives, generalizations, methodology, culminating activities, evaluation, resources, and supplementary information where appropriate. (Author/BL)

ED 174 436 SE 028 253
Introductory Curriculum Materials, Project SCATE.
Iowa State Dept. of Public Instruction, Des Moines. Div. of Curriculum.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—[76]
Note—55p.; Not available in hard copy due to marginal legibility of original document
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Conservation (Environment), Critical Reading, Critical Thinking, Decision Making, Economic Factors, Energy, Environment, *Environmental Education, Inductive Methods, Land Use, *Problem Solving, Science Education, *Secondary Education, Units of Study, *Values
The objective of Project SCATE (Students Concerned About Tomorrow's Environment) is for students to investigate environmental problems and the political processes involved in their solution. The four identified areas of concern are: (1) land use policy development, (2) air and water quality, (3) energy allocation and consumption, and (4) economic considerations related to the quality of life. This document contains instructional units, including objectives and activities, centering around the four concerns. Unit titles are (1) Identifying a problem; (2) Clearly stating a problem, (3) Determining testable and non-testable statements, (4) Generalizing; (5) Model Assembly; (6) Land Use; (7) Discovering a biological community; (8) Children's forest controversy; (9) Great swamp; and (10) Urban studies. (TM)

ED 177 012 SE 029 132
The Ocean: Source of Nutrition for the Future. Northern New England Marine Education Projects
Maine Univ., Orono. Coll. of Education., Maine Univ., Orono. Sea Grant Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—78
Note—45p.; For related documents, see SE 029 133-135, Not available in hard copy due to copyright restrictions
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Biology, Class Activities, Earth Science, Ecology, *Environmental Education, *Home Economics Education, *Interdisciplinary Approach, Marine Biology, Oceanology, *Science Education, Secondary Education, Social Studies
Identifiers—*Sea Grant
This unit provides lessons utilizing aspects of aquaculture to portray concepts in several secondary school disciplines. Extensive background is provided on four marine species currently cultured in Maine. The history of aquaculture in Maine is provided. A bibliography of sources of information on aquaculture follows the background section. Two lesson outlines are provided. Each includes an introduction, overview, teacher and student background, and suggested activities according to the discipline being considered. Appendices include a list of marine aquaculture companies, directions for the establishment of a marine aquarium, and a list of information resources. (RE)

ED 179 375 SE 028 823
Day, John Weeden, Kenneth P
Western Coal Boom or Bust? Grades 9-11. Interdisciplinary Student/Teacher Materials in Energy, the Environment, and the Economy.
National Science Teachers Association, Washington, D.C.
Spons Agency—Department of Energy, Washington, D.C. Office of Education, Business and Labor Affairs.
Report No.—HCP/U-3841-10
Pub Date—Jun 79
Contract—EX-76-C-10-3841
Note—77p.
Available from—U.S. Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830 (no price quoted)
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052) — Collected Works - Serials (022)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Energy, Environment, *Environmental Education, Environmental Influences, *Fuels, History, *Interdisciplinary Approach, Land Use, *Natural Resources, Pollution, *Science Education, *Secondary Education, Social Studies
Identifiers—Coal, *Energy Education
This unit uses energy choices to raise questions about the energy option of coal available to the nation along with attendant advantages and disadvantages of this option. The unit introduces locations of coal deposits in the U.S. and their types. Emphasis is on relatively unexploited deposits in the western United States. Comparisons are made between western coal and that of the east. Heat and sulfur content are discussed. Possible boom-town effects are discussed in the context of development of resources. Strip mining controversies are examined. (Author/RE)

ED 179 412 SE 029 435
Friedland, James Frishman, Austin
Huntington II Simulation Program - MALAR. Student Workbook, Teacher's Guide, and Resource Handbook.
Digital Equipment Corp., Maynard, Mass.; State Univ. of New York, Stony Brook. Huntington Computer Project.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—Mar 73
Grant—NSF-GW-5883
Note—95p.; For related documents, see SE 029 434-440 and ED 093 644-645; Not available in hard copy due to marginal legibility of original document
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Biology, *Computer Assisted Instruction, Computer Programs, *Ecology, Environment, Game Theory, *Health Education, *Models, *Science Education, Secondary Education, *Simulation, Social Studies
Described is the computer model "MALAR" which deals with malaria and its eradication. A computer program allows the tenth- to twelfth-grade student to attempt to control a malaria epidemic. This simulation provides a context within which to study the biological, economic, social, political, and ecological aspects of a classic world health problem. (Author/RE)

ED 179 415 SE 029 438
Frishman, Austin
Huntington II Simulation Program - RATS. Student Workbook, Teacher's Guide, and Resource Handbook.
Digital Equipment Corp., Maynard, Mass.; State Univ. of New York, Stony Brook. Huntington Computer Project.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date—May 78
Grant—NSF-GW-5883
Note—70p.; For related documents, see SE 029 434-440 and ED 093 644-645; Not available in hard copy due to marginal legibility of original document
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*City Problems, *Computer Assisted Instruction, Conservation Education, *Economic Disadvantagement, Environment, *Environmental Education, Game Theory, Instructional Materials, Pesticides, Rats, Rodenticides, Science Education, Secondary Education, *Simulation, *Urban Environment
Presented are instructions for the use of "RATS," a model simulating the dynamics of a rat population in either a city or an apartment house. The student controls the conditions of growth and sets the points at which the computer program prints reports. The rat population is controlled by variables including garbage levels selected for the site, and types and quantity of poison applied. At the end of the simulation, the program prints details on the nature of the rat population, the dollar value of damage done by the rats, cost of poison, and amount of poison left uneaten. (Author/RE)

ED 184 860 SE 030 513
Voss, Albert P.
Urban/Environmental Education Project, Curriculum Module II: Energy Conservation - What Are the Options?
Allegheny Intermediate Unit, Pittsburgh, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Aug 79
Note—50p.; For related documents, see SE 030 511-519. Contains occasional light and broken type.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Class Activities, *Conservation Education, *Energy, Energy Conservation, Environment, *Environmental Education, Physical Sciences, *Science Education, Secondary Education, *Urban Education
Identifiers—*Energy Education
Included in this module are five activities dealing with energy conservation in the urban environment. The activities include (1) conducting an energy inventory; (2) the physical nature of temperature, space, and insulation and their effects on energy use; (3) blackouts; (4) the sellers and consumers of energy, (5) energy conservation decision-making. Also included are an overview, teacher background information, an activity preview, and a pretest. (RE)

ED 184 863 SE 030 516
Bigan, Barbara
Urban Environmental Education Project, Curriculum Module V: Urban Air Quality - At What Costs?
Allegheny Intermediate Unit, Pittsburgh, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Aug 79
Note—52p.; For related documents, see SE 030

511-519.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC03 Plus Postage.
Descriptors—*Air Pollution. *Class Activities. *Decision Making. *Energy. *Environment. *Environmental Education. Environmental Influences. Fuel Consumption. Fuels. Meteorology. Middle Schools. Pollution. Science Education. Secondary Education. Urban Education. Urban Environment. *Urban Problems
Identifiers—*Energy Education
Included in this module are five activities dealing with air quality and sources of air pollution in the urban environment. Activities included are (1) the nature of the atmosphere, (2) discussion of major pollutants, (3) measuring air quality, (4) inversions and (5) pollution control. Also included are an overview, teacher background information, an activity preview, a pretest, and a module evaluation form (RE)

ED 184 864 SE 030 517
Biglon, Barbara
Urban Environmental Education Project, Curriculum Module VI: Solid Waste - Trash or Treasure?
Allegheny Intermediate Unit, Pittsburgh, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—Aug 79
Note—42p.. For related documents, see SE 030 511-519.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Class Activities. *Decision Making. *Environment. *Environmental Education. *Environmental Influences. Middle Schools. Natural Resources. Pollution. Recycling. Science Education. Secondary Education. Urban Education. Urban Environment. *Urban Problems. Waste Disposal. Wastes
Included in this module are four activities dealing with issues of solid waste disposal relative to urban concerns. Included activities are: (1) sources and composition of solid waste, (2) a "garbage game", (3) disposal options for solid waste, and (4) an example county plan for solid waste disposal. Also included are an overview, teacher background information, an activity preview, a pretest, and a module evaluation form (RE)

ED 188 936 SE 031 459
Terry, Mark
Conceptual Guide to Environmental Education in Washington State Secondary Schools: An Invitation and Guide to Implementation.
Washington Office of the State Superintendent of Public Instruction, Olympia.
Pub Date—80
Note—71p.; Contains occasional light and broken type
Pub Type— Guides - Classroom - Teacher (052) — Guides - Non-Classroom (055)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Conservation Education. *Curriculum Development. *Educational Planning. *Environmental Education. *Interdisciplinary Approach. Outdoor Education. Program Descriptions. *Public Policy. *Secondary Education
This guide is intended to provide a logical approach to the improvement of environmental education at the secondary school level. It includes: (1) an introduction; (2) four goals for environmental education, (3) the role of the environmental studies course, (4) where to go with environmental education, (5) a planning and evaluation checklist, and (6) an annotated resource list for the State of Washington. A guide to discussion of specific subject area references is also provided for the guide (RE)

ED 190 350 SE 030 981
Landes, Nancy Hetherington, Aramin
Critical Choices. Teacher's Guide and Student Guide. Net Energy Unit. Draft.
Michigan State Univ., East Lansing. Cooperative Extension Service.; Michigan State Univ., East Lansing. Science and Mathematics Teaching Center.
Spons Agency—Department of Energy, Washington, D.C.; Michigan Dept. of Commerce, Lansing.
Pub Date—28 Mar 79
Grant—EC-77-6-01-5092
Note—79p.. For related documents, see SE 030 975-985 and ED 180 774.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01, PC04 Plus Postage.
Descriptors—*Attitudes. *Class Activities. Conservation Education. *Curriculum Development. Decision Making. *Energy. *Energy Conservation. Environmental Education. *Evaluation Methods. Home Economics. Interdisciplinary Approach. Natural Resources. Opinions. Science Education. Secondary Education. Social Studies
Identifiers—*Energy Education
This module is intended to assist students to evaluate how students in American high schools view their use of energy. Values clarification activities consider energy conservation and energy use habits. The activities are intended to cover one to two class periods and involve discussion, small group activities, and language arts. (Author/RE)

ED 190 353 SE 030 984
McLeod, Richard J.
Conservation Not Conversation (Or More Action and Less Talk). Teacher's Guide and Student Guide. Net Energy Unit. Draft.
Michigan State Univ., East Lansing. Cooperative Extension Service.; Michigan State Univ., East Lansing. Science and Mathematics Teaching Center.
Spons Agency—Department of Energy, Washington, D.C.; Michigan Dept. of Commerce, Lansing.
Pub Date—28 Mar 79
Grant—EC-77-6-01-5092
Note—99p.. For related documents, see SE 030 975-985 and ED 180 774.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Class Activities. *Conservation Education. Curriculum Development. *Decision Making. *Energy. *Energy Conservation. Environmental Education. *Fuel Consumption. Information Dissemination. Interdisciplinary Approach. *Natural Resources. Public Policy. Science Education. Secondary Education. Social Sciences
Identifiers—*Energy Education
This module focuses on conservation measures to gain energy. Students are asked to list various conservation measures they can make at home and in their personal transportation; from these they determine the gain associated with each measure. The students are also asked to consider conservation measures in terms of effect on lifestyle. An optional activity includes a publication of a newsletter for the community. One class period is required to implement the module (Author/RE)

ED 191 745 SE 032 880
Bottinelli, Charles A.
The Energy Scorecard: A Way to Trim Your Energy Bills. Teacher's Guide.
Energy Information Associates, Inc., Littleton, Colo.
Spons Agency—Colorado State Office of Energy Conservation, Denver.
Pub Date—Oct 79
Note—26"p.. Page HE-2 removed due to copyright restrictions. Some colored pages may not reproduce well.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC11 Plus Postage.
Descriptors—*Class Activities. Curriculum Development. *Decision Making. *Energy. *Energy Conservation. *Fuel Consumption. Home Economics. *Interdisciplinary Approach. Mathematics Education. Public Policy. Science Education. Secondary Education. Social Studies
Identifiers—*Energy Education
The goal of this mini-unit is to involve students and their parents in a cooperative exercise to increase awareness of areas of household energy consumption. Low-cost methods for reducing energy waste and reducing energy costs are provided. The document has separate sections containing activities in the disciplines of: (1) home economics, (2) mathematics, (3) science, and (4) social studies. (Author/RE)

ED 193 047 SE 032 946
Alex, Robert And Others
Exploitation or Conservation. Today's Choices for Tomorrow. A Guide to Activities and Strategies in Environmental Education, Grades 9-12.
Alachua County Schools, Gainesville, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date—Aug 77
Note—244p. Contains occasional light and broken type
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC10 Plus Postage.
Descriptors—*Biology. *Environmental Education. Interdisciplinary Approach. *Natural Resources. Physical Sciences. *Pollution. Resource Units. Science Instruction. Secondary Education. Secondary School Science. *Social Studies
Identifiers—Environmental Problems. Environmental Quality
Presented in this guide are classroom and outdoor lessons intended to assist high school teachers in implementing environmental education objectives. Provided for each objective are background information, up to 15 related activities, and teacher questions designed to facilitate students' investigations. Among the learning strategies used are role-playing, field studies, library research, and interviews of local residents. Emphasis is upon data collection and discussion by students. The student's role in natural and social environments is stressed in most activities (Author/RE)

ED 193 048 SE 032 947
Helmick, Robert And Others
Environmental I.D.E.A.S. Clusters 10, 11, 12, Physical Sciences. Preliminary Edition.
Polk County Board of Public Instruction, Bartow, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date—Jun 77
Note—122p.. Not available in hard copy due to marginal legibility of original document. Best copy available
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Chemistry. *Earth Science. *Environmental Education. *Natural Resources. Resource Units. Science Education. Science Instruction. Scientific Concepts. *Secondary Education. *Social Studies
Identifiers—*Environmental Problems
Approximately 50 experiments related to environmental problems comprise this manual. The three conceptual themes under which these lessons are organized deal with (1) change, (2) the interaction of custom, rule, and law in society, and (3) economy, life style, and individual attitudes. Provided are materials for both students and teachers. Teacher materials include background information, student objectives, references, and conceptual theme statement. Listed in the student materials are the problem, materials needed, procedure, discussion questions and suggested follow-up experiments (WB)

ED 196 102 CS 503 212
Kleinau, Marion And Others
Project Eco-Drama-A Model.
Southern Illinois Univ., Carbondale.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—[75]
Note—84p.; "Not a Drop to Drink," page 53, removed due to copyright restrictions.
Pub Type— Reports - Descriptive (141) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Attitude Change. Change Agents. Communication Skills. Community Attitudes. Conservation (Environment). Drama. *Ecology. Elementary Secondary Education. *Interdisciplinary Approach. *Learning Activities. Program Descriptions. *Speech Curriculum. Student Attitudes
Focusing primarily on the education of high school students, the project described in this paper combines traditional ecology studies with studies in communication and the verbal arts in order to build an awareness of community problems and provide a means by which students can transmit their learning to the community. The first section of the paper discusses methods and forms for integrating classes in ecology with those in basic communications, debate, oral interpretation and readers theatre. Intera-

tute, or mass communication. The second section gives specific exercises for group interaction that include interpersonal approaches, games, role playing, audience debate techniques, and other exercises that may lead into the creation of scripts. The section also provides suggestions for devising similar exercises. The third section discusses the creation of scripts for readers theatre and contains some sample scripts that have evolved from the project. (FL)

ED 196 725 SE 033 935
The Litter Problem. Environmental Education Supplementary Instructional Guide. Secondary Level.
Hawaii State Dept. of Education, Honolulu. Office of Instructional Services
Report No.—RS-79-8219
Pub Date—Sep 79
Note—89p. For related document, see SE 033 934. Not available in hard copy due to marginal legibility of original document.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Community Problems, *Environmental Education, Instructional Materials, Mathematics Education, Secondary Education, Social Studies, Student Projects, *Waste Disposal, *Wastes

Presented is a guide for helping secondary school students investigate the litter problem, acquire litter control skills, and develop an anti-litter ethic. The manual contains a hierarchy of learning objectives, a pretest, posttest, background information on litter, and activities keyed to the learning objectives. Each lesson includes brief statements of content, instructional activities, and assessment tasks. Provided in the appendix are a glossary, a list of organizations and agencies involved in litter control, supplementary mathematics problems, and more than 20 litter-related activities appropriate for any subject area. (WB)

ED 199 116 SE 034 685
Meyers, Paul A.; Ham, Frank C.
Our Energy Options.
Rockford Public Schools 205, Ill.
Spons Agency—Department of Education, Washington, D.C.
Pub Date—81
Note—54p. Contains photographs which may not reproduce well.
Pub Type— Reference Materials (130) — Reports - Descriptive (141)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Energy, Energy Conservation, *Environmental Education, Futures (of Society), Long Range Planning, *Science Education, *Secondary Education, *Social Studies, Technological Advancement, *Technology
Identifiers—*Alternative Energy Sources, Project APEC

Presented is an analysis of alternatives available to the United States in dealing with energy problems. Options explained and evaluated include coal, solar, hydroelectric, nuclear, geothermal, wind, biomass, and energy conservation. The booklet is part of Project APEC (America's Possible Energy Choices), a nationally validated Title IV-C project designed to educate teachers of grades 9-12 about energy and provide related study units and materials for students in these grades. (WB)

ED 200 397 SE 033 408
Citizen Education on Nuclear Technology (CENT), Teacher's Guide.
Intermountain Science Experience Center, Idaho Falls, Idaho
Spons Agency—Department of Education, Washington, D.C.
Report No.—INTERSEC-80-1B
Bureau No.—522AH90640
Pub Date—80
Grant—G007904045
Note—42p. For related document, see SE 033 407.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Citizen Participation, *Community Education, *Energy, Interdisciplinary Approach, Nuclear Energy, Nuclear Physics, *Power Technology, *Radiation, Science Activities, *Science Curriculum, Science Education, Science Instruction, Secondary Education, Secondary School Science, *Teaching Guides

Using an interdisciplinary approach, this curriculum focuses on understanding (1) the fundamental principles of operating a nuclear power plant, (2) the place of nuclear energy in the overall energy supply demand situation, (3) risk-benefit balance of the major energy sources, and (4) the role of political action in developing nuclear energy sources. It is suitable for both high school courses and adults in communities where nuclear energy has become an issue. The teaching guide presents background information, possible activities and serves as a resource for the successful teaching of a topic. (Author/DS)

ED 200 408 SE 034 451
Pennsylvania's Energy Curriculum for the Secondary Grades: Informational Module.
Pennsylvania State Dept of Education, Harrisburg
Spons Agency—Pennsylvania State Governor's Energy Council, Harrisburg
Pub Date—80
Note—10ap. For related documents, see SE 034 430-457.
Pub Type— Guides - Classroom - Teacher (052) — Reference Materials (130)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—Current Events, *Energy, Energy Conservation, *Environmental Education, Interdisciplinary Approach, *Science Education, Secondary Education, *Secondary School Science, *Social Studies

Pennsylvania's Department of Education provides eight energy education modules that cover different secondary school disciplines. This introductory publication is designed to accompany each of the eight subject-area modules. It contains background information for teachers on topics ranging from energy's definition and past uses to nuclear waste disposal, energy conservation, and principles of energy economics. Also included are a glossary, bibliography, and list of free films and other resource materials. (WB)

ED 201 501 SE 034 841
Winslow, Donald R.
Multidisciplinary Education 31E: Environmental Studies, Study Guide.
Indiana Univ., Bloomington. School of Continuing Studies.
Pub Date—80
Note—82p.; Appendix, pages 43-57, removed due to copyright restrictions. Contains photographs which may not reproduce well.
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—College Programs, *Ecology, *Environmental Education, *Higher Education, *Independent Study, Interdisciplinary Approach, *Science Education, Science Instruction, Secondary Education, Social Problems, *Social Studies

Presented is the learner's guide for a high school level independent study course in environmental studies. The manual is divided into two sections: (1) The Nature of the Environment, with lessons on ecosystems, limiting factors, interdependence and adaptation, and (2) Economic, Political, Behavioral, and Ethical Aspects of Environmental Studies, which covers population, energy, the urban environment and ethics. Each of the nine lessons lists objectives, presents a reading assignment, discusses the readings, offers a self test, and provides a written assignment. This correspondence course is offered by Indiana University's Independent Study Division. (WB)

ED 201 523 SE 034 924
Allen, Rodney F., Ed.
Okeechobee County Energy Education Activities—Middle School Level.
Tri-County Teacher Education Center, Sebring, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date—81
Note—96p.; Not available in hard copy due to marginal legibility of original document.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Basic Skills, *Energy, Energy Conservation, *Environmental Education, Interdisciplinary Approach, *Language Arts, Mathematics Education, *Science Education, *Secondary Education, *Social Studies
Identifiers—Energy Consumption

Over 60 energy education activities related to mathematics, science, social studies, and English comprise this manual for middle school teachers. Included are issues for discussion, puzzles, science investigations, story writing exercises, and energy cost calculation problems. Among the topics covered in these lessons are energy consumption trends, pollution problems, energy resources, conservation strategies, and historical perspectives on energy use. (WB)

ED 202 719 SE 035 146
Timmons, Joyce L.; Fortner, Rosanne
Geography of the Great Lakes. Student Guide and Teacher Guide. OEAGLS Investigation 14.
Ohio State Univ., Columbus. Research Foundation.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md.
Pub Date—May 80
Grant—NOAA-04-8-M01-170; NOAA-04-158-44099; NOAA-NA-79AA-00130
Note—30p.; For related documents, see SE 035 140-155 and ED 179 352-358. Prepared in collaboration with the Ohio Sea Grant Program.
Available from—Ohio Sea Grant Education Office, 283 Arps Hall, Ohio State Univ., 1945 N. High St., Columbus, OH 43210 ($1.00 plus $1.00 per order for shipping).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Basic Skills, *Geography, *Map Skills, Mathematics Education, Mathematics Instruction, *Measurement, Problem Solving, Science Education, *Secondary Education, Social Studies, *Water Resources
Identifiers—Great Lakes, *Oceanic Education Activities Great Lakes Schools, Ohio Sea Grant Program

This unit describes four secondary school activities related to the geography of the Great Lakes. In Activity A students develop map skills as they study the lakes' positions and associated cities; these skills are applied to the St. Lawrence Seaway in Activity B. Activities C and D involve learners in solving perimeter, area, distance, rate, time, and volume problems using the Great Lakes area for examples. The teacher's guide includes a materials list, overview of the unit, objectives, teaching suggestions, evaluation items, and an answer key. The student workbook is also provided. (Author/WB)

ED 207 811 SE 035 546
Feed, Need, Greed: Food Resources & Population. A High School Curriculum.
Science for the People, Cambridge, Mass. Boston Chapter.
Pub Date—80
Note—109p.; Numerous copyrighted cartoons removed. Photographs may not reproduce well. Prepared by the Food and Nutrition Group.
Available from—Science for the People, 897 Main St., Cambridge, MA 02139 ($5.00 plus $0.50 postage).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—Consumer Economics, Developing Nations, Economics Education, *Environmental Education, *Food, Instructional Materials, Interdisciplinary Approach, Nutrition, *Population Education, Science Curriculum, Science Education, Secondary Education, *Secondary School Science, *Social Studies, *Teaching Guides, World Problems
Identifiers—Science and Society

Four units, teacher's notes, and a comprehensive glossary provide background information and activities aimed at raising the awareness of high school students and teachers regarding the nature of the food system and its relationship to nutrition, population, and resources. These non-sequential units analyze the economic and political factors surrounding world food and population issues. Examined are: (1) myths of overpopulation, (2) quantity and quality of food eaten by underfed and overfed nations, (3) the role of large, multinational corporations in the production, cost, and distribution of food, and (4) alternative lifestyles. Designed as a supplement to the existing curriculum, units may be used in social studies and science classes. Informa-

tive charts, graphs, and illustrations are also provided. (Author/DC)

ED 207 818 SE 035 590
Allen, Rodney F., Ed.
Highlands County Energy Education Activities--High School Level.
Tri-County Teacher Education Center, Sebring, Fla.
Spons Agency—Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date—81
Note—60p.; Not available in hard copy due to marginal legibility of original document.
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Conservation Education, *Energy, *Environmental Education, Industrial Arts, *Instructional Materials, *Interdisciplinary Approach, Language Arts, Learning Activities, Mathematics, *Science Activities, Science Education, Science Instruction, Secondary Education, Secondary School Science, Social Studies
Identifiers—*Energy Education
Presented are five instructional units, developed by the Tri-County Teacher Education Center, for the purpose of educating secondary school students on Florida's unique energy problems. Unit one provides a series of value clarification and awareness activities as an introduction to energy. Unit two uses mathematics exercises to examine energy consumption. Unit three, which focuses on basic competencies, teaches vocabulary, writing, reading, mathematics, map, and thinking skills through energy-related activities and problems. Unit four uses discussion, experimentation, role playing and simulations to examine issues and teach problem solving, including such topics as hydrogen as a fuel, costs and benefits energy policies, air quality, and highway speeds. Included in unit five are devices which use different kinds of energy, activities for constructing a solar powered water heater, windmill, watt meter, and still. (DC)

ED 211 388 SE 036 099
Fraser, Mollie And Others
Energy Conservation Activity Guide, Grades 9-12. Bulletin 1602.
Louisiana State Dept. of Education, Baton Rouge. Div. of Academic Programs; Louisiana State Dept. of Natural Resources, Baton Rouge.
Pub Date—Jan 81
Note—469p.; Contains occasional light and broken type.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC19 Plus Postage.
Descriptors—*Conservation Education, *Energy, *Energy Conservation, Environmental Education, High Schools, *Interdisciplinary Approach, Learning Activities, Natural Resources, Nuclear Energy, *Science Activities, Science Education, Secondary Education, *Secondary School Science, Solar Radiation
Identifiers—Alternative Energy Sources, *Energy Education
As an interdisciplinary, non-sequential teaching guide, this publication was developed to increase awareness and understanding of the energy situation and to encourage individuals to become energy conservationists. Sections provide background information for the teacher followed by a variety of student activities using different subject areas for grades 9-12 (art, language arts, social studies, music, mathematics, science). Some of the topics included are energy in Louisiana, energy demand, energy development in Louisiana, sources of energy, solar, nuclear, and geothermal energy, fossil fuels, wind, biomass, solid waste, gasohol, conservation, and energy futures. Each activity identifies the subject area(s), objectives, materials, and procedures. A glossary, listing of free and inexpensive materials, and bibliography are provided. (Author/DC)

ED 213 583 SE 036 096
Sly, Carolie Rose, Larry
Environmental Education Guide, Volume 4: An Environmental/Energy Education Primer for Grades Ten through Twelve, 1981-1984.
Alameda County Superintendent of Schools, Hayward, Calif., California State Dept. of Education, Sacramento.
Pub Date—81
Note—266p.; For related documents, see SE 036 093-095.
Available from—Office of the Alameda County Superintendent of Schools, 685 "A" St., Hayward, CA 94541 ($7.00; $25.00 for complete set of 4 volumes).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Conservation Education, *Curriculum Development, Decision Making, Energy, Energy Conservation, *Environmental Education, High Schools, Institutions, *Interdisciplinary Approach, *Learning Activities, Natural Resources, Physical Environment, Secondary Education, Secondary School Curriculum, Urban Environment
Identifiers—*California, *Energy Education, Environmental Management
As one of four volumes in a K-12 series, this teaching guide contains classroom and outdoor activities pertaining to the environment and energy for tenth through twelfth grades. The guide was developed based upon the understanding that environmental education can serve as an instructional umbrella covering many topics (conservation, marine education, city planning, population, etc.) and that it is not a specific subject but an interdisciplinary theme. The activities are organized around four major topics: natural environment, built environment, social institutions and decision making, and energy and environmental resource management. Each section begins with a summary of issues related to that topic followed by a listing of major concepts and their associated objectives. One activity is presented to teach each objective (approximately 40). Objectives correspond with those contained in the California "Course of Study" guide for 1981-84. Each activity provides a brief description, the objective, purpose, time, topics, location, materials, lead-up and preparation procedures, and follow-up activities. Appendices list the sources for the activities, California resource agencies, and teaching materials available from these agencies. In the beginning of the guide, a procedure is outlined for planning an environmental education program. (DC)

ED 214 794 SE 036 499
Energy Use and the Environment. Concepts & Activities for the Classroom: Mathematics Module. Environmental Education Supplementary Instructional Guide.
Hawaii State Dept. of Education, Honolulu. Office of Instructional Services.
Pub Date—Sep 80
Note—224p.; Contains colored pages which may not reproduce well.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC09 Plus Postage.
Descriptors—Concept Formation, *Conservation Education, *Energy, *Energy Conservation, *Environmental Education, Interdisciplinary Approach, *Learning Activities, Mathematics Education, Secondary Education, *Secondary School Mathematics
Identifiers—*Energy Education, Hawaii
As part of a comprehensive, interdisciplinary environmental education program for elementary and secondary education in Hawaii, this teaching guide provides a variety of energy education activities for secondary school mathematics. An extensive introduction outlines the total program and how it fits into the general education program and explains how to use the teaching guide which is organized around 15 core themes: energy fundamentals, evolution of energy, energy today, conservation, human dimensions, alternatives, storage and transmission systems, transportation, environmental and ecological considerations, cost, energy versus population versus food, interdependence, self-sufficiency, appropriate technology, and future perspectives. Background information is provided for each theme with related objectives and concepts. In addition a list of activities and vocabulary are given. Some of the suggested activities are presented in an elaborated form indicating subject, grade, themes, objectives, concepts, competencies, other related objectives, materials, and activity and follow-up procedures. A bibliography concludes the manual. (DC)

ED 219 269 SE 038 776
Lessons from an Energy Curriculum for the Senior High Grades. Unit I - Energy Decision Making (Housing and Home Furnishings). Energy Education Curriculum Project.
Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Apr 82
Grant—DE-F645-76CS-60038
Note—59p.; For related documents, see SE 038 775-784.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Conservation Education, Decision Making, Electrical Appliances, Energy, *Energy Conservation, Environmental Education, High Schools, *Home Furnishings, *Housing, Interdisciplinary Approach, *Learning Activities, Lighting, Physical Sciences, Science Activities, Science Curriculum, Science Education, *Secondary School Curriculum, Teaching Guides, Units of Study
Identifiers—*Energy Education, Indiana
Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum, resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. Unit I, focusing on energy decision-making related to housing and home furnishings, consists of an introduction (rationale, unit objective, and general background information), five lessons, unit resources, bibliography and teacher evaluation form. Each lesson includes title, objectives, background information, activities, evaluation techniques, and resources. Titles of lessons are: (1) Water Heaters and Water Usage; (2) Home Lighting Plan - Which Conserves Energy? (3) Appliance Energy Use; (4) Caulking and Weatherstripping; and (5) Windows and Energy. (Author/JN)

ED 219 270 SE 038 777
Lessons from an Energy Curriculum for the Senior High Grades. Unit II - Energy Consumption and Conservation in the Home. Energy Education Curriculum Project.
Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Jan 82
Grant—DE-F645-76CS-60038
Note—70p.; For related documents, see SE 038 775-784.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Climate Control, *Conservation Education, Design Requirements, Energy, *Energy Conservation, Environmental Education, Heating, High Schools, *Housing, Interdisciplinary Approach, *Learning Activities, Physical Sciences, Science Activities, Science Curriculum, Science Education, *Secondary School Curriculum, Teaching Guides, Units of Study
Identifiers—*Energy Education, Indiana
Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum, resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. Unit II, focusing on energy consumption and conservation in the home, consists of an introduction (rationale, unit objective, and general background information), nine lessons, unit resources, bibliography, and teacher evaluation form. Each lesson includes lesson title, objectives, background information, activities, evaluation techniques, and resources. Titles of lessons are: (1) Energy Conservation in the Home; (2) Supplemental Information, Using Wood; (3) Supplemental Information, R-Values and Uses; (4) Home Heating & Cooling - Save Energy, Save Dollars, (5) Energy Questions and Checklists, (6) Weatherize Your Home; (7) An Easy-on-Energy Home; (8) Making an Insulation Experiment Model; and (9) Energy Conservation Worksheets. (Author/JN)

ED 219 272 SE 038 779
Lessons from an Energy Curriculum for the Senior High Grades. Unit IV - Energy and Economics (Residential and Agricultural). Energy Education Curriculum Project.
Indiana State Dept. of Commerce, Indianapolis. Energy Group.; Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Jan 82
Grant—DE-F645-76CS-60038
Note—62p.; For related documents, see SE 038 775-784.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Community Involvement, *Conservation Education, Energy, *Energy Conservation, Environmental Education, *Fuels, High Schools, Interdisciplinary Approach, *Learning Activities, Natural Resources, Pollution, Science Activities, Science Curriculum, Science Education, *Secondary School Curriculum, Teaching Guides, Units of Study, *Utilities
Identifiers—Alternative Energy Sources, *Energy Education, Indiana
Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. Unit IV, focusing on energy and economics (residential and agricultural), consists of an introduction (rationale, unit objectives, and general background information), seven lessons, unit resources, bibliography, and teacher evaluation form. Each lesson includes lesson title, objectives, background information, activities, evaluation techniques, and resources. Titles of lessons are: (1) Community Involvement in Government Rationing, Pollution - A Role Playing Lesson; (2) Wise Use of Decreasing Natural Resources; (3) Standard of Living; (4) The Need for Energy Conservation in the Home and on the Farm; (5) The Need for Energy/Conservation, Student Information Sheets; (6) Resources and Their Wastes - Air, Water and Soil Pollution; and (7) Fuel Consumption Checklist and E.Q. (Energy Quotient) Lesson. (Author/JN)

ED 219 277 SE 038 784
Lessons from an Energy Curriculum for the Senior High Grades. Unit IX - Energy Conservation and the Law. Energy Education Curriculum Project.
Indiana State Dept. of Commerce, Indianapolis. Energy Group., Indiana State Dept. of Public Instruction, Indianapolis. Div. of Curriculum.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—Jan 82
Grant—DE-F645-76CS-60038
Note—29p.; For related documents, see SE 038 775-783.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Conservation Education, Energy, *Energy Conservation, Environmental Education, High Schools, Interdisciplinary Approach, *Laws, *Learning Activities, *Legislation, Science Activities, Science Curriculum, Science Education, *Secondary School Curriculum, Teaching Guides, Units of Study
Identifiers—*Energy Education, Indiana
Energy education units (consisting of a general teacher's guide and nine units containing a wide variety of energy lessons, resources, learning aids, and bibliography) were developed for the Indiana Energy Education Program from existing energy education materials. The units were designed to serve as an entire curriculum, resource document, supplementary materials, or as a laboratory manual of "hands-on" activities which could be infused into existing grades 9-12 curricula. Unit IX, focusing on energy conservation and the law, consists of an introduction (rationale, unit objectives, and general background information), two lessons, bibliography, and teacher evaluation form. Both lessons include titles, objectives, background information, activities, evaluation techniques, and resources. In the first lesson (How a Bill Becomes Law) students identify major factors influencing passage and/or modifications of legislation, demonstrate an understanding of the lawmaking process, and evaluate a law as an example of a good law. In the second lesson (Does the 55 MPH Speed Limit Save Lives?) students develop competency in gathering data and testing a hypothesis. (Author/JN)

ED 219 278 SE 038 785
A Curriculum Guide for Energy Education - Vocational Home Economics Education. A Guide for Planning Performance-Based Energy Education in Home Economics Education Programs.
South Carolina State Dept. of Education, Columbia. Home Economics Education Section.
Pub Date—Jul 82
Note—330p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC14 Plus Postage.
Descriptors—Behavioral Objectives, *Competency Based Education, *Conservation Education, Energy, *Energy Conservation, *Home Economics, Housing, *Learning Activities, Secondary Education, State Curriculum Guides, Teaching Guides, Vocational Education
Identifiers—Alternative Energy Sources, *Energy Education, South Carolina
This guide serves as a resource for performance-based learning experiences designed to assist secondary school home economics students in developing competencies essential for effective energy use and management. A rationale for performance-based vocational education; definitions/explanations of the terms "competency," "performance-objective," "performance-guide," and "learning experiences"; diagram illustrating relationships of the components indicated in the terms; list of 10 energy education competencies; and an outline of a conceptual structure of energy education are provided in an introduction. The first section provides, in chart format, performance objectives, performance guides, learning experiences, and instructional resources related to each competency. The second section provides supplementary materials referred to under the instructional resources columns in the first section. Materials include various types of activities, readings, worksheets, and overhead transparency masters. A 27-item bibliography, annotated media listing, and evaluation form are also provided. (JN)

ED 219 287 SE 038 800
Canipe, Stephen L.
Biology and the Future of Man.
Pub Date—82
Note—80p.
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—*Biological Influences, *Biology, *College Science, Demography, Environmental Education, *Environmental Influences, *Futures (of Society), Heredity, Higher Education, Instructional Materials, Pesticides, Radiation, Reproduction (Biology), Science Curriculum, Science Education, Secondary Education, *Secondary School Science, Units of Study, Wastes
The purpose of this unit is to provoke discussion and thought by the reader. Topics considered include cloning; amniocentesis and sex determination; predicting abnormalities and abortion; transplants; life prolonging machines; cryogenics; prenatal surgery; sperm and egg banks; radiation; psychobehavior, ESB (electrical stimulation of the brain), and mind altering drugs; euthanasia; inequalities in care; germ and biological warfare; machine technology; human experimentation; balanced populations; green revolution (agricultural changes which have taken place over the last 25 years); greenhouse effect; ozone; noise, sewage, metals, and solid waste; and pesticides. Two tests are included, one over the entire unit and another over the content presented in the first three sections. (Author/JN)

Elementary/Middle/Secondary

ED 039 138 SE 008 339
Amsdorf, Val
Population Studies: A Multidisciplinary Concern.
Delaware Univ., Newark.
Pub Date 16 Feb 70
Note—10p.
EDRS Price MF-$0.25 HC Not Available from EDRS.
Descriptors—*Curriculum Development, *Elementary School Science, *Environmental Education, Instructional Materials, *Interdisciplinary Approach, *Population Growth, Secondary School Science, *Social Studies, Teacher Education, Teaching Techniques
Focusing on the interaction between population growth and the quality of man's environment, suggestions are made for an interdisciplinary approach to teaching concepts and appropriate analytic tools and attitudes for solving related problems. An outline of a kindergarten through twelfth grade plan for teaching nutrition is given as an example. Suggestions are made for teacher preparation, instructional materials, and teaching processes. [Not available in hardcopy due to marginal legibility of original document.] (EB)

ED 042 607 SE 009 068
Archbald, David, Ed.
Environmental Education, Curriculum and Teaching Activities.
Cooperative Educational Service Agency 12, Portage, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [70]
Note—169p.
EDRS Price MF-$0.75 HC Not Available from EDRS.
Descriptors—*Curriculum Guides, Elementary Education, Environmental Education, *Instructional Materials, *Resource Materials, *Secondary Education
Identifiers—Elementary Secondary Education Act Title III
Presented is a curriculum guide and teaching activities for a K-12 program in environmental education. The program is based on forty-four important environmental education concepts. These concepts are sequenced according to grade level. Activities to teach each concept are suggested. The concepts are organized around the interdependency of living things. The concepts are further developed with attention to three subthemes, economics and culture, ecology, and management. The document is intended to provide teachers with concepts that should be taught in an environmental education program and to provide direction as to how these concepts may be taught. This work was prepared under an ESEA Title III contract. [Not available in hardcopy due to marginal legibility of original document.] (HB)

ED 049 917 SE 010 418
Fleetwood, Grayce R. And Others
Teachers Guide for Environmental Education.
North Carolina State Board of Education, Raleigh. Dept. of Public Instruction
Pub Date Sep 70
Note—230p.
EDRS Price MF-$0.65 HC-$9.87
Descriptors—Bibliographies, Ecology, Educational Philosophy, *Environmental Education, *Instructional Materials, *Natural Resources, Pollution, *Resource Materials, *Teaching Guides
This guide has been prepared as an aid to the teacher in organizing classroom experiences designed to focus on man and his environment. It serves to identify resources for use in stimulating student interest, to broaden their comprehension of and their environment, and attain conceptual understandings. The initial section provides an orientation and definition of environmental education - what its goals are and how they might be achieved. Subsequent sections receiving emphasis are ecosystems, natural resources, pollution, and environmental decision making. Within each area a unifying theme is selected and important concepts set forth. Each theme and group of related concepts is followed by background information. In addition, free and inexpensive books, films, filmstrips, records, tapes, booklets, units, pamphlets, and other resources are included under each area. [Page 32 is of questionable reproducibility.] (BL)

ED 059 926 SO 002 251
K-12 Curriculum Guide for Environmental Education.
Colorado State Univ., Ft. Collins.; Poudre School District R-1, Ft. Collins, Colo.
Pub Date [70]
Note—155p.
EDRS Price MF-$0.65 HC-$6.58
Descriptors—*Activity Learning, *Affective Objectives, *Cognitive Objectives, Community Resources, Community Study, Curriculum Guides, Ecology, Elementary Grades, *Environmental Education, Humanities Instruction, *Interdisciplinary Approach, Mathematics Instruction, *Nature Centers, *Outdoor Education, Science Instruction, Secondary Grades, Social Studies, Thematic Approach
Identifiers—Colorado
This guide to environmental and outdoor education is based on the principle that man will properly care for his world only if he both understands and appreciates it. Seventy-two multidisciplinary environmental themes are identified for instruction in grades K-12. Each theme is presented with behavioral objectives, key concepts, and both in school and out of school activities. The outdoor activities are heavily emphasized, and designed for a local nature center, public parks, and campgrounds. Disciplines incorporated together and separately in the themes are science, social studies, math, and humanities. The guide recommends that the themes be taught in conjunction with the regular curricula, when appropriate. Supplementing each theme group (K-3, 4-6, and 7-12) are extensive resource guides to films, recordings, filmstrips, pamphlets, and books. A final section presents ideas and information for teachers in planning outdoor experiences, such as: literature and music for the outdoors, and how to read a compass. (DJB)

ED 062 182 SE 013 661
Hamann, Julianna M.
Environmental Education, A Teacher's Guide with Inquiry and Value Seeking Strategies.
Santee School District, Calif.
Pub Date [72]
Note—265p.
EDRS Price MF-$0.65 HC-$9.87
Descriptors—Affective Objectives, Cognitive Objectives, Conservation Education, Ecology, Elementary Grades, *Environmental Education, *Fundamental Concepts, *Instructional Materials, *Learning Activities, Secondary Grades, *Teaching Guides
This guide is written to focus attention on both the cognitive and affective aspects of environmental education. Its format provides four levels of development: primary, intermediate, junior high, and senior high school grades, with the first two subdivided into three categories each. Performance objectives, teaching-learning inquiries, and evaluation-terminal performance are outlined within each level based on three supporting concepts. These concepts emphasize interdependence in interchange of matter and energy, in social interaction, and in cultural components and forms. Basic ideas accentuated throughout the activities are that: (1) increased population growth creates a population pressure on the carrying capacity of our ecosystem, and (2) the consumption of goods and services per capita places an increased pressure on our renewable and non-renewable resources. Topics cover land, air, water, ecology, plants and animals, environment, and population and the approaches to these topics, concepts stress awareness, concern, and action. A bibliography, agency resource list, glossary of terms, and additional teaching-learning activities are appended. (BL)

ED 063 989 RC 006 197
Lundstrom, Donald And Others
Environment—A Way of Teaching (Grades K-12).
Alameda County School Dept., Hayward, Calif.
Pub Date 71
Note—99p.
Available from—Curriculum Library, Alameda County School Department, 224 West Winton Ave., Hayward, Calif. 94544 ($2.50)
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Activity Learning, Agencies, Conservation Education, *Curriculum Guides, Ecology, Educational Legislation, Enrichment Activities, *Environmental Education, Library Materials, Mental Health, *Outdoor Education, Physical Education, *Resource Materials, *Teaching Methods
Identifiers—California
Resource information and ideas for curriculum programs related to the study of the environment are presented in this resource guide for elementary and secondary teachers. Activities in the outdoors and action programs representative of recent district and county activities in Alameda County, California, are discussed. A list of resources, agencies, organizations, and programs, and a bibliography of library materials are also provided. The appendices include (1) the California State Education Code and (2) Federal and state laws and regulations pertaining to the environment. (NO)

ED 064 196 SO 002 947
Brandwein, Paul F. And Others
Ekistics; A Handbook for Curriculum Development in Conservation and Environmental Education.
California State Dept. of Education, Sacramento. Bureau of Elementary and Secondary Education.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 71
Note—222p.
EDRS Price MF-$0.65 HC-$9.87
Descriptors—Affective Objectives, Behavioral Objectives, Cognitive Objectives, Community Role, Concept Teaching, *Conceptual Schemes, *Conservation Education, *Curriculum Development, Curriculum Guides, Ecology, Elementary Grades, Environment, *Environmental Education, *Interdisciplinary Approach, Secondary Grades, Sequential Learning, Teaching Techniques
Identifiers—*Ekistics
Conceptual frameworks for instructional K-12 programs in conservation and environmental education are provided in this draft curriculum guide. The objective is to help students understand cultural and social as well as physical interaction between man and his environment, interaction that, in fact, makes man interdependent with, and binds him so his environment. Sequential work units are based on cognitive-affective schemes in an interdisciplinary approach involving traditional subject areas of science, health, social sciences, arts, humanities, and also stressing other subject areas. Although school is the catalyst for environmental education concepts and values, the learning framework extends into the community, state, nation, and world. The draft is divided into three major chapters. In chapter one, statements of rationale, several ekistical situations, and an analyzed standard problem are presented. Chapter two gives conceptual outlines, including concept explications, and performance objectives. A discussion of planned instruction and teaching methods is provided in Chapter III. (Author/SJM)

ED 066 308 88 SE 014 436
MacGown, Richard H.
The School Site in Environmental Education.
Maine Environmental Education Project, Yarmouth.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.

Pub Date 71
Note—31p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—Conceptual Schemes, *Design Needs, *Environmental Education, Guidelines, *Program Development, School Planning, *Site Analysis, Site Development
Identifiers—ESEA Title III
Realizing that school sites can play an important role in enhancing the educational process, guidelines dealing with the development of a school site for environmental education purposes are presented. First, the roles of this site for environmental studies are explained as: (1) an ecology laboratory, (2) an environmental management laboratory, (3) a natural history interpretive area, and (4) a multiple-use school and community recreation area. Site planning is viewed as the key to effective school site design, development, and utilization. The three basic phases of planning are discussed in detail. Site Analysis gives an inventory of all factors which may influence the site; natural and man-made influences relating to ecological, economic, political, social, technological, and aesthetic points of view. Program Development is concerned with analyzing the nature of the particular purpose or use for the site. Design Concept Development is the graphic interpretation of how the site and program should be blended into a compatible solution. Accompanying the narrative material are examples of site analysis diagrams; a model of steps in the program development process; and examples of the schematic solution to the design problem. This work was prepared under an ESEA Title III contract. (BL)

ED 067 233 SE 014 440
Bennett, Dean B Mueller, Richard H
Guidelines for Planning and Implementing a Comprehensive Community Environmental Inventory.
Maine Environmental Education Project, Yarmouth.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 71
Note—37p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Community Resources, Community Study, *Data Collection, Environmental Influences, *Facility Inventory, *Guidelines, Natural Resources, Planning
Identifiers—ESEA Title III
A comprehensive, community environmental inventory is viewed in this booklet as an ongoing process of investigation and study to compile and evaluate information about the natural and man-made environmental features and characteristics of an area. It is of value to the community in planning development and resolving environmental problems and to the school in its environmental education program, with emphasis on the individual community. Section I includes general introductory items which give an overview of the community. Section II outlines natural environmental features and characteristics. Information of this kind provides an ecological basis for making judgments about the environmental effects of human activities. The list of human environmental use areas and characteristics in Section III is a reflection of these activities. Most community environmental problems will relate to one or more of these features, and in practice the stimulus for inventorying. Techniques for detecting and evaluating possible problem areas are suggested in Section IV. Section V contains data useful in understanding human demands upon the environment and causes, effects, and solutions to problems. Social, political, and economic aspects are considered. Sources for inventory information are compiled in Section VI. This work was prepared under an ESEA Title III contract. (BL)

ED 071 868 SE 015 351
Total Environment Education: An Open Design to Real Life Learning Experiences.
Indiana State Dept. of Public Instruction, Indianapolis.
Pub Date 72
Note—122p., Pilot copy for testing effectiveness, format and approach. Official publication will follow the edit of this design
EDRS Price MF-$0.65 HC-$6.58
Descriptors—Curriculum Development, *Curriculum Guides, Elementary Grades, *Environment, *Environmental Education, *Fundamental Concepts, Interdisciplinary Approach, *Learning Activities, Objectives, Secondary Grades
Six global objectives—energy, earth resources, waste disposal, population, interdependence, and quality of life—are used as a framework in preparing this open design for environmental education, one which emphasizes behavioral change in the affective domain. To aid classroom teachers in achieving these goals, the guide is divided into five sections. Part 1 deals with the role of the teacher in the classroom situation and covers teaching strategies which recognize environmental education as future oriented, problem focused, interdisciplinary, student initiated, and community centered. In Part 2 each global objective is restated with specific supporting instructional objectives. For each specific objective, the grade level and subject areas into which it may be logically infused are suggested. Part 3 develops several model units for grades K-12 incorporating the instructional objectives, possible student activities, and teaching aids. Suggestions for implementation of an on-going environmental education program in terms of the responsibilities of the district are provided in Part 4. The final section gives names and addresses of agencies and individuals who can provide free and inexpensive materials to supplement the environmental education program. (BL)

ED 079 068 SE 015 933
Environmental Activities, K-12 Environmental Education Program, Summer Workshop 1972.
Menomonie Public Schools, Wis.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date 72
Note—42p.
EDRS Price MF-$0.65 HC-$3.29
Descriptors—*Curriculum Guides, Elementary Grades, *Environmental Education, Instructional Materials, *Interdisciplinary Approach, *Learning Activities, Natural Resources, Secondary Grades, Teaching Guides
Identifiers—ESEA Title III
Representing an initial effort in activity construction, this booklet of environmental education activities was developed by teachers attending a 1972 summer workshop of the Menomonie, Wisconsin, School District titled K-12 Environmental Education Program. The activities cover a range of subject areas—biology, science, social studies, language arts, mathematics, economics, art, and music—and grade levels, K-12, although the booklet is not inclusive of all grade levels and subject areas. Preceding the activities is a list of 12 environmental education concepts compiled by the teacher and each of the 38 activities centers around one of the concepts. Organized in outline form, each activity defines the specific concept, discipline area, grade level, objectives, activities to conduct, resources to utilize (reference materials, community resources, materials required, etc.), and evaluation procedures. It is suggested the activities be used to supplement a teacher's present curriculum, modifying them for specific situations. Blank activity forms are provided for this purpose. This work was prepared under an ESEA Title III contract. (BL)

ED 080 348 SE 016 524
Hershey, John T., Ed And Others
A Curriculum Activities Guide to Solid Waste and Environmental Studies.
Project KARE, Blue Bell, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 73
Grant—OEG-0-72-5105
Note—312p.
Available from—Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, Ohio 44106
EDRS Price MF-$0.65 HC-$13.16
Descriptors—*Curriculum Guides, Elementary Grades, Environment, *Environmental Education, Instructional Materials, *Learning Activities, Perception, *Problem Solving, Secondary Grades, Student Research, *Wastes
This book is the first in a series of four books emphasizing student-oriented problem solving related to environmental matters. It is divided into three activity levels: awareness, transitional, and operational. The activity sequence is designed to motivate students toward a concern for environmental quality, take action related to particular problems or concerns, and provide background for in-depth, on-going problem investigations. Process-skills dealt with at the awareness level include observation of solid waste sources and components, categorizing of solid-waste problems, qualitative comparisons, measuring the magnitude of the problem, inferring, and questioning. Each activity identifies the situation and notes open-ended questions, equipment needed, procedure, past studies, limitations, and a bibliography. Transitional activities focus on real problems of the community and involve students in predicting, data collection, data processing, data evaluation, and formulation of hypotheses. Economic, political, social, scientific, technological, and legal factors are considered. Activity format is the same. Operational activities extend those of the first two levels. Four approaches to problem solving are presented: simulation, contract projects, debating, and modeling situations. A bibliography and glossary are appended. Related documents are SE 016 525 and SE 016 614. (BL)

ED 083 004 SE 016 827
Hershey, John T., Ed And Others
A Curriculum Activities Guide to In-Depth Environmental Studies.
Project KARE, Blue Bell, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date 73
Grant—OEG-0-72-5105
Note—167p.
Available from—Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, Ohio 44106
EDRS Price MF-$0.65 HC-$6.58
Descriptors—*Curriculum Guides, Elementary Grades, *Environmental Education, Instructional Materials, *Investigations, *Natural Resources, *Problem Solving, Secondary Grades, Student Research
This guide is the fourth in a series of four books emphasizing student-oriented problem solving related to environmental matters. It utilizes a three-level activity approach: awareness, transitional, and operational. The intent is to provide investigations that will motivate students to pursue in-depth studies, thus encouraging them to generate ideas, design and carry through plans of action, make decisions regarding data collection, processing, evaluation, and utilization, and determine what potential impact these findings might have on community action. In proposing or recommending action they must consider the action and alternatives to this action as they relate to a variety of political, economic, legal, social, scientific, and technological factors. Topics considered for the investigations include birds, weather, ferns, air quality and vegetation, and weeds. Each chapter is devoted to one topic and provides a series of investigations on that topic. An introduction and background information give initial orientation followed by an enumeration of materials and methods, and, where appropriate, data, interpretations, and conclusions. A bibliography supplements each chapter. Related documents are SE 016 524, SE 015 525, and SE 016 614. (BL)

ED 089 993 SE 017 542
Kennedy, Dave And Others
Create Tomorrow Today. An Energy Awareness Program.
Washington State Board of Education, Olympia.
Pub Date Mar 74
Note—73p.
EDRS Price MF-$0.75 HC-$3.15 PLUS POSTAGE
Descriptors—Activity Units, Annotated Bibliographies, *Conservation Education, Curriculum, *Elementary School Science, *Energy, *Environmental Education, Guides, *Instructional Materials, Resource Guides

This resource guide is designed for use by teachers. Units are included on the energy crisis, environmental awareness, and decision making concerning shrinking energy resources. Both short-term and long-term problems and alternatives are discussed. Group and individual activities are suggested. Charts and graphs, suitable for making transparencies, are included. A bibliographic section describes books, films, and government publications that are pertinent to the topics. (LS)

ED 091 172 SE 017 508
Wheatley, John H. Coon, Herbert L.
100 Teaching Activities in Environmental Education.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio.
Pub Date [74]
Note—204p.; Module III of three modules to introduce teachers and others to environmental education, a related document is ED 086 841
Available from—Ohio State University, Center for Science and Mathematics Education, 244 Arps Hall, Columbus, Ohio 43210 ($3.50)
EDRS Price MF-$0.75 HC-$10.20 PLUS POSTAGE
Descriptors—Activity Units, *Environmental Education, Fine Arts, Fundamental Concepts, *Instructional Materials, *Interdisciplinary Approach, Language Arts, *Learning Activities, Mathematics Education, *Resource Materials, Science Education, Social Studies
Identifiers—ERIC SMEAC
This package contains over one hundred activities in environmental education designed for student use in grades K through 12. Each activity has been classified by the editors according to the most appropriate grade level, subject matter, environmental concept involved, and environmental problem area. Subject areas are science, mathematics, social studies, language arts, and fine arts. environmental concepts include bio-physical, socio-cultural, management, and change, and problem areas are aesthetics, health, genetics, and psychological/behavioral. In addition to being classified in these four categories, each activity contains (1) a statement of purpose on how the activity may be used, and (2) a reference to a source where the activity may be found in more detail or with variations. (JP)

ED 092 374 SE 017 816
LaHart, David E., Ed. Tillis, C. Richard, Ed
Multidisciplinary Environmental Education Activities.
Florida State Dept. of Education, Tallahassee. Div of Elementary and Secondary Education
Pub Date [74]
Note—122p.; A related document is SE 017 815
Available from—Bureau of Environmental Education, Department of Education, 347 Miles Johnson Building, South Duval Street, Tallahassee, Florida 32304 (free while the supply lasts)
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—Curriculum, Curriculum Development, *Environmental Education, *Instruction, *Instructional Materials, *Interdisciplinary Approach, *Learning Activities, Resource Units, Teaching Guides
This volume contains a series of papers which develop multidisciplinary environmental education activities in seven subject matter areas: political science, health education, language or communication arts, art, science, mathematics, and social studies. Different formats are used for organizing the materials in each of the different subject areas. General outlines for the teacher are provided for the political science, health education, communication arts, mathematics, and social studies units. Sample materials to be used for student activities are included for health education (elementary and secondary levels), communication arts (elementary and secondary), art (elementary and secondary), science (elementary), mathematics (secondary and intermediate), and social studies (elementary). (DT)

ED 092 376 SE 017 914
Environmental Educational Strategies for Wise Use of Energy.
North Carolina State Dept. of Public Instruction, Raleigh. Div. of Science Education.
Pub Date Feb 74
Note—75p.
EDRS Price MF-$0.75 HC-$4.20 PLUS POSTAGE
Descriptors—*Energy, *Environmental Education, *Interdisciplinary Approach, *Learning Activities, Natural Resources, *Resource Materials, Resource Units, Teaching Guides
This publication was designed for teachers to use at all levels in the elementary and secondary schools. In addition, certain portions of it could be used with adult groups. It is composed of numerous interdisciplinary instructional activities related to energy use and conservation. For convenience, the activities are grouped for grades K-3, grades 4-6, and grades 7-12. The appendix contains various items such as checklists, charts, glossary, and selected readings and films for educators. (JP)

ED 092 395 SE 017 968
Mengel, Wayne
Energy, Key to the Future. Teaching Techniques for the Understanding and Conservation of Energy, K-12.
Dutchess County Board of Cooperative Educational Services, Poughkeepsie, N.Y.
Pub Date Feb 74
Note—36p.
EDRS Price MF-$0.75 HC-$1.85 PLUS POSTAGE
Descriptors—Curriculum, *Energy, *Environmental Education, *Instruction, *Learning Activities, Resource Materials, *Teaching Guides
The teaching techniques presented in this booklet are designed to provide students with concepts which relate to the energy crisis and energy conservation. The techniques are not presented in the form of completed lesson plans, but rather are intended to act as starting points for further development by the teacher. General activities for students are suggested for the topics of conservation of energy, production of electricity and heat, social impact, political implications, economics, and geography of the energy crisis, and energy in transportation, in the home, in the school, and in the community. Twenty-two projects related to the energy crisis and energy conservation also are suggested. Tips on how to conserve energy and several diagrams concerning energy topics are provided. (DT)

ED 092 437 SO 007 537
Swanson, Carl P.
The Role of the Humanities in Environmental Education.
Pub Date 74
Note—23p.; Based on a paper presented to the AAAS Symposium, "The Relationship of the Natural Sciences, Social Sciences, and the Humanities to Environmental Education" (San Francisco, February 25, 1974)
EDRS Price MF-$0.75 HC-$1.50 PLUS POSTAGE
Descriptors—Attitudes, Conservation Education, Educational Philosophy, *Environmental Education, Futures (of Society), *Humanism, *Humanities, Land Use, Natural Resources, Natural Sciences, Population Growth, *Social Sciences, Technology, Values
The present flood of environmental literature mourns our values and actions which have led to such predictable results. Our value systems, making use of the available science and technology, have wrought changes in the land and its meaning which neither the land nor the human spirit can accommodate with ease; crises of both an environmental and a spiritual nature are inevitable. As solutions are sought for environmental problems and attempts made to adjust our way of life to an environment finite in space and resources, the method must be a humanized one. The central image of the many-faceted individual in a kaleidoscopic environment is derived as much from the humanist as it is from the scientist and the engineer. (Author/KSM)

ED 093 589 SE 016 889
Wilson, June S., Ed.
Multidisciplinary Activities for Environmental Learning.
Genesee Intermediate School District, Flint, Mich.
Pub Date Jul 73
Note—242p.
EDRS Price MF-$0.75 HC-$11.40 PLUS POSTAGE
Descriptors—Curriculum Guides, Elementary School Students, *Environmental Education, Field Studies, Integrated Activities, *Science Activities, Science Education, Secondary School Students, Teaching Guides
Identifiers—*Multidisciplinary Activities, Project CHANGE
This teacher's guide contains multidisciplinary activities written by teachers and principals in Genessee County, Michigan, in a four-day workshop sponsored by Project CHANGE. Activities contained in this publication range from elementary through high school levels, with the appropriate teaching level being indicated for each activity. Most of the activities are presented on a single page. The objective of the activity, materials needed (if any), description (of what the students should do, cautions to the teacher), and related activities (if any) are provided within this space limitation. Some activities designed for high school students contain more detail in the form of directions, questions to be answered, or simple identification keys. (PEB)

ED 093 621 SE 017 114
Total Environment Education.
Indiana State Dept. of Public Instruction, Indianapolis.
Pub Date 73
Note—122p.; See ED 071 868 for the Pilot Study
EDRS Price MF-$0.75 HC-$5.40 PLUS POSTAGE
Descriptors—Administrator Guides, *Curriculum Design, *Curriculum Guides, Elementary School Students, *Environmental Education, *Integrated Curriculum, Program Development, Secondary School Students
Identifiers—*Indiana
Presented is a description of a K-12 interdisciplinary design for environmental education programs developed by the Division of Curriculum of the Indiana system of public instruction. The publication is designed to assist administrators and their teaching staffs in developing meaningful environmental education curricula and related activities which focus on real life experiences in the local school community. Suggestions are provided for a plan to be followed in designing a K-12 multidisciplinary program. The material is divided into seven chapters: Environmental Education - What It Is, The State Environmental Education Design, Challenge to the Environmental Education Teacher, Local School Curriculum Development and Implementation, Model Environmental Education Units, Environmental Education Instructional Objectives, and Curriculum Resources. An Indiana school district, the New Albany-Floyd County School Corporation, has implemented this curriculum design but did not have dissemination materials available at the time this publication was prepared. (PEB)

ED 102 031 SE 018 803
Heacock, John H., Ed. Coon, Herbert L., Ed.
Teaching Activities in Environmental Education. Volume II - 1974.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio.
Pub Date 74
Note—200p.; For Volume I, see ED 091 172
Available from—Ohio State University, Center for Science and Mathematics Education, 244 Arps Hall, Columbus, Ohio 43210 ($4.00)
EDRS Price MF-$0.76 HC-$9.51 PLUS POSTAGE
Descriptors—*Conservation Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Outdoor Education, *Science Education, Teaching Guides
Identifiers—ERIC SMEAC
This publication is the second volume of teaching activities in environmental education designed for student use in grades K-12. Each activity has been classified by the editors according to the most appropriate grade level, subject matter, environmental concept involved, and environmental problem area. Subject areas are science, mathematics, social studies, language arts, and fine arts; the concepts include biophysical, sociocultural, management, and change-oriented concepts. The other classification, en-

vironmental problem areas, includes aesthetic considerations, eco-community relationships, and psychological and behavioral considerations. In addition to being classified in these four categories, each activity contains a statement of purpose on how the activity may be used and a reference to a source where the activity may be found in more detail or with variations. (Authors/TK)

ED 103 196 SE 016 892
Hershey, John T., Ed. And Others
A Curriculum Activities Guide to Solid Wastes and Environmental Studies, Volume 4.
Institute for Environmental Education, Cleveland, Ohio.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education
Pub Date Aug 73
Grant—OEG-0-72-5105
Note—244p.; Revised 2nd Edition. For the 1st Edition, see ED 080 348
Available from—Institute for Environmental Education, 8911 Euclid Avenue, Cleveland, Ohio 44106 ($6.75)
EDRS Price MF-$0.76 HC-$12.05 PLUS POSTAGE
Descriptors—*Conservation Education, *Curriculum Guides, Ecology, Elementary Grades, Environment, *Environmental Education, Instructional Materials, *Learning Activities, Natural Resources, Pollution, Problem Solving, Science Education, Secondary Grades, Waste Disposal, *Wastes
Identifiers—Solid Wastes
This document, developed for elementary and secondary students, is one of a series emphasizing student-oriented problem solving related to environmental matters. It is designed to guide others in initiating, continuing, or expanding their environmental education program. Volume 4 is intended for use by cadre who have used similar materials at a training workshop and is organized in two sections, Chapter 1 on awareness activities and Chapter 2 on transitional activities. Awareness activities are designed to orient students toward a concern for environmental problems and a realization that the problems are appropriate subjects for study. Process skills dealt with at the awareness level include observation of solid waste sources and components, categorizing of solid waste problems, comparisons, measurement, inferring, and questioning. Transitional activities are directed toward real community concerns and involve the students in predicting, data collection, data processing, data evaluation, and formulation of hypotheses. Each activity identifies the situation and notes open-ended questions, equipment needed, procedure, past studies, limitations, and a bibliography. A bibliography and glossary are appended. (BT)

ED 103 219 SE 017 503
Natural Resources Activity Guide. Bulletin No. 1232.
Louisiana State Dept. of Education, Baton Rouge.
Report No—Bull-1232
Pub Date 73
Note—128p.
EDRS Price MF-$0.76 HC-$6.97 PLUS POSTAGE
Descriptors—Elementary Grades, *Environmental Education, *Interdisciplinary Approach, Learning Activities, *Natural Resources, *Outdoor Education, Role Playing, Science Education, Secondary Grades, Simulation
Over the past 50 years the U.S. population has shifted from rural to urban areas. Most of the students in U.S. schools today live in urban environments. As a result of this, most students have little knowledge of natural resources and their management. Since these students are the future decision-makers of the country, it is important that they have an understanding of the environment and its interaction with all factors, natural or man-made. It is because of this concern for the future that this activity guide was developed. The activities in the guide include a variety of disciplines including science, math, art, communications, and social studies. Designed for teachers, the guide includes a rationale for the process and problem-solving approach to learning that is used in these activities, and gives a detailed explanation as to its most effective usage in the development of lesson plans. Most of the activities, with some modification, can be adapted for most grade levels, though they are appropriate for older students in original form. Role-playing activities and a simulation game are included. A bibliography and materials list are given in the back of the guide. (MA)

ED 106 070 SE 018 143
Rex, Thomas F., Ed.
Energy and Man's Environment: Elementary Through Secondary Interdisciplinary Activity Guide.
Washington Office of the State Superintendent of Public Instruction, Olympia, Washington State Office of Environmental Programs, Seattle.
Pub Date Mar 73
Note—130p.; second revised discussion draft
EDRS Price MF-$0.76 HC-$6.97 PLUS POSTAGE
Descriptors—Elementary Secondary Education, *Energy, *Environmental Education, Interdisciplinary Approach, *Learning Activities, *Natural Resources, Science Education
Energy and its relationship to the environment is the topic of this activity guide. The student activities vary in sophistication and can be used at the different grade levels, K-12. These activities are designed for correlation in the existing school curriculum and have as their objectives the teaching of skills through manipulation of materials and independent study, the shaping of positive environmental attitudes, and the developing of an environmental awareness. Each chapter in the guide concerns a new energy-environment concept and is divided into a number of objectives based on four themes--scientific, ethical, aesthetic, and utilitarian. Each of these is further stated as they apply to the various grade levels. And finally, a listing of the activities is given. (MA)

ED 107 468 SE 016 956
Learning to Get Around. An Urban Environment Mapping Unit.
Group for Environmental Education, Philadelphia, Pa.; Pennsylvania Advancement School, Philadelphia; Philadelphia School District, Pa.
Pub Date 71
Note—92p.; Related documents are ED 045 426, SE 016 954 and 955
Available from—GEE! Group for Environmental Education, Inc., 1214 Arch Street, Philadelphia, Pennsylvania 19107
EDRS Price MF-$0.76 HC-$4.43 PLUS POSTAGE
Descriptors—Conservation Education, *Curriculum Guides, Elementary Secondary Education, Environment, *Environmental Education, Instructional Materials, Learning Activities, *Map Skills, Metropolitan Areas, *Natural Resources, Outdoor Education, Science Education, Teaching Guides, *Urban Environment
This unit deals with mapping the urban environment. The unit is designed to help the student visualize his surroundings, read and interpret maps, and create maps. These understandings and skills are designed to help the student develop a sense of self-control and a sense of personal-control over his environment. The unit is a student oriented, auto-instructional workbook. It begins with a pretest and is followed by 16 lessons. The lessons increase in difficulty and involvement as the student increases his skills in understanding, reading, and drawing maps. The lessons are activity oriented, and questions are answered through means of a self-check. The lessons include such activities as a treasure hunt, drawing maps, using map symbols, measuring, and drawing to scale. The various maps needed for the lessons are also included. A teacher's guide further explains the purpose and directions for each lesson and suggests additional interdisciplinary activities. Completing the guide is a session dealing with aerial mapping and one dealing with neighborhood interviews. (TK)

ED 111 662 SE 019 617
Fowler, John W.
Energy-Environment Source Book. Volume 1: Energy, Society, and the Environment. Volume 2: Energy, Its Extraction, Conversion and Use.
National Science Teachers Association, Washington, D.C.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Bureau No—BR-0-047FPA
Pub Date 75
Contract—DEC-0-74-8736
Note—270p.; For related documents, see SE 019 618 and 619
Available from—National Science Teachers Association, 1742 Connecticut Avenue, N. W., Washington, D. C. 20009 (Stock Number 471-14692, $4.00 prepaid)
EDRS Price MF-$0.76 Plus Postage. HC Not Available from EDRS.
Descriptors—Conservation (Environment), Elementary Education, *Elementary School Science, *Energy, Environmental Education, Instructional Aids, *Instructional Materials, *Natural Resources, Science Education, Secondary Education, *Secondary School Science
Identifiers—National Science Teachers Association, NSTA
This source book, one part of a three-part NSTA series on energy-environment, is written for teachers who wish to incorporate material on the complex subject of energy into their teaching. This work is divided into two volumes, each with numerous tables and figures, along with appendices containing a glossary, mathematics primer, heat engine descriptions, and nuclear energy discussion. Volume 1 (Energy, Society, and the Environment) deals with energy and its relationship with conservation, the environment, the economy, and strategies for energy conservation. In Volume 2 (Energy, Its Extraction, Conversion, and Use), topics discussed include the rate of energy consumption, future sources of energy, and the increased cost of energy. (Author/CP)

ED 111 663 SE 019 618
Mrving, Kathryn E. Conley, Rebecca E.
Energy-Environment Materials Guide.
National Science Teachers Association, Washington, D.C.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Bureau No—BR-0-047FPA
Pub Date 75
Contract—DEC-0-74-8736
Note—68p.; For related documents, see SE 019 617 and 619
Available from—National Science Teachers Association, 1742 Connecticut Avenue, N. W., Washington, D. C. 20009 (Stock Number 471-14694, $2.00 prepaid)
EDRS Price MF-$0.76 Plus Postage. HC Not Available from EDRS.
Descriptors—Conservation (Environment), Elementary Education, *Elementary School Science, *Energy, Environmental Education, *Instructional Materials, *Natural Resources, Reading Materials, Resource Guides, Science Education, Secondary Education, *Secondary School Science, Teaching Guides
Identifiers—National Science Teachers Association, NSTA
This publication, one part of a three-part NSTA series on energy-environment, is a sampling of current energy literature. The references are divided into four separate categories, each directed for a specific audience: readings for teachers, readings for students (grades 8-10), readings for students (grades 5-9), and readings for students (grades K-6). Included in four appendices are guides for films and audio-visual materials, curriculum materials, sources of information, and government documents. (Author/CP)

ED 111 664 SE 019 619
Smith, Stephen M., Ed. And Others
Energy-Environment Mini-Unit Guide.
National Science Teachers Association, Washington, D.C.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Bureau No—BR-0-047FPA
Pub Date 75
Contract—OEC-0-74-8736
Note—217p.; For related documents, see SE 019 617 and 618
Available from—National Science Teachers As-

sociation. 1742 Connecticut Avenue, N. W., Washington, D. C. 20009 (Stock Number 471-14696, $3.00 prepaid)
EDRS Price MF-$0.76 Plus Postage. HC Not Available from EDRS.
Descriptors—Conservation (Environment), Elementary Education, *Elementary School Science, *Energy, Environmental Education, Instructional Materials, Interdisciplinary Approach, *Natural Resources, Preschool Education, Science Education, Secondary Education, *Secondary School Science, Social Studies, *Teaching Guides
Identifiers—National Science Teachers Association, NSTA
This unit is one part of a three-part National Science Teachers Association (NSTA) series on energy-environment. The goal of this NSTA project is to create a collection of mini-units that provide materials for science and social studies teachers in grades K-12. These materials are intended to make teaching more interdisciplinary and to stimulate decision making in young children. Activities are sought that will enable students to understand and use existing fundamental concepts in the energy-environment area, identify and evaluate personal and community practices, attitudes, and values related to energy-environment issues, and make effective decisions and/or define their views of appropriate actions on energy-environment issues. (Editor/CP)

ED 113 143 SE 019 432
Healy, Mary K. Root, Phyllis
A Beginning. Revised 3rd Edition.
Pub Date 73
Note—61p.; Prepared for the Sierra Club Conference on Education for Environmental Awareness. For an earlier edition, see ED 071 866. Occasional marginal legibility due to colors used
EDRS Price MF-$0.76 HC-$3.32 Plus Postage.
Descriptors—Ecology, Educational Resources, Environment, *Environmental Education, *Instructional Materials, *Instructional Media, *Learning Activities, Natural Resources, *Student Projects
This document contains a selection of materials focusing on man acting to know, preserve, and improve his environment. The booklet is divided into three parts. Part one presents a listing of objectives. They reflect a need for all to become aware of the problems that plague our environment. Furthermore, they indicate that the ecological improvement of the earth is the responsibility of each and every member of society. The second section is a description of eleven class projects which are to be adapted and used in the appropriate grade level, kindergarten through twelve. Relevant topics include environmental laws that could be submitted to the state legislature, a conservation fair, an advertising campaign for endangered species, a map of your locality with its environmental problems and proposed solutions, and "ecopornography," part three, the most extensive, is a directory of resources. Provided are a brief description, cost information, and grade level for films, filmstrips, printed materials, literature, units, texts, periodicals, songs and games. (BP)

ED 113 151 SE 019 632
A Handbook of Environmental Encounters.
Oregon State Dept. of Education, Salem.
Pub Date 73
Note—117p.
Available from—Documents Clerk, Oregon Department of Education, 942 Lancaster Drive, N.E., Salem, Oregon 97310 ($2.50)
EDRS Price MF-$0.76 HC-$5.70 Plus Postage
Descriptors—Ecology, *Elementary Secondary Education, Environment, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Learning Activities, Natural Resources, Problem Solving, *Science Education, Student Projects, *Teaching Guides
This handbook has been designed as a teaching resource to be used in the development of student attitudes and competencies, reflecting an awareness of the environment, and a motivation to work toward solutions to its problems. Listed activities are to be adapted to the abilities and interests of students, school locale, and teaching situation. Suggested exercises consist of air, noise pollution, soil, rocks, minerals, ecosystems, trees, plants, marine and freshwater life, animals, population, energy, pesticides, land use, watershed management, private enterprise, student needs and perceptions, and solid waste. Each of the activities or encounters has objectives stated in behavioral terms. The rationale for each undertaking is identified, with needed materials and appropriate terminology. The environmental topics are divided into activities which call for some particular action on the part of students (i.e., observation, collection, identification, comparison, discussion, etc.). Appraisal activities are suggested for teachers to determine the extent of learning which has occurred. The encounters have been made as flexible as possible to give them the greatest utility. They are designed to be implemented in one or more of the curricular areas, and suggestions for integration are provided. Printed and audiovisual materials are also listed. (BP)

ED 116 946 95 SE 020 158
Ring, Noel, Ed.
Landscapes of Vermont. A Curriculum Guide in Land Use Education.
Vermont Univ., Burlington. Dept. of Geography
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Bureau No—74-7338
Pub Date Oct 75
Note—47p.; Photographs will not reproduce well
Available from—University of Vermont, Geography Department, 112 Old Mill, Burlington, Vermont 05401 ($1.00, single copies of this guide or class sets of 25 copies of the 4-page centerfold)
EDRS Price MF-$0.76 HC-$1.95 Plus Postage
Descriptors—*Environmental Education, *Geography, *Instructional Materials, *Land Use, Learning Activities, Natural Resources, Science Education, *Social Studies, Teaching Guides
Identifiers—*Vermont
This manual is designed to assist school and organizations in gaining a better understanding of land use at the community, state, and national levels. The manual emphasizes interpretation of maps and photo-imagery to analyze the geographic concepts relating to landscape. The manual promotes the use of local government publications from the U.S. Geological Survey, the U.S. Soil Conservation Service, and state extension services, and the use of space photographs and satellite imagery. The manual lists projects and activities for land use study in social studies, science, vocational agriculture, humanities, environmental education, and 4-H groups. Thorough lists of documentary materials, audio-visual aids, and other resources are included. (MR)

ED 116 947 SE 020 159
Brown, William E.
Environmental Education Manual for New Mexico Teachers.
New Mexico State Dept. of Education, Santa Fe.
Pub Date Nov 70
Note—73p.
EDRS Price MF-$0.76 HC-$3.32 Plus Postage
Descriptors—Conservation Education, *Curriculum Guides, *Environmental Education, Instructional Materials, Natural Resources, *Program Development, *Teaching Guides, Teaching Methods
Identifiers—*New Mexico
This booklet was prepared as a guide for New Mexico teachers for incorporating environmental education into existing curricula. The booklet begins with a discussion of the objectives of environmental education and the role of schools. Brief discussions are given on the social and economic implications of environmental education, a single procedure to institute a program, inquiry teaching methods, environmental concepts and designs, and environmental education settings. Finally, the booklet provides a list of readings, periodicals, publications, and conservation organizations. (MR)

ED 121 569 SE 019 336
Energy Materials.
Iowa State Dept. of Public Instruction, Des Moines.
Pub Date [74]
Note—127p.; Pages 117-128 of the original document entitled "Public Interest Report--Solutions to the ENERGY CRISIS," are copyrighted and therefore not available. They are not included in the pagination
EDRS Price MF-$0.83 HC-$7.35 Plus Postage
Descriptors—Bibliographies, Conservation Education, *Elementary Secondary Education, *Energy, Energy Conservation, *Environmental Education, *Instructional Materials, Learning Activities, *Resource Materials
These resource materials, developed for use by teachers in the elementary and secondary schools, are designed to provide the teacher with a bibliography, questions and answers, and suggested classroom activities all relating to the energy problem. The materials are designed to develop a conservation ethic and greater understanding of our energy problem. The publication is divided into three parts. Part I, Energy in the Natural Environment, consists of a representative bibliography of sources concerning energy. Included are a subject index, an alphabetical listing of books and periodicals by title, a listing of audiovisual materials, and the addresses of the publishers of the bibliographical entries. Part II, Energy in the Social Environment: A Guide to Resource Material, contains instructional materials designed to assist classroom teachers in developing and enriching an energy awareness unit or lesson. Part III, Possible Classroom Activities, contains an elementary, intermediate, and secondary unit on energy. Additional resources include an energy simulation game, the Iowa Geological Survey Materials, and a listing of environmentally related organizations and their addresses. A glossary of terms concludes this publication. (BT)

ED 123 034 SE 019 380
Baker, Thomas M.; Reiher, John F.
Equinox, A Model for the Environmental Education Curriculum for Kindergarten Through Grade Twelve in Delaware's Schools.
Delaware State Dept. of Public Instruction, Dover.; Del Mod System, Dover, Del.
Spons Agency—National Science Foundation, Washington, D.C.
Pub Date Jan 75
Grant—NSF-GW-6703
Note—88p.; For related documents, see SE 020 404-407; Occasional Marginal Legibility; Best copy available
Available from—Mr. John F. Reiher, State Supervisor of Science and Environmental Education, Department of Public Instruction, John G. Townsend Building, Dover, Delaware 19901 (Free while supply lasts)
EDRS Price MF-$0.83 HC-$4.67 Plus Postage
Descriptors—Behavioral Objectives, Curriculum Development, *Curriculum Guides, *Elementary Secondary Education, *Environmental Education, *Interdisciplinary Approach, Learning Activities, *State Curriculum Guides, State Programs
Identifiers—*Delaware, Del Mod System, National Science Foundation, NSF
This publication represents the state model for environmental education curriculum for kindergarten through grade twelve in Delaware's schools. The document defines environmental education, lists major curriculum objectives and guidelines, and stresses the importance of the interdisciplinary approach. Four model units, representing the grade level blocks K-3, 4-6, 7-9 and 10-12, have been expanded to demonstrate the conversion of objectives into a program of student learning experiences. Each expansion includes: global objectives, instructional objectives and suggested activities for the instructional objective. The model is organized around six major global objectives dealing with energy sources, earth resources, resource reclamation, population dynamics, interdependence, and quality of life. Following each global objective is a series of instructional objectives for use in the development of local programs. For each instructional objective, the grade level and subject areas into which it may be infused have been suggested. A bibliography concludes this publication. (BT)

ED 123 095 SE 020 775
Linder, Alice D.
Environmental Education; A Source Book for Educators.
South Carolina State Dept. of Education, Columbia.
Pub Date 76

Note—131p.
EDRS Price MF-$0.83 HC-$8.69 Plus Postage
Descriptors—*Course Content, Course Objectives, Course Organization, *Curriculum Design, *Curriculum Guides, *Environmental Education, Instructional Materials, *Integrated Curriculum, Student Centered Curriculum
Identifiers—*South Carolina

This curriculum guide presents a plan to implement an environmental education program. The main objective of the program is to develop environmental literacy including skills of inquiry, problem solving, managing, and communication, knowledge of environmental interrelationships, and positive attitudes and values toward environmental problems and their solutions. The program emphasizes interdisciplinary, student-centered activities. The guide begins by defining environmental education and its philosophy. A plan is outlined to develop the program: recognize a need, sell the idea, establish a committee, set goals, develop a plan, collect information, determine curricular changes, provide inservice education, pilot the project, support program, and evaluate and recycle. Program settings are discussed including the community, state and regional resources, and national sites. The major portion of the guide discusses curricular design encompassing teaching techniques, environmental literacy objectives, and strategies and approaches for curriculum change. Teaching strategies recommended include a single discipline course, multidisciplinary course, minicourses, enrichment, and community action projects. Finally, the guide discusses two approaches to environmental education, interdisciplinary and single disciplinary. Sample class activities are listed for each approach. The appendices are comprehensive listing resources, references, state and federal agencies, and sample units. (MR)

ED 123 136 SO 008 629
Built Environment: A Teacher Introduction to Environmental Education.
American Inst. of Architects, Washington, D.C.
Pub Date [74]
Note—31p.
EDRS Price MF-$0.83 HC-$2.06 Plus Postage
Descriptors—*Architectural Character, *Class Activities, Cultural Context, Elementary Secondary Education, *Environmental Education, Environmental Influences, Human Engineering, Inquiry Training, *Physical Environment, Problem Solving, Resource Materials, Social Studies Units, Spatial Relationship, Teaching Techniques

This environmental education teacher's guide focuses on the "built environment" or everything people have imposed on the natural physical environment. The guide provides objectives and a broad definition of environmental education, sample activities, suggestions for local consultants and resources, and an annotated list of both printed and audiovisual materials. Three general teaching approaches are recommended: (1) the observing, thinking, and discovery approach; (2) the theoretical problem approach where students make environmental decisions of hypothetical situations; and (3) the "real world" situation approach where students examine real problems which confront their community. Sample activities follow the three general approaches and include activities on local community environment, personal space, classroom environment, field trips, how the built environment influences feelings and senses, mapping, and measuring exercises. The guide seeks to prepare students for their present and future roles as users and shapers of the built environment. (Author/DE)

ED 125 862 SE 019 832
Environmental Education Guide K-12.
Virginia State Dept. of Education, Richmond
Pub Date Jul 74
Note—95p
EDRS Price MF-$0.83 HC-$4.67 Plus Postage
Descriptors—*Curriculum Guides, Elementary Secondary Education, *Environmental Education, *Instructional Materials, *Learning Activities, *Science Activities, Science Materials, State Curriculum Guides

This educational program intends to promote a universal view of the environment through interdisciplinary, activity centered experiences. The objectives identified are to help students examine environmental relationships, acquire problem-solving skills to analyze society's environmental problems, and develop civil responsibility and values. The guide gives suggestions and procedures for implementing the program. Most of the guide contains environmental investigations for grades, K-3 and 8-12. Each investigation lists goals and objectives, key questions, and suggested procedures to answer the key questions. The processes used in the procedures are also listed. The appendix contains an annotated bibliography of environmental education readings. (MR)

ED 125 865 SE 020 172
Hart, Jonathan M
Energy-Environment Opinionnaire.
Tennessee Univ., Knoxville. Environment Center
Pub Date Jul 75
Note—10p
EDRS Price MF-$0.83 HC-$1.67 Plus Postage
Descriptors—Attitudes, *Attitude Tests, *Energy, *Environment, Environmental Education, *Evaluation, Natural Resources, Opinions, *Questionnaires, Secondary Education

This questionnaire is designed to assess the opinions of students and teachers of educational institutions and citizens about energy and the environment. It is composed of 85 energy and environment oriented statements about which the examinee gives an opinion. Choices provided on the answer sheet given are strongly agree, mildly agree, not sure or don't know, mildly disagree, and strongly disagree. Reproduction of the exam is allowed without permission, though credit is requested. A respondent information sheet is also included. (Author/MA)

ED 125 868 95 SE 020 232
Wheatley, John H. Coon, Herbert L.
Teaching Activities in Environmental Education. Volume III - 1975.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date 75
Note—195p.; For Volumes I and II of this series, see ED 091 172 and ED 102 031
Available from—Ohio State University, Center for Science and Mathematics Education, 244 Arps Hall, Columbus, Ohio 43210 ($4.00)
EDRS Price MF-$0.83 HC-$10.03 Plus Postage.
Descriptors—Conservation Education, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, Outdoor Education, *Science Education, Teaching Guides

This volume is the third in a series of learning activities designed to supplement a K-12 curriculum. The activities are interdisciplinary in nature and include topics in science, mathematics, social studies, language arts, and fine arts. Besides a division of activities according to grade and subject matter, they are also grouped by environmental concepts that include the biophysical, sociocultural, management, and change, and by problem areas that concern aesthetics, health, genetics, ecocommunity relationships, and psychological and behavioral considerations. Each activity includes a reference to the environmental education program from which it was taken, as well as a stated purpose and a methods section. (MA)

ED 125 871 95 SE 020 244
Environmental Education Handbook.
Montana State Dept. of Public Instruction, Helena.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date Dec 72
Note—236p.
EDRS Price MF-$0.83 HC-$14.05 Plus Postage.
Descriptors—*Curriculum Guides, Educational Philosophy, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, *Learning Activities, Natural Resources, Pollution, Population Education, Science Education
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III, *Montana

This handbook is designed to help educators develop an environmental curriculum for their school districts. An introduction to the publication suggests ways of using the handbook and states a philosophy of environmental education. Most of the remaining pages are devoted to 20 teaching cells, or units, on various grade levels, K-12. Each unit contains an introduction and some background information for the teacher, and an appropriate activity. The topics are primarily ecological and biological in nature. Organic gardening, populations, and field ecology are among the topics covered. Each unit is designed as a starting point for the teacher and can be expanded and developed to suit individual needs. Final sections of the handbook include a listing of environmental education programs in Montana, a bibliography, a listing of resource personnel and agencies, and a survey of environmental curricula. (MA)

ED 125 883 SE 020 444
Aesthetics and Environmental Education. A Multi-Disciplinary Resource for Curriculum Development.
Wisconsin State Dept. of Public Instruction, Madison.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date [76]
Note—64p.; Colored pictures and photographs may not reproduce well
EDRS Price MF-$0.83 HC-$3.50 Plus Postage.
Descriptors—*Aesthetic Education, *Curriculum Development, Curriculum Guides, Educational Philosophy, Elementary Secondary Education, *Environmental Education, Ethics, *Resource Guides, Resource Materials, *Values
Identifiers—Wisconsin

Educators have become increasingly aware of the complexity of most environmental problems. This realization has resulted in a recognition that scientific and technological solutions in themselves may be a major means for dealing with our environmental problems, but underlying nearly all environmental problems and solutions are human attitudes and behaviors which are a result of our society's ethics and values. Efforts to develop environmental education programs have called attention to the fact that aesthetic awareness and understanding should form the basis by which human beings interpret these ethics and values that influence behavior affecting environmental quality. The purpose of this publication is to provide a philosophic point of view on aesthetics and the environment and to serve as a resource for incorporation of environmental aesthetics learning experiences into any subject. (Author/MA)

ED 125 888 SE 020 682
Bedwell, Lance, Ed
Environmental Education Handbook for Teachers.
Illinois State Office of Education, Springfield
Pub Date [76]
Note—101p.; Contains some broken and light type
Available from—Illinois Office of Education, 100 North First Street, Springfield, Illinois 62777
EDRS Price MF-$0.83 HC-$6.01 Plus Postage.
Descriptors—Curriculum Design, *Curriculum Guides, *Educational Resources, *Elementary Secondary Education, *Environmental Education, Guidelines, Instructional Materials, Laws, Program Guides, *Resource Guides
Identifiers—Illinois

In response to the interest in environmental education programs in the schools, the state of Illinois has planned this handbook as a guide for teachers desiring to develop an environmental curriculum or to expand an existing one. The guide presents a rationale for developing such a program, including current environmental education laws and state plans. Six steps are given for organizing an environmental education program and curriculum guidelines to achieve this goal at all grade levels, K-12, are also given in one section of the handbook, there are sample units covering topics listed in the guidelines and including all grade levels. Another section contains a listing of resources available to teachers developing environmental education programs. The handbook is designed to accommodate supplementary material when it is printed. (MA)

ED 130 833 SE 021 182
Coon, Herbert L., Ed. Alexander, Michele Y., Ed.
Energy Investigations for the Classroom.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date 76
Note—148p.; Contains occasional colored pages
Available from—(Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Road, 3rd Floor, Columbus, Ohio 43212 ($4.50)
EDRS Price MF-$0.83 HC-$7.35 Plus Postage.
Descriptors—Elementary Secondary Education, *Energy, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, *Science Education, Teaching Guides

This sourcebook, designed for use in grades K-12, contains energy teaching activities related to energy resources, production, distribution and use. Each activity has been classified by the editors according to the most appropriate grade level, subject matter, and energy concept involved. Subject areas are science, mathematics, social studies, language arts, and fine arts. This sourcebook draws heavily on ideas and factual materials found at the ERIC Center for Science, Mathematics, and Environmental Education. The references cited in specific activities could be useful to persons interested in obtaining more activities and ideas related to energy. Many of the activities are interdisciplinary in nature and were developed or suggested by public school teachers. (BT)

ED 134 434 SE 021 720
Benedict, Drborah And Others
Try These. We Have! Environmental Education Activities for the Trainable Mentally Retarded.
Marian Coll., Indianapolis, Ind.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date [76]
Grant—OEG-0-74-7370
Note—143p.; Some pages printed on colored paper may be marginally legible; Materials prepared in the Outdoor Ecological Laboratory, Marian College
Available from—Dr. Dennis E. Clark, Director, Wetlands Ecological Laboratory, Marian College, 3200 Cold Spring Road, Indianapolis, Indiana 46222 (no price quoted)
EDRS Price MF-$0.83 HC-$7.35 Plus Postage.
Descriptors—*Attention Span, *Elementary Secondary Education, *Environment, *Environmental Education, Exceptional Children, *Instructional Materials, Language Arts, Mathematics, *Mentally Handicapped, Perceptual Motor Coordination, Sciences, *Teaching Guides

These environmental education materials include both out-of-classroom and in-classroom experiences. The activities emphasize seven major goals including language skills, number skills, social skills, motor skills, science, and attention span. There are eight coded topical areas: (1) air, (2) animals, (3) games, (4) light; (5) plants; (6) seasons; (7) soil; and (8) water. Each topical area contains a variety of activities related to the general theme. The activities are described on separate cards and are written for the teacher. Each card contains the following: (1) a title; (2) a purpose; (3) suggested directions; (4) a materials list, and (5) hints and instructions for the teacher. The materials were tested with trainable mentally retarded students. (RH)

ED 135 648 SE 022 131
Cripe, Julie, Ed. Wright, Joe, Ed.
Project SAVE. Student Action for Valuing the Environment.
Indiana State Dept. of Public Instruction, Indianapolis.
Spons Agency—Environmental Quality Control, Inc., Indianapolis, Ind.
Pub Date [77]
Note—33p.; Occasional photographs may not reproduce well
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Ecology, *Elementary Secondary Education, *Environment, *Environmental Education, Interdisciplinary Approach, Pollution, *Problem Solving, *Program Descriptions, Student Projects
Identifiers—*Indiana, *Project SAVE

Project SAVE (Student Action for Valuing the Environment) encourages a team approach to solving environmental problems. SAVE suggests that students initiate, create, and implement practical approaches to solving community environmental problems. Included in this publication are descriptions of 13 exemplary programs that include elementary schools, middle schools, a junior high school, and high schools. Also included are a list of suggestions for community projects and resources available to assist in problem solving. (RH)

ED 137 140 SE 022 429
Coon, Herbert L. Bowman, Mary Lynne
Environmental Education in the Urban Setting: Rationale and Teaching Activities.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date 76
Note—199p.
Available from—Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($4.00)
EDRS Price MF-$0.83 HC-$10.03 Plus Postage.
Descriptors—Curriculum, *Elementary Secondary Education, *Environment, *Environmental Education, Instruction, *Instructional Materials, Resource Materials, Teaching Guides, *Urban Studies

This document has two parts. Part I is a rationale developed to present a point of view about the opportunities for environmental education in urban schools. The premise is that environmental education should be a vital part of the total school program. Part II, Teaching Activities, contains ideas and suggestions for implementing such a program. The activities are designed for student use in grades K-12. Each activity has been classified according to the most appropriate grade level, subject matter, environmental concept involved, and environmental problem area. In addition to being classified in these four categories, each activity contains: (1) a statement of purpose on how the activity may be used, and (2) a reference to a source where the activity may be found in more detail or with variations. (Author/RH)

ED 138 436 SE 020 918
Thrasher, William And Others
Environmental Studies Continuum K-12, Interdisciplinary Environmental Education.
Broward County Schools, Fort Lauderdale, Fla.
Spons Agency—Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
Pub Date May 73
Note—50p.; Contains occasional marginal legibility
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Curriculum, Curriculum Guides, *Ecology, *Elementary Secondary Education, *Environmental Education, Instructional Materials, Natural Resources, Pollution
Identifiers—Elementary Secondary Education Act Title III, ESEA Title III

This guide is designed to assist curriculum developers, subject area specialists, and teachers in identifying environmental activities and learning aids appropriate for various grade levels. The guide attempts to integrate all grade levels by using the same conceptual scheme throughout the primary, intermediate, middle, and secondary levels. This conceptual scheme includes six major statements: (1) living things are interdependent with one another and their environment, (2) all organisms are interrelated through matter and energy, (3) the environment must be protected, (4) population size is regulated in nature; (5) the world is a finite system with limited resources, and (6) the available technical solutions to environmental problems must be implemented. Topics are listed under each environmental statement for each grade level thus obtaining continuity in the total program. (MR)

ED 138 527 SO 010 002
Holtgrieve, Donald G. Mathiason, Carol
Field Trips in Geographic Education: An Annotated Bibliography. Instructional Activities Series IA/G-1.
National Council for Geographic Education.
Pub Date 75
Note—15p.
Available from—National Council for Geographic Education, 115 North Marion, Oak Park, Illinois 60301 ($1.00 paper cover)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Annotated Bibliographies, Area Studies, Class Activities, Community Study, Disadvantaged Youth, *Educational Methods, Elementary Secondary Education, *Environmental Education, *Exceptional Children, *Field Trips, Geographic Regions, *Geography Instruction, History, Instructional Trips, Learning Activities, Retarded Children

Elementary and secondary school teachers can use this annotated bibliography to obtain information for planning, conducting, and evaluating field trips. It contains 125 references to journal articles and reports, most of which were published during the period 1960-75. Each entry provides author's name, title, source, date, and a one- or two-sentence annotation. Most of the items annotated have reference to geographic and environmental content at all school grade levels from one to 12. There are references to help the beginning teacher plan his or her first field trip. Several entries suggest safety tips for teachers, students, and bus drivers while traveling. Most of the references describe ideas for average classes, but at least five references are aimed specifically at retarded, economically disadvantaged, or exceptional children. Some describe local field trips within the community or state; others explain how long-distance, overnight trips can be planned. Observation guidelines for students are given, and follow-up activities might include drawing the most interesting things seen on the trip. A few entries describe aerial field trips, which are especially well suited to geographic study of particular regions. (AV)

ED 141 081 SE 022 539
Kohuth, Barbara J. Marsh, Boyd T.
An Educational Guide for Planning an Improved Human Environment.
Cleveland Dept. of Public Health and Welfare, Ohio.
Pub Date 74
Note—291p.; Not available in hard copy due to copyright restrictions; Contains occasional light type
Available from—Inner Circle Press, Inc., Hudson, Ohio 44236 (no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Community Problems, Conservation Education, Consumer Education, Curriculum Guides, *Elementary Secondary Education, Environment, *Environmental Education, *Health Education, *Instructional Materials, Learning Activities, *Teaching Guides, Units of Study

This guide contains a curriculum featuring learnings and activities concerning environmental health of the home, neighborhood and city. There are six main sections to this guide: (1) Resources - containing sections on solid wastes, sound, radiation, air, water, shelter, and chemicals; (2) Environment - containing sections on positive and negative aspects of the environment, the environment's effect on people, public properties, and vandalism; (3) People - containing sections on apathy, fatalism, and cultural arts and environment; (4) Cooperative Action - containing sections dealing with the responsibility for cooperative action by community agencies; (5) Consumerism - containing sections on product safety, consumer power, and consumer laws; and (6) Conservation - containing sections showing the relationships between resources, life styles, diseases, and the various alternatives available to us. Each section has learning statements, learning activities and teacher notes that include background information, the application of the activity to the local community, a vocabulary list, a list of

materials needed and appropriate supplementary films, books and resource materials. (Author/AJ)

ED 141 116 SE 022 619
Owens, Michael
Activities in Environmental Education. Environmental Studies Program.
Educational Personnel Development Consortium D, Richardson, Tex.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date [77]
Grant—G007601990
Note—95p.; Contains occasional colored pages that may not reproduce well
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—Conservation Education, Educational Games, Elementary Grades, *Environmental Education, Games, *Instructional Materials, *Learning Activities, *Secondary Grades, *Teaching Guides
Identifiers—Environmental Studies
This guide describes 38 activities appropriate for grades K-12. Each activity contains a brief description of the activity and a list of materials needed. The second section of the guide contains environmental learning games to be played in the classroom. These games include crossword puzzles, cryptograms, logic problems, card games, and find-a-words. All of the games listed may be reproduced. There is a list of free materials available on trees, wood products, and paper making. (AJ)

ED 141 178 SE 022 707
Schultz, Judith M. ; Coon, Herbert L.
Population Education Activities for the Classroom.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date Jan 77
Note—195p.; Not available in hard copy due to marginal legibility of original document
Available from—Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($4.00)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Demography, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, *Population Education, Science Education, Social Sciences, Teaching Guides
This document contains a series of population learning activities designed to supplement a K-12 curriculum. The activities are interdisciplinary in nature and include topics in science, mathematics, social studies, language arts, fine arts, and home economics. Besides a division of activities according to grade and subject matter, the activities are also grouped by population concept. Each activity includes a reference to the environmental education program from which it was taken as well as a stated purpose and methods section. Also included in this publication are pretest factual and attitudinal tests, a basic glossary of population terms, and an annotated list of resource materials that includes: teaching materials, background readings for teacher and student, readings for students in grades 3-12, audio-visual materials and their sources, and rental information. (BT)

ED 144 332 EC 102 455
Tully, Randolph R., Jr., Ed.
A Curriculum Activities Guide to Environmental Studies with Students with Special Education Needs.
Montgomery County Intermediate Unit 23, Blue Bell, Pa.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date 75
Grant—OEG-71-1775
Note—127p.; Information concerning this publication may be obtained from Project KARE, Colony Office Building, Route 73 & Butler Pike, Blue Bell, Pennsylvania 19422
EDRS Price MF-$0.83 HC-$7.35 Plus Postage.
Descriptors—Aesthetic Education, Air Pollution Control, Animal Science, Curriculum Guides, Elementary Secondary Education, *Environmental Education, *Handicapped Children, *Learning Activities, Natural Resources, Playgrounds, Soil Conservation, Teacher Developed Materials
Developed by teachers, the curriculum guide provides information on environmental studies activities for use with handicapped students. Activities are divided into three areas: awareness level activities (aesthetics, cemeteries, water, soil, air, noise, and miscellaneous activities); transition level activities (playgrounds, cemeteries, wildlife, and miscellaneous activities); and operational level activities (site development, erosion, and soil). Such activities as categorizing living and non-living things, playground planning, and using a problem erosion are included. Outlined for each activity are an introduction, questions, equipment needed, and procedures. A final section consists of teacher statements on activity implementation. Appended are a paper on the U.S. Office of Education national diffusion network, and explanation of environmental studies activities, and technical reports on six of the activities included in the guide. (SBH)

ED 144 794 SE 023 051
Environmental Education for Teachers and Resource People.
Forest Service (DOA), Washington, D.C.
Pub Date [77]
Note—286p.; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Curriculum Development, *Elementary Secondary Education, *Environmental Education, Instructional Materials, Learning Activities, Lesson Plans, Science Education, *Teaching Guides
This document is a guide for teachers and community resource personnel interested in developing an environmental education program. The book is divided into seven parts: (1) Process and Problem Solving Approach to Learning, (2) Lesson Plans for Environmental Investigations, (3) Simulations, (4) Developing Environmental Investigations, (5) Group Involvement Techniques, (6) Environmental Education Action Plan, and (7) Miscellaneous Activities. The environmental investigations include topics such as water quality, ecological relationships, and land use, and are designed for students in grades K-12. Guidelines are included for the preparation, execution, and post-discussion of these investigations. Simulations concerned with land use and community action are included along with guidelines for developing further simulations. The action plan section gives directives for organizing an environmental education committee and school curriculum. (MA)

ED 144 826 SE 023 119
McCabe, Robert H., Ed. And Others
Man and Environment Teaching Alternatives.
Miami-Dade Community Coll., Fla.; Ohio State Univ., Columbus, Ohio. Information Reference Center for Science, Mathematics, and Environmental Education.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date Jun 77
Note—336p.
Available from—Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($6.00)
EDRS Price MF-$0.83 HC-$18.07 Plus Postage.
Descriptors—*Curriculum Guides, Elementary Secondary Education, Energy Conservation, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, *Science Education, Values
Identifiers—Man and Environment, Miami Dade Community College FL
The material contained in this document is the result of an Education Professions Development Act Grant awarded to Miami-Dade Junior College for the fiscal year 1972. Much of the material was developed in a two-week teacher training workshop held in July, 1972, in Miami Beach, Florida. In this session, 46 faculty members from across the country, consultants, and workshop staff contributed initial input for this document. The material in this book is intended to expand the format of the "Man and Environment Revised Curriculum" by making this more useful for teachers to teach the various topics. Over 30 topics are covered in the publication, including value systems, pollution, population dynamics, and economics. Every topic is then subdivided into alternatives. Each alternative is composed of an overview containing background information on the topic, the basic concept to be learned, student learning objectives, and teaching/learning strategies. Contained within this book are a multitude of ideas about how elementary and secondary grade teachers may present the modular topics of Man and Environment in an interdisciplinary framework. The book is designed as a supplement to other Man and Environment and ecological materials. (Author/MA)

ED 148 594 SE 023 427
Kennedy, Thomas G., Ed. ; Hernbrode, William R., Ed.
Teachers Resource Guide for Environmental Education.
Arizona State Dept. of Education, Phoenix
Pub Date [77]
Note—338p.; Not available in hard copy due to colored pages throughout entire document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Curriculum Guides, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, *Interdisciplinary Approach, *Learning Activities, Natural Resources, Resource Materials, Science Education, Teaching Guides, Values
This guide is divided into seven major sections, each representing one of the following fundamental natural resources: (1) soil, (2) air, (3) water, (4) vegetation, (5) wildlife, (6) minerals, and (7) man. Within each of the seven major sections, there are three subsections which provide the following: (1) Background Information, (2) Suggestions and Activities, (3) Additional Resources. The guide is designed as a basis for developing a sound environmental ethic among students in grades K-12. It represents a resource of information, suggestions, and activities for supplementing an existing curriculum. The activities are appropriate for several disciplines, including science, mathematics, social studies, fine arts, language arts, and industrial arts and vocational education. Some illustrations are given. (Author/MA)

ED 150 026 SE 023 976
Coon, Herbert L. ; Price, Charles L.
Water-Related Teaching Activities.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date Jun 77
Note—156p.
Available from—Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($4.00)
EDRS Price MF-$0.83 HC-$8.69 Plus Postage.
Descriptors—*Elementary Secondary Education, *Environmental Education, *Instructional Materials, Natural Resources, Pollution, Science Activities, Science Education, *Social Studies, *Water Resources, World Problems
This publication is designed to provide interested teachers with teaching activities for all grade levels and subject areas that can be used to help students learn about water resources. For each activity, the purpose, level, subject, and concept are given. Activities are organized by grade level. Most of these water related learning activities are science (77) or social studies (46) activities with several mathematics, art, language arts, and music activities included. In general, the activities involve the students in investigations to answer given questions designed to stimulate student thought on water use and management. A section is also included that contains lists of films, filmstrips, addresses of film distributors, and water testing equipment and manufacturer's addresses. (MR)

ED 152 541 SE 024 054
Bowman, Mary Lynne ; Disinger, John F.
Land Use Management Activities for the Classroom.

ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio
Spons Agency—National Inst of Education (DHEW), Washington, D C
Pub Date Jun 77
Note—265p. Contains occasional light and broken type
Available from—Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($5.00)
EDRS Price MF-$0.83 HC-$14.05 Plus Postage.
Descriptors—*Class Activities, Classroom Materials, Conservation Education, Elementary Secondary Education, *Environmental Education, *Land Use, Management Education, *Science Activities, Science Education, *Teaching Guides

The activities included in this publication were selected and developed to give teachers ideas and examples of ways to implement land use management instruction in the classroom. One of the primary objectives of this compilation is to demonstrate that there is now in existence a variety of materials that focus on land use concerns. The activities designed for student use in grades K through 12 are "action-oriented" and involve student participation throughout the school community. Each activity has been classified by the authors according to the most appropriate grade level, subject matter and land use concept involved. In addition to being classified in these categories, each activity contains (1) a statement of purpose on how the activity may be used, and (2) a reference to a source where the activity may be found in more detail or with variations. The subject areas encompassed by these activities include science, mathematics, social studies, language arts and fine arts. Some typical activities are planting trees, examining soil, and discussing newspaper articles. (Author/BB)

ED 154 996 SE 024 209

Posthuma, Fredrick E., Ed.
Energy and Education: Teaching Alternatives.
National Education Association, Washington, D C.
Pub Date 78
Note—142p. Not available in hard copy due to copyright restrictions
Available from—National Education Association, 1201 Sixteenth St., N.W., Washington, D C 20036 (Stock No. paper 1492-8-00, no price quoted)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Activity Units, *Conservation Education, Energy, *Energy Conservation, *Environmental Education, *Experiential Learning, Interdisciplinary Approach, Lesson Plans, Natural Resources, *Science Activities, Simulation
Identifiers—*Energy Education, National Education Association

This publication is a collection of energy education articles for the classroom teacher. Most of these articles suggest energy education activities and projects that may be used as is or modified to fit classroom conditions. Two energy mini-units are included as well as a collection of energy lesson plans. Contents include (1) Teaching About the Nuclear Power Controversy by Simulation, (2) Our School-Made Solar Project, (3) Six Ways to Reduce Energy Consumption, (4) Leisure and the Energy Crisis, (5) Some Guidelines for Energy Programs, (6) Energy Teaching Centers, (7) Which Source of Energy is Best for Heating My Community?, (8) Energy and Its Natural Sources, and (9) Energy Resource List. Many of the articles also include student or teacher resource lists as well as activity suggestions and informative texts. A rationale for energy education is presented in the first article. Brief descriptions of each article are also included. (CS)

ED 156 463 SE 024 391

Davis, Debbie And Others
Environmental Education Resource Guide.
Montgomery County Public Schools, Rockville, Md.
Pub Date [78]
Note—55p. Not available in hard copy due to small print throughout entire document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—*Educational Resources, *Elementary Secondary Education, Energy Conservation, *Environmental Education, *Information Sources, Natural Resources, Pollution, Population Education, *Resource Guides, Science Education

While this guide was designed specifically for teachers in Montgomery County, Maryland, Schools, much of the material can be used by individuals nationwide. Contents include nature studies, pollution, energy, land use, environmental design, recreation, and government and the public aspect. Resources listed under these headings include films, textbooks, multimedia materials, guest speakers, and environmental units. Attempts have been made to list materials appropriate to grades K-12 and to label them according to age or grade levels. Further sections of the guide list organizations, newsletters, periodicals, and guides having to do with the environment. The format of this publication is in the style of the Whole Earth Catalog, having illustrations interspersed among the columns of resource materials. Where possible or appropriate, a brief description of the materials is included. (MA)

ED 156 473 SE 024 425

Environmental Education Resource Guide.
Rhode Island State Dept. of Education, Providence.
Spons Agency—National Inst of Education (DHEW), Washington, D C.
Pub Date Jan 78
Grant—NIE-G-76-0055
Note—131p. Contains light and broken type
Available from—Dissemination Unit, Rhode Island Dept of Education, 22 Hayes St., Providence, RI 02908 (no price quoted)
EDRS Price MF-$0.83 HC-$7.35 Plus Postage.
Descriptors—*Annotated Bibliographies, Educational Resources, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, Natural Resources, *Resource Guides, *State Departments of Education
Identifiers—*Rhode Island

To help meet the needs of Rhode Island teachers for useful environmental education materials, the Dissemination Services Unit of this state's Department of Education compiled this resource guide. The entries in this document are available either from ERIC or from the Dissemination Services Unit. A brief document description is given under most entries. This publication lists documents according to their grade level focus so that documents are categorized under general, elementary, secondary, and K-12 headings. Other sections list journal articles, bibliographies, other information sources such as periodicals and films, and state sources. Documents cover many environmental education topics such as population, land use, outdoor classrooms, field trips, ecology, and environmental education curriculum development. A separate resource guide has been developed for energy education. Although emphasis is given to Rhode Island environmental education, this guide can be of use to educators nationwide. (MR)

ED 157 768 SE 024 770

Hammond, W., Ed.
On Campus Teaching Activity Guide: Environmental Education, Lee County Schools.
Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date 74
Note—178p.; Not available in hard copy due to marginal legibility of original document
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Art, Biological Sciences, *Elementary Secondary Education, *Environmental Education, Home Economics, *Instructional Materials, Interdisciplinary Approach, Language Arts, Mathematics, Physical Education, Sciences, Social Studies, Special Education, *Teaching Guides

This booklet presents a variety of environmentally oriented activities that may be used on school sites, many interdisciplinary in nature. The activities are cross referenced according to two separate index systems. (1) By discipline area, and (2) by topic. Discipline areas include Language Arts, Mathematics, Science, Social Studies, Art, Home Economics, Physical Education, and Special Education. Examples of topics are acorns, age, ants, art, attitudes, averaging, clouds, colleges, diatoms, descriptive words, government, haiku poetry, insects, and wilderness survival. Due to the flexibility of many of the activities within this booklet, specific grade levels are not designated. The activities are appropriate for kindergarten, elementary, middle, and high school students. (Author/RH)

ED 157 773 SE 024 775

Tillis, Richard
Anti-Litter Curriculum Packet, Interdisciplinary, K-12.
Florida State Dept. of Education, Tallahassee. Office of Environment Education.
Pub Date 72
Note—25p.
EDRS Price MF-$0.83 HC-$1.67 Plus Postage.
Descriptors—*Art Education, Conservation Education, Elementary Secondary Education, *Environmental Education, *Instructional Materials, *Pollution, *Visual Aids, *Waste Disposal

This curriculum packet consists of 20 illustrated cards with 15 activities designed to create "positive feelings" about a clean environment. Activities range from picture coloring for younger students, to lessons such as the economic and health problems litter creates for older students. Objectives include encouraging anti-litter and anti-pollution attitudes, understanding the methods and problems of solid waste disposal, understanding the environmental costs of producing paper, and using art education skills to produce "Glenn Gittler" posters, trash can stencils, and costumes. (Author/RH)

ED 159 075 SE 024 956

Bowman, Mary Lynn, Comp *Coon, Herbert L., Comp.*
Recycling: Activities for the Classroom.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio
Spons Agency—National Inst of Education (DHEW), Washington, D C.
Pub Date Apr 78
Note—145p. Not available in hard copy due to small print throughout entire document
Available from—Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($4.50)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Curriculum Enrichment, Ecology, *Elementary Secondary Education, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, *Learning Activities, Natural Resources, *Recycling, Science Education

This publication provides 80 classroom activities for the teacher. These activities are designed for elementary through high school students and are action-oriented for participation in the school community. Each activity is classified according to appropriate grade level, subject matter, and recycling concept involved. In addition, each activity includes a statement of purpose, a reference to the source of the original activity, and a set of procedures. Some illustrations and sample work sheets are provided. The final section contains resource information on publications, organizations, and films related to recycling and environmental education. (MA)

ED 162 897 SE 025 423

Hembrodt, William R., Ed.
Multidisciplinary Wildlife Teaching Activities.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Jun 78
Note—95p.
Available from—Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($3.00)
EDRS Price MF-$0.83 HC-$4.67 Plus Postage.
Descriptors—Art Education, *Conservation Education, English Education, *Environmental Education, Industrial Arts, Mathematics Education,

*Natural Resources, *Natural Sciences, Science Education, Social Studies, *Wildlife Management, *Zoology
Identifiers—Wildlife Education
This guide provides information and activities descriptions designed to allow the teacher to use wildlife concepts in the teaching of various subjects. The author suggests that wildlife and animals are tremendous motivators for children and hold their attention. In the process, concepts of wildlife interaction with man and the environment are taught along with the major subject. The guide does not presuppose an extensive knowledge of science. In addition to activities and concepts tailored for a variety of classroom subjects, the guide provides a history of American wildlife, a presentation of basic concepts of wildlife education, and a bibliography of field guides, activities, life histories, and periodicals of interest to the classroom teacher seeking to use their technique. (RE)

ED 165 988 SE 025 258
Priddy, Michael D., Ed. And Others
Energy Conservation Education Resource Guide.
Guilford County School System, Greensboro, N.C.
Spons Agency—North Carolina Dept. of Commerce, Raleigh.
Pub Date—Jul 78
Note—175p.; Some colored pages may not reproduce well
EDRS Price MF-$0.83 HC-$8.69 Plus Postage.
Descriptors—*Elementary Secondary Education, *Energy Conservation, *Environmental Education, *Instructional Materials; Interdisciplinary Approach, *Learning Activities, Natural Resources, Resource Guides, Science Education
Identifiers—North Carolina (Guilford County)
Although designed as a resource for teachers in the Guilford County (North Carolina) School System, this guide contains information applicable to most K-12 curricula. There are five color-coded sections, each devoted to specific grade levels: K-3, 4-6, 4-9, 10-12. The Appendices include field trip possibilities, an energy use checklist, and illustrations. Each grade level section contains energy concepts, related activities, and resources for the teacher. There is an annotated bibliography containing entries for all resources listed at the end of each section. This resource guide is not intended to provide an exhaustive list of concepts, activities, and resources, but rather is a working tool to be amended and modified by teachers. An interdisciplinary and integrated approach is used throughout the guide. (MA)

ED 166 016 SE 025 412
Davey, Don McDuffie, Claudia
Energy Crisis: Resource Guide for Energy Conservation Education.
Bonneville Power Administration, Portland, Oreg.
Spons Agency—Oregon State Dept. of Energy, Salem.
Pub Date—78
Note—42p.
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—*Agencies, Annotated Bibliographies, Audiovisual Aids, Curriculum Guides, *Educational Resources, *Energy Conservation, Environmental Education, Information Sources, *Organizations (Groups), Periodicals, *Resource Guides
Identifiers—*Energy Education, *Oregon
This publication is a resource guide to energy education and conservation materials and organizations. The stated purpose of this guide is to make teachers and other interested citizens of Oregon aware of some of the resources and sources of information on energy conservation education that are available in Oregon and in the United States and Canada. The first section lists the resources for energy education giving: (1) agency or organization name and address; (2) agency functions; (3) publications or films available from the agency; and (4) additional information about the agency and about speakers, if available, from the agency. The second section is an annotated bibliography of curriculum guides and teacher resource books. The third section lists multimedia materials with sources and addresses. The fourth section lists periodicals in the Oregon area that relate to energy conservation education. (MR)

ED 166 032 SE 026 355
Elvin, Betty And Others
Texas Energy Education Framework: A Pilot Draft.
Texas Education Agency, Austin.
Pub Date—78
Note—28p.; Contains occasional light and broken type
EDRS Price MF-$0.83 HC-$2.06 Plus Postage.
Descriptors—Conceptual Schemes, *Curriculum Development, *Curriculum Guides, *Elementary Secondary Education, Energy, *Energy Conservation, Environmental Education, *Matrices, Units of Study
Identifiers—*Texas
This publication presents a conceptual framework for grades K through 12 energy education in Texas. Matrices are used in which "basic concerns of people" such as: (1) individual well-being; (2) career; and (3) social interactions are given on one axis and three learning dimensions: (1) knowledge; (2) applications; and (3) values are used on the other axis. These matrices are to serve as a guide to curriculum development and are given for grade levels K-3, 4-6, 6-8, and 9-12. Energy education experiences are given for parts of these matrices. Infusing energy education into existing curricula is expanded and a rationale for energy education is given. (MR)

ED 167 454 SO 011 528
Dalton, Ed And Others
The Energy and Conservation Education Glossary.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—78
Note—36p. For related documents, see SO 011 523-529
Available from—Energy and Man's Environment, 0224 S.W. Hamilton, No. 301, Portland, Oregon 97201 ($4.00, paper cover)
Pub Type— Reference Materials - Vocabularies/Classifications (134)
EDRS Price MF-$0.83 Plus Postage. HC Not Available from EDRS.
Descriptors—Conservation (Environment), *Conservation Education, Definitions, Elementary Secondary Education, *Energy, *Energy Conservation, *Environmental Education, Environmental Influences, Fuels, *Glossaries, Information Science, Reference Materials, Vocabulary Development, Word Lists
The glossary of approximately 700 energy-related terms provides a useful resource to K-12 classroom teachers and curriculum developers for teaching basic energy concepts and skills. In addition, developers of the glossary suggest that it can help teachers develop supplementary language and word games for students, such as crossword puzzles. The terms are arranged alphabetically and space is provided at the end of each alphabetic section so that additional words and definitions can be added. Although the major focus of the glossary is energy resources, it also includes brief definitions of common concepts, principles, and expressions related to conservation. The glossary concludes with a form requesting that readers propose new words or suggest changes in existing content. (DB)

ED 170 139 SE 027 599
Allbrooks, Ann And Others
Environmental Studies: A High School Course for Each Citizen, of Each Town, in South Carolina, U.S.A.
South Carolina State Dept. of Education, Columbia
Pub Date—77
Note—772p
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF05/PC32 Plus Postage.
Descriptors—*Activity Units, Air Pollution Control, *Course Content, *Environmental Education, *Instructional Materials, Pollution, Science Activities, Science Education, *Secondary Education, Social Sciences, Water Pollution Control
This is a complete environmental studies course for high schools. It may be used as a year-long elective, a semester course, or infused by individual units into science, social studies, health, or other courses. The course is composed of thirteen separate units entitled (1) Investigating Environmental Problems and Issues, (2) Energy, (3) Water, (4) Food and Fiber, (5) the Marsh Lands, (6) Ecosystems, (7) Land Use, (8) Climate and Air, (9) Population, (10) Wildlife, (11) Chemicals and You, (12) Solid Wastes, and (13) Noise. Each unit contains a short introduction, content statements, student objectives, student activities, and lists of resources. The activities are geared to the state, national, and global level, but there is an emphasis on issues and concerns of South Carolina. (BB)

ED 173 072 SE 027 730
Coon, Herbert L. Bowman, Mary Lynne
Energy Activities for the Classroom: Volume II.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Dec 78
Note—165p.; For related document, see ED 130 533
Available from—Information Reference Center (ERIC IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($3.00)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Class Activities, Economics, *Elementary Secondary Education, *Energy, *Energy Conservation, Environmental Education, Fine Arts, Fuel Consumption, Fuels, History, *Instructional Materials, Language Arts, Mathematics Education, *Science Education, Science Materials, Scientific Concepts, Social Studies, Technology
Identifiers—*Energy Education, Information Analysis Products
This resource book contains descriptions of over 100 classroom activities designed to illustrate concepts relating to energy, its production, characteristics, use, and conservation. Each activity integrates the energy lesson into a concept that relates to one or more subject areas common to public school curricula. Many of the activities included in the document were developed by public school teachers. In addition to teaching activities, an annotated bibliography of energy teaching resources available from ERIC is provided. (RE)

ED 173 115 SE 027 930
Our School Yard Series: Project I-C-E.
Cooperative Educational Service Agency 9, Green Bay, Wis.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—[79]
Note—50p.; May not reproduce clearly due to colored background
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Class Activities, *Educational Facilities, Elementary Secondary Education, *Environment, *Environmental Education, *Integrated Activities, *Integrated Curriculum, Validated Programs
Identifiers—*National Diffusion Network Programs, *Project ICE
This collection of teaching activities provides guidance in using the resources of the school yard to integrate environmental education with other subject areas. Provided with each activity are: (1) recommended grade level; (2) subject areas integrated into the activity; (3) objectives, (4) rationale, (5) equipment needs, (6) specific activities, and (7) additional, optional activities. (RE)

ED 173 117 SE 027 932
Environmental Activities Training Project: Field Activities.
Cooperative Educational Service Agency 9, Green Bay, Wis.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—[79]
Note—263p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC11 Plus Postage.
Descriptors—*Class Activities, *Elementary Secondary Education, *Environment, *Environmental Education, Field Trips, Integrated Curriculum, *Interdisciplinary Approach, Validated Programs
Identifiers—National Diffusion Network, *Project ICE
Presented are descriptions of activities for both the classroom and the field. Activities frequently integrate environmental education with other subject areas. Each activity description includes specification of grade level, disciplines being taught, concepts, objectives, directions, and equipment requirements when appropriate. Classroom follow-up suggestions are presented for field activities. (RE)

ED 174 371 RC 011 480
Murrow, Casey, Ed.
Using Our Communities. An Outline for Action in

Vermont Schools.
Spons Agency—Vermont State Dept. of Education, Montpelier.
Pub Date—Jan 77
Note—64p.
Pub Type— Guides - Classroom - Teacher (052) — Reports - Descriptive (141)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Agriculture, Career Exploration, *Community Study, Community Support, Curriculum Enrichment, Educational Resources, Elementary Secondary Education, Environmental Education, *Experiential Learning, *Field Trips, Interviews, *Learning Activities, Local Government, Local History, Natural Sciences, *Outdoor Education, Parent School Relationship, *Program Development, Relevance (Education), School Community Relationship, Social Services, Social Studies, Student Motivation, Writing
Identifiers—Experiential Education, *Vermont
Outstanding community based work now going on in Vermont schools is described in this booklet which also suggests ways to develop similar work in other communities. The term "Community Studies" is used to encompass a broad range of activities carried out with the local community as the focus of and location for students' work. The booklet discusses ways of obtaining program support from school administrators, parents, and the local community; outlines the wide variety of experiences possible in community based studies, and gives guidelines for planning successful field trips. The section titled "Community Studies Activities" describes 50 projects undertaken in Vermont schools that succeeded in the eyes of the teachers and children involved. Activity categories are local history, media, natural resources, mapping, technology, government and social services, student businesses, community service projects, physical education and health, and agriculture and forestry. Additional activities illustrate the techniques of shadowing, interviewing, and observing and describe ways in which teachers have used community studies to augment the regular curriculum. Final chapters cover student writing (often the most striking success of community oriented work), record keeping, and local and regional resources. (JH)

ED 175 726 SE 028 809
Brown, Mark And Others
Florida's Urban Environment, Teacher's Guide.
Florida Audubon Society, Maitland.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—75
Grant—GOO7407881
Note—28p.; For related documents, see SE 028 807-810; Contains occasional light and broken type
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*City Planning, *Elementary Secondary Education, Environment, *Environmental Education, Planning, Public Policy, *Urban Areas, *Urban Environment, *Urban Studies
Identifiers—Energy Education, Florida
This unit begins with the historical development of Florida and analyzes development from the perspective of an energy system. The unit deals with the urbanization process currently taking place in Florida and explores where it may be leading. Lessons are designed for individualized instruction or for use by students in small groups. In some cases material may be used by students in large groups. (Author/RE)

ED 176 957 SE 027 928
Texas Energy Education Framework.
Texas Education Agency, Austin. Div. of Curriculum Development.
Pub Date—79
Note—26p.; For related document, see ED 166 032
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Conceptual Schemes, *Curriculum Development, *Curriculum Guides, *Elementary Secondary Education, Energy, *Energy Conservation, Environmental Education, *Matrices, *Science Education, Technology, Units of Study
Identifiers—Energy Education, *Texas
This guide is designed to assist teachers and educational administrators to infuse energy education into the public school curriculum. The document is divided into blocks of grade levels: K-3, 4-6, 6-8, 9-12. For each grade level, a matrix is presented in which one axis includes such 'people' concerns as: (1) consumer concerns; (2) individual well-being; (3) career, (4) recreation, and (5) socio-legal. The other axis of the matrix includes the learning dimensions of: (1) knowledge, (2) application, and (3) values. The approach to energy education is multidisciplinary and an effort is made to relate the basic information to experiences which students have at various stages of public school education. (RE)

ED 176 984 SE 028 908
Fowler, Kathryn Mervine
Population: The Human Dilemma. An NSTA Environmental Materials Guide.
National Science Teachers Association, Washington, D.C.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—77
Grant—G007601968
Note—99p.; Not available in hard copy due to copyright restrictions
Available from—National Science Teachers Association, 1742 Connecticut Ave., N.W., Washington, D.C. 20009 (Stock No. 471-14714; $3.50)
Pub Type— Reference Materials - Bibliographies (131)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Annotated Bibliographies, Demography, *Elementary Secondary Education, Environment, *Environmental Education, *Population Education, Population Growth, Publications, *Resource Materials, *Science Education
Presented are annotations on more than 100 popular books selected according to their appropriateness to the interests of classroom teachers and their students. This is designed to facilitate the introduction of contemporary population education topics into the K-12 classroom. Selections are organized both by subject and by reading level, including division into teacher-level readings and readings appropriate for students in grades K-12. (Author/RE)

ED 177 015 SE 029 135
The Edible Blue Mussel: A Learning Experience for Marine Education, Northern New England Marine Education Project.
Maine Univ., Orono. Coll. of Education.; Maine Univ., Orono. Sea Grant Program.
Spons Agency—National Oceanic and Atmospheric Administration (DOC), Rockville, Md. National Sea Grant Program.
Pub Date—78
Note—21p.; For related documents, see SE 029 132-134; Not available in hard copy due to copyright restrictions
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Class Activities, Earth Science, *Ecology, Elementary Secondary Education, *Environmental Education, *Interdisciplinary Approach, Language Arts, Marine Biology, Mathematics Education, *Oceanology, *Science Education, Social Studies
Identifiers—*Sea Grant
The major unifying concept for each of the disciplinary sections in this curriculum infusion unit is that the blue mussel is an easily obtainable, high quality, very palatable seafood. A section is provided for teacher familiarity with the anatomy and ecological background of the mussel. The guide is arranged by discipline areas. Sections provide objectives and directions for activities involving use of mussels to portray concepts of the discipline. (RE)

ED 179 421 SE 029 501
Staub, Joseph R., Jr
Energy Education Resource Guide.
Maryland State Dept. of Education, Baltimore. Div of Instruction.; Maryland State Energy Office, Baltimore.
Pub Date—80
Note—34p.; Contains occasional colored print which may not reproduce well
Pub Type— Reference Materials - Bibliographies (131) — Reference Materials - Directories/Catalogs (132)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Art Education, Consumer Education, *Elementary Secondary Education, *Energy, *Environmental Education, Home Economics Education, Industrial Arts, *Interdisciplinary Approach, Language Arts, Mathematics Education, Science Education, Social Studies, Special Education, Vocational Education
Identifiers—*Energy Education
This guide is an annotated listing of recent curricular materials dealing with some aspects of energy. A grade-subject matrix at the beginning of the guide directs the user to pages containing appropriate references for level and desired subject. A standard body of information is given for each guide entry. Materials are listed alphabetically by source, including the mailing address of the source, title, grade level, subject area, publication date, number of pages, price, and a brief abstract of the material. The collection includes 91 entries. (Author/RE)

ED 180 794 SE 029 449
Corey, Helen H., Ed.
Energy Education Workshop Handbook: A Guide to Materials by the Project for an Energy-Enriched Curriculum.
National Science Teachers Association, Washington, D.C.
Spons Agency—Department of Energy, Washington, D.C. Office of Education, Business and Labor Affairs.
Report No —DOE-TID-3841-11
Pub Date—78
Contract—DOE-EX-76-C-10-3841
Note—82p.
Available from—U.S. Department of Energy, Technical Information Center, P.O. Box 62, Oak Ridge, TN 37830 (no price quoted)
Pub Type— Guides - General (050) — Guides - Classroom - Teacher (052) — Guides - Non-Classroom (055)
EDRS Price - MF01/PC04 Plus Postage.
Descriptors—Curriculum Planning, Economic Education, *Energy, *Environmental Education, *Inservice Education, *Interdisciplinary Approach, Nonformal Education, Science Education, Teacher Education, *Teacher Workshops, Workshops
Identifiers—*Energy Education
This handbook is designed to help teachers supervisors, club leaders, and in-service directors lead workshops in energy education. It is based primarily on materials produced by Project for an Energy-Enriched Curriculum (PEEC), but can be modified for use with other materials. The handbook contains six chapters including: (1) Introducing the PEEC Packets; (2) What Are the Facts Behind the Energy Crisis, (3) Interdisciplinary Approaches to Teaching Energy, (4) Infusing Energy Topics into Traditional Subjects, (5) Adapting PEEC Materials to Regional Interests; and (6) Workshop Planning Aids. (Author/RE)

ED 180 827 SE 029 699
Owens, Michael
Energy Education Curriculum Resource, Energy Education Workshop: Energy Sources of the Future.
Education Service Center Region 7, Kilgore, Tex.
Pub Date—79
Note—173p.; Page 55 removed due to copyright restrictions
Pub Type— Guides - Classroom - Teacher (052) — Guides - Non-Classroom (055)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—Curriculum, *Curriculum Development, *Curriculum Guides, *Curriculum Research, *Elementary Secondary Education, *Energy, *Energy Conservation, Interdisciplinary Approach, Science Education, Secondary Education, Social Studies
Identifiers—*Energy Education
This guide is designed to provide teachers with suggestions and assistance in equiping children as advocates of energy stewardship. It is divided into six discussion sections and one section dedicated to specific energy activities presented as curriculum guides for: (1) intermediate science, (2) high school science, (3) intermediate social studies, and (4) high school social studies. Discussion sections deal with

energy education problems, energy education framework, energy saving, quick fix energy checklists, and Federal Energy Audits Grants. (Author/RE)

ED 181 656 EC 122 720
Wright, Joe
Environmental Education for the Gifted and Talented.
Indiana State Dep: of Public Instruction. Indianapolis. Div. of Curriculum.
Spons Agency—Office of Education (DHEW), Washington, D.C.
Pub Date—77
Note—19p.; For related materials, see EC 122 718-721
Available from—Charles Whaley, State Consultant for Gifted and Talented Education, Indiana State Dept. of Public Instruction, State House, Indianapolis, IN 46204 (Free)
Pub Type— Guides - Classroom - Teacher (052) — Reports - Descriptive (141)
EDRS Price - MF01 PC01 Plus Postage.
Descriptors—Ecology, Elementary Secondary Education, Energy Conservation, *Environmental Education, *Gifted, Guidelines, *Models, Natural Resources, Program Descriptions, Program Development, *Talented Students
Designed for school personnel the booklet suggests a framework for providing programs for the gifted and talented (G T) students that will develop a concern for environmental problems After a description of environmental education and a rationale for its place in the classroom, descriptions of three Indiana programs for G T students are provided Suggestions for projects in each of the following areas are listed (with sample projects in parentheses) community documentation, preservation and restoration (plan and implement a series of informational presentations on the history of the community emphasizing ecological trends); environmental improvement (monitor the water quality of water resources near the community and make the information available to the appropriate sources), and energy conservation (cooperate with local mechanics to develop a car tune up campaign). A list of principles of a G T environmental education program is provided and resources for projects, such as business, industry, and organizations, are surveyed. (PHR)

ED 182 118 SE 029 688
Bowman, Mary Lynn
Values Activities in Environmental Education.
ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio
Spons Agency—National Inst of Education (DHEW), Washington, D.C
Pub Date—Dec 79
Contract—400-78-0004
Note—134p
Available from—Information Reference Center (ERIC IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($3.75)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC06 Plus Postage.
Descriptors—*Affective Behavior, Attitudes, Class Activities, Elementary Secondary Education, *Environment, *Environmental Education, *Humanistic Education, Interdisciplinary Approach, Moral Development, Personal Values, Social Values, *Values
Identifiers—*Information Analysis Products
This collection of class activities is intended to provide approaches to values discussion and clarification at all levels of the public school. Activities are presented for elementary school, junior high school, and senior high school pupils, and for ranges encompassing the entire range or various sequential ranges of grades Subject areas involved in the activities include single subject areas or combinations of science, mathematics, social studies, language arts, and fine arts Each activity includes a purpose statement, grade level, subjects involved by discipline area, references, and an activity description. Activities place the student in a simulated circumstance where he or she must choose between conflicting values. (RE)

ED 183 416 SE 030 357
Byrne, Robert And Others
Man's Manipulation of the Ecosystem: A Curriculum Guide for Elementary and Secondary Teachers.
New Jersey State Dept. of Environmental Protection, Trenton.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—[80]
Grant—G007701233
Note—16p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Conservation Education, Curriculum Design, Ecology, *Elementary Secondary Education, Environment, *Environmental Education, *History, Interdisciplinary Approach, *Natural Resources, *Science Education, Wildlife Management
This short teaching unit presents broad topics dealing with natural resource management and the impacts of man, historically and currently, on the ecosystem A broad format has been used to facilitate adaptation of the topic to individual school systems and grade levels. An effort has been made to specifically integrate selected disciplines into the topic. Notes are provided in the teaching unit which suggest modifications for grade levels. All suggested activities have been field-tested in public schools. The unit includes learning concepts; behavioral objectives, class discussions, questions, supportive activities, and a detailed example activity; and a glossary of terms. (RE)

ED 187 557 SE 030 943
LaHart, David E.
Solar '80s: A Teacher's Handbook for Solar Energy Education.
Florida State Solar Energy Center, Cape Canaveral.
Pub Date—Mar 80
Note—101p.; Contains light and broken type.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC05 Plus Postage.
Descriptors—Conservation Education, *Curriculum Development, Elementary Secondary Education, Energy, *Energy Conservation, Environment, *Environmental Education, Fuel Consumption, *Fuels, Natural Resources, *Science Education, *Solar Radiation, Technological Advancement, Technology
Identifiers—*Energy Education
This guide is intended to assist the teacher in exploring energy issues and the technology of solar energy conversion and associated technologies. Sections of the guide include: (1) Rationale; (2) Technology Overview, (3) Sun Day Suggestions for School; (4) Backyard Solar Water Heater; (5) Solar Tea; (6) Biogas; (7) Solar Cells; (8) Economics, (9) Sundials; (10) Activities for Elementary Schools; (11) Activities for Secondary Schools; and (12) a bibliography and source listing for energy education materials. Other topics are covered in detail within the 19 chapters of the guide. (RE)

ED 188 860 SE 030 642
Campbell, Sally R
An Educator's Guide to the Three Es: Energy, Ecology, Economics, 1979 Edition.
Sears, Roebuck and Co Chicago, Ill
Pub Date—79
Note—24p.; Not available in hard copy due to copyright restrictions For related document see ED 164 404
Available from—Association Films Inc., Agents for Sears Consumer Information Service, 512 Burlington Ave., LaGrange IL 60525 ($1 00, Free on a one-per-teacher basis for staff development programs devoted to subject matter).
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Citizen Participation, Class Activities, Curriculum Development, *Ecology, *Economics, Elementary Secondary Education, *Energy, Energy Conservation, Environment, *Environmental Education, Instructional Materials, *Interdisciplinary Approach, Natural Resources, Outdoor Education, Public Policy, Science Education, Social Studies
Identifiers—*Energy Education
This guide presents units involved in unifying the student's views of energy, environment, and economic issues in making decisions required of the citizen. Goals, concepts, and background information are presented at the beginning of the booklet. A pretest of relevant knowledge is provided Other units include (1) example discussion questions, (2) suggested learning experiences; (3) interdisciplinary projects which include activities in Art, English, History, Driver Training, and Consumer Education (4) projects for advanced students; (5) elementary and middle school activities; and (6) word games. A resource section including organizations, businesses, publications, and government agencies concludes the booklet. (RE)

ED 188 919 SE 031 426
Let's Recycle! Lesson Plans for Grades K-6 and 7-12.
Environmental Protection Agency, Washington, D.C. Office of Water Programs. Environmental Protection Agency, Washington, D.C Solid Waste Management Office.
Report No.—EPA-SW-801
Pub Date—80
Note—49p.; Pages 33-36 removed due to copyright restrictions.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC02 Plus Postage.
Descriptors—*Class Activities, *Curriculum Development, Elementary Secondary Education, *Environment, *Environmental Education, Interdisciplinary Approach, *Natural Resources, Pollution, *Recycling, Science Education, Social Sciences, Waste Disposal
The purpose of this guide is to inform students of solid waste problems and disposal options. Lesson plans deal specifically with waste and recycling and include interdisciplinary approaches to these problems. The manual is divided in two sections - K-6 and 7-12. Activities are designed to allow the teacher maximum flexibility, and plans may be modified easily. A state-by-state list of solid waste agencies is provided (Author RE)

ED 190 348 SE 030 979
Allen, Virginia Hetherington, Martin
Life Styles. Teacher's Guide and Student Guide. Net Energy Unit. Draft.
Michigan State Univ., East Lansing Cooperative Extension Service., Michigan State Univ., East Lansing Science and Mathematics Teaching Center.
Spons Agency—Department of Energy, Washington, D.C.; Michigan Dept of Commerce, Lansing.
Pub Date—28 Mar 79
Grant—EC-77-S-01-5092
Note—29p.; For related documents, see SE 030 975-985 and ED 180 774. Pages 5-8 in the Teacher's Guide and 5-8 in the Student Materials removed due to copyright restrictions.
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Conservation Education, Curriculum Development, Decision Making, Elementary Secondary Education, Energy, *Energy Conservation, *Environmental Education, Fuel Consumption, *Futures (of Society), *Interdisciplinary Approach, Natural Resources, Planning, Public Policy, *Science Education, Social Studies
Identifiers—*Energy Education
This module is intended to assist the teacher in presenting lessons on the influence of energy on lifestyles now and in the future. Five activities are presented including (1) a science fiction story; (2) lifestyles interview, (3) future projections, (4) energy usage and lifestyle trend (5) lifestyle differences. The module is intended to cover six class sessions. A slide set and film loop are needed for some class sessions Availability information is provided. (RE)

ED 190 398 SE 031 490
Ek, George And Others
Colorado Model for Conservation Education: Concepts.
Colorado State Dept of Education, Denver; Colorado State Dept. of Natural Resources, Denver.; Colorado State Div. of Wildlife, Denver
Pub Date—79
Note—116p.; For related document, see SE 031 491. Contains colored pages which may not reproduce well.
Available from—Colorado Dept. of Education, State Office Building, 201 E Colfax, Denver, CO 80203 ($10 00; No charge to Colorado Public Schools).
Pub Type— Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC05 Plus Postage.
Descriptors—*Concept Formation, *Conservation Education, Curriculum Development, *Decision Making, *Ecology, *Elementary Secondary Education, Environment, *Environmental Education, Interdisciplinary Approach, Natural Resources, Sciences, Social Studies

This guide describes a model to help students understand environmental and conservation concepts. The guide proposes four concepts: (1) The Wholeness of Earth's Systems, (2) The Effects of Ecosystems on Human Beings (3) Human Beings are Now the Most Influential of Earth's Organisms, and (4) Our Ability to Comprehend Must be Coupled With the Obligation of Self-Control. There are four segments, each of which contains a three-grade portion of the K-12 span. Each segment treats the four concepts and offers considerations and approaches for introducing students to the concepts. (RE)

ED 190 399 SE 031 491
Ek, George And Others
Colorado Model for Conservation Education: Resources.
Colorado State Dept of Education, Denver; Colorado State Dept of Natural Resources, Denver, Colorado State Div of Wildlife, Denver
Pub Date—79
Note—193p., For related document, see SE 031 490. Contains colored pages which may not reproduce well.
Available from—Colorado Dept. of Education, State Office Building 201 E. Colfax, Denver, CO 80203 ($4.00; No charge to Colorado Public Schools).
Pub Type— Guides - Classroom - Teacher (052) — Reference Materials - Directories/Catalogs (132)
EDRS Price - MF01/PC08 Plus Postage.
Descriptors—*Concept Formation, *Conservation Education, *Curriculum Development, *Decision Making, Ecology, Elementary Secondary Education, Environment, *Environmental Education, Natural Resources, *Resource Materials, Sciences, Social Studies

This guide is devoted to the presentation and development of concepts dealing with conservation education in the public schools. The guide develops four overriding concepts: (1) The Wholeness of Earth's Systems; (2) The Effects of Ecosystems on Human Beings; (3) Human Beings Are Now the Most Influential of Earth's Organisms, and (4) Our Ability to Comprehend Must be Coupled With the Obligation of Self Control. There are four segments, each of which covers a three-grade portion of the K-12 span. Each segment deals with the four concepts in the context of the specific grade span. Resource materials supporting concept development are cited. (RE)

ED 191 697 SE 031 902
The Challenge of Survival: A Guide for Teachers. Bulletin No. 12, Revised 1975.
Alabama State Dept of Education, Montgomery. Div of Instructional Services
Pub Date - 75
Note—166p., For related document, see SE 031 903. Contains light and broken type
Pub Type—Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC07 Plus Postage.
Descriptors—*Air Pollution, *Civil Defense, Class Activities, Curriculum Development, Decision Making, Elementary Secondary Education, *Emergency Programs, *Environmental Education, Nuclear Warfare, Pollution, Public Health, *Public Policy, *Water Pollution

This guide is devoted to development of instructional units dealing with threats to human survival. It addresses both natural and man-made disasters. Chapters include descriptions of specific threats and suggested approaches to dealing with them. Appendixes present source information for films, test, resource material, physical education material, resource agencies, and transparency masters. (RE)

ED 191 698 SE 031 903
The Challenge of Survival, Bulletin 1976, No. 16.
Alabama State Dept of Education, Montgomery. Div of Instructional Services
Pub Date—76
Note—212p., For related document, see SE 031 902. Photographs may not reproduce well
Pub Type— Guides - Classroom - Learner (051)
EDRS Price - MF01/PC09 Plus Postage.
Descriptors—*Air Pollution, *Civil Defense, Class Activities, Curriculum Development, Decision Making, Elementary Secondary Education, *Emergency Programs, *Environmental Education, Nuclear Warfare, Pollution, Public Health, *Public Policy, *Water Pollution

This booklet is intended to accompany lessons dealing with threats to human survival. It addresses both natural and man-made disasters. Chapters present photos and diagrams along with descriptions of specific threats and suggested approaches to dealing with them. Chapters include (1) Disasters, (2) Survival in the Nuclear Age, (3) Civil Preparedness in Other Nations, (4) Civil Preparedness in Time of Emergency, (5) Population and Pollution and Petroleum, (6) Air Pollution, (7) Noise Pollution, (8) Water Pollution, (9) Energy, (10) Drug Abuse Problems, (11) Crisis in the Streets, and a closing section of conclusions. (RE)

ED 193 028 SE 032 869
Population Education in Health: Some Sample Lessons.
United Nations Educational, Scientific, and Cultural Organization, Bankok (Thailand). Regional Office for Education in Asia and Oceania.
Pub Date—80
Note—47p., For related documents, see SE 032 870-872
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—Community Health Services, Elementary Secondary Education, *Environmental Education, *Health Education, Health Materials, Nutrition, *Overpopulation, *Population Education, Population Growth, Teaching Guides

This manual for home economics teachers contains eight sample lessons on health issues related to population growth. Among the topics treated are nutrition, family health, communicable diseases, causes of high mortality, and community health services. Lessons are designed for lower primary through high school students. A scope and sequence chart depicts how teachers can integrate population-related concerns into the health curriculum. These activities were adapted from materials prepared in several countries in Asia and Oceania. (WB)

ED 193 029 SE 032 870
Population Education in Home Economics: Some Sample Lessons.
United Nations Educational, Scientific, and Cultural Organization, Bankok (Thailand). Regional Office for Education in Asia and Oceania.
Pub Date—80
Note—54p.; For related documents, see SE 032 869-872. Contains occasional marginal legibility
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Elementary Secondary Education, Environmental Education, *Family Life Education, *Home Economics Education, Home Economics Teachers, Marriage, Nutrition Instruction, *Overpopulation, *Population Education, Teaching Guides

Seven sample lessons on population and the family appear in this home economics teacher's manual. These activities have been adapted from materials produced in several countries in Asia and Oceania. A scope and sequence chart illustrates how teachers can integrate population-related issues into the home economics curriculum. Among the topics covered in this manual are family relationships, nutrition, family stages, marriage, adolescent changes and decisions, and family resources. Activities are designed for students in the upper primary grades through high school. (WB)

ED 193 030 SE 032 871
Population Education in Mathematics: Some Sample Lessons.
United Nations Educational, Scientific, and Cultural Organization, Bankok (Thailand). Regional Office for Education in Asia and Oceania.
Pub Date—80
Note—67p., For related documents, see SE 032 869-872
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—*Arithmetic, Elementary Secondary Education, *Environmental Education, Mathematics Education, *Mathematics Instruction, Mathematics Teachers, *Overpopulation, *Population Education, Population Growth, Teaching Guides

This mathematics teacher's manual contains ten sample lessons on population growth and demography that were developed from materials produced in several countries in Asia and Oceania. Among the mathematics concepts and skills students apply during these lessons are set theory, cardinal and ordinal numbers, frequency tables, percentages, ratios, averages, inequalities, and the use of graphs and tables. Activities are designed for lower primary through high school students. Topics investigated include family size, fertility rates, agesex pyramids, dependency ratios, and population projections. A scope and sequence chart illustrates how teachers can integrate population-related issues into the regular mathematics curriculum. (WB)

ED 194 349 SE 033 190
Roth, Charles E. Lockwood, Linda G
Strategies and Activities for Using Local Communities as Environmental Education Sites.
ERIC Clearinghouse for Science, Mathematics, and Environmental Education, Columbus, Ohio
Spons Agency—National Inst of Education (DHEW), Washington, D.C.
Pub Date—Dec 79
Contract—400-78-0004
Note—195p.
Available from—Information Reference Center (ERIC IRC), The Ohio State Univ., 1200 Chambers Rd., 3rd Floor, Columbus, OH 43212 ($5.50).
Pub Type— Guides - Classroom - Teacher (052) — Information Analyses (070)
EDRS Price - MF01/PC08 Plus Postage.
Descriptors—*Community Problems, *Community Study, Elementary Secondary Education, *Environmental Education, *Natural Resources, Nonformal Education, *Outdoor Education, *Resource Materials, Science Education, Science Instruction, Social Studies

Presented are over 100 environmental education activities which use the local community for a learning site and resource. These lessons are grouped under seven topical headings: (1) biological neighbors, (2) physical environs, (3) built environs, (4) social environs, (5) understanding ourselves, (6) influencing change, and (7) improvement and restoration projects. Lesson plans include purpose, materials needed, procedure, additional notes, and references. Among the learning strategies employed are field trips, community inventories, simulations, values clarification activities, and community action projects. Intended for 9 through 18-year-olds, these activities have been compiled from currently available materials and are appropriate for use in both formal and non-formal educational programs. Appendices include listings of reference materials and sources of community information. (WB)

ED 195 403 SE 033 251
Yankee Lands: A Land Use Curriculum Project.
Antioch/New England Graduate School, Keene, N.H.
Spons Agency—Office of Education (DHEW), Washington, D.C. Office of Environmental Education.
Pub Date—80
Note—363p.; Not available in hard copy due to marginal legibility of original document. Several charts removed due to oversize.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Ecology, *Elementary Secondary Education, *Environmental Education, Field Trips, *Land Use, *Natural Resources, *Outdoor Education, Resource Materials, Science Education, *Social Studies
Identifiers—New England

In response to issues surrounding the acquisition and planning of Pisgah State Park, New Hampshire, the Antioch/New England Graduate School has produced this set of activities related to land use decisions. Contained are learning experiences de-

signed to help students appreciate New England's natural and cultural history in order to encourage a sense of responsibility and respect for the land. The six units deal with ecological succession, the hill farm community, New England's energy resources, using the winter landscape, the politics of wilderness development, and future land use decisions. Each unit begins with a major pacesetting activity, followed by a series of supplementary studies. Detailed background information regarding biological and social aspects of the Pisgah State Park area accompanies several lessons. While many activities presented are field experiences in Pisgah State Park, these lessons are also intended to serve as models for land use studies in other locations. (WB)

ED 196 704 SE 033 681
Bowman, Mary Lynne Comp
Teaching Basic Skills Through Environmental Education Activities.
ERIC Clearinghouse for Science, Mathematics, and Environmental Education, Columbus, Ohio.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Pub Date—Dec 79
Contract—400-78-0004
Note—176p.
Available from—Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, OH 43212 ($4.00)
Pub Type— Books (010) — Guides - Classroom - Teacher (052) — Information Analyses - ERIC Information Analysis Products (071)
EDRS Price - MF01/PC06 Plus Postage.
Descriptors—*Basic Skills, *Elementary Secondary Education, *Environmental Education, Instructional Materials, *Language Arts, Mathematics Education, *Mathematics Instruction, Outdoor Education, Reading Skills, Writing Skills
Presented are 65 participation-oriented environmental education activities for teaching basic skills in language arts and mathematics. Intended for students in the elementary and junior high school grades, lessons are classified by grade level and subject area. Each lesson plan describes the purpose, lists required materials, and explains the instructional procedure. Among the skills covered are those related to reading, grammar, creative writing, basic number processes, geometry, and solving word problems. Also provided are references for each activity and a list of publications on other environmental education activities. (WB)

ED 196 726 SE 033 936
A Framework for Environmental Education in the Public Schools of Hawaii.
Hawaii State Dept. of Education, Honolulu. Office of Instructional Services.
Report No.—TAC-77-4277
Pub Date—Sep 77
Note—20p.
Pub Type - Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Curriculum Development, *Curriculum Guides, *Elementary Secondary Education, *Environmental Education, Program Guides, *State Curriculum Guides, State Departments of Education, Statewide Planning
Prepared by the Hawaii State Department of Education, this framework for environmental education is intended to guide teachers and administrators in their development of K-12 environmental education program guides and learning experiences. Included are objectives, a rationale, general concepts, environmental issues, and a scope and sequence model. (WB)

ED 199 092 SE 034 442
Stapp, William B. Cox, Dorothy A.
Environmental Education Activities Manual. Revised Edition.
Pub Date—Oct 79
Note—758p.; For related documents, see ED 119 944-949. Not available in hard copy due to marginal legibility of original document.
Available from—Dorothy A. Cox, 32493 Shady Ridge Dr., Farmington Hills, MI 48018 ($12.00 each postpaid).
Pub Type— Books (010) — Guides - Classroom - Teacher (052)
EDRS Price - MF04 Plus Postage. PC Not Available from EDRS.
Descriptors—*Community Action, *Concept Formation, Elementary Secondary Education, *Environmental Education, Interdisciplinary Approach, *Problem Solving, Science Activities, Science Education, Science Instruction, Social Studies, *Values Clarification
Published previously as six separate books, this revised manual contains lesson plans for over 300 K-12 environmental education experiences. Four activity sections follow an introductory chapter on the philosophy, model, and implementation guidelines for the people-environment interaction perspective upon which these activities focus. The Concept Activities and Understandings section provides lessons on five major concepts basic to the development of environmentally literate citizens: ecosystem, population, economics and technology, environmental decisions, and environmental ethics. In the Skill Developing Activities chapter, experiences that foster development of eight environmental problem-solving skills are offered. Strategies to help students examine their environment-related values comprise the section on Values Clarification Activities. The Environmental Encounters section contains a series of activities for studying and solving environmental problems in schools and communities. Lessons in all four of these activity sections are identified by grade level. Concluding the manual is a chapter listing titles and sources of numerous environmental education resource materials. (WB)

ED 200 424 SE 034 552
Schirmer, Sharon Ed.
Conservation of Energy: Idea and Activity Guide. An Interdisciplinary Teacher's Guide to Energy and Environmental Activities. Section Eight.
Energy and Man's Environment, Inc., Portland, Oreg.
Pub Date—79
Note—170p.; Not available in hard copy due to copyright restrictions.
Available from - Energy and Man's Environment, 7874 S.W. Nimbus Ave., Beaverton, OR 97005 ($6.00)
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—Current Events, Elementary Secondary Education, *Energy, *Energy Conservation, *Environmental Education, Interdisciplinary Approach, Science Education, *Science Instruction, *Social Studies, Values
Presented are several hundred energy and environment-related instructional ideas and activities for grades K through 12. These brief suggestions are intended to serve as a resource bank of teaching ideas, rather than as a set of detailed lesson plans. Identified as to grade level, the activities are grouped into 8 sections which are each based on an energy conservation concept and series of general objectives. Educators may use this compendium as an activities guide, as a resource document for planning entire units, and as a tool for stimulating discussion in inservice programs. (Author/WB)

ED 200 435 SE 034 579
Stokes, Bruce
Helping Ourselves: Local Solutions to Global Problems.
Worldwatch Inst., Washington, D.C.
Report No.—ISBN-0-393-01362-6
Pub Date—Mar 81
Note—158p.; Not available in hard copy due to copyright restrictions.
Pub Type— Books (010) — Reports - Descriptive (141)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Community Action, *Community Development, Community Programs, Environmental Education, *Life Style, Local Issues, *Problem Solving, Quality of Life, *Social Problems, World Problems
Solutions to global problems such as inflation, [illegible] energy supplies, and deteriorating environmental quality lie at the local level where the consequences are most obvious, the motivation to get involved is most direct, and the benefits of action are most immediate. Examples of problems regarding energy, [illegible] food production, health care, and family planning demonstrate the success of self-help efforts. Emphasized are actions at the personal and community levels in contrast to reliance upon government [illegible] and the professional elite. (Author/WB)

ED 200 481 SO 013 244
Sni, Chr.
Global Education-An Implementation Plan & Resource Guide.
Pub Date—80
Note—73p.; Some pages may not reproduce clearly from EDRS in paper copy or microfiche due to poor reproducibility of original document.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC03 Plus Postage.
Descriptors—Annotated Bibliographies, *Curriculum Development, Definitions, Educational Objectives, Elementary Secondary Education, Geography, *Global Approach, Interdisciplinary Approach, Learning Activities, Program Development, Social Studies
This guide contains a rationale, plan, and bibliography for the implementation of a K-12, district wide, global education program. Parts one and two of the guide provide a definition of and rationale for global education. Global education is defined as the lifelong growth in understanding, through study and participation, of the world community and the interdependency of its peoples and systems—ecological, social, economic, and technological. The rationale provided is taken from a statement by Rene Dubos, 1969 Pulitzer Prize recipient. Part two outlines specific goals of global education. How to implement a program is the topic of Part three. A self-assessment program instrument is included. Suggested steps for starting a program are: get administrative support, identify a staff, carry out needs assessment, develop guidelines, provide professional staff, locate existing resources, and develop a model program. Activities for classroom use in various disciplines are then outlined. The guide suggests that physical education teachers utilize games from different countries in their classes and that music teachers teach students about the musical instruments from around the world. A geography unit entitled "Could You Live and Work in a Country Other Than Your Own?" is described. An annotated bibliography, which comprises about half the publication, concludes the guide. Cited are teacher resources and print and nonprint student materials. The materials listed date back to 1973. (Author/RM)

ED 202 963 UD 021 462
Be a Water Watcher: A Resource Guide for Water Conservation, K-12.
New York City Board of Education, Brooklyn, N.Y. Div. of Curriculum and Instruction.
Pub Date—[81]
Note—33p.; Pages 15-19 have been deleted for copyright reasons.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Class Activities, Conservation (Environment), Elementary Secondary Education, *Science Instruction, *Water Resources
Identifiers—*New York (New York)
This is a resource guide for response to the New York City water emergency) for grades K-12 on the subject of water conservation. Activities are suggested for science, industrial arts, social studies, and communication arts classes. A bibliography on water is also provided. (APM)

ED 204 138 SE 035 241
Environmental Education K-12 Curriculum Guide.
Hawaii State Dept. of Education, Honolulu. Office of Instructional Services.
Report No.—RS-81-0653
Pub Date—Mar 81
Note—215p.
Pub Type— Guides - Classroom - Teacher (052) — Guides - Non-Classroom (055)
EDRS Price - MF01/PC09 Plus Postage.
Descriptors—*Curriculum Development, *Curriculum Guides, *Elementary Secondary Education, *Environmental Education, Interdisciplinary Approach, Program Descriptions, Resource Materials, *State Curriculum Guides, State Programs
Identifiers—*Hawaii
The intent of this guide is to extend the 1977 document, "A Framework for Environmental Education in the Public Schools of Hawaii" (ED 196 726) so as to provide more specific guidelines for teachers and administrators. Chapter 1 contains introductory material pertaining to the guiding principles and rationale for environmental education. In the second chapter, overall goals, objectives and

competencies are presented along with a scope and sequence model and descriptions of the desired characteristics of programs and personnel. Chapter III describes the content of environmental education by concepts, subjects, and areas of concern. Chapter IV contains a set of instructional goals and attendant objectives which integrate the concepts and issues to provide an approach for classroom use. This chapter also includes a chart matching performance expectations with instructional objectives. Presented in the Appendix are definitions and discussions of environmental terms and issues, descriptions of resource materials, and a list of environment-related agencies and organizations. (Author/WB)

ED 207 817 SE 035 589
Simmons, John S., Ed.
Learning About Energy in Secondary Schools: Some Exemplary Lessons for Students. Volume II. Final Report, April 8, 1981 to December 31, 1981.
Florida State Univ., Tallahassee. Coll. of Education.
Spons Agency—Department of Energy, Washington, D.C.
Pub Date—81
Grant—DE-FG05-81CA10087
Note—124p.; Contains occasional marginal legibility.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01 PC05 Plus Postage.
Descriptors—Activity Units, Art Activities, *Conservation Education, Elementary School Science, Elementary Secondary Education, *Energy, *Environmental Education, *Instructional Materials, Interdisciplinary Approach, Language Arts, Learning Activities, Mathematics, Science Activities, Science Education, Secondary School Science, Social Studies, *Teaching Guides
Identifiers—*Energy Education
Sixteen teaching units of activities were prepared for students in grades 4-12 to increase their awareness, knowledge, and skills of energy and energy related issues by examining topics such as energy conservation on the farm, foreign oil, U.S. energy consumption, energy efficient houses, alternative energy sources, personal energy use, conservation, automobiles and geography. The activities draw upon social studies, mathematics, language arts, science, art and architecture, and use a variety of teaching methods including films, discussion, role playing, readings, question and answers, map and graph reading, interviewing, speeches, lecture and group work. While the organizational format for each unit is not standardized, most indicate grade level, subject, objectives, new vocabulary, materials needed, skills, evaluation, and resource materials. In the beginning of the book, a Florida Governor's Energy Award Program, comparable to the Presidential Physical Fitness Program, is proposed. It is suggested that local areas implement this award program with their own award certificates. (DC)

ED 214 752 SE 035 951
Bowman, Mary Lynne
Teaching Natural Resource Management Through Environmental Education Activities.
ERIC Clearinghouse for Science, Mathematics, and Environmental Education, Columbus, Ohio.
Spons Agency—National Inst. of Education (ED), Washington, D.C.
Pub Date—Dec 81
Contract—400-78-0004
Note—197p.
Available from—Information Reference Center (ERIC/IRC), The Ohio State Univ., 1200 Chambers Rd., 3rd Floor, Columbus, OH 43212 ($6.50).
Pub Type— Guides - Classroom - Learner (051) — Guides - Classroom - Teacher (052) — Information Analyses - ERIC Information Analysis Products (071)
EDRS Price - MF01/PC08 Plus Postage.
Descriptors—Attitudes, *Conservation Education, *Curriculum, Elementary Secondary Education, *Environmental Education, Mathematics, *Natural Resources, Sciences, Social Sciences, *Supplementary Reading Materials, Values
Identifiers—*Natural Resources Management
This publication presents a variety of participation oriented environmental education activities for teaching natural resources education. Activities are divided into five categories: (1) Elementary School Activities; (2) Elementary-Junior High School Activities; (3) Junior High School Activities; (4) Junior-Senior High School Activities, and (5) Senior High School Activities. Most activities include a purpose, level, subject areas, reference of the source of the activity, and the activity itself. A variety of experiences are included for most school subject areas. (RH)

ED 218 154* SE 038 294
Environmental Education: A Guide to Teaching Conservation in Texas.
Texas Education Agency, Austin. Div. of Curriculum Development.
Pub Date—81
Note—132p.
Available from—Additional copies may be purchased for $3. by contacting the Publications Distribution Office, Texas Education Agency.
Pub Type— Guides - Classroom - Teacher (052) — Reference Materials (130)
EDRS Price - MF01 Plus Postage. PC Not Available from EDRS.
Descriptors—*Conservation (Environment), *Conservation Education, Ecological Factors, Elementary Secondary Education, *Environmental Education, *Forestry, *Natural Resources, Resource Materials, Water Resources, *Wildlife
Identifiers—Minerals, *Texas
This document describes Texas' natural resources and suggests ways to correlate conservation instruction into the existing curriculum. Resources discussed include: 1) soil (soil formation; properties of soils; soil survey, soil use in agriculture; soils and the state economy, land value; specific soil resources); 2) air (principal pollutants and their effects; methods of detecting and measuring air contaminants; methods of eliminating/reducing air contaminants; automobile exhaust emissions; legislation and control agencies; air control regions/programs); 3) forests (forests serving people; tree regions; commercial forests and industry); 4) wildlife (game mammals and birds; food/game fish; non-game animals; rare/endangered species; government roles in wildlife management; economic value of Texas wildlife); 5) rangeland (importance and historical use of rangeland; climate; soil formations; managing rangeland resources; physiological aspects of range plants; ecological considerations; range condition classification and improvement practices); 6) mineral (mineral production and economy; distribution of mineral resources; mineral industries); 7) oil and gas (search for oil and gas; exploring for oil; crude oil production; energy shortage; federal/state regulation; natural gas production; refining and petrochemicals; transportation; marketing; oil/gas reserves); 8) water (general considerations, specific water resources; planned/developmental agencies; priorities for use of water; state/national economy); and 10) estuarine resources (general characteristics and estuarine life). (JN)

ED 218 160 SE 038 584
Raindrops - Teachers Guide.
Duke Power Company, Educational Services Dept., Charlotte, NC.
Pub Date—29 Sep 79
Note—50p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC02 Plus Postage.
Descriptors—*Ecology, Elementary Secondary Education, Environment, *Environmental Education, Interdisciplinary Approach, *Learning Activities, *Power Technology, Social Studies, *Utilities, *Water Resources
Identifiers—Catawba River, North Carolina
Following a test and answer sheet for pretesting/posttesting purposes related to the film "Raindrops" (focusing on the ecology of, and electric development along, the banks of North Carolina's Catawba River), seven activities are outlined as possibilities for helping students gain a fuller understanding of the river and its development. The content area emphasized, objective, and instructional strategies are provided for each activity. Materials required (maps, charts, puzzles, worksheets) are included as part of the activity or call for use of readily available library sources such as the "World Almanac." Five suggestions for further enhancing the study of the Catawba River and answers to questions are also included. (Author/JN)

ED 218 162 SE 038 586
Campe, Stephen L.
Energy Football
Pub Date—Jun 82
Note—15p.
Pub Type— Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—*Conservation Education, *Educational Games, Elementary Secondary Education, *Energy, *Energy Conservation, Interdisciplinary Approach, Learning Activities
Identifiers—*Energy Education
This game is designed to provide basic energy information and to foster addition, subtraction, and multiplication skills while the game is being played. Game cards contain questions, answers, and information on the value of the questions. The cards are to be cut apart and retained by the "referee" as he/she asks questions of team member(s). Teachers will need to provide a die and markers for the yardage and the "football." The game may be extended by devising new questions based on material studied in class. (Author/JN)

ED 219 327 SO 014 192
Shillenn, James K. Vincent, John R.
Nuclear Power in the Classroom: A Union of Science and Social Studies Education.
Pub Date—Aug 81
Note—14p.
Pub Type— Opinion Papers (120) — Guides - Classroom - Teacher (052)
EDRS Price - MF01/PC01 Plus Postage.
Descriptors—Controversial Issues (Course Content), Course Content, Educational Needs, Elementary Secondary Education, Inservice Teacher Education, *Interdisciplinary Approach, *Nuclear Energy, *Science Instruction, *Social Studies
This paper examines issues that K-12 science and social studies teachers need to keep in mind when teaching about nuclear power. The information needs to be presented in as objective a manner as possible. Science needs to become more social oriented. Team teaching should be encouraged. Elementary and secondary inservice teacher education is needed. When designing a class about nuclear energy, teachers need to be aware that accuracy of informational content needs to be considered from two perspectives. These perspectives are the correctness of the information and the intellectual honesty with which this information is presented. Teachers should also know the major issues surrounding the nuclear debate and some of the arguments on both sides of the issues so that information and activities can focus on these major points. The paper examines six of these major issues and discusses what nuclear advocates and adversaries say concerning them. The issues are nuclear safety, health impact, nuclear waste management, economics of nuclear power, the need for nuclear power, and nuclear proliferation. In developing a strategy for presenting these nuclear issues in the classroom, there are a variety of available resources that the classroom teacher can use. The paper does not describe the resources. (RM)

SUBJECT INDEX

NOTE: *Documents are listed by ED number in the Table of Contents. The page on which the abstract can be located is listed.*

AMERICAN STUDIES	(1)	ED121654
ANASAZI (ANTHROPOLOGICAL LABEL)	(1)	ED216828
*ANIMAL BEHAVIOR	(1)	ED160281
ANIMAL BEHAVIOR	(5)	ED174365 ED174366 ED174367 ED174368 ED176905
ANIMAL FACILITIES	(1)	ED106213
*ANIMALS	(3)	ED196728 ED206466 ED206467
ANIMALS	(4)	ED206465 ED206469 ED209061 ED209062
ANIMAL SCIENCE	(3)	ED141175 ED144332 ED156595
*ANNOTATED BIBLIOGRAPHIES	(6)	ED093602 ED136527 ED156473 ED159106 ED160528 ED176984
ANNOTATED BIBLIOGRAPHIES	(10)	ED089993 ED118486 ED149965 ED166016 ED167369 ED179443 ED179484 ED196788 ED200481 ED218164
ANSWER KEYS	(1)	ED146084
*ANSWER SHEETS	(1)	ED190363
*ANTHROPOLOGY	(3)	ED107549 ED195399 ED198013
ANTHROPOLOGY	(1)	ED125937
*APPLE CIDER MAKING	(1)	ED160282
*APPROPRIATE TECHNOLOGY	(1)	ED198005
*AQUACULTURE	(1)	ED211875
*ARCHAEOLOGY	(1)	ED195399
ARCHERY	(2)	ED158906 ED183297
*ARCHITECTURAL CHARACTER	(1)	ED123136
ARCHITECTURAL EDUCATION	(1)	ED176908
ARCHITECTURE	(4)	ED087600 ED133212 ED167312 ED167579
AREA STUDIES	(6)	ED060940 ED136527 ED147222 ED147223 ED156594 ED156595
ARIZONA	(1)	ED156529
ARKANSAS	(3)	ED212492 ED212493 ED212494
ART	(14)	ED017377 ED024481 ED035423 ED086499 ED092330 ED108875 ED157666 ED157768 ED160281 ED160283 ED164192 ED176909 ED182736 ED206470
*ART ACTIVITIES	(3)	ED165972 ED168024 ED193058
ART ACTIVITIES	(15)	ED085247 ED171456 ED176910 ED176911 ED178231 ED178232 ED193059 ED195399 ED201561 ED206418 ED206419 ED206420 ED206421 ED207817 ED219206
*ART EDUCATION	(9)	ED085247 ED086499 ED087688 ED100661 ED100686 ED100687 ED100688 ED103242 ED157773
ART EDUCATION	(12)	ED060940 ED103205 ED162897 ED174479 ED175722 ED175724 ED175728 ED175729 ED177013 ED179421 ED180833 ED180839

BIBLIOGRAPHIES	(14)	ED028086	ED049917	ED062176	ED083117	ED093682	ED121569	ED134535
	ED134536	ED134537	ED134538	ED141953	ED152643	ED167413	ED179443	
*BICYCLING	(1)	ED184861						
BIOGRAPHIES	(1)	ED125937						
*BIOLOGICAL INFLUENCES	(1)	ED219287						
BIOLOGICAL INFLUENCES	(5)	ED086482	ED086483	ED086484	ED086485	ED086487		
*BIOLOGICAL SCIENCES	(11)	ED100667	ED108890	ED137063	ED141175	ED157757	ED157763	ED157770
	ED162905	ED164334	ED193055	ED219234				
BIOLOGICAL SCIENCES	(15)	ED028086	ED099235	ED128163	ED141159	ED157762	ED157768	ED157771
	ED157834	ED157835	ED157836	ED157837	ED167410	ED173057	ED195389	ED211358
*BIOLOGY	(16)	ED034676	ED046781	ED058127	ED062109	ED100662	ED100777	ED101945
	ED167421	ED175730	ED177012	ED179416	ED180699	ED180812	ED193047	ED200409
	ED219287							
BIOLOGY	(47)	ED017377	ED032220	ED033844	ED035540	ED044295	ED051993	ED053946
	ED055015	ED071264	ED071265	ED071266	ED071267	ED086522	ED086552	ED086553
	ED086554	ED086555	ED086556	ED086557	ED087188	ED087189	ED092358	ED093619
	ED097221	ED100778	ED103890	ED133219	ED133220	ED134433	ED134435	ED135649
	ED157757	ED174364	ED174365	ED174366	ED174367	ED174368	ED174435	ED174442
	ED179412	ED180808	ED180813	ED191747	ED194306	ED196731	ED198012	ED206467
*BIOLOGY INSTRUCTION	(5)	ED174364	ED174365	ED174366	ED174367	ED174368		
*BIRDS	(1)	ED206469						
BIRTH	(1)	ED214842						
BIRTH RATE	(5)	ED111716	ED120046	ED160528	ED164417	ED171597		
BOATING SAFETY	(1)	ED183297						
*BOOKS	(1)	ED179443						
BOOKS	(1)	ED179404						
*BOTANY	(3)	ED103245	ED160286	ED174367				
BOTANY	(14)	ED101942	ED103246	ED157680	ED175593	ED175594	ED175724	ED175730
	ED183368	ED193055	ED196728	ED200409	ED204105	ED209061	ED209062	
*BRINE SHRIMP	(1)	ED103233						
*BRONFENBRENNER (URIE)	(1)	ED193410						
*BUILDING DESIGN	(1)	ED219276						
*BULLETIN BOARDS	(1)	ED086500						
*BUROS	(1)	ED162905						
BUSINESS	(2)	ED155669	ED202717					
*BUSINESS EDUCATION	(1)	ED100689						
*CALIFORNIA	(16)	ED086482	ED086483	ED086484	ED086485	ED086486	ED086487	ED213580
	ED213581	ED213582	ED213583					

CHANGE STRATEGIES	(4)	ED120068	ED120069	ED156593	ED187485		
CHANGING ATTITUDES	(3)	ED125938	ED156478	ED164414			
CHARTS	(1)	ED202765					
*CHECK LISTS	(1)	ED184734					
*CHEMICAL ANALYSIS	(1)	ED157758					
CHEMICAL INDUSTRY	(1)	ED202724					
CHEMICAL REACTIONS	(1)	ED079048					
*CHEMISTRY	(2)	ED093599	ED193048				
CHEMISTRY	(5)	ED017377	ED053946	ED099234	ED157758	ED194302	
*CHILD DEVELOPMENT	(1)	ED193410					
CHILDHOOD NEEDS	(1)	ED215926					
*CHILD LANGUAGE	(1)	ED149594					
*CHILD REARING	(1)	ED147216					
*CHILDREN	(2)	ED147216	ED193410				
CHILDREN	(1)	ED204084					
*CHILDRENS ART	(1)	ED168824					
*CHILDRENS BOOKS	(1)	ED079048					
*CHILDRENS GAMES	(2)	ED167311	ED198980				
*CHILDRENS LITERATURE	(2)	ED179443	ED182763				
CHILDRENS LITERATURE	(1)	ED179484					
*CHINESE CULTURE	(1)	ED121656					
*CITIZEN PARTICIPATION	(2)	ED171466	ED188860				
CITIZEN PARTICIPATION	(2)	ED200397	ED201508				
CITIZEN ROLE	(1)	ED104794					
CITIZENSHIP	(3)	ED051011	ED051012	ED059958			
CITIZENSHIP EDUCATION	(1)	ED187606					
*CITY DEMOGRAPHY	(2)	ED120048	ED166301				
CITY IMPROVEMENT	(1)	ED061126					
CITY PLANNING	(7)	ED045350	ED051012	ED061126	ED081601	ED092377	ED120048 ED174484
*CITY PROBLEMS	(4)	ED061126	ED064487	ED132011	ED174484		
CITY PROBLEMS	(6)	ED051012	ED055015	ED055940	ED087608	ED120048	ED121653
*CIVICS	(2)	ED113215	ED153044				

*CIVIL DEFENSE	(2)	ED191697	ED191698					
CIVIL LIBERTIES	(5)	ED153923	ED179436	ED183456	ED214838	ED215921		
*CIVIL RIGHTS	(1)	ED202940						
CIVIL RIGHTS LEGISLATION	(1)	ED202940						
*CLASS ACTIVITIES	(40)	ED071264	ED071265	ED071266	ED071267	ED087188	ED087189	ED123136
	ED152541	ED173072	ED173117	ED174432	ED174479	ED175728	ED175729	ED177013
	ED178350	ED180826	ED182137	ED183392	ED184017	ED184859	ED184860	ED184861
	ED184863	ED184864	ED184869	ED186231	ED187555	ED188868	ED188919	ED190344
	ED190346	ED190350	ED191743	ED191745	ED191747	ED191748	ED191749	ED202963
	ED216081							
CLASS ACTIVITIES	(47)	ED033812	ED098098	ED098100	ED116981	ED118526	ED129068	ED129069
	ED121653	ED121656	ED135690	ED135694	ED138227	ED138538	ED150783	ED157817
	ED157818	ED157819	ED157820	ED164414	ED165970	ED167449	ED167450	ED167451
	ED167452	ED173115	ED173159	ED173163	ED175730	ED177012	ED177015	ED178335
	ED179794	ED179795	ED180832	ED182418	ED183363	ED183374	ED184865	ED184875
	ED186246	ED186281	ED186315	ED186316	ED188860	ED190353	ED191697	ED191698
*CLASSROOM DESIGN	(1)	ED065309						
CLASSROOM GAMES	(7)	ED081595	ED089899	ED125925	ED167449	ED167450	ED167451	ED167452
CLASSROOM GUIDANCE PROGRAMS	(1)	ED170896						
*CLASSROOM MATERIALS	(2)	ED144786	ED144787					
*CLASSROOM MATERIALS	(3)	ED152541	ED159106	ED166060				
CLASSROOM TECHNIQUES	(1)	ED134526						
*CLIMATE CONTROL	(1)	ED219270						
CLIMATIC FACTORS	(3)	ED130927	ED156595	ED165975				
*COAL	(1)	ED219274						
COAL	(1)	ED179375						
*COASTAL ZONES	(4)	ED200453	ED200454	ED206468	ED211373			
COASTAL ZONES	(5)	ED198010	ED198011	ED198013	ED211358	ED211389		
COEDUCATION	(1)	ED175590						
*COGNITIVE DEVELOPMENT	(1)	ED128081						
COGNITIVE OBJECTIVES	(7)	ED055018	ED059926	ED062182	ED064196	ED098084	ED130927	ED150079
*COGNITIVE PROCESSES	(1)	ED211361						
COGNITIVE PROCESSES	(1)	ED154999						
COHORT ANALYSIS	(1)	ED171597						
COLLEGE PROGRAMS	(1)	ED201501						
*COLLEGE SCIENCE	(1)	ED219287						
COLOR	(1)	ED103235						

*COMMUNITY ROLE	(1)	ED155069
COMMUNITY ROLE	(1)	ED064196
COMMUNITY SERVICES	(1)	ED216081
*COMMUNITY STUDIES	(2)	ED167312 ED167317
*COMMUNITY STUDY	(5)	ED051011 ED128289 ED165977 ED174371 ED194349
COMMUNITY STUDY	(8)	ED059926 ED061126 ED066407 ED067233 ED071917 ED098098 ED098100 ED138527
COMMUNITY SUPPORT	(2)	ED171466 ED174371
*COMMUNITY SURVEYS	(1)	ED167317
*COMPARATIVE ANALYSIS	(1)	ED157817
COMPARATIVE ANALYSIS	(1)	ED215921
*COMPARATIVE EDUCATION	(2)	ED179484 ED206517
COMPARATIVE EDUCATION	(2)	ED198017 ED198018
*COMPARING POLITICAL EXPERIENCES	(2)	ED120068 ED120069
COMPASS ACTIVITIES	(1)	ED165974
COMPASS READING	(1)	ED210172
*COMPETENCY BASED EDUCATION	(1)	ED219278
*COMPLIANCE (LEGAL)	(1)	ED202940
COMPOSITION SKILLS (LITERARY)	(1)	ED149843
COMPREHENSIVE PROGRAMS	(1)	ED077723
COMPUTATION	(2)	ED100668 ED100669
*COMPUTER ASSISTED INSTRUCTION	(18)	ED113269 ED167366 ED167366 ED167367 ED167368 ED167369 ED167370 ED167371 ED167372 ED167373 ED167374 ED179411 ED179412 ED179414 ED179415 ED179416 ED179417 ED196702
COMPUTER ASSISTED INSTRUCTION	(1)	ED055940
COMPUTER ORIENTED PROGRAMS	(1)	ED113269
*COMPUTER PROGRAMS	(1)	ED149965
COMPUTER PROGRAMS	(3)	ED179411 ED179412 ED196702
*CONCEPT FORMATION	(3)	ED190398 ED190399 ED199092
CONCEPT FORMATION	(11)	ED098084 ED121568 ED134535 ED134536 ED134537 ED134538 ED138538 ED157662 ED160286 ED171475 ED214794
*CONCEPT TEACHING	(15)	ED038207 ED064187 ED134535 ED134536 ED134537 ED134538 ED135690 ED135694 ED157835 ED157836 ED157837 ED167410 ED167452 ED176911 ED214838
CONCEPT TEACHING	(23)	ED051011 ED051012 ED055015 ED055018 ED059947 ED059949 ED059950 ED059958 ED064196 ED073032 ED075315 ED088722 ED100778 ED120045 ED120068 ED120069 ED128081 ED146084 ED167834 ED167449 ED167450 ED167451 ED206513

*CONCEPTUAL SCHEMES	(4)	ED046826	ED064196	ED141427	ED166009				
CONCEPTUAL SCHEMES	(10)	ED066308	ED086557	ED166010	ED166011	ED166012	ED166013	ED166014	
	ED166015	ED166032	ED176957						
*CONFLICT	(2)	ED073032	ED125928						
CONFLICT	(3)	ED125925	ED125933	ED179436					
*CONFLICT RESOLUTION	(1)	ED093743							
CONFLICT RESOLUTION	(4)	ED118526	ED125925	ED125933	ED153923				
*CONSERVATION AND ENVIRONMENTAL SCIENCE CENTER	(1)	ED033784							
CONSERVATION (CONCEPT)	(2)	ED125928	ED125938						
*CONSERVATION EDUCATION	(117)	ED017377	ED024484	ED027991	ED028086	ED032220	ED033844	ED033862	
	ED034676	ED035540	ED041767	ED044296	ED051993	ED059947	ED062234	ED064196	
	ED067218	ED071836	ED089993	ED097219	ED097221	ED099187	ED099190	ED099210	
	ED099216	ED099217	ED099218	ED099219	ED099220	ED099221	ED099240	ED100644	
	ED100652	ED100653	ED100654	ED100655	ED100657	ED100658	ED100660	ED100661	
	ED100664	ED100665	ED100666	ED100691	ED100692	ED100712	ED101937	ED102031	
	ED103196	ED104639	ED106055	ED106095	ED126928	ED137100	ED144824	ED144825	
	ED152498	ED152499	ED154996	ED157666	ED157762	ED161727	ED162897	ED167449	
	ED167450	ED167451	ED167452	ED167454	ED168877	ED174432	ED176960	ED178035	
	ED179416	ED180808	ED180813	ED183363	ED184416	ED184866	ED186246	ED190348	
	ED190853	ED190398	ED190399	ED193054	ED194440	ED195389	ED199085	ED201421	
	ED201422	ED201423	ED201424	ED205395	ED206471	ED207817	ED207818	ED210171	
	ED211378	ED211379	ED211388	ED212492	ED212493	ED212494	ED214752	ED214794	
	ED215863	ED218154	ED218162	ED219268	ED219269	ED219270	ED219271	ED219272	
	ED219273	ED219274	ED219275	ED219276	ED219277	ED219278			
CONSERVATION EDUCATION	(141)	ED033784	ED033788	ED033812	ED045875	ED045880	ED059085	ED059948	
	ED059949	ED059950	ED062102	ED063989	ED073032	ED081595	ED092358	ED092379	
	ED092437	ED094912	ED098972	ED099186	ED099188	ED099189	ED099191	ED099192	
	ED099199	ED099200	ED099213	ED099214	ED099215	ED099229	ED099230	ED099231	
	ED099232	ED099233	ED099234	ED099235	ED100639	ED100640	ED100650	ED100656	
	ED100659	ED100662	ED100663	ED100667	ED100668	ED100669	ED100670	ED100671	
	ED100672	ED100673	ED100674	ED100676	ED100686	ED100687	ED100688	ED100689	
	ED100690	ED100693	ED100694	ED100695	ED100696	ED100697	ED100698	ED100778	
	ED101941	ED101942	ED101943	ED101944	ED101945	ED101959	ED103201	ED103213	
	ED106054	ED106084	ED106087	ED107466	ED107468	ED108874	ED108875	ED108876	
	ED108890	ED114254	ED116910	ED116947	ED119962	ED119963	ED119964	ED119965	
	ED121569	ED125868	ED125883	ED125938	ED130821	ED130822	ED130831	ED134448	
	ED134449	ED135656	ED135838	ED139671	ED141081	ED141094	ED141116	ED152841	
	ED156485	ED156486	ED157760	ED157763	ED157765	ED157773	ED158906	ED162905	
	ED167355	ED170135	ED170138	ED174431	ED175724	ED179415	ED180809	ED180811	
	ED180812	ED180814	ED184735	ED186231	ED186261	ED187554	ED187557	ED188058	
	ED188936	ED190350	ED194252	ED194353	ED206419	ED207824	ED207838	ED207859	
	ED211361	ED213580	ED213581	ED213582	ED213583	ED214841			
*CONSERVATION (ENVIRONMENT)	(19)	ED090096	ED099198	ED099199	ED137066	ED152531	ED157662	ED157834	
	ED157835	ED157836	ED157837	ED166011	ED170138	ED174431	ED174435	ED174436	
	ED175724	ED188008	ED193054	ED218154					
CONSERVATION (ENVIRONMENT)	(28)	ED107549	ED111662	ED111663	ED111664	ED125923	ED125931	ED130927	
	ED141157	ED149986	ED156594	ED156595	ED158301	ED158302	ED158309	ED160418	
	ED162886	ED165975	ED167454	ED174432	ED180813	ED183363	ED196102	ED199085	
	ED201422	ED201423	ED201424	ED206063	ED206471				
*CONSERVATION FIELD CENTRES (CANADA)	(1)	ED201421							

CONSTRUCTION COSTS	(1)	ED125930
CONSTRUCTION NEEDS	(1)	ED125925
*CONSTRUCTION (PROCESS)	(1)	ED080361
CONSTRUCTION (PROCESS)	(5)	ED174364 ED174365 ED174366 ED174367 ED174368
*CONSUMER ECONOMICS	(1)	ED167312
CONSUMER ECONOMICS	(3)	ED059950 ED207011 ED215926
CONSUMER EDUCATION	(6)	ED141081 ED147589 ED147590 ED151297 ED179421 ED180825
CONTENT ANALYSIS	(1)	ED070635
*CONTENT AREA READING	(3)	ED197996 ED197997 ED197998
*CONTROVERSIAL ISSUES	(1)	ED073032
CONTROVERSIAL ISSUES (COURSE CONTENT)	(1)	ED219327
*COOKING INSTRUCTION	(2)	ED160282 ED160284
*COOPERATIVE PLANNING	(1)	ED153923
CORE CURRICULUM	(1)	ED024484
*COSTS	(1)	ED147216
COSTS	(1)	ED167312
COUNSELING	(1)	ED187485
*COUNSELING INSTRUCTIONAL PROGRAMS	(1)	ED170896
COUNSELOR ATTITUDES	(1)	ED187875
*COUNSELOR ROLE	(1)	ED175592
COUNSELOR ROLE	(2)	ED038222 ED197924
*COUNSELOR TRAINING	(1)	ED038222
*COURSE CONTENT	(5)	ED033853 ED043501 ED055864 ED123095 ED170139
COURSE CONTENT	(14)	ED033862 ED059901 ED120068 ED156479 ED156480 ED156481 ED156482 ED156483 ED156484 ED156485 ED170153 ED183297 ED200279 ED219327
*COURSE DESCRIPTIONS	(1)	ED144788
COURSE DESCRIPTIONS	(5)	ED064187 ED085163 ED087688 ED103294 ED212519
*COURSE OBJECTIVES	(1)	ED120069
COURSE OBJECTIVES	(6)	ED098098 ED098100 ED102048 ED123095 ED128289 ED200279
COURSE ORGANIZATION	(2)	ED059901 ED123095
*COURSES	(1)	ED200279
*COURT LITIGATION	(1)	ED082982
*CREATIVE ACTIVITIES	(1)	ED061118

*CURRICULUM DEVELOPMENT	(51)	ED039138	ED046826	ED064196	ED066366	ED070635	ED102046	ED120044
	ED120053	ED125852	ED125883	ED137063	ED138538	ED144794	ED159106	ED160418
	ED166032	ED167355	ED171466	ED175718	ED175722	ED176905	ED176911	ED176957
	ED178231	ED179356	ED180774	ED180827	ED180838	ED183357	ED184869	ED186246
	ED186282	ED187557	ED187629	ED188919	ED188936	ED190246	ED190350	ED190399
	ED191743	ED195544	ED200431	ED204138	ED206418	ED213580	ED213581	ED213582
	ED213583	ED215939	ED216369	ED218204				
CURRICULUM DEVELOPMENT	(47)	ED055015	ED055018	ED055833	ED061059	ED063162	ED071868	ED075233
	ED080291	ED092374	ED096685	ED114269	ED116910	ED123034	ED125938	ED134535
	ED134536	ED134537	ED134538	ED135690	ED135694	ED141950	ED142429	ED142433
	ED152498	ED152499	ED155059	ED157666	ED165970	ED166009	ED176909	ED176910
	ED178232	ED180794	ED182144	ED187554	ED188860	ED196344	ED196348	ED196253
	ED190398	ED191697	ED191698	ED191745	ED196726	ED200450	ED206419	ED206517
*CURRICULUM ENRICHMENT	(9)	ED082919	ED089899	ED093599	ED167401	ED167402	ED167409	ED167410
	ED176909	ED206419						
CURRICULUM ENRICHMENT	(16)	ED035473	ED038207	ED058049	ED144786	ED144787	ED159075	ED165972
	ED165973	ED165974	ED165975	ED165976	ED165977	ED167393	ED174371	ED176905
	ED206418							
CURRICULUM EVALUATION	(1)	ED183456						
*CURRICULUM GUIDES	(103)	ED024484	ED027991	ED042607	ED051011	ED051012	ED059961	ED063151
	ED063162	ED063989	ED068368	ED070635	ED071264	ED071265	ED071266	ED071267
	ED071868	ED077723	ED079058	ED080348	ED080349	ED080367	ED080368	ED081601
	ED083004	ED086473	ED087185	ED087189	ED093619	ED093621	ED093648	ED097221
	ED098872	ED099186	ED099187	ED099213	ED099214	ED099215	ED099216	ED099217
	ED099218	ED099219	ED099220	ED099221	ED099229	ED099230	ED099231	ED099232
	ED099233	ED099240	ED100049	ED100650	ED100676	ED100712	ED101941	ED101942
	ED101943	ED101944	ED101945	ED103196	ED106054	ED107466	ED107468	ED114254
	ED116947	ED121568	ED123034	ED123095	ED125862	ED125871	ED125888	ED128081
	ED134455	ED137063	ED139671	ED144786	ED144787	ED144826	ED149843	ED149979
	ED149980	ED153846	ED154986	ED156486	ED157683	ED157771	ED158906	ED164192
	ED164283	ED164341	ED165972	ED165973	ED165974	ED165975	ED165976	ED165977
	ED166032	ED166301	ED176957	ED180827	ED186281	ED187556	ED196726	ED204138
CURRICULUM GUIDES	(73)	ED035473	ED058127	ED059926	ED059968	ED061126	ED062284	ED064196
	ED079100	ED080361	ED086522	ED087570	ED091269	ED093589	ED097211	ED097219
	ED099188	ED099189	ED099190	ED099191	ED099192	ED099210	ED101937	ED107539
	ED108076	ED110396	ED113143	ED113214	ED113215	ED113216	ED113256	ED120053
	ED121566	ED121567	ED125052	ED125383	ED137056	ED138436	ED141081	ED141933
	ED144332	ED144788	ED147531	ED147532	ED147589	ED147590	ED149931	ED150079
	ED150783	ED152643	ED153923	ED156482	ED156484	ED157681	ED157682	ED157765
	ED161727	ED166016	ED174431	ED176905	ED176909	ED176910	ED176911	ED177012
	ED177013	ED177014	ED177015	ED178231	ED178232	ED178256	ED179980	ED180774
	ED187485	ED188977						
CURRICULUM PLANNING	(2)	ED033788	ED046826					
*CURRICULUM RESEARCH	(1)	ED180827						
DALLAS INDEPENDENT SCHOOL DISTRICT	(1)	ED183297						
DANCE	(1)	ED061118						
*DANCE	(1)	ED128081						
*DATA COLLECTION	(1)	ED067233						
*DAY CAMP PROGRAMS	(3)	ED204084	ED206420	ED206421				
	(1)	ED142488						

DIALOGUE	(2)	ED125928	ED125930					
*DISABILITIES	(2)	ED213163	ED213164					
DISABILITIES	(2)	ED184875	ED202940					
DISADVANTAGED	(2)	ED214838	ED215921					
DISADVANTAGED YOUTH	(1)	ED138527						
DISCIPLINE	(1)	ED187485						
*DISCOVERY LEARNING	(6)	ED034104	ED158301	ED158302	ED158303	ED209061	ED209062	
DISCOVERY LEARNING	(4)	ED032220	ED035540	ED156478	ED160285			
DISCOVERY PROCESSES	(1)	ED206465						
DISCRIMINATORY ATTITUDES (SOCIAL)	(1)	ED093743						
DISCUSSION (TEACHING TECHNIQUE)	(3)	ED125928	ED183456	ED214842				
DISEASE RATE	(1)	ED157837						
*DISTINGUISHED ACHIEVEMENT AWARD ENTRY	(1)	ED074038						
*DISTRICT OF COLUMBIA	(2)	ED157817	ED196577					
*DIXON PUBLIC SCHOOLS IL	(2)	ED178231	ED178232					
DOCUMENTARIES	(2)	ED120068	ED120069					
DRAMA	(3)	ED165973	ED196102	ED204084				
*EARLY CHILDHOOD EDUCATION	(1)	ED128081						
EARLY CHILDHOOD EDUCATION	(3)	ED100652	ED168725	ED187629				
EARTHQUAKES	(1)	ED216927						
*EARTH SCIENCE	(18)	ED061060	ED063111	ED086557	ED100663	ED100778	ED133210	ED133218
	ED170141	ED170153	ED177013	ED179352	ED183374	ED193048	ED198010	ED198011
	ED200410	ED211365	ED216927					
EARTH SCIENCE	(31)	ED026006	ED032220	ED033844	ED033853	ED061061	ED086556	ED100688
	ED133211	ED133213	ED134438	ED141175	ED147222	ED157763	ED173062	ED173082
	ED174365	ED174366	ED174368	ED176960	ED177012	ED177014	ED177015	ED179353
	ED179355	ED180013	ED180332	ED183368	ED196731	ED200453	ED200454	ED206468
ECOSYSTEMS	(1)	ED059948						
*ECOLOGICAL FACTORS	(3)	ED083117	ED113148	ED125931				
ECOLOGICAL FACTORS	(13)	ED086482	ED086483	ED086484	ED086485	ED086486	ED086487	ED104794
	ED124450	ED125938	ED142481	ED147222	ED147223	ED218154		
*ECOLOGY	(115)	ED020016	ED053945	ED055015	ED056073	ED058127	ED059085	ED059948
	ED059949	ED059950	ED059959	ED061059	ED061061	ED062180	ED062234	ED063151
	ED065351	ED070002	ED077723	ED080367	ED080368	ED086553	ED097219	ED097221
	ED098096	ED098098	ED098109	ED100679	ED100777	ED100778	ED101941	ED101942
	ED103234	ED103244	ED103247	ED103248	ED103249	ED103250	ED103251	ED103253
	ED104794	ED106086	ED106213	ED107471	ED113214	ED113216	ED114268	ED119962
	ED119963	ED119964	ED119965	ED124450	ED128135	ED130144	ED133219	ED133220
	ED133230	ED133231	ED133436	ED142429	ED142453	ED149843	ED149986	ED149993

EDUCATIONAL ADMINISTRATION	(1)	ED179484						
EDUCATIONAL ASSESSMENT	(1)	ED184734						
*EDUCATIONAL DEVELOPMENT	(1)	ED179484						
*EDUCATIONAL ENVIRONMENT	(1)	ED201421						
EDUCATIONAL ENVIRONMENT	(3)	ED175590	ED187629	ED197924				
EDUCATIONAL EQUIPMENT	(1)	ED085163						
*EDUCATIONAL FACILITIES	(2)	ED134408	ED173115					
EDUCATIONAL FACILITIES	(2)	ED065309	ED118360					
*EDUCATIONAL GAMES	(8)	ED081595	ED087576	ED157757	ED184735	ED198980	ED214838	ED218162
	ED219244							
EDUCATIONAL GAMES	(20)	ED130927	ED141116	ED141162	ED151297	ED165970	ED165974	ED173057
	ED174365	ED174366	ED174367	ED174368	ED175593	ED175594	ED176903	ED181417
	ED205346	ED214842	ED215921	ED216927	ED219271			
EDUCATIONAL INNOVATION	(5)	ED038207	ED074038	ED113269	ED141953	ED197924		
EDUCATIONAL LEGISLATION	(2)	ED063989	ED151123					
EDUCATIONAL MEDIA	(1)	ED184735						
*EDUCATIONAL METHODS	(1)	ED138527						
EDUCATIONAL METHODS	(1)	ED196702						
EDUCATIONAL NEEDS	(4)	ED046826	ED215939	ED218204	ED219227			
*EDUCATIONAL OBJECTIVES	(2)	ED187629	ED194261					
EDUCATIONAL OBJECTIVES	(44)	ED066407	ED134455	ED134535	ED134536	ED135690	ED135694	ED138538
	ED147222	ED150079	ED157662	ED158906	ED164417	ED165970	ED165972	ED165973
	ED165974	ED165975	ED165976	ED165977	ED167413	ED167449	ED167450	ED167451
	ED167452	ED171475	ED174364	ED174365	ED174367	ED174368	ED176905	ED176909
	ED176910	ED179436	ED179484	ED183357	ED183456	ED184734	ED187606	ED194440
	ED200481	ED212519	ED215939	ED216081	ED218204			
EDUCATIONAL PARKS	(5)	ED152498	ED156529	ED156530	ED156531	ED156532		
EDUCATIONAL PHILOSOPHY	(9)	ED099917	ED092437	ED125871	ED125883	ED160285	ED176905	ED179484
	ED187485	ED201421						
*EDUCATIONAL PLANNING	(1)	ED188936						
*EDUCATIONAL PROGRAMS	(5)	ED108874	ED108875	ED152498	ED152499	ED170135		
EDUCATIONAL PROGRAMS	(7)	ED038207	ED067202	ED099214	ED099215	ED099234	ED099235	ED151123
EDUCATIONAL QUALITY	(1)	ED171466						
*EDUCATIONAL RESEARCH	(1)	ED134408						
EDUCATIONAL RESEARCH	(1)	ED187875						
*EDUCATIONAL RESOURCES	(7)	ED125852	ED125855	ED125888	ED156463	ED157666	ED166016	ED170135
EDUCATIONAL RESOURCES	(13)	ED106055	ED113143	ED118486	ED152643	ED156473	ED158906	ED165972

	ED086499	ED093673	ED103213	ED106057	ED114268	ED119960	ED119961	ED121568
	ED137063	ED142429	ED142433					
ELEMENTARY GRADES	(48)	ED033812	ED046826	ED051011	ED051012	ED055010	ED059926	ED059947
	ED059948	ED059949	ED061118	ED062182	ED064196	ED071868	ED073912	ED079068
	ED080344	ED080348	ED080349	ED080361	ED081595	ED083004	ED083117	ED092383
	ED098084	ED103196	ED103219	ED103234	ED103235	ED103236	ED103237	ED103238
	ED103239	ED103240	ED103241	ED103242	ED103243	ED103244	ED103245	ED103246
	ED103247	ED103248	ED103249	ED103250	ED103251	ED103252	ED103253	ED116904
	ED141116							
*ELEMENTARY SCHOOL CURRICULUM	(3)	ED147581	ED190054	ED193055				
ELEMENTARY SCHOOL CURRICULUM	(6)	ED087576	ED130927	ED147582	ED206418	ED213580	ED213581	
*ELEMENTARY SCHOOL MATHEMATICS	(1)	ED212411						
ELEMENTARY SCHOOL MATHEMATICS	(6)	ED176910	ED176911	ED178231	ED206418	ED206419	ED219206	
*ELEMENTARY SCHOOL SCIENCE	(55)	ED032220	ED033844	ED033862	ED034676	ED035540	ED039133	ED045375
	ED051993	ED061058	ED086500	ED089993	ED092389	ED092390	ED092391	ED093633
	ED093634	ED103233	ED111662	ED111663	ED111664	ED123055	ED127169	ED128163
	ED133144	ED133150	ED134415	ED134433	ED134455	ED138461	ED138462	ED144824
	ED152531	ED157680	ED167409	ED167421	ED168577	ED193058	ED193059	ED193062
	ED194352	ED200407	ED200445	ED200450	ED200453	ED206466	ED206467	ED206468
	ED206469	ED210171	ED211358	ED214792	ED216906	ED216907	ED219234	ED219291
ELEMENTARY SCHOOL SCIENCE	(28)	ED041767	ED061034	ED062122	ED092388	ED097221	ED141145	ED153846
	ED174442	ED176910	ED176911	ED178231	ED179351	ED179352	ED179353	ED179355
	ED180898	ED184075	ED186281	ED198010	ED199085	ED204105	ED207817	ED207824
	ED211373	ED211378	ED212458	ED212460	ED219206			
ELEMENTARY SCHOOL STUDENTS	(3)	ED093589	ED093621	ED170896				
*ELEMENTARY SCIENCE STUDY	(1)	ED167409						
*ELEMENTARY SECONDARY EDUCATION	(77)	ED113151	ED114269	ED121569	ED123034	ED125868	ED125871	ED125885
	ED125888	ED130820	ED133149	ED134434	ED134455	ED135648	ED135649	ED137140
	ED138436	ED141081	ED141145	ED141178	ED144794	ED149981	ED149982	ED149983
	ED149984	ED149985	ED149986	ED149987	ED149988	ED150026	ED152498	ED153820
	ED156463	ED156473	ED156529	ED156530	ED156531	ED156532	ED157660	ED157681
	ED157682	ED157683	ED157760	ED157768	ED157770	ED158930	ED159075	ED160418
	ED162885	ED165974	ED165975	ED165988	ED166052	ED167393	ED167395	ED170135
	ED173072	ED173117	ED174479	ED175726	ED176909	ED176957	ED176960	ED176984
	ED179421	ED180027	ED182144	ED183368	ED183416	ED190344	ED190398	ED194261
	ED195403	ED196704	ED196726	ED204138	ED205396	ED218094		
ELEMENTARY SECONDARY EDUCATION	(145)	ED103244	ED103250	ED106054	ED106055	ED106070	ED106213	ED107468
	ED108074	ED108875	ED113148	ED120044	ED120064	ED121653	ED123136	ED125855
	ED125862	ED125883	ED129535	ED130833	ED138527	ED141953	ED142428	ED142489
	ED144332	ED144826	ED149964	ED152499	ED152541	ED155069	ED156593	ED156594
	ED156595	ED157773	ED157817	ED159106	ED160281	ED160283	ED160286	ED160528
	ED161727	ED162905	ED164192	ED165976	ED165977	ED167454	ED170101	ED170152
	ED170896	ED171466	ED171475	ED173062	ED173115	ED174364	ED174365	ED174366
	ED174367	ED174368	ED174371	ED174481	ED177015	ED178335	ED179353	ED179365
	ED179443	ED179484	ED181656	ED182118	ED183374	ED183456	ED184734	ED184735
	ED184869	ED186156	ED187486	ED187554	ED187555	ED187557	ED187606	ED187629
	ED188860	ED188919	ED190348	ED190399	ED191697	ED191698	ED191747	ED191748
	ED191749	ED193020	ED193029	ED193030	ED193031	ED193061	ED193410	ED194306
	ED194349	ED195544	ED196102	ED196728	ED198010	ED198013	ED198017	ED198018
	ED198980	ED199085	ED199092	ED199096	ED200413	ED200424	ED200431	ED201421
	ED201561	ED202727	ED202963	ED204105	ED206471	ED206517	ED207817	ED207824
	ED207859	ED209062	ED210182	ED211361	ED211373	ED211375	ED211375	ED211376
	ED211377	ED213163	ED213164	ED214752	ED214838	ED214841	ED214842	ED215929

ED134535	ED134536	ED134537	ED134538	ED135648	ED135649	ED135656	ED137056
ED137064	ED137140	ED138436	ED138527	ED138538	ED139671	ED141081	ED141094
ED141116	ED141178	ED141953	ED142429	ED142433	ED142481	ED144332	ED144786
ED144787	ED144794	ED144824	ED144825	ED144826	ED146084	ED147168	ED147222
ED147589	ED147590	ED148581	ED149843	ED149964	ED149965	ED149979	ED149989
ED149981	ED149982	ED149984	ED149985	ED149986	ED149987	ED149988	ED149989
ED149990	ED149991	ED149992	ED149993	ED149994	ED149995	ED150026	ED150079
ED152531	ED152541	ED153819	ED154986	ED154996	ED154999	ED156463	ED156479
ED156478	ED156479	ED156480	ED156481	ED156482	ED156480	ED156484	ED156485
ED156486	ED156529	ED156530	ED156531	ED156532	ED157681	ED157682	ED157690
ED157757	ED157758	ED157760	ED157762	ED157763	ED157764	ED157765	ED157766
ED157768	ED157770	ED157771	ED157773	ED157834	ED157835	ED157836	ED157857
ED158301	ED158302	ED158603	ED159075	ED160283	ED161727	ED161754	ED162815
ED162886	ED162897	ED162905	ED164283	ED164334	ED164341	ED164414	ED165970
ED165972	ED165973	ED165974	ED165975	ED165976	ED165977	ED165983	ED165991
ED166009	ED166010	ED166014	ED166015	ED166301	ED167365	ED167367	ED167368
ED167369	ED167370	ED167373	ED167374	ED167396	ED167421	ED167449	ED167450
ED167451	ED167452	ED167454	ED168324	ED169563	ED169564	ED170101	ED170135
ED170139	ED170141	ED170151	ED170152	ED170153	ED171466	ED171475	ED171507
ED173062	ED173082	ED173086	ED173115	ED173117	ED174364	ED174365	ED174366
ED174367	ED174407	ED174431	ED174435	ED174436	ED174479	ED175590	ED175593
ED175594	ED175722	ED175723	ED175724	ED175726	ED175728	ED175729	ED175730
ED176905	ED176960	ED176964	ED177012	ED177013	ED177014	ED177015	ED178231
ED178232	ED178335	ED178550	ED179375	ED179411	ED179415	ED179417	ED179421
ED180757	ED180774	ED180791	ED180794	ED180808	ED180809	ED180811	ED180812
ED180813	ED180814	ED180852	ED180883	ED181656	ED182110	ED182113	ED182114
ED182118	ED182131	ED182132	ED182133	ED182134	ED182135	ED182136	ED182144
ED183321	ED183357	ED183363	ED183368	ED183374	ED183416	ED184017	ED184260
ED184862	ED184863	ED184864	ED184865	ED184866	ED184869	ED184875	ED186246
ED187485	ED187557	ED187579	ED187606	ED188003	ED188360	ED188868	ED188919
ED188936	ED190348	ED190398	ED190399	ED191697	ED191698	ED191747	ED191748
ED191749	ED193028	ED193030	ED193031	ED193047	ED193048	ED193055	ED193058
ED193059	ED193060	ED193062	ED193063	ED194302	ED194349	ED194352	ED195389
ED195403	ED196577	ED196704	ED196724	ED196725	ED196726	ED196728	ED196731
ED197998	ED198005	ED198012	ED198013	ED199092	ED199096	ED199109	ED199114
ED199115	ED199116	ED200407	ED200408	ED200414	ED200424	ED200445	ED200450
ED201501	ED201508	ED201509	ED201510	ED201523	ED202724	ED202729	ED204105
ED204138	ED205346	ED205395	ED206418	ED206419	ED206420	ED206421	ED206465
ED206466	ED206467	ED206468	ED206469	ED206470	ED206471	ED207811	ED207817
ED207818	ED207824	ED207851	ED207859	ED209061	ED209062	ED210172	ED210122
ED211361	ED211378	ED211379	ED212458	ED212469	ED213460	ED212461	ED213580
ED213581	ED213582	ED213583	ED214752	ED214792	ED214794	ED215863	ED215926
ED218094	ED218154	ED218160	ED219286				

ENVIRONMENTAL EDUCATION

(186)

ED038222	ED038223	ED038224	ED042607	ED044295	ED046781	ED055833	
ED056873	ED056874	ED061058	ED061059	ED061060	ED061061	ED062122	ED063151
ED065309	ED065345	ED065551	ED066366	ED067218	ED068568	ED069468	ED070582
ED070615	ED080344	ED081607	ED081608	ED086552	ED086560	ED086566	ED089299
ED093743	ED100644	ED103233	ED106088	ED108876	ED108891	ED110396	ED111662
ED111663	ED111664	ED118486	ED120046	ED120865	ED125928	ED125930	ED133144
ED133150	ED133207	ED133208	ED133210	ED133213	ED133214	ED133215	ED133216
ED133228	ED133230	ED133231	ED137063	ED137065	ED146044	ED146048	ED147223
ED147224	ED147581	ED147582	ED151297	ED152490	ED152499	ED152643	ED153820
ED153844	ED153846	ED157662	ED157689	ED160225	ED166011	ED166012	ED166013
ED166016	ED166032	ED166060	ED167355	ED167366	ED167371	ED167372	ED167402
ED168877	ED170138	ED170896	ED173057	ED173072	ED173158	ED173159	ED173163
ED174371	ED174432	ED174442	ED174484	ED176891	ED176892	ED176910	ED176957
ED179351	ED179352	ED179353	ED179355	ED179356	ED179374	ED180892	ED184735
ED184859	ED184861	ED185156	ED186231	ED186261	ED187554	ED187629	ED190344
ED190346	ED190350	ED190363	ED190360	ED190361	ED190362	ED190363	ED190400
ED193029	ED193053	ED193056	ED193061	ED194261	ED194325	ED194353	ED195396
ED195399	ED197996	ED197997	ED198010	ED198011	ED198020	ED199085	ED200409
ED200410	ED200418	ED200435	ED200453	ED200464	ED202726	ED204162	ED204183
ED204184	ED204185	ED204186	ED207858	ED210171	ED211058	ED211365	ED211373

		ED211374	ED211375	ED211376	ED211377	ED211388	ED211389	ED212492	ED212493
		ED212494	ED215923	ED216906	ED216907	ED216927	ED219234	ED219244	ED219268
		ED219269	ED219270	ED219271	ED219272	ED219273	ED219274	ED219275	ED219276
		ED219277	ED219281	ED219287					
*ENVIRONMENTAL EDUCATION PROJECT	(8)	ED113214	ED113215	ED113216	ED113256	ED121653	ED121654	ED121655	
		ED121656							
ENVIRONMENTAL ENERGY EDUCATION PROJECT	(1)	ED147188							
ENVIRONMENTAL IMPACT STUDIES	(1)	ED174364							
*ENVIRONMENTAL INFLUENCES	(44)	ED071264	ED071265	ED071266	ED071267	ED087188	ED087189	ED103240	
		ED170138	ED174435	ED175723	ED184864	ED184865	ED193410	ED219287	
ENVIRONMENTAL INFLUENCES	(27)	ED059947	ED067233	ED087688	ED099199	ED099200	ED099210	ED107549	
		ED120053	ED123136	ED125852	ED130927	ED142488	ED142489	ED146024	ED161754
		ED167449	ED167450	ED167451	ED167452	ED167454	ED174404	ED178335	ED178350
		ED179375	ED179436	ED180774	ED184863				
ENVIRONMENTAL MANAGEMENT	(4)	ED213580	ED213581	ED213582	ED213583				
*ENVIRONMENTAL PROBLEMS	(1)	ED193048							
ENVIRONMENTAL PROBLEMS	(1)	ED193047							
ENVIRONMENTAL PROTECTION AGENCY	(1)	ED148581							
ENVIRONMENTAL QUALITY	(1)	ED193047							
ENVIRONMENTAL RESEARCH	(9)	ED063111	ED086482	ED086483	ED086484	ED086485	ED086486	ED086487	
		ED093648	ED100777						
ENVIRONMENTAL STUDIES	(1)	ED141116							
EPIDEMIOLOGY	(1)	ED077723							
EQUAL EDUCATION	(1)	ED202940							
EQUAL OPPORTUNITIES (JOBS)	(1)	ED202940							
*EQUAL PROTECTION	(1)	ED202940							
*EQUIPMENT	(2)	ED080361	ED213164						
EQUIPMENT	(9)	ED038223	ED038224	ED093648	ED107471	ED175590	ED175592	ED175728	
		ED175729	ED186156						
EQUIPMENT MAINTENANCE	(1)	ED170101							
EQUIPMENT STANDARDS	(1)	ED170101							
ERIC SMEAC	(2)	ED091172	ED102031						
EROSION	(1)	ED174364							
ESEA TITLE III	(137)	ED032220	ED034676	ED035540	ED043501	ED045350	ED045375	ED046715	
		ED055833	ED056873	ED058049	ED061059	ED061060	ED061061	ED063151	ED065351
		ED066308	ED067233	ED067241	ED067242	ED067243	ED067244	ED067245	ED067246
		ED067304	ED068339	ED069468	ED070600	ED070601	ED079048	ED079068	ED079100
		ED081601	ED081602	ED085247	ED085248	ED085249	ED086499	ED086500	ED086507
		ED086553	ED086554	ED086555	ED086556	ED086557	ED092389	ED092390	ED092391
		ED093599	ED096085	ED097241	ED097219	ED097221	ED098972	ED099210	ED099213
		ED099214	ED099215	ED099229	ED099230	ED099231	ED099232	ED099233	ED099240

	ED100649 ED100650 ED100653 ED100654 ED100655 ED100656 ED100657 ED100658	
	ED100659 ED100660 ED100661 ED100662 ED100663 ED100664 ED100665 ED100666	
	ED100667 ED100668 ED100669 ED100670 ED100671 ED100672 ED100673 ED100674	
	ED100686 ED100687 ED100688 ED100689 ED100690 ED100691 ED100692 ED100693	
	ED100694 ED100695 ED100696 ED100697 ED100698 ED101937 ED106688 ED113214	
	ED113215 ED113216 ED113256 ED116910 ED119960 ED119961 ED119962 ED119963	
	ED119964 ED119965 ED121566 ED121567 ED121568 ED125871 ED130821 ED130822	
	ED130831 ED132011 ED133144 ED133150 ED133151 ED133224 ED133225 ED133226	
	ED133227 ED133228 ED133229 ED133230 ED133231 ED134455 ED137064 ED137065	
	ED138436 ED141175	
*ESKIMOS	(1)	ED167311
*ESTUARIES	(2)	ED142429 ED142433
ESTUARIES	(2)	ED198010 ED206469
*ETHICAL INSTRUCTION	(1)	ED176905
*ETHICS	(2)	ED149983 ED149990
ETHICS	(4)	ED121656 ED125883 ED176905 ED196728
ETHNIC GROUPS	(2)	ED214838 ED215921
ETHNICITY	(1)	ED155069
ETHNIC STUDIES	(3)	ED064187 ED091268 ED120048
*ETHNOLOGY	(1)	ED198013
EUROPE (EAST)	(1)	ED147223
*EVALUATION	(2)	ED067202 ED125865
EVALUATION	(4)	ED038207 ED150079 ED167355 ED183456
EVALUATION CRITERIA	(6)	ED165972 ED165973 ED165974 ED165975 ED165976 ED165977
*EVALUATION METHODS	(1)	ED190350
EVALUATION METHODS	(5)	ED033784 ED087688 ED102048 ED151123 ED194440
EVALUATION TECHNIQUES	(1)	ED038222
EVOLUTION	(1)	ED062180
*EXCEPTIONAL CHILD EDUCATION	(8)	ED071264 ED071265 ED071266 ED071267 ED087188 ED087489 ED180814 ED183363
*EXCEPTIONAL CHILDREN	(1)	ED138527
EXCEPTIONAL CHILDREN	(1)	ED134434
*EXHIBITS	(1)	ED191747
EXHIBITS	(1)	ED191749
EXPENDITURES	(1)	ED147216
EXPERIENTIAL EDUCATION	(2)	ED173062 ED174371
*EXPERIENTIAL LEARNING	(26)	ED153820 ED154996 ED156478 ED165970 ED165975 ED167312 ED171456 ED173057 ED174364 ED174365 ED174366 ED174367 ED174368 ED174371 ED176908

	ED176910	ED178232	ED183297	ED184734	ED184735	ED186156	ED194261	ED196577
	ED198980	ED209061	ED216828					
EXPERIENTIAL LEARNING	(30)	ED152499	ED156483	ED156484	ED157662	ED160285	ED164283	ED165972
	ED165973	ED165974	ED165976	ED165977	ED166009	ED167311	ED167317	ED170101
	ED171475	ED173062	ED175590	ED175591	ED175592	ED176905	ED176909	ED178231
	ED183321	ED187485	ED197924	ED200381	ED206420	ED206421	ED209062	
*EXPERIMENTS	(2)	ED061058	ED062122					
EXPERIMENTS	(2)	ED070615	ED174367					
*EXPORTS	(1)	ED202717						
*FACILITIES	(2)	ED118360	ED133140					
FACILITIES	(1)	ED184734						
*FACILITY GUIDELINES	(1)	ED118360						
*FACILITY INVENTORY	(1)	ED067233						
FACILITY INVENTORY	(1)	ED170101						
FACULTY DEVELOPMENT	(1)	ED165970						
FACULTY HANDBOOKS	(1)	ED175590						
FAMILY LIFE	(1)	ED075315						
*FAMILY LIFE EDUCATION	(1)	ED193029						
*FAMILY PLANNING	(1)	ED147216						
FAMILY PLANNING	(4)	ED152643	ED171597	ED179417	ED206517			
*FAMILY ROLE	(1)	ED193410						
*FEDERAL GOVERNMENT	(1)	ED202940						
FEDERAL LEGISLATION	(1)	ED153842						
FEDERAL REGULATION	(1)	ED179795						
FEMALES	(2)	ED187875	ED214842					
FICSS	(1)	ED104794						
FICTION	(1)	ED179443						
*FIELD EXPERIENCE PROGRAMS	(4)	ED059950	ED167317	ED183297	ED186156			
FIELD EXPERIENCE PROGRAMS	(3)	ED051011	ED158936	ED158930				
*FIELD INSTRUCTION	(5)	ED058049	ED108874	ED108875	ED160285	ED171475		
FIELD INSTRUCTION	(13)	ED059949	ED167317	ED170101	ED171456	ED173117	ED174364	ED174365
	ED174366	ED174367	ED174368	ED183297	ED184734	ED186156		
*FIELD STUDIES	(4)	ED069468	ED080344	ED103251	ED211365			
FIELD STUDIES	(9)	ED061059	ED067218	ED070588	ED093589	ED093619	ED094948	ED107480
	ED209061	ED209062						

*FIELD TRIPS	(20)	ED061059	ED138527	ED156529	ED156530	ED156531	ED156532	ED158930
	ED170101	ED171456	ED174371	ED180832	ED182144	ED183321	ED188868	ED194302
	ED206420	ED206421	ED211358	ED211373	ED211377			
FIELD TRIPS	(46)	ED024484	ED070588	ED099216	ED099217	ED099218	ED099219	ED099220
	ED099221	ED100778	ED102048	ED107480	ED113214	ED116910	ED121566	ED121568
	ED142488	ED142489	ED143581	ED157770	ED160284	ED160285	ED165970	ED165973
	ED165975	ED165976	ED165977	ED167317	ED171475	ED173057	ED173117	ED174431
	ED176908	ED176911	ED180311	ED180812	ED180813	ED186156	ED186246	ED187435
	ED195403	ED195544	ED200410	ED206419	ED206466	ED207851	ED209062	
FILMS	(5)	ED062176	ED103294	ED121565	ED142481	ED160528		
FILMSTRIPS	(2)	ED056873	ED056874					
FINANCIAL SUPPORT	(3)	ED067202	ED151123	ED158930				
FINE ARTS	(2)	ED091172	ED173072					
FIRST AID	(2)	ED134455	ED183297					
*FISH	(1)	ED141145						
FISH	(1)	ED103238						
*FISHERIES	(3)	ED202724	ED206470	ED211375				
FISHERIES	(1)	ED144788						
FISHES	(3)	ED086485	ED086486	ED086487				
*FISHING	(1)	ED158906						
FISHING	(1)	ED183297						
*FLORIDA	(2)	ED107480	ED128289					
FLORIDA	(7)	ED059958	ED061126	ED062284	ED142429	ED142433	ED175724	ED175726
*FLORIDA (PINELLAS COUNTY)	(1)	ED120053						
FOCUS ON INNER CITY SOCIAL STUDIES	(1)	ED104794						
*FOLK CULTURE	(1)	ED200418						
FOLLOWUP STUDIES	(1)	ED175590						
*FOOD	(9)	ED116981	ED120054	ED124451	ED141159	ED153841	ED162885	ED193031
	ED199120	ED207811						
FOOD	(6)	ED147224	ED153923	ED160282	ED199146	ED204084	ED214842	
FOOD PRODUCTION	(1)	ED219271						
*FOODS INSTRUCTION	(1)	ED219271						
FOOD STAMPS	(1)	ED141427						
*FOREIGN COUNTRIES	(1)	ED179484						
N COUNTRIES	(8)	ED070635	ED125930	ED156594	ED156595	ED198017	ED198018	ED204084
	ED206517							

*HISTORY INSTRUCTION	(1)	ED156532 ED160284 ED173072 ED173163 ED179374 ED179375 ED184862 ED216081 ED212519
HISTORY INSTRUCTION	(4)	ED134526 ED156593 ED156594 ED156595
HOLIDAYS	(1)	ED120081
*HOME ECONOMICS	(2)	ED100826 ED219278
HOME ECONOMICS	(10)	ED157768 ED167413 ED171456 ED179395 ED190350 ED191743 ED191745 ED199109 ED207824 ED219271
*HOME ECONOMICS EDUCATION	(4)	ED100690 ED167413 ED177012 ED193029
HOME ECONOMICS EDUCATION	(2)	ED179421 ED100826
HOME ECONOMICS TEACHERS	(1)	ED193029
*HOME FURNISHINGS	(1)	ED219269
*HOME MANAGEMENT	(1)	ED167413
HOME MANAGEMENT	(1)	ED100826
HOME PROGRAMS	(1)	ED168725
*HORSES	(1)	ED162905
HORSESHOE PITCHING	(1)	ED183297
*HOUSING	(3)	ED100649 ED219269 ED219270
HOUSING	(2)	ED107466 ED219278
HOUSING DISCRIMINATION	(1)	ED202940
HOUSING NEEDS	(1)	ED100649
HOUSING PATTERNS	(1)	ED100649
HUMAN CAPITAL	(1)	ED171597
HUMAN DEVELOPMENT	(2)	ED086522 ED152643
*HUMAN DIGNITY	(1)	ED153923
HUMAN DIGNITY	(1)	ED055864
HUMAN ENGINEERING	(1)	ED123136
*HUMAN GEOGRAPHY	(5)	ED055015 ED083722 ED103294 ED120045 ED130927
HUMAN GEOGRAPHY	(7)	ED055940 ED100778 ED142481 ED142488 ED142489 ED147224 ED156593
*HUMANISM	(1)	ED092437
*HUMANISTIC EDUCATION	(6)	ED125937 ED125938 ED135694 ED182118 ED187485 ED188977
HUMANISTIC EDUCATION	(1)	ED135690
*HUMANITIES	(1)	ED092437
HUMANITIES	(2)	ED059948 ED082978

*HUMANITIES INSTRUCTION	(2)	ED180833	ED212519					
HUMANITIES INSTRUCTION	(1)	ED059926						
*HUMAN RELATIONS	(3)	ED093743	ED206420	ED206421				
HUMAN RELATIONS	(3)	ED067304	ED142431	ED188977				
HUMAN RELATIONS UNITS	(2)	ED051011	ED051012					
HUMAN RESOURCES	(2)	ED176908	ED216828					
*HUNGER	(3)	ED116901	ED120049	ED120054				
HUNTER SAFETY	(1)	ED183297						
*HUNTING	(1)	ED150906						
*HUNTING	(1)	ED176905						
HYGIENE	(2)	ED017377	ED071836					
ICE	(1)	ED103249						
*ICHTHYOLOGY	(1)	ED219234						
ILLINOIS	(2)	ED096085	ED125088					
*ILLINOIS (DUPAGE COUNTY)	(1)	ED171466						
ILLINOIS (ELGIN)	(1)	ED176911						
ILLUSTRATIONS	(10)	ED125928	ED157666	ED160282	ED160284	ED160286	ED174364	ED174365
	ED174366	ED174367	ED174368					
IMMIGRANTS	(1)	ED160528						
*INCOME	(1)	ED141427						
*INDEPENDENT STUDY	(3)	ED106084	ED180757	ED201501				
INDEPENDENT STUDY	(6)	ED101945	ED103213	ED147581	ED147582	ED147589	ED147590	
*INDIANA	(2)	ED093621	ED135640					
INDIANA	(10)	ED219268	ED219269	ED219270	ED219271	ED219272	ED219273	ED219274
	ED219275	ED219276	ED219277					
INDIVIDUAL DEVELOPMENT	(3)	ED055018	ED187485	ED188977				
*INDIVIDUALIZED INSTRUCTION	(3)	ED190360	ED190361	ED190362				
INDIVIDUALIZED INSTRUCTION	(2)	ED089899	ED190363					
INDIVIDUAL NEEDS	(2)	ED214838	ED215921					
INDIVIDUAL POWER	(1)	ED157035						
INDUCTIVE METHODS	(4)	ED073032	ED088722	ED125931	ED174436			
*INDUSTRIAL ARTS	(4)	ED100691	ED100692	ED175728	ED182137			
INDUSTRIAL ARTS	(6)	ED162897	ED175729	ED179395	ED179421	ED207018	ED207824	

*INDUSTRIALIZATION	(1)	ED099213						
INDUSTRIALIZATION	(6)	ED051012	ED125930	ED147222	ED147224	ED153843	ED183456	
INDUSTRIAL TECHNOLOGY	(1)	ED147224						
*INDUSTRY	(1)	ED099213						
INDUSTRY	(4)	ED190360	ED190361	ED190362	ED190363			
INFANT MORTALITY	(1)	ED171597						
INFLATION (ECONOMICS)	(1)	ED147216						
*INFORMATION ANALYSIS PRODUCTS	(1)	ED182118						
INFORMATION ANALYSIS PRODUCTS	(2)	ED167317	ED173072					
*INFORMATION DISSEMINATION	(3)	ED201422	ED201423	ED201424				
INFORMATION DISSEMINATION	(2)	ED167355	ED190353					
INFORMATION SCIENCE	(1)	ED167454						
*INFORMATION SOURCES	(2)	ED156463	ED167413					
INFORMATION SOURCES	(5)	ED162886	ED166016	ED201422	ED201423	ED201424		
*INFORMATION SYSTEMS	(1)	ED167393						
INFORMATION UTILIZATION	(1)	ED151297						
INITIATIVE TESTS	(1)	ED187485						
*IN KIND INCOME	(1)	ED141427						
*INQUIRY	(1)	ED194306						
*INQUIRY TRAINING	(3)	ED055015	ED055018	ED154999				
INQUIRY TRAINING	(8) ED150079	ED071264	ED071265	ED071266	ED071267	ED087188	ED087189	ED123136
*INSERVICE EDUCATION	(1)	ED180794						
INSERVICE EDUCATION	(3)	ED145845	ED213163	ED213164				
INSERVICE PROGRAMS	(1)	ED165970						
*INSERVICE TEACHER EDUCATION	(1)	ED165970						
INSERVICE TEACHER EDUCATION	(2)	ED161754	ED219027					
INSERVICE TEACHING	(1)	ED165970						
*INSTITUTE FOR ENVIRONMENTAL EDUCATION	(2)	ED093619	ED093648					
*INSTITUTES (TRAINING PROGRAMS)	(1)	ED171807						
INSTITUTIONS	(4)	ED213580	ED213581	ED213582	ED213583			
*INSTRUCTION	(3)	ED062176	ED092374	ED092395				
UCTION	(16)	ED045436	ED045437	ED062180	ED092358	ED092380	ED093599	ED093619

	ED093633	ED093634	ED093682	ED097211	ED133140	ED137056	ED137140	ED156480
	ED170153							
INSTRUCTIONAL AIDS	(3)	ED034104	ED038207	ED111662				
INSTRUCTIONAL IMPROVEMENT	(1)	ED027991						
INSTRUCTIONAL INNOVATION	(1)	ED033812						
*INSTRUCTIONAL MATERIALS	(256)	ED028086	ED033044	ED034676	ED035540	ED042607	ED043501	ED045375
	ED045380	ED045436	ED045437	ED046715	ED046781	ED049917	ED050940	ED053945
	ED053946	ED059085	ED061058	ED061060	ED061061	ED062122	ED062182	ED063151
	ED065345	ED065351	ED071917	ED07904D	ED085247	ED086473	ED086482	ED086483
	ED086484	ED086485	ED086486	ED086487	ED086499	ED086507	ED086522	ED086552
	ED086553	ED086554	ED086555	ED086556	ED087576	ED089993	ED091172	ED092358
	ED092374	ED092377	ED092378	ED092379	ED093673	ED093682	ED098072	ED099188
	ED099189	ED099191	ED099192	ED099199	ED099200	ED099214	ED099215	ED099231
	ED099232	ED099234	ED099235	ED100695	ED102031	ED103201	ED103230	ED104639
	ED106087	ED106095	ED108274	ED108876	ED108890	ED108891	ED111662	ED111663
	ED113143	ED113148	ED113151	ED114268	ED116904	ED116946	ED119960	ED119961
	ED119962	ED119963	ED119964	ED119965	ED121565	ED121569	ED123055	ED125855
	ED125862	ED125868	ED125871	ED125885	ED127160	ED128081	ED128163	ED130821
	ED130822	ED130831	ED130833	ED132011	ED133144	ED133150	ED133151	ED133207
	ED133208	ED133209	ED133210	ED133211	ED133212	ED133213	ED133214	ED133215
	ED133216	ED133217	ED133218	ED133219	ED133220	ED133224	ED133226	ED133228
	ED133230	ED134415	ED134434	ED134448	ED135649	ED136656	ED137056	ED137064
	ED137065	ED137075	ED137100	ED137140	ED138461	ED141081	ED141094	ED141116
	ED141141	ED141142	ED141145	ED141157	ED141158	ED141159	ED141162	ED141175
	ED141170	ED144786	ED144787	ED144825	ED144826	ED146044	ED146048	ED147183
	ED148581	ED149964	ED149965	ED149979	ED149980	ED149981	ED149982	ED149983
	ED149984	ED149985	ED149986	ED149987	ED149988	ED149989#	ED149990	ED149991
	ED149992	ED149993	ED149994	ED149995	ED150026	ED151297	ED152643	ED153819
	ED153820	ED153841	ED153842	ED153843	ED153844	ED153845	ED153859	ED154985
	ED156473	ED156479	ED156481	ED156483	ED156484	ED156485	ED157630	ED157631
	ED157682	ED157683	ED157758	ED157760	ED157762	ED157763	ED157764	ED157765
	ED157766	ED157768	ED157770	ED157771	ED157773	ED159075	ED161754	ED165975
	ED165988	ED165991	ED166009	ED166060	ED167069	ED167071	ED167393	ED167409
	ED167413	ED168877	ED169206	ED170139	ED173072	ED173082	ED174432	ED175728
	ED175729	ED179352	ED179353	ED179355	ED180774	ED182110	ED182113	ED182114
	ED182180	ED183321	ED186246	ED194352	ED194353	ED196702	ED204182	ED204183
	ED204184	ED204185	ED204186	ED205346	ED206418	ED206419	ED207817	ED207818
	ED210172							
INSTRUCTIONAL MATERIALS	(284)	ED032220	ED033788	ED035473	ED038207	ED039138	ED056806	ED055940
	ED056873	ED056874	ED066293	ED067210	ED067241	ED067242	ED067243	ED067244
	ED067245	ED067246	ED067504	ED068337	ED068359	ED068366	ED068368	ED070615
	ED070680	ED070681	ED071264	ED071265	ED071266	ED071267	ED071836	ED073032
	ED073913	ED073923	ED075223	ED077723	ED079665	ED079700	ED080291	ED080344
	ED080348	ED080349	ED080361	ED080367	ED080368	ED081895	ED081601	ED081607
	ED082978	ED082982	ED082994	ED085240	ED085249	ED085500	ED085557	ED087128
	ED087189	ED092389	ED092390	ED092391	ED093599	ED093633	ED093634	ED097211
	ED097219	ED097221	ED098064	ED099186	ED099187	ED099190	ED099210	ED099213
	ED099216	ED099217	ED099218	ED099219	ED099220	ED099221	ED099229	ED099230
	ED099233	ED099240	ED100639	ED100644	ED100650	ED100652	ED100653	ED100654
	ED100655	ED100656	ED100657	ED100658	ED100659	ED100660	ED100661	ED100662
	ED100663	ED100664	ED100665	ED100666	ED100667	ED100668	ED100669	ED100670
	ED100671	ED100672	ED100673	ED100674	ED100676	ED100686	ED100687	ED100688
	ED100689	ED100690	ED100691	ED100692	ED100693	ED100694	ED100696	ED100697
	ED100698	ED100712	ED101937	ED101942	ED101959	ED103196	ED103234	ED103235
	ED103236	ED103237	ED103238	ED103239	ED103240	ED103241	ED103242	ED103243
	ED103244	ED103245	ED103246	ED103247	ED103248	ED103249	ED103250	ED103251
	ED103252	ED103253	ED103294	ED104651	ED106054	ED106055	ED106057	ED106084
	ED107466	ED107468	ED107771	ED107549	ED108875	ED114664	ED118216	ED118236
	ED114254	ED116914	ED116947	ED116981	ED118426	ED118526	ED120045	ED120046

	ED120048	ED120049	ED120053	ED120054	ED120068	ED120069	ED121568	ED121653
	ED121654	ED121655	ED121656	ED123095	ED124451	ED125888	ED125925	ED125933
	ED127161	ED130927	ED133225	ED133227	ED133229	ED133231	ED134433	ED134449
	ED134526	ED137063	ED138436	ED142429	ED142433	ED144794	ED144824	ED146084
	ED152531	ED155069	ED156478	ED156593	ED156594	ED156595	ED157666	ED160523
	ED162886	ED162905	ED164283	ED164334	ED164417	ED165970	ED165972	ED165973
	ED165974	ED165976	ED165977	ED166010	ED166011	ED166012	ED166013	ED166014
	ED166015	ED167365	ED167367	ED167395	ED167449	ED167450	ED167451	ED167452
	ED170135	ED170141	ED170151	ED170152	ED171597	ED174364	ED174365	ED174366
	ED174367	ED174368	ED175091	ED175730	ED176905	ED176915	ED178352	ED179356
	ED179415	ED179416	ED179436	ED179484	ED180757	ED182297	ED183357	ED183363
	ED186281	ED186282	ED187564	ED188308	ED190360	ED190360	ED190361	ED190362
	ED190363	ED190400	ED194261	ED195399	ED196704	ED196724	ED196725	ED207811
	ED210171	ED211358	ED211361	ED211373	ED211375	ED211376	ED211377	ED211378
	ED211379	ED212411	ED216681	ED216927	ED219267			
*INSTRUCTIONAL MEDIA	(1)	ED113143						
INSTRUCTIONAL MEDIA	(2)	ED027991	ED113269					
*INSTRUCTIONAL PROGRAMS	(1)	ED171466						
INSTRUCTIONAL PROGRAMS	(2)	ED027991	ED087576					
INSTRUCTIONAL TRIPS	(3)	ED027991	ED138527	ED171475				
INSTRUCTION CURRICULUM ENVIRONMENT	(12)	ED100686	ED100687	ED100688	ED100689	ED100690	ED100692	ED100693
	ED100694	ED100695	ED100696	ED100697	ED100698			
*INTEGRATED ACTIVITIES	(3)	ED093084	ED173115	ED176911				
INTEGRATED ACTIVITIES	(3)	ED093589	ED176910	ED216369				
*INTEGRATED CURRICULUM	(8)	ED053945	ED053946	ED059901	ED093621	ED123095	ED153842	ED173115
	ED216369							
INTEGRATED CURRICULUM	(11)	ED033862	ED134455	ED153841	ED153843	ED153859	ED173117	ED176909
	ED176911	ED182100	ED206418	ED206419				
INTERACTION	(2)	ED093743	ED147224					
*INTERDEPENDENCE	(5)	ED134535	ED134536	ED134537	ED134538	ED135690		
INTERDEPENDENCE	(1)	ED103294						
*INTERDISCIPLINARY APPROACH	(132)	ED039138	ED046826	ED053946	ED055864	ED055940	ED059926	ED059947
	ED059948	ED059949	ED059950	ED059958	ED063162	ED064107	ED064196	ED079068
	ED085247	ED085248	ED085249	ED091172	ED092374	ED092376	ED092377	ED092378
	ED092379	ED096085	ED099186	ED099188	ED099189	ED099190	ED099191	ED099192
	ED099233	ED100649	ED100650	ED100690	ED100777	ED100778	ED101944	ED102048
	ED103201	ED103219	ED103275	ED123034	ED134535	ED134536	ED134537	ED134538
	ED137056	ED138538	ED153820	ED157682	ED157683	ED157762	ED157818	ED160281
	ED160282	ED160283	ED160284	ED164192	ED164253	ED164414	ED166010	ED166012
	ED166013	ED166014	ED169563	ED169564	ED171575	ED173117	ED174431	ED174479
	ED175593	ED175594	ED175722	ED175728	ED176903	ED176960	ED177012	ED177013
	ED177015	ED179351	ED179374	ED179375	ED179395	ED179421	ED180794	ED180833
	ED182144	ED183297	ED184017	ED187629	ED188860	ED188866	ED188886	ED190044
	ED190346	ED190348	ED191745	ED193061	ED196102	ED197996	ED197997	ED197998
	ED199109	ED206418	ED207818	ED207824	ED207831	ED210171	ED210182	ED211361
	ED211374	ED211375	ED211376	ED211377	ED211378	ED211379	ED211388	ED211389
	ED212492	ED212493	ED212494	ED212519	ED213529	ED213581	ED213562	ED213583
	ED214792	ED216369	ED219268	ED219286	ED219327			
*INTERDISCIPLINARY APPROACH	(223)	ED050940	ED053945	ED055015	ED056049	ED056127	ED061118	ED071860

	ED071917	ED075315	ED080291	ED081601	ED081607	ED086473	ED086499	ED086507
	ED092389	ED092390	ED092391	ED097219	ED098084	ED098096	ED098098	ED098100
	ED099187	ED099199	ED099200	ED099214	ED099215	ED099234	ED099235	ED099240
	ED100644	ED100652	ED100653	ED100654	ED100655	ED100656	ED100657	ED100658
	ED100659	ED100660	ED100661	ED100662	ED100663	ED100664	ED100665	ED100666
	ED100667	ED100668	ED100669	ED100670	ED100671	ED100672	ED100673	ED100674
	ED100686	ED100687	ED100688	ED100689	ED100691	ED100692	ED100693	ED100694
	ED100695	ED100696	ED100697	ED100698	ED101941	ED101942	ED101943	ED101945
	ED101959	ED102031	ED106054	ED106070	ED106095	ED107549	ED108890	ED111664
	ED113148	ED113151	ED113214	ED113215	ED113216	ED114264	ED114268	ED114269
	ED120053	ED121654	ED121656	ED126868	ED128185	ED128289	ED130821	ED130822
	ED130831	ED130833	ED130927	ED135648	ED135699	ED135694	ED137100	ED141178
	ED141953	ED142488	ED142569	ED144788	ED144826	ED149952	ED149953	ED149985
	ED149986	ED149987	ED149988	ED149989*	ED149990	ED149991	ED149992	ED149993
	ED149994	ED149995	ED151297	ED152643	ED153819	ED154996	ED156478	ED157766
	ED157768	ED157817	ED157820	ED159075	ED159106	ED160285	ED160286	ED162885
	ED165970	ED165976	ED165988	ED166009	ED166011	ED166015	ED167312	ED167402
	ED167449	ED167450	ED167451	ED167452	ED171456	ED173057	ED173158	ED175590
	ED175591	ED175718	ED175729	ED175730	ED176905	ED177014	ED178335	ED178350
	ED180826	ED180827	ED182110	ED182118	ED182137	ED183368	ED183374	ED183392
	ED183416	ED184862	ED184866	ED186156	ED186236	ED187554	ED187555	ED188919
	ED190350	ED190353	ED190398	ED191743	ED193047	ED193058	ED193059	ED194052
	ED194353	ED194440	ED196577	ED198005	ED198013	ED199092	ED199096	ED199146
	ED200397	ED200407	ED200408	ED200424	ED200435	ED200461	ED201501	ED201523
	ED201561	ED202729	ED204136	ED206465	ED206517	ED207811	ED207817	ED209061
	ED209062	ED212411	ED214794	ED215063	ED216906	ED218160	ED218162	ED219269
	ED219270	ED219271	ED219272	ED219273	ED219274	ED219275	ED219276	ED219277
*INTERMEDIATE GRADES	(15)	ED056874	ED063151	ED065351	ED067242	ED067246	ED070681	ED092377
	ED092378	ED092379	ED097211	ED097219	ED119961	ED178231	ED179351	ED202729
INTERMEDIATE GRADES	(40)	ED059948	ED083117	ED097221	ED102048	ED103234	ED103236	ED103237
	ED103238	ED103239	ED103240	ED103247	ED103251	ED103253	ED147582	ED157764
	ED157817	ED165970	ED165972	ED165973	ED165976	ED165977	ED170151	ED178232
	ED186315	ED196577	ED198005	ED198010	ED206420	ED206421	ED207824	ED209125
	ED210171	ED211373	ED211374	ED211375	ED211376	ED211377	ED212411	ED212493
	ED213581							
*INTERMEDIATE SCIENCE CURRICULUM STUDY	(4)	ED190360	ED190361	ED190362	ED190363			
INTERNATIONAL EDUCATION	(3)	ED103294	ED142481	ED212411				
INTERNATIONAL ORGANIZATIONS	(1)	ED116981						
INTERNATIONAL PROGRAMS	(1)	ED116981						
*INTERNATIONAL RELATIONS	(1)	ED202717						
INTERNATIONAL RELATIONS	(4)	ED135690	ED153923	ED214838	ED215921			
INTERNATIONAL STUDIES	(2)	ED214838	ED215021					
INTERPERSONAL COMPETENCE	(2)	ED194261	ED216828					
*INTERPERSONAL RELATIONSHIP	(1)	ED093743						
INTERPERSONAL RELATIONSHIP	(1)	ED216828						
*INTERVENTION	(1)	ED170896						
INTERVIEWS	(2)	ED165977	ED174071					
*INVERTEBRATES	(1)	ED206467						

	ED150079	ED152643	ED157682	ED157683	ED157834	ED157835	ED157836	ED157837
	ED158301	ED158302	ED158303	ED159075	ED161727	ED165983	ED165991	ED167449
	ED167450	ED167451	ED167452	ED168725	ED169256	ED171456	ED171475	ED173057
	ED173062	ED174371	ED175593	ED175594	ED176909	ED176910	ED176911	ED178231
	ED178232	ED180757	ED180774	ED182144	ED182763	ED183456	ED184735	ED187485
	ED188977	ED194261	ED194440	ED195389	ED196192	ED199175	ED204084	ED205346
	ED206419	ED206420	ED206421	ED207551	ED209062	ED210182	ED211361	ED211389
	ED212492	ED212493	ED212494	ED213580	ED213581	ED213582	ED213583	ED214792
	ED214794	ED215863	ED216906	ED216907	ED218094	ED218160	ED219264	ED219268
	ED219269	ED219270	ED219271	ED219272	ED219273	ED219274	ED219275	ED219276
	ED219277	ED219278	ED219286					
LEARNING ACTIVITIES	(212)	ED024484	ED033788	ED050940	ED059085	ED061060	ED063151	ED063162
	ED065345	ED065351	ED066298	ED067241	ED067242	ED067246	ED067244	ED067245
	ED067246	ED068337	ED069468	ED070615	ED070680	ED070681	ED073923	ED074038
	ED077723	ED080361	ED080367	ED080368	ED081601	ED081602	ED082982	ED086597
	ED091269	ED093682	ED093743	ED097219	ED097221	ED098072	ED099186	ED099187
	ED099188	ED099189	ED099190	ED099191	ED099192	ED099210	ED099213	ED099216
	ED099217	ED099219	ED099220	ED099229	ED099230	ED099231	ED099232	ED099233
	ED099234	ED099240	ED100639	ED100644	ED100652	ED100653	ED100654	ED100655
	ED100656	ED100657	ED100658	ED100659	ED100660	ED100661	ED100662	ED100663
	ED100664	ED100665	ED100666	ED100667	ED100668	ED100669	ED100670	ED100671
	ED100672	ED100673	ED100674	ED100686	ED100687	ED100683	ED100689	ED100690
	ED100691	ED100692	ED100693	ED100694	ED100695	ED100696	ED100697	ED100698
	ED101937	ED101943	ED101944	ED103201	ED103219	ED103233	ED104609	ED104794
	ED106054	ED106084	ED106087	ED106095	ED106213	ED107466	ED107468	ED110396
	ED113151	ED113214	ED113215	ED113216	ED114254	ED114268	ED116946	ED118486
	ED119960	ED119961	ED119962	ED119963	ED119964	ED119965	ED120045	ED120046
	ED120048	ED120049	ED120053	ED121566	ED121569	ED121654	ED121655	ED121656
	ED123034	ED123055	ED125930	ED125931	ED125933	ED125937	ED125938	ED128031
	ED134448	ED134449	ED134535	ED134536	ED134537	ED134538	ED135690	ED135694
	ED137056	ED138527	ED138598	ED139671	ED141091	ED142429	ED142433	ED144786
	ED144787	ED144794	ED144824	ED144825	ED147183	ED147223	ED148581	ED149843
	ED149983	ED150783	ED151123	ED153923	ED155069	ED157681	ED161754	ED164417
	ED167395	ED170101	ED170141	ED175590	ED175591	ED176908	ED179436	ED179793
	ED182110	ED182113	ED182114	ED183321	ED183307	ED188006	ED198980	ED199120
	ED200481	ED201561	ED206416	ED207017	ED207018	ED209061	ED209125	ED210171
	ED211378	ED211379	ED211388	ED212411	ED212519	ED214841	ED214842	ED215920
	ED215921	ED215923	ED215926	ED218162	ED219244			
LEARNING ACTIVITY PACKETS	(1)	ED061118						
*LEARNING EXPERIENCE	(1)	ED074038						
LEARNING EXPERIENCE	(4)	ED067202	ED184734	ED197924	ED216828			
*LEARNING LABORATORIES	(1)	ED186156						
LEARNING MODULES	(13)	ED147216	ED164417	ED174364	ED174365	ED174366	ED174367	ED174368
	ED179792	ED179793	ED179794	ED179795	ED206420	ED206421		
LEARNING PROCESSES	(1)	ED098004						
LEARNING STATIONS	(1)	ED108874						
LEGAL RESPONSIBILITY	(1)	ED167317						
*LEGENDS	(1)	ED200418						
*LEGISLATION	(3)	ED068339	ED137065	ED219277				
LEGISLATION	(3)	ED133217	ED201423	ED201424				
[illegible] TIME	(1)	ED097211						

*MARINE EDUCATION	(12)	ED167393	ED182763	ED194325	ED211358	ED211373	ED211374	ED211375
	ED211376	ED211377	ED211389	ED216906	ED219234			
MARINE EDUCATION	(2)	ED207851	ED214792					
*MARINE SCIENCE	(1)	ED170153						
MARRIAGE	(1)	ED193029						
*MARYLAND	(1)	ED150079						
MARYLAND	(2)	ED051011	ED051012					
*MASTERS THESES	(1)	ED118486						
*MASTERY LEARNING	(1)	ED146084						
MASTERY TESTS	(1)	ED146084						
MATCH BOXES	(1)	ED034104						
MATERIAL DEVELOPMENT	(2)	ED174364	ED206517					
*MATERIALS AND ACTIVITIES FOR TEACHERS AND CHILDREN	(1)	ED034104						
*MATHEMATICAL APPLICATIONS	(5)	ED100664	ED100668	ED100669	ED100670	ED167401		
MATHEMATICAL APPLICATIONS	(2)	ED085249	ED165974					
MATHEMATICAL CONCEPTS	(2)	ED113148	ED165974					
*MATHEMATICAL ENRICHMENT	(1)	ED212411						
MATHEMATICAL ENRICHMENT	(1)	ED209061						
*MATHEMATICS	(1)	ED182133						
MATHEMATICS	(27)	ED017377	ED089099	ED093673	ED099233	ED099240	ED100644	ED134434
	ED142488	ED142489	ED157666	ED157766	ED157768	ED157818	ED160281	ED160283
	ED160284	ED164192	ED167378	ED167374	ED170151	ED170152	ED176909	ED201561
	ED206470	ED207817	ED207818	ED214752				
MATHEMATICS CURRICULUM	(2)	ED059948	ED059949					
*MATHEMATICS EDUCATION	(6)	ED085249	ED103236	ED103252	ED167401	ED177014	ED193061	
MATHEMATICS EDUCATION	(38)	ED091172	ED092377	ED092378	ED092379	ED100664	ED100668	ED100669
	ED100670	ED101944	ED162897	ED165974	ED173072	ED174479	ED175722	ED177013
	ED177015	ED179374	ED179391	ED182133	ED182137	ED184817	ED191745	ED193030
	ED194353	ED196704	ED196725	ED196731	ED201523	ED202719	ED202726	ED207824
	ED211374	ED214794						
*MATHEMATICS INSTRUCTION	(3)	ED165974	ED193030	ED196704				
MATHEMATICS INSTRUCTION	(5)	ED059926	ED171456	ED187629	ED193061	ED202719		
*MATHEMATICS MATERIALS	(1)	ED179792						
MATHEMATICS MATERIALS	(2)	ED165974	ED212411					
MATHEMATICS TEACHERS	(1)	ED193030						
[illegible]ES	(2)	ED166032	ED176957					

*MINORITY GROUP CHILDREN	(1)	ED196577						
MINORITY GROUPS	(1)	ED214842						
MISSISSIPPI	(1)	ED175718						
MISSOURI	(1)	ED087688						
MOBILE CLASSROOMS	(1)	ED038207						
*MODELS	(2)	ED179412	ED181656					
MODELS	(10)	ED077723	ED081595	ED091268	ED100777	ED100778	ED125931	ED141427
	ED179411	ED179414	ED180774					
*MONITORING	(1)	ED175723						
*MONTANA	(1)	ED125871						
MORAL DEVELOPMENT	(1)	ED182118						
MOTHERS	(1)	ED214842						
MOTION	(1)	ED219281						
MOTIVATION	(1)	ED181417						
MOTIVATION TECHNIQUES	(1)	ED066298						
*MOTOR VEHICLES	(2)	ED147589	ED147590					
MOTOR VEHICLES	(2)	ED147581	ED147582					
MULTICULTURAL EDUCATION	(2)	ED187629	ED216369					
*MULTIDISCIPLINARY ACTIVITIES	(1)	ED093589						
*MULTIMEDIA INSTRUCTION	(1)	ED034104						
MULTIMEDIA INSTRUCTION	(2)	ED079048	ED125938					
*MULTNOMAH COUNTY OUTDOOR SCHOOL OR	(5)	ED175590	ED175591	ED175592	ED175593	ED175594		
*MUNICIPALITIES	(3)	ED056874	ED142489	ED216081				
*MUSEUMS	(1)	ED106213						
MUSIC	(2)	ED099233	ED157666					
*MUSIC ACTIVITIES	(1)	ED165972						
MUSIC ACTIVITIES	(3)	ED176910	ED176914	ED219286				
MUSICAL INSTRUMENTS	(1)	ED165972						
*MUSIC EDUCATION	(4)	ED100671	ED100672	ED100693	ED100694			
MUSIC EDUCATION	(2)	ED059948	ED177013					
MYTHOLOGY	(2)	ED125907	ED200418					
NATIONAL DEMOGRAPHY	(1)	ED171597						
NATIONAL DIFFUSION NETWORK	(1)	ED173117						

PEACE	(1)	ED153923
PEDESTRIAN TRAFFIC	(2)	ED147581 ED147582
*PENNSYLVANIA DEPARTMENT OF EDUCATION	(1)	ED164283
PERCENTAGE	(1)	ED167401
*PERCEPTION	(1)	ED059949
PERCEPTION	(8)	ED080348 ED080349 ED081602 ED083117 ED165970 ED165972 ED176908 ED178980
*PERCEPTUAL DEVELOPMENT	(2)	ED080291 ED169256
PERCEPTUAL DEVELOPMENT	(1)	ED096085
PERCEPTUAL MOTOR COORDINATION	(1)	ED134434
PERCEPTUAL MOTOR LEARNING	(2)	ED128081 ED176911
PERFORMANCE CRITERIA	(1)	ED150079
PERIODICALS	(1)	ED166016
PERSONAL VALUES	(1)	ED151297
*PERSONNEL	(1)	ED067202
PERSONNEL	(1)	ED151123
PERSONNEL EVALUATION	(1)	ED145845
PERSONNEL POLICY	(1)	ED024484
*PESTICIDES	(1)	ED141158
PESTICIDES	(3)	ED100712 ED179415 ED219287
PESTS	(1)	ED106057
PETROLEUM INDUSTRY	(4)	ED165991 ED179395 ED186281 ED187554
PHILOSOPHY	(2)	ED125937 ED157662
*PHOTOGRAPHY	(2)	ED063111 ED133209
PHOTOGRAPHY	(2)	ED061118 ED133368
PHYSICAL ACTIVITIES	(1)	ED085163
PHYSICAL DESIGN NEEDS	(1)	ED151123
*PHYSICAL DEVELOPMENT	(1)	ED085163
*PHYSICAL EDUCATION	(3)	ED100695 ED100696 ED173057
PHYSICAL EDUCATION	(8)	ED033812 ED035473 ED063989 ED157666 ED157768 ED175722 ED176910 ED176911
*PHYSICAL ENVIRONMENT	(4)	ED114269 ED123136 ED156594 ED156595
PHYSICAL ENVIRONMENT	(11)	ED082919 ED130927 ED147222 ED153923 ED179443 ED209061 ED209062 ED213580 ED213581 ED213582 ED213583

*PHYSICAL GEOGRAPHY	(2)	ED088722	ED103294					
PHYSICAL GEOGRAPHY	(7)	ED100778	ED125931	ED138538	ED146084	ED147222	ED157817	ED179443
*PHYSICAL SCIENCES	(6)	ED100697	ED184817	ED194353	ED219275	ED219276	ED219281	
PHYSICAL SCIENCES	(10)	ED043501	ED099188	ED134455	ED141175	ED167410	ED184860	ED193047
	ED210172	ED219269	ED219270					
*PHYSICS	(4)	ED059901	ED100698	ED127161	ED202727			
PHYSICS	(13)	ED017377	ED053946	ED101945	ED162886	ED179395	ED190346	ED193063
	ED198011	ED199114	ED200407	ED201508	ED201509	ED201510		
*PHYSIOLOGY	(1)	ED103238						
PHYTOPLANKTON	(1)	ED086483						
PILOT PROJECTS	(1)	ED218094						
*PLANNING	(2)	ED125933	ED191740					
PLANNING	(12)	ED067233	ED121565	ED157666	ED160285	ED164417	ED175726	ED178350
	ED180774	ED184866	ED188860	ED190348	ED201561			
*PLANT GROWTH	(1)	ED103243						
*PLANT IDENTIFICATION	(2)	ED103245	ED175724					
PLANT IDENTIFICATION	(7)	ED160286	ED165975	ED165976	ED173062	ED174365	ED209062	ED216828
*PLANTS	(3)	ED103243	ED103245	ED103246				
PLANTS	(1)	ED103244						
PLANTS (BOTANY)	(1)	ED196731						
*PLANT SCIENCE	(1)	ED103246						
PLANT SCIENCE	(2)	ED061058	ED141175					
PLASTICS	(1)	ED186315						
*PLATE TECTONICS	(1)	ED216927						
*PLAY	(1)	ED167311						
*PLAYGROUND ACTIVITIES	(1)	ED209061						
PLAYGROUNDS	(1)	ED144332						
POETRY	(2)	ED121656	ED165973					
*POLICY	(1)	ED170101						
POLICY	(3)	ED134526	ED157662	ED160528				
*POLICY FORMATION	(2)	ED157820	ED166014					
POLICY FORMATION	(2)	ED152643	ED167365					
POLITICAL INFLUENCES	(3)	ED110526	ED120068	ED150923				
*POLITICAL ISSUES	(3)	ED110526	ED120068	ED120069				

RADIATION	(1)	ED219287						
RATIOS (MATHEMATICS)	(1)	ED167401						
*RATS	(1)	ED106057						
RATS	(1)	ED179415						
*READING	(1)	ED133144						
READING	(2)	ED141141	ED182136					
*READING GAMES	(1)	ED181417						
READING GAMES	(1)	ED193053						
READING IMPROVEMENT	(1)	ED106213						
*READING INSTRUCTION	(3)	ED181417	ED193053	ED215923				
*READING MATERIALS	(4)	ED181417	ED197996	ED197997	ED197998			
READING MATERIALS	(3)	ED061061	ED111663	ED160528				
READING SKILLS	(7)	ED158302	ED158303	ED169563	ED169564	ED193053	ED196704	ED206468
RECORDKEEPING	(1)	ED167317						
RECORDS (FORMS)	(5)	ED024484	ED129535	ED167317	ED190362	ED190363		
*RECREATION	(2)	ED141141	ED158906					
RECREATION	(5)	ED024484	ED108874	ED108876	ED213163	ED213164		
*RECREATIONAL ACTIVITIES	(4)	ED085163	ED097211	ED167311	ED178232			
RECREATIONAL ACTIVITIES	(6)	ED087576	ED116910	ED184735	ED205346	ED206420	ED206421	
RECREATIONAL FACILITIES	(3)	ED167579	ED204105	ED205346				
*RECREATIONAL PROGRAMS	(1)	ED195544						
RECREATIONAL PROGRAMS	(4)	ED097211	ED175591	ED183297	ED184734			
*RECYCLING	(5)	ED059947	ED159075	ED175729	ED188919	ED191749		
RECYCLING	(8) ED198005	ED073032	ED098096	ED171466	ED175728	ED180826	ED184864	ED188008
*REDWOOD GLEN RESIDENT OUTDOOR SCHOOL	(1)	ED129535						
*REFERENCE MATERIALS	(1)	ED125852						
REFERENCE MATERIALS	(4)	ED114269	ED147188	ED167454	ED170141			
*REGIONAL PLANNING	(4)	ED161754	ED174484	ED180774	ED191748			
REGIONAL PLANNING	(3)	ED045350	ED184861	ED184866				
RELATIONSHIP	(5)	ED134535	ED134536	ED134537	ED134538	ED155069		
*RELEVANCE (EDUCATION)	(1)	ED171466						
RELEVANCE (EDUCATION)	(3)	ED066298	ED174371	ED200279				

*SCHOOL ORIENTATION	(1)	ED175591						
SCHOOL ORIENTATION	(2)	ED175593	ED175594					
SCHOOL PLANNING	(1)	ED066308						
*SCHOOL POLICY	(2)	ED158930	ED175591					
SCHOOL POLICY	(2)	ED175590	ED175592					
*SCHOOL RECREATIONAL PROGRAMS	(1)	ED085163						
SCHOOL ROLE	(1)	ED193410						
*SCHOOL SPACE	(1)	ED065309						
*SCHOOL YARDS	(2)	ED193055	ED196731					
SCHOOL YARDS	(1)	ED205395						
*SCIENCE ACTIVITIES	(62)	ED035540	ED046715	ED051993	ED053946	ED061034	ED070588	ED093589
	ED093599	ED093619	ED103233	ED123055	ED125862	ED149964	ED150783	ED152531
	ED152541	ED154996	ED154999	ED157680	ED161727	ED165975	ED165976	ED167395
	ED167409	ED167421	ED168824	ED170151	ED170152	ED179352	ED179353	ED179355
	ED179356	ED180811	ED180812	ED182135	ED190360	ED190361	ED190362	ED190363
	ED194306	ED196731	ED200407	ED200409	ED200445	ED207817	ED207818	ED207851
	ED207858	ED210171	ED210172	ED211365	ED211373	ED211377	ED211378	ED211379
	ED211388	ED214792	ED216906	ED216907	ED216927	ED219234	ED219281	
SCIENCE ACTIVITIES	(45)	ED032220	ED033844	ED034676	ED053945	ED080344	ED094948	ED101942
	ED106087	ED119960	ED119961	ED134448	ED144824	ED149843	ED150026	ED151297
	ED156478	ED157681	ED160418	ED166060	ED168877	ED170139	ED170153	ED180809
	ED180813	ED180814	ED184875	ED196702	ED199092	ED200397	ED206418	ED206419
	ED206420	ED206421	ED211375	ED219268	ED219269	ED219270	ED219271	ED219272
	ED219273	ED219274	ED219275	ED219276	ED219277	ED219286		
SCIENCE AND SOCIETY	(1)	ED207811						
SCIENCE A PROCESS APPROACH	(2)	ED103235	ED123055					
*SCIENCE COURSE IMPROVEMENT PROJECT	(1)	ED167410						
SCIENCE COURSE IMPROVEMENT PROJECT	(3)	ED032220	ED165975	ED167409				
*SCIENCE COURSE IMPROVEMENT PROJECTS	(4)	ED179352	ED179353	ED179355	ED216927			
SCIENCE COURSE IMPROVEMENT PROJECTS	(7)	ED179356	ED190360	ED190361	ED190362	ED190363	ED202724	ED202727
*SCIENCE CURRICULUM	(8)	ED059950	ED173158	ED173159	ED174442	ED186282	ED200397	ED216906
	ED219268							
SCIENCE CURRICULUM	(25)	ED059948	ED130927	ED179351	ED179352	ED179353	ED179355	ED179356
	ED182110	ED182144	ED183557	ED194306	ED194440	ED207811	ED216927	ED219234
	ED219269	ED219270	ED219271	ED219272	ED219273	ED219274	ED219275	ED219276
	ED219277	ED219287						
*SCIENCE EDUCATION	(144)	ED027991	ED098098	ED099216	ED099217	ED099218	ED099219	ED099220
	ED099221	ED100639	ED100644	ED100662	ED100663	ED100667	ED100669	ED100671
	ED100672	ED100673	ED100676	ED100697	ED100698	ED100712	ED101937	ED101942
	ED101945	ED102031	ED103233	ED103234	ED103235	ED103236	ED103237	ED103238
	ED103239	ED103241	ED103242	ED103243	ED103244	ED103245	ED103246	ED103247
	ED103248	ED103249	ED103250	ED103251	ED103252	ED103253	ED106084	ED106088
	ED107466	ED107480	ED108890	ED113151	ED113214	ED114268	ED125868	ED130833
	ED134455	ED144826	ED149964	ED149965	ED149986	ED153843	ED153845	ED153859

	ED157680	ED166060	ED170135	ED170141	ED173072	ED173158	ED173159	ED173163
	ED174435	ED175718	ED175723	ED176957	ED176984	ED177012	ED177014	ED177015
	ED179353	ED179355	ED179375	ED179411	ED179412	ED179416	ED180791	ED180811
	ED180812	ED180813	ED180832	ED180833	ED182137	ED182180	ED183357	ED183374
	ED183392	ED183416	ED184859	ED184860	ED184865	ED184869	ED184875	ED186231
	ED186281	ED186282	ED187554	ED187555	ED187557	ED188868	ED190344	ED190346
	ED190348	ED191743	ED194353	ED197996	ED197997	ED198005	ED198010	ED198011
	ED198012	ED199114	ED199116	ED200407	ED200408	ED200409	ED200410	ED200453
	ED200454	ED201501	ED201508	ED201523	ED202724	ED202727	ED202729	ED205395
	ED206465	ED206467	ED206468	ED206469	ED206470	ED206471	ED212458	ED212460
	ED212461							
SCIENCE EDUCATION	(284)	ED033812	ED089699	ED091172	ED092358	ED092377	ED092378	ED092379
	ED093589	ED093599	ED093619	ED093633	ED093634	ED099199	ED099200	ED099214
	ED099215	ED099234	ED099235	ED099240	ED100649	ED100650	ED100652	ED100653
	ED100654	ED100655	ED100656	ED100657	ED100658	ED100659	ED100660	ED100661
	ED100664	ED100665	ED100666	ED100668	ED100670	ED100674	ED100686	ED100687
	ED100688	ED100689	ED100690	ED100691	ED100692	ED100693	ED100694	ED100695
	ED100696	ED101941	ED101943	ED101944	ED101959	ED103196	ED103201	ED103213
	ED103219	ED103240	ED104639	ED104651	ED106055	ED106057	ED106070	ED106087
	ED106095	ED107468	ED108576	ED108891	ED111662	ED111663	ED111664	ED114254
	ED116910	ED116946	ED119962	ED119963	ED119964	ED119965	ED125855	ED125871
	ED125885	ED127160	ED127161	ED128163	ED128185	ED130821	ED130822	ED130831
	ED133151	ED134448	ED134449	ED137063	ED137064	ED138461	ED138462	ED141178
	ED144706	ED144707	ED144788	ED144794	ED144824	ED144825	ED146044	ED146048
	ED147186	ED148581	ED149979	ED149980	ED149981	ED149982	ED149983	ED149987
	ED149988	ED149989	ED149990	ED149991	ED149994	ED150026	ED152531	ED152541
	ED153841	ED153842	ED153846	ED154999	ED156463	ED156479	ED156480	ED156481
	ED156482	ED156483	ED156484	ED156485	ED156486	ED156529	ED156530	ED156531
	ED156532	ED157666	ED157681	ED157682	ED157683	ED157770	ED159075	ED160418
	ED161727	ED162897	ED164334	ED164341	ED165928	ED165991	ED167355	ED167393
	ED167395	ED167409	ED167410	ED167421	ED168824	ED168877	ED170139	ED170153
	ED173082	ED174407	ED174436	ED174442	ED174479	ED175722	ED175724	ED175728
	ED175729	ED175730	ED176960	ED177013	ED178335	ED178350	ED179352	ED179356
	ED179374	ED179395	ED179414	ED179415	ED179417	ED179421	ED180757	ED180794
	ED180808	ED180809	ED180814	ED180827	ED182110	ED182113	ED182114	ED182134
	ED182144	ED183297	ED183363	ED183368	ED184735	ED184817	ED184863	ED184864
	ED187629	ED188860	ED189219	ED190350	ED190353	ED190360	ED190361	ED190362
	ED190363	ED190400	ED191745	ED193031	ED193048	ED193054	ED193055	ED193058
	ED193059	ED193060	ED193062	ED193063	ED194302	ED194306	ED194349	ED194352
	ED195399	ED195403	ED196577	ED196702	ED196728	ED196731	ED197998	ED198013
	ED199085	ED199092	ED199096	ED199109	ED200397	ED200424	ED200445	ED200450
	ED201509	ED201510	ED202717	ED202719	ED204105	ED204182	ED204183	ED204184
	ED204185	ED204186	ED206466	ED207811	ED207817	ED207818	ED207824	ED207851
	ED207858	ED210171	ED210172	ED211358	ED211365	ED211373	ED211375	ED211377
	ED211378	ED211379	ED211388	ED212459	ED214792	ED216906	ED216907	ED216927
	ED219234	ED219268	ED219269	ED219270	ED219271	ED219272	ED219273	ED219274
	ED219275	ED219276	ED219277	ED219281	ED219287			
*SCIENCE EQUIPMENT	(2)	ED175728	ED175729					
SCIENCE EQUIPMENT	(1)	ED194302						
*SCIENCE EXPERIMENTS	(3)	ED148581	ED190400	ED207858				
SCIENCE EXPERIMENTS	(2)	ED165975	ED173159					
*SCIENCE FACILITIES	(1)	ED041767						
*SCIENCE FAIRS	(1)	ED044295						
SCIENCE FICTION	(2)	ED093682	ED179900					
CE INSTRUCTION	(13)	ED165975	ED173158	ED179351	ED193031	ED193054	ED193055	ED194353

	ED199114	ED199146	ED200424	ED200450	ED202963	ED219327		
SCIENCE INSTRUCTION	(43)	ED059926	ED150783	ED151297	ED165976	ED171456	ED171475	ED179352
	ED179353	ED179355	ED179356	ED182110	ED190346	ED191747	ED191749	ED193047
	ED193048	ED193058	ED193059	ED193060	ED193063	ED194349	ED194352	ED196731
	ED198005	ED198010	ED198011	ED198012	ED199092	ED200397	ED200407	ED200409
	ED200410	ED200445	ED200453	ED200454	ED201501	ED202729	ED207818	ED212458
	ED212459	ED212460	ED212461	ED216927				
*SCIENCE MATERIALS	(1)	ED138461						
SCIENCE MATERIALS	(7)	ED119962	ED119963	ED119964	ED119965	ED125862	ED128185	ED173072
SCIENCE PROGRAMS	(1)	ED173158						
*SCIENCE PROJECTS	(2)	ED044295	ED116904					
*SCIENCES	(4)	ED080368	ED099229	ED099230	ED135656			
SCIENCES	(33)	ED035473	ED038207	ED063162	ED082978	ED087188	ED087189	ED093673
	ED099240	ED101959	ED108874	ED108875	ED134434	ED137100	ED141162	ED142488
	ED142489	ED157764	ED157766	ED157768	ED157817	ED157818	ED157820	ED160281
	ED160282	ED160283	ED160284	ED160286	ED182135	ED183368	ED190398	ED190399
	ED195389	ED214752						
SCIENCE TEACHERS	(1)	ED193031						
*SCIENCE UNITS	(3)	ED059901	ED094912	ED153846				
SCIENCE UNITS	(5)	ED096085	ED100639	ED128081	ED151297	ED152531		
*SCIENTIFIC CONCEPTS	(1)	ED197996						
SCIENTIFIC CONCEPTS	(5)	ED167410	ED173072	ED179793	ED179794	ED193048		
SCIENTIFIC PRINCIPLES	(1)	ED053946						
*SEAFARERS	(1)	ED202727						
SEAFARERS	(2)	ED211374	ED216906					
SEA GRANT	(1)	ED167393						
*SEA GRANT PROGRAM	(4)	ED177012	ED177013	ED177014	ED177015			
*SEASHORE ECOLOGY	(1)	ED209062						
*SECONDARY EDUCATION	(133)	ED045350	ED045437	ED070635	ED098072	ED099186	ED099187	ED099190
	ED099191	ED099192	ED099210	ED099213	ED099229	ED099230	ED099231	ED099232
	ED099233	ED099240	ED100659	ED100660	ED100661	ED100662	ED100663	ED100665
	ED100666	ED100667	ED100671	ED100672	ED100673	ED100674	ED100688	ED100689
	ED100690	ED100691	ED100692	ED100696	ED101943	ED101944	ED106084	ED106088
	ED106095	ED114264	ED121566	ED121567	ED130822	ED130831	ED133151	ED133213
	ED133214	ED133215	ED133224	ED133225	ED133226	ED133227	ED133228	ED133229
	ED133230	ED133231	ED134449	ED135656	ED137064	ED137065	ED137100	ED144787
	ED147188	ED149989	ED149990	ED149991	ED149992	ED149993	ED149994	ED149995
	ED153841	ED153842	ED153843	ED153844	ED154986	ED156479	ED156480	ED156481
	ED156482	ED156483	ED156484	ED156485	ED156486	ED157757	ED157765	ED158906
	ED161754	ED165991	ED166060	ED167365	ED167370	ED167372	ED167373	ED167374
	ED170139	ED170141	ED173082	ED173159	ED173163	ED174407	ED174436	ED175718
	ED175722	ED175728	ED175729	ED175730	ED177014	ED179375	ED179395	ED180757
	ED180833	ED182110	ED182113	ED182131	ED182132	ED182133	ED182134	ED182135
	ED182136	ED183297	ED184862	ED188936	ED193048	ED196702	ED199109	ED199114
	ED199115	ED199116	ED200454	ED201523	ED202717	ED202719		

SECONDARY EDUCATION	(188)	ED042607	ED066366	ED098096	ED098098	ED098100	ED099188	ED100644
	ED100664	ED100668	ED100669	ED100670	ED100777	ED103294	ED104651	ED104794
	ED107466	ED107471	ED107480	ED107549	ED108876	ED108890	ED110396	ED111662
	ED111663	ED111664	ED111716	ED113215	ED113216	ED113256	ED113269	ED116914
	ED116981	ED118486	ED118526	ED120046	ED120048	ED120049	ED120068	ED120069
	ED121654	ED121656	ED125865	ED125925	ED125928	ED125930	ED125931	ED125933
	ED125937	ED125938	ED127161	ED128185	ED128289	ED133207	ED133208	ED133209
	ED133210	ED133211	ED133212	ED133216	ED133217	ED133218	ED133219	ED133220
	ED134526	ED134537	ED134538	ED137075	ED138538	ED141175	ED142481	ED146084
	ED147216	ED147222	ED147223	ED147224	ED147589	ED147590	ED149965	ED152643
	ED153923	ED154999	ED157818	ED157819	ED157835	ED157836	ED157837	ED164334
	ED164417	ED166301	ED167317	ED167366	ED167367	ED167368	ED167369	ED167371
	ED167413	ED167451	ED167452	ED169564	ED170153	ED171597	ED173057	ED173158
	ED174484	ED175723	ED176908	ED177012	ED178350	ED179356	ED179374	ED179411
	ED179412	ED179414	ED179415	ED179416	ED179417	ED179436	ED179792	ED179980
	ED180774	ED180791	ED180809	ED180812	ED180813	ED180814	ED180827	ED182137
	ED183363	ED183392	ED183817	ED184859	ED184860	ED184863	ED184864	ED184865
	ED184866	ED186282	ED186316	ED188977	ED190350	ED190353	ED190360	ED190361
	ED190362	ED190363	ED190400	ED191745	ED193047	ED193060	ED193063	ED194325
	ED194353	ED195396	ED195399	ED196725	ED196731	ED197924	ED198011	ED198012
	ED199175	ED200279	ED200381	ED200397	ED200408	ED200414	ED201501	ED201508
	ED202724	ED202726	ED202765	ED207811	ED207818	ED207851	ED207858	ED211379
	ED211388	ED212459	ED212461	ED212494	ED212519	ED213582	ED213583	ED214794
	ED215863	ED216369	ED216927	ED219278	ED219287			
*SECONDARY GRADES	(31)	ED063162	ED066298	ED067243	ED067244	ED067304	ED068337	ED068348
	ED073923	ED077723	ED079100	ED081601	ED082978	ED085248	ED086507	ED093682
	ED099199	ED099200	ED099215	ED099234	ED099235	ED101959	ED103201	ED116910
	ED121565	ED137056	ED139671	ED141116	ED141157	ED141159	ED141162	ED144788
SECONDARY GRADES	(44)	ED038812	ED046826	ED055015	ED055940	ED058127	ED059926	ED059947
	ED059950	ED059958	ED061126	ED062182	ED062234	ED064196	ED066407	ED068339
	ED071868	ED073032	ED073913	ED075315	ED079068	ED080344	ED080348	ED080349
	ED080361	ED081595	ED083004	ED088722	ED092377	ED092378	ED092379	ED103196
	ED103219	ED103234	ED103236	ED103238	ED103239	ED103240	ED103244	ED103247
	ED103250	ED103251	ED103253	ED141094	ED141158			
*SECONDARY SCHOOL CURRICULUM	(10)	ED219268	ED219269	ED219270	ED219271	ED219272	ED219273	ED219274
	ED219275	ED219276	ED219277					
SECONDARY SCHOOL CURRICULUM	(2)	ED213582	ED213583					
*SECONDARY SCHOOL MATHEMATICS	(7)	ED085249	ED100664	ED100668	ED100669	ED100670	ED193061	ED214794
SECONDARY SCHOOL MATHEMATICS	(1)	ED179792						
*SECONDARY SCHOOL SCIENCE	(63)	ED028086	ED033853	ED033862	ED043501	ED045380	ED046715	ED046781
	ED050940	ED051993	ED055833	ED061058	ED061060	ED086522	ED086552	ED086553
	ED086554	ED086555	ED086556	ED092358	ED093599	ED099229	ED099230	ED100697
	ED100698	ED101942	ED101945	ED107471	ED111662	ED111663	ED111664	ED127161
	ED128185	ED134455	ED137075	ED141158	ED141175	ED149964	ED149965	ED157758
	ED164334	ED170153	ED193060	ED193063	ED194302	ED194325	ED196731	ED198010
	ED198011	ED198012	ED199114	ED200408	ED200409	ED200410	ED200454	ED207811
	ED207858	ED210172	ED211365	ED211388	ED212459	ED216927	ED219281	ED219287
SECONDARY SCHOOL SCIENCE	(39)	ED039138	ED041767	ED053945	ED053946	ED055806	ED059901	ED061061
	ED062122	ED062176	ED062180	ED086473	ED086557	ED093682	ED099189	ED141145
	ED179352	ED179353	ED179355	ED179356	ED186282	ED190360	ED190361	ED190362
	ED190363	ED193047	ED193061	ED194353	ED196702	ED199085	ED200397	ED204105
	ED207817	ED207818	ED207824	ED207851	ED211373	ED211379	ED212461	ED216907
SECONDARY SCHOOL STUDENTS	(5)	ED093589	ED093619	ED093621	ED094948	ED108891		
DARY SCHOOL TEACHERS	(1)	ED170101						

SECOND LANGUAGE INSTRUCTION	(1)	ED187629
*SEDRO WOOLLEY PROJECT	(6)	ED059949 ED059950 ED061118 ED100777 ED100778 ED102048
SEDRO WOOLLEY PROJECT	(2)	ED059947 ED059948
*SEISMOLOGY	(1)	ED216927
SELF ACTUALIZATION	(1)	ED121656
*SELF CONCEPT	(1)	ED169256
SELF CONCEPT	(5)	ED055018 ED093743 ED188977 ED197924 ED200381
SELF DIRECTED GROUPS	(1)	ED176908
*SELF ESTEEM	(1)	ED197924
SELF ESTEEM	(2)	ED055018 ED194261
SELF EVALUATION (INDIVIDUALS)	(1)	ED188977
*SEMANTICS	(1)	ED056873
SEMANTICS	(1)	ED149594
SENIOR HIGH SCHOOLS	(2)	ED147590 ED157820
SENSORY EXPERIENCE	(6)	ED160285 ED165972 ED165973 ED165975 ED165976 ED215926
SENSORY TRAINING	(2)	ED195389 ED198980
SENTENCE STRUCTURE	(1)	ED149594
SEQUENTIAL LEARNING	(1)	ED064196
SEQUENTIAL PROGRAMS	(1)	ED088722
SERVICE VEHICLES	(2)	ED147581 ED147582
*SEX BIAS	(1)	ED187875
SEX DISCRIMINATION	(1)	ED202940
SEX EDUCATION	(1)	ED046826
SEX ROLE	(1)	ED187875
*SEX STEREOTYPES	(1)	ED187875
*SHADOWS	(1)	ED103248
SHIPBUILDING	(1)	ED211376
*SHIPPING INDUSTRY	(3)	ED202717 ED202726 ED202727
*SHIPS	(1)	ED211376
SHIPS	(1)	ED141142
*SHOPPING CENTERS	(2)	ED167312 ED171475
SHORT COURSES	(4)	ED106213 ED113214 ED113215 ED113216

SOCIALIZATION	(3)	ED055018 ED178232 ED193410
SOCIAL MOBILITY	(1)	ED091268
*SOCIAL PLANNING	(1)	ED055940
*SOCIAL PROBLEMS	(4)	ED142481 ED187606 ED200435 ED207859
SOCIAL PROBLEMS	(11)	ED055940 ED098100 ED104794 ED110396 ED134449 ED151297 ED153923 ED157836 ED157837 ED174407 ED201501
SOCIAL RESPONSIBILITY	(1)	ED128289
*SOCIAL SCIENCES	(9)	ED092437 ED120044 ED153842 ED156481 ED156482 ED156485 ED156486 ED170151 ED170152
SOCIAL SCIENCES	(29)	ED017377 ED055015 ED068339 ED082978 ED099240 ED100777 ED101944 ED106213 ED110396 ED120045 ED120046 ED120048 ED120049 ED133215 ED133216 ED135656 ED141178 ED149964 ED152643 ED153841 ED156529 ED156530 ED156531 ED156532 ED166060 ED170139 ED188919 ED190353 ED214752
SOCIAL SERVICES	(1)	ED174371
SOCIAL STRATIFICATION	(1)	ED091268
SOCIAL STRUCTURE	(1)	ED156593
*SOCIAL STUDIES	(96)	ED039138 ED055018 ED055864 ED058127 ED067304 ED068348 ED080367 ED087688 ED091268 ED091269 ED093743 ED098100 ED099187 ED100673 ED100674 ED100778 ED101941 ED101943 ED102048 ED110396 ED116946 ED118486 ED120053 ED134526 ED135690 ED135694 ED138538 ED141142 ED141157 ED141162 ED142488 ED142489 ED146084 ED147222 ED147223 ED147224 ED150026 ED153843 ED153844 ED153845 ED153859 ED155069 ED157834 ED157835 ED157836 ED157837 ED164414 ED165976 ED165977 ED167366 ED167368 ED174407 ED179351 ED179436 ED179795 ED182180 ED183368 ED184862 ED186315 ED186316 ED188977 ED193047 ED193048 ED193060 ED195396 ED195403 ED196788 ED197998 ED198013 ED198018 ED199115 ED199116 ED199120 ED199146 ED200408 ED200414 ED200424 ED200445 ED201501 ED201523 ED202726 ED206470 ED206471 ED207811 ED207859 ED212458 ED212460 ED212461 ED212519 ED214838 ED215863 ED215923 ED215939 ED216906 ED218204 ED219327
SOCIAL STUDIES	(127)	ED035473 ED059926 ED059948 ED063162 ED075315 ED082982 ED089899 ED091172 ED092377 ED092378 ED092379 ED093673 ED099234 ED100644 ED100777 ED101944 ED101959 ED103294 ED108875 ED111664 ED114254 ED118526 ED120054 ED121653 ED121654 ED121656 ED124450 ED124451 ED125933 ED125937 ED125938 ED134536 ED137100 ED141159 ED149985 ED150079 ED151297 ED157666 ED157766 ED157768 ED160281 ED160282 ED160283 ED160286 ED162886 ED162897 ED162905 ED167365 ED167367 ED167369 ED167370 ED167371 ED167372 ED167373 ED167374 ED167449 ED167450 ED167451 ED167452 ED171456 ED173072 ED173163 ED174371 ED174479 ED175722 ED176909 ED176910 ED176911 ED177012 ED177013 ED177015 ED178231 ED179374 ED179375 ED179412 ED179421 ED180827 ED187554 ED187555 ED187606 ED187629 ED188860 ED188868 ED190346 ED190348 ED190350 ED190398 ED190399 ED191745 ED191749 ED193062 ED193063 ED194349 ED194352 ED194353 ED194440 ED195399 ED196724 ED196725 ED197997 ED198005 ED199092 ED199096 ED199109 ED199175 ED200407 ED200450 ED200481 ED201508 ED201509 ED201510 ED201561 ED202717 ED202719 ED202729 ED205395 ED206418 ED206419 ED207817 ED207818 ED207824 ED207851 ED209125 ED212459 ED216081 ED218160 ED219286
*SOCIAL STUDIES UNITS	(29)	ED034104 ED051011 ED051012 ED061126 ED064187 ED066407 ED073032 ED080722 ED098084 ED104794 ED107549 ED113214 ED113215 ED113216 ED116981 ED118526 ED120068 ED121653 ED121654 ED121655 ED121656 ED128289 ED130927 ED150079 ED151297 ED153920 ED156593 ED156594 ED156595
SOCIAL STUDIES UNITS	(18)	ED055940 ED062204 ED111716 ED113256 ED120044 ED120045 ED120046

	ED120048 ED120049 ED120069 ED123136 ED138538 ED146084 ED157817 ED157818 ED157819 ED157820 ED166301	
SOCIAL SYSTEMS	(1) ED147223	
SOCIAL VALUES	(8) ED174407 ED182118 ED182131 ED182132 ED182133 ED182134 ED182135 ED192136	
*SOCIOCULTURAL PATTERNS	(3) ED099231 ED099232 ED162886	
SOCIOCULTURAL PATTERNS	(2) ED055864 ED100650	
*SOCIOECONOMIC INFLUENCES	(1) ED166013	
*SOCIOLOGY	(1) ED066407	
SOCIOLOGY	(3) ED100673 ED113256 ED173082	
*SOIL	(1) ED103250	
SOIL	(3) ED100676 ED100712 ED103244	
*SOIL CONSERVATION	(1) ED067218	
SOIL CONSERVATION	(7) ED092379 ED144332 ED174435 ED175593 ED175594 ED201422 ED201423	
*SOIL CONSERVATION SERVICE	(2) ED152498 ED152499	
SOIL CONSERVATION SERVICE	(1) ED157666	
*SOIL SCIENCE	(1) ED193055	
SOIL SCIENCE	(9) ED044295 ED061058 ED156594 ED157680 ED157771 ED165975 ED173082 ED174435 ED205395	
*SOLAR ENERGY	(3) ED173158 ED173159 ED173163	
*SOLAR RADIATION	(11) ED173158 ED173159 ED173163 ED179793 ED179794 ED183392 ED184817 ED187557 ED200450 ED216907 ED219274	
SOLAR RADIATION	(15) ED173062 ED179395 ED179792 ED180791 ED180826 ED182137 ED183374 ED184869 ED186281 ED186282 ED194353 ED211388 ED212492 ED212493 ED212494	
SOLID WASTE	(1) ED106095	
*SOLID WASTES	(1) ED137065	
SOLID WASTES	(1) ED103196	
*SOUTH CAROLINA	(1) ED123095	
SOUTH CAROLINA	(1) ED219278	
*SPACE SCIENCES	(1) ED170141	
SPATIAL RELATIONSHIP	(1) ED123136	
*SPECIAL EDUCATION	(2) ED180814 ED183363	
SPECIAL EDUCATION	(2) ED157768 ED179421	
*SPECIAL PROGRAMS	(1) ED200381	
II CURRICULUM	(1) ED196102	

SPEECH SKILLS	(3)	ED169563	ED169564	ED197924				
*STAFF IMPROVEMENT	(1)	ED146845						
STAFF IMPROVEMENT	(1)	ED165970						
STAFF ROLE	(3)	ED024484	ED175590	ED201421				
*STATE CURRICULUM GUIDES	(4)	ED123034	ED137056	ED196726	ED204138			
STATE CURRICULUM GUIDES	(6)	ED125862	ED139671	ED212492	ED212493	ED212494	ED219278	
*STATE DEPARTMENTS OF EDUCATION	(1)	ED156473						
STATE DEPARTMENTS OF EDUCATION	(1)	ED196726						
*STATE HISTORY	(1)	ED150079						
STATE HISTORY	(1)	ED138538						
STATE PROGRAMS	(4)	ED123034	ED204138	ED211378	ED211379			
STATEWIDE PLANNING	(1)	ED196726						
STATISTICAL DATA	(1)	ED202765						
*STORY TELLING	(1)	ED125937						
*STRAND APPROACH TO ENVIRONMENTAL EDUCATION	(1)	ED160285						
*STREAMS	(1)	ED103251						
*STUDENT ATTITUDES	(2)	ED125938	ED147216					
STUDENT ATTITUDES	(10)	ED125937	ED142488	ED151297	ED164283	ED167895	ED187875	ED196102
	ED197924	ED201421	ED214841					
STUDENT BEHAVIOR	(7)	ED071264	ED071265	ED071266	ED071267	ED175590	ED175591	ED175592
*STUDENT CENTERED CURRICULUM	(2)	ED058127	ED125938					
STUDENT CENTERED CURRICULUM	(6)	ED085163	ED113214	ED113215	ED113216	ED123695	ED125937	
STUDENT DEVELOPED MATERIALS	(1)	ED093648						
STUDENT EVALUATION	(4)	ED167449	ED167450	ED167451	ED167452			
STUDENT EXPERIENCE	(1)	ED167317						
STUDENT HANDBOOKS	(2)	ED175591	ED175592					
STUDENT INTERESTS	(1)	ED125938						
*STUDENT MOTIVATION	(1)	ED216828						
STUDENT MOTIVATION	(1)	ED174371						
*STUDENT NEEDS	(1)	ED195544						
STUDENT OPINION	(1)	ED151297						
*STUDENT PARTICIPATION	(1)	ED216828						
STUDENT PARTICIPATION	(5)	ED058127	ED125933	ED141953	ED155069	ED171466		

*STUDENT PROJECTS	(7)	ED050940	ED068337	ED070615	ED113143	ED116914	ED142488	ED180757
STUDENT PROJECTS	(15)	ED058127	ED059085	ED061058	ED062122	ED068366	ED073923	ED081608
	ED087688	ED113148	ED113151	ED135648	ED142489	ED171466	ED196724	ED196725
STUDENT REACTION	(2)	ED125938	ED151297					
*STUDENT RESEARCH	(3)	ED061060	ED179794	ED180757				
STUDENT RESEARCH	(4)	ED046781	ED080348	ED080349	ED083004			
*STUDENT RESPONSIBILITY	(1)	ED175591						
STUDENT RESPONSIBILITY	(2)	ED196724	ED216828					
*STUDENT ROLE	(1)	ED038223						
STUDENT ROLE	(3)	ED038222	ED038224	ED175591				
STUDENT TEACHER RELATIONSHIP	(4)	ED070680	ED070681	ED187485	ED201421			
*STUDENT TEACHING	(1)	ED074038						
STUDENT TRANSPORTATION	(1)	ED158930						
STUDENT VOLUNTEERS	(1)	ED175592						
*STUDY CENTERS	(1)	ED125852						
*STUDY GUIDES	(5)	ED068366	ED070615	ED083117	ED086553	ED086555		
STUDY GUIDES	(5)	ED086552	ED086554	ED086556	ED086557	ED180757		
*SUBURBAN YOUTH	(1)	ED176908						
SUMMER PROGRAMS	(4)	ED027991	ED038223	ED170135	ED204084			
SUNKEN MEADOW STATE PARK NY	(1)	ED186156						
SUPERVISION	(1)	ED158930						
SUPPLEMENTARY EDUCATIONAL CENTERS	(2)	ED033784	ED033788					
*SUPPLEMENTARY READING MATERIALS	(1)	ED214752						
SURVEYS	(6)	ED160283	ED164283	ED165977	ED167371	ED170135	ED183368	
SURVIVAL SKILLS	(3)	ED158906	ED183297	ED216828				
SWIMMING	(1)	ED158930						
*SYNTAX	(1)	ED149594						
*SYSTEMS APPROACH	(1)	ED186282						
*SYSTEMS CONCEPTS	(1)	ED098084						
TABLES (DATA)	(1)	ED147224						
TACTUAL PERCEPTION	(1)	ED215926						
*TALENT	(1)	ED181656						
TAXONOMY	(1)	ED062180						

*TEACHER AIDES	(1)	ED089899						
TEACHER ATTITUDES	(1)	ED187875						
TEACHER CERTIFICATION	(1)	ED152498						
*TEACHER DEVELOPED MATERIALS	(2)	ED157682	ED206419					
TEACHER DEVELOPED MATERIALS	(26)	ED058127	ED106088	ED120053	ED124450	ED124451	ED125925	ED125928
	ED125930	ED125931	ED125933	ED125937	ED125938	ED137056	ED144332	ED147222
	ED157681	ED157817	ED157818	ED157819	ED157820	ED167449	ED167450	ED167451
	ED167452	ED206418	ED209125					
*TEACHER EDUCATION	(3)	ED074038	ED128163	ED174484				
TEACHER EDUCATION	(5)	ED027991	ED039138	ED160528	ED171807	ED180794		
TEACHER EDUCATION CURRICULUM	(1)	ED087576						
TEACHER IMPROVEMENT	(1)	ED160285						
*TEACHER ORIENTATION	(1)	ED175590						
*TEACHER RESPONSIBILITY	(1)	ED158930						
TEACHER RESPONSIBILITY	(2)	ED129535	ED176908					
*TEACHER ROLE	(2)	ED175590	ED201421					
TEACHER ROLE	(6)	ED033784	ED067202	ED129535	ED151123	ED187485	ED198980	
*TEACHER WORKSHOPS	(1)	ED180794						
TEACHER WORKSHOPS	(3)	ED033862	ED175590	ED176908				
*TEACHING	(1)	ED017377						
*TEACHING GUIDES	(225)	ED028086	ED033788	ED033844	ED033853	ED033862	ED034104	ED035473
	ED035540	ED038207	ED038224	ED045350	ED045375	ED045380	ED045436	ED045437
	ED049917	ED051993	ED056873	ED056874	ED058049	ED061059	ED062122	ED062176
	ED062180	ED062182	ED065345	ED065351	ED066298	ED067241	ED067242	ED067243
	ED067244	ED067245	ED067246	ED067304	ED068337	ED068339	ED069468	ED070588
	ED070680	ED070681	ED071917	ED073923	ED075223	ED079100	ED080201	ED080344
	ED081595	ED081602	ED081607	ED082978	ED082982	ED092358	ED092389	ED092390
	ED092391	ED092395	ED093634	ED093673	ED094912	ED096085	ED099199	ED100639
	ED100644	ED100652	ED100653	ED100654	ED100655	ED100656	ED100657	ED100658
	ED100659	ED100660	ED100661	ED100662	ED100663	ED100664	ED100665	ED100666
	ED100667	ED100668	ED100669	ED100670	ED100671	ED100672	ED100673	ED100686
	ED100687	ED100688	ED100689	ED100690	ED100691	ED100692	ED100693	ED100694
	ED100695	ED100696	ED100697	ED100698	ED101959	ED103201	ED103237	ED103238
	ED103239	ED103250	ED103253	ED104639	ED104651	ED106058	ED106057	ED106084
	ED106095	ED108875	ED108876	ED108890	ED108891	ED111664	ED113151	ED116904
	ED116910	ED116914	ED116947	ED119960	ED119961	ED119962	ED119963	ED119964
	ED119965	ED121565	ED121566	ED121567	ED121568	ED127160	ED127161	ED129535
	ED130820	ED133225	ED133227	ED133229	ED133231	ED134415	ED134433	ED134434
	ED134449	ED135649	ED135656	ED137064	ED137075	ED138462	ED139671	ED141081
	ED141094	ED141116	ED141141	ED141142	ED141145	ED141157	ED141159	ED141162
	ED142429	ED142433	ED144794	ED144824	ED144825	ED146044	ED146048	ED147188
	ED148581	ED149979	ED149980	ED149981	ED149982	ED149983	ED149985	ED149987
	ED149988	ED149989	ED149990	ED149991	ED149993	ED149994	ED149995	ED152541
	ED153841	ED153842	ED153843	ED153844	ED153845	ED153859	ED156478	ED156480
	ED156482	ED156484	ED156486	ED156531	ED157666	ED157760	ED157762	ED157763
	ED157764	ED157766	ED157768	ED157770	ED157771	ED160285	ED161704	ED162886
	ED166970	ED166060	ED167317	ED173082	ED182131	ED182132	ED182133	ED182134

VISUAL AIDS	(1)	ED087576
*VISUAL IMPAIRMENTS	(1)	ED184875
*VISUAL LEARNING	(1)	ED089899
*VISUALLY HANDICAPPED	(1)	ED134408
VISUAL PERCEPTION	(1)	ED215926
VOCABULARY	(2)	ED165973 ED175592
*VOCABULARY DEVELOPMENT	(2)	ED141141 ED181417
VOCABULARY DEVELOPMENT	(6)	ED149843 ED157662 ED160284 ED167454 ED175593 ED205346
*VOCABULARY SKILLS	(1)	ED206469
VOCABULARY SKILLS	(1)	ED193053
*VOCATIONAL EDUCATION	(2)	ED100659 ED187875
VOCATIONAL EDUCATION	(3)	ED179395 ED179421 ED219278
*WALKABOUT	(1)	ED197924
*WASTE DISPOSAL	(10)	ED098096 ED098098 ED098100 ED156481 ED156483 ED157773 ED191749 ED196724 ED196725 ED218094
WASTE DISPOSAL	(13)	ED103196 ED156479 ED156480 ED156482 ED156484 ED156485 ED156486 ED174407 ED180826 ED180832 ED184864 ED188008 ED188919
*WASTES	(5)	ED080348 ED103196 ED196724 ED196725 ED218094
WASTES	(5)	ED092378 ED133228 ED133229 ED184864 ED219287
*WATER POLLUTION	(9)	ED175723 ED176350 ED190360 ED190361 ED191697 ED191698 ED196702 ED202724 ED212459
WATER POLLUTION	(6)	ED176960 ED180813 ED180832 ED183368 ED188008 ED212458
*WATER POLLUTION CONTROL	(6)	ED061058 ED070615 ED093648 ED104651 ED156484 ED157758
WATER POLLUTION CONTROL	(15)	ED073032 ED086473 ED086482 ED092378 ED114268 ED137064 ED149965 ED156483 ED156485 ED156486 ED157834 ED170139 ED173082 ED174407 ED174435
WATER QUALITY	(1)	ED190400
*WATER RESOURCES	(36)	ED045380 ED067218 ED070680 ED070681 ED079100 ED080361 ED121566 ED133218 ED133226 ED133227 ED137064 ED138461 ED150026 ED154986 ED156483 ED156484 ED156485 ED156486 ED164414 ED173062 ED180808 ED180809 ED190400 ED198011 ED201422 ED202717 ED202719 ED202726 ED202963 ED207851 ED210171 ED211375 ED211377 ED212458 ED212459 ED218160
WATER RESOURCES	(33)	ED044295 ED061058 ED061060 ED092379 ED093648 ED104651 ED120053 ED128289 ED130462 ED149964 ED149965 ED156594 ED156595 ED174365 ED174366 ED174368 ED174407 ED174435 ED174442 ED175593 ED175594 ED175723 ED176960 ED180813 ED183368 ED183374 ED205346 ED205395 ED206469 ED210172 ED211358 ED211376 ED218154
WATERSHEDS	(1)	ED107471
WATER SPORTS	(1)	ED204084

WAVES	(1)	ED198011						
*WEATHER	(1)	ED103249						
WEATHER	(2)	ED212460	ED212461					
*WETLANDS	(2)	ED133219	ED133220					
WILDERNESS EDUCATION PROGRAMS	(1)	ED197924						
*WILDLIFE	(3)	ED196728	ED199085	ED218154				
WILDLIFE	(4)	ED100712	ED193055	ED201424	ED205395			
WILDLIFE EDUCATION	(1)	ED162897						
*WILDLIFE MANAGEMENT	(10)	ED133230	ED133231	ED156478	ED162897	ED162905	ED170138	ED175724
	ED179411	ED179416	ED201424					
WILDLIFE MANAGEMENT	(8)	ED092379	ED106876	ED157834	ED173082	ED183363	ED183368	ED183416
	ED191747							
WIND ENERGY	(1)	ED216907						
*WIND (METEOROLOGY)	(1)	ED216907						
WINTER	(1)	ED120081						
*WINTER GAMES	(1)	ED167311						
WISCONSIN	(1)	ED125883						
WOMENS EDUCATION	(1)	ED179484						
WORD LISTS	(1)	ED167454						
*WORKBOOKS	(1)	ED187579						
WORKBOOKS	(4)	ED053945	ED138461	ED146084	ED175593			
*WORK EXPERIENCE PROGRAMS	(1)	ED197924						
*WORKSHEETS	(2)	ED164192	ED183321					
WORKSHEETS	(10)	ED092377	ED092378	ED092379	ED176910	ED178231	ED179351	ED179352
	ED179353	ED179355	ED190362					
WORKSHOPS	(2)	ED175592	ED180794					
WORK STUDY PROGRAMS	(1)	ED187485						
*WORLD AFFAIRS	(2)	ED179436	ED212411					
WORLD AFFAIRS	(6)	ED113269	ED153923	ED155069	ED159106	ED209125	ED212519	
*WORLD GEOGRAPHY	(3)	ED103294	ED118406	ED157817				
WORLD GEOGRAPHY	(3)	ED088722	ED130927	ED157819				
*WORLD HISTORY	(1)	ED100674						
WORLD HISTORY	(1)	ED212519						
WORLD PROBLEMS	(10)	ED113269	ED116981	ED120054	ED153923	ED162885	ED179436	ED183456

AUTHOR INDEX

NOTE: *Documents are listed by ED number in the Table of Contents. The page on which the abstract can be located is listed.*