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ABSTRACT

To some educators, infusing environmental education into different subject areas at different levels may seem like an insurmountable task. This handbook was developed to take the guesswork out of this process and alleviate the fear and confusion that may result. It was designed to assist with infusing skill, participation and attitude activities into the classroom, correlate widely used curriculum supplements with the objectives and principles in the Wisconsin Department of Public Instruction's environmental education guide, and simplify the infusion process using proven and effective activities. Activities are categorized by subject areas, grade levels, environmental education objectives, and ecological principles. Major resources coordinated in this volume include: (1) "Project Learning Tree"; (2) "Project WILD"; (3) "Living Lightly on the Planet"; (4) "Investigating and Evaluating Environmental Issues and Action Skill Development Modules"; and (5) "The CLASS Project." The "Fundamental Environmental Principles" are enumerated. Appendices include a "Grades 10-12 Appendix" and environmental education resources. (CW)

Avoiding Infusion Confusion

A Practical Handbook for Infusing Environmental Activities into your Classroom

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Additional copies of Avoiding Infusion Confusion are available for grades K–3, 4–6, 7–9, and 10–12.
Write or call:

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(See order form at the end of this handbook.)

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INTRODUCTION

"Environmental education should permeate the entire curriculum with every subject area at every grade level dealing with the environment in some way," according to the Wisconsin Department of Public Instruction's A Guide to Curriculum Planning in Environmental Education. To some educators this may seem like an insurmountable task, especially to those unfamiliar with what environmental education has to offer. To help simplify the process of infusing environmental education activities into your present curriculum, we have developed a handbook that takes the guesswork out of this process and alleviates the fear and confusion that may result.

What is "Avoiding Infusion Confusion"?

It is a handbook designed to...

...assist educators with infusing environmental education activities into the classroom.

...correlate widely used curriculum supplements with the objectives and principles in the DPI's A Guide to Curriculum Planning in Environmental Education

...simplify the infusion process utilizing proven and effective activities.

How is it used?

The format is designed for quick reference. Activities are categorized by subject area. They are also coordinated with grade level, environmental education objective and ecological principles.

Why was this handbook written?

It was written to assist...

...school districts in developing a program for the infusion of environmental education into Wisconsin Public School curricula as required by state mandate.

...individual teachers in selecting appropriate activities best suited for their classroom situation.

...educators in developing a systematic approach to infusion that will help reduce preparation time.

By infusing environmental education activities into every subject area in our school systems and in our student's everyday lives, we are increasing their knowledge, and appreciation of the natural environment. We are also insuring that students will be better equipped to make responsible decisions when faced with environmental issues. The task of infusing environmental education may seem like a tall order, but we're sure you'll agree that it's well worth the effort. Good luck!

Objective Categories

Grade-Level Emphases on Environmental Education Objective Categories

Level	Major Emphasis	Minor Emphasis
K - 3	Awareness Attitudes	Knowledge Skills Participation
3 - 6	Knowledge Attitudes	Awareness Skills Participation
6 - 9	Knowledge Skills Attitudes	Awareness Participation
9 - 12	Skills Participation Attitudes	Awareness Knowledge

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We have divided our handbook into four separate parts, according to grade levels. The four are: K-3, 4-6, 7-9, and 10-12. Piaget's levels of intellectual development illustrate the importance of teaching basic skills and concepts to young children, and moving towards more challenging activities. This is reflected in a changing degree of emphasis on each objective category for each of the four grade-level groups. As an administrator or teacher, you will want to know what to emphasize with your students and what will be emphasized in other grades, as well as your own. This will insure that each program has sequence, and each student has consistency from year to year.

How to use this Handbook

This handbook combines activities contained in selected, widely used environmental education programs, and the principles developed by the Department of Public Instruction (DPI) in its Guide to Curriculum Planning in Environmental Education. The activities are organized by: principle number, the environmental education resource, (i.e. Project WILD) and the appropriate content areas (i.e. Language Arts).

As you use this handbook, you will notice that the distribution of activities among the principles and the content areas, is not always equal. The environmental education programs chosen, did not always contain activities that could be used to teach every one of the principles developed by the DPI. In addition, activities were not always appropriate for use in every one of the five content areas. By filling in the blank boxes with activities you are familiar with and know to be suitable for that principle, content area, and grade level, the handbook becomes a personalized, timesaving device for infusing environmental education into your lesson plans and curriculum. A list of additional resources has been provided at the end of this handbook.

Organization of the Materials

Each principle taken from the DPI Guide to Curriculum Planning in Environmental Education is listed by number at the top of the left-hand page. Each of these numbers corresponds to an abridged version of the DPI's principles found on pages 5-8 of this handbook. The complete unabridged list of principles may be found in the DPI guide on pages 13-22.

At the top of each right-hand page you will also find a list of concepts. These concepts summarize the principles and are designed as a quick reference to the major points of the corresponding principle.

Environmental education resources are listed in the left hand column. Activities from each of these resources are organized according to the content area they relate to. This handbook is limited to the five content areas of Art, Health, Language Arts, Science, and Social Studies. The DPI has singled out these content areas because they most readily lend themselves to the process of infusion.

Activities were analyzed and placed in a particular box or series of boxes based on how well they teach a principle or concept. This is a subjective process to some degree. You may find that by actually conducting an activity in the classroom or outdoors that you feel it belongs with another principle or content area. One of the strengths of this handbook is its adaptability to your needs and situation.

A maximum of five activities are listed in each box. An asterisk inside a box indicates that there are additional activities listed in the appendix beginning on page 83. To find these overflow activities, turn to the appendix and locate the number of the principle you are working with (far left column). Once you have found the correct principle number, work from left to right and locate the content area, the environmental education resource you are using, and finally, the list of activities in the right column. The activities are arranged by the page number where they are found in the environmental education resource.

In addition to the appendix and resource section, a concept index is located at the back of this handbook. The concepts are arranged individually and in alphabetical order. If you wish to teach a particular concept and need a good activity, simply turn to the concept index and it will list the page in the handbook where this concept can be located. Please note: not all of the activities teach each of the concepts listed. You will need to look at the individual activity to determine if it teaches the concept, principle or idea you had in mind.

Finding an activity in this handbook: An Example

Imagine that you are a seventh grade Language Arts teacher planning a lesson that incorporates the ecological concept of interdependence. You would like to use an activity that would help illustrate this concept and would be appropriate for the grade level and subject area that you are teaching. You have a number of environmental education resources (i.e. Project Learning Tree) but you have not had a chance to use them extensively in the classroom. Along with your other materials you have this exciting new handbook that is designed to simplify the process of infusing environmental education into your lesson plans.

Step 1. Turn to the "Concept Index" in the back of this handbook under "Interdependence" listed alphabetically. Next to the concept is the principle number and the page number it is located on. You may use either the principle number or the page number to locate this concept.

Step 2. After finding the page number and/or principle number, turn to the Environmental Activities Section and locate the appropriate page. You will find the concept (possibly along with others) at the top of the right page.

Step 3. Locate the environmental education resource you would like to use from those listed in the left column.

Step 4. Move across the row of boxes until you are beneath the correct content area. This box may contain a list of activity titles and page numbers. An empty box means that there was not an appropriate activity in the environmental education resource for this subject area and concept. If one or more activities are listed, turn to the environmental education resource that you are using and check to see if the activity teaches the concept you are interested in. Remember that an asterisk in the box indicates additional activities for these concepts and this environmental education resource are located in the appendix of this handbook.

Fundamental Environmental Principles*

Concept	Principle
Solar Energy	(1)
Secondary Energy Sources	(2)
Earth's Energy Balance	(3)
Weather & Climate, Water Cycle, Biosphere Oceanography	(4)
Decomposition, Erosion Habitat, Interaction, Interdependence, & Niche	(5)
Adaptations, Change, Camouflage, Continental Drift, Diversity, Evolution, & Succession	(6)
Biogeochemical Cycles, Energy Transfer, Food Webs, Photosynthesis, Renewable Resources, & Respiration	(7)
Birth-Death Rate, Carrying Capacity, Homeostasis, Human Population Growth, Limiting Factors, & Population	(8)

I. Fundamental Principles Dealing with Earth's Environment

A. Earth's environment operates as a system supported by conditions that are functions of earth's structure and place in the solar system.

1. Solar energy is the primary source of energy for all biogeochemical cycles and other processes occurring on earth.
2. Nuclear processes, geothermal sources, tidal movements, and gravity are secondary sources.
3. The earth is in a state of overall energy balance, absorbing energy from the sun and radiating it into space.
4. Absorption and distribution of solar energy results in the movement of global air masses, the hydrologic (water) cycle, and ocean currents, giving rise to earth's prevailing weather and climates and providing conditions essential to life on earth.

B. Earth's environment is a complex, interrelated, interactive, dynamic, constantly changing macrosystem called the ecosphere.

1. The ecosphere is composed of a mosaic of interacting systems called ecosystems.
2. The ecosphere has and is undergoing continuous change.
3. Energy and materials required for life pass into or are found in the ecosphere, and are components of each ecosystem.
4. Each ecosystem of the ecosphere contains a number of species populations, the size and stability of which vary, depending on biotic and abiotic changes in the system.

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Outline based on 1976 Federal Interagency Committee on Education Report.

Concept	Principle
Biological Needs of Humans	(9)
Psychological Needs of Humans	(10)
Use of Materials and Energy, Cultural Attitudes, Values, & Pollution	(11)
Human's Ecological Domination of Earth	(12)
Effects of Humans on Ecosystems Social Interaction	(13)
Human Population Growth and Technology and its Effects on Ecosystems	(14)
Effects of Values on Human Behavior-Impacts on Ecosystems	(15)
Built Environments are Influenced by Ecosystems	(16)

II. Fundamental Principles Dealing with Humans as Ecosystem Components

A. Humans use ecosystems to satisfy basic needs and desires.

1. Basic biological needs that must be met for humans to live and grow include habitable climate, energy, materials, rest and exercise, other humans for reproduction, and protection against environmental stress.

2. Humans cannot grow and completely develop mentally unless essential psychological and social needs and desires are met. These include security, love, esteem, self-fulfillment, social interaction, health, comfort, material goods, and religious experiences.

3. Each human culture has its own perceived needs and desires that make different demands and impacts on ecosystems. In times of stress many of these needs and desires can be adjusted.

B. Humans are an all-pervasive species in the ecosphere and thus exert a special ecological dominance.

1. Human domination results from various factors which include...large intellectual capacity, adaptation to a wide range of environmental conditions, large population size, specialization in diversity of labor.

2. Human tendencies to form and function in social and corporate groups and institutions promote development of human habitats that create unique concentrated demands on ecosystems and further increase human effects on ecosystems.

3. Recent rapid increases in human populations and technological capabilities have accelerated ecosystem changes until some are potentially irreversible.

4. Human aesthetic, ethical, moral, and spiritual values may reinforce or conflict with harmonious relationships within ecosystems.

C. Ecosystems affect humans

1. Humans and all their products function in an ecosystem framework.

Concept	Principle
Ecosphere Changes Due to Human Population and Technology Nonrenewable Resources	(17)
Physical and Chemical Components of Ecosystems: Effects on Humans	(18)
Human Needs and Values: Effects on Ecosystems	(19)
Interrelationships	(20)
Feedback Mechanisms of Ecosystems	(21)
Synergistic Effects	(22)
Appreciating Ecosystems and their Components, Appreciating the Environment, Human Impacts on Ecosystems	(23)
Barriers to Ecosystem Harmony	(24)

2. Ecosphere changes due to increasing human population and technology have both short and long term effects.

3. The built environment and its psychological miliea have a powerful effect on humans. Information transfer by verbal comunication and learned behavior operates on humans in a parallel and synergistic manner in much the same way as do physical and chemical components of ecosystems.

D. Complex interactions among humans and other ecosystem components occur continuously.

1. Humans' perceptions of their needs, their impacts on ecosystems, and ecosystem impacts on them, reflect the cultural and individual values, goals, skills, insights, and capabilities of the individuals, groups, institutions, and nations involved.

2. Relationships among components of ecosystems are reciprocal, ranging from mutually beneficial to unidirectionally destructive.

3. Feedback mechanisms of different kinds, for xample physical, chemical, social, behavioral, ranging from rudimentary to highly sophisticated, govern relationships among and within components of ecosystems.

4. Human activities often have synergistic effects on ecosystems and visa versa.

5. Human activities affect ecosystem maintenance and management.

III. Methods for Harmonizing Human Activities with Ecosystem Processes to Achieve Environmental Quality

A. Methods by which human activities, local through global, are harmonized with ecosystem processes are complex, and outcomes are not always predictable.

1. Barriers to harmony include...effects of ecosystem changes, lack of knowledge needed to make environmental predictions, and lack of uniformly dependable social-political cooperation.

Concept	Principle	
Methods to Attain Harmony	(25)	2. Harmony can be pursued through...education, environmental art, citizen action, voluntary and formal policies, economic and social incentives, and enforcement of policies.
Methods to Promote Harmony	(26)	3. Institutions, processes, and attitudes for promoting harmony include...education and communication, ethical, moral and other influences, science and technology, civic and social institutions, government and political processes, industry and commerce.
		B. Basic procedure for harmonizing human activities with ecosystem processes can be described as a series of steps.
Investigation of Ecosystems	(27)	1. Investigate ecosystem processes and components, including the effects of human activities on ecosystems and the influences of ecosystems on human functioning.
Importance of Ecosystem Processes and Changes	(28)	2. Recognize the importance of ecosystem processes and the significance of ecosystem changes.
Causes of Ecosystem Changes and their Consequences	(29)	3. Identify the causes of ecosystem changes and their consequences.
Action Strategies	(30)	4. Develop alternative action strategies to maintain and enhance beneficial ecosystem changes and to reduce detrimental changes, with special attention to irreversible changes and to long range versus short range commitments of resources.
Analyzing and Evaluating Alternative Action Strategies	(31)	5. Analyze and evaluate alternative action strategies within a broad array of environmental, social, and economic criteria, recognizing that criteria will differ according to circumstances of politics, geography, scale, time and society.
Adopting Action	(32)	6. Select among alternative action strategies, and adopt a policy which can be implemented at all levels, individual through global.
Implementing Action Strategies	(33)	7. Decide on and complete actions to implement the policy.
Monitoring and Evaluating Policies	(34)	8. Monitor and evaluate affects of the implemented policy.
Monitoring Feedback and Adjusting Actions as Necessary	(35)	9. Feeding information gained in Principle 34 back through Principle 27 to adjust acti to changing data bases, requirements, conditions, and perceptions.

Where to Obtain the Environmental Education Resources used in this Handbook:

The CLASS Project

Margaret Rosenberry and NWF staff. Published by and available from National Wildlife Federation, 1412 Sixteenth Street, Washington, D.C. 20036, 1982.

Investigating and Evaluating Environmental Issues and Actions Skill Development Modules.

Harold R. Hungerford, Ralph A. Litherland, R. Ben Peyton, John M. Ramsey, Audrey N. Tomera, and Trudi L. Volk. Champaign, IL. Stipes Publishing Company, 1985

Living Lightly in the City for Grades K-3 and 4-6.

Maura O'Conner, 1985

Living Lightly on the Planet for Grades 7-9 and 10-12

Maura O'Conner and Kathy McGlauflin, 1982, 1984. Published and available from the Schiltz Audubon Center, 1111 East Brown Deer Road Milwaukee, WI, 53217

Nature with Children of All Ages

Edith Sisson. Published by Englewood Cliffs of NJ in 1982. Available through bookstores.

Project Learning Tree: Supplemental Activity Guide for Grades K-6 and 7-12.

Western Regional Environmental Education Council and the American Forest Institute. Published by the American Forest Institute, Washington D.C. in 1975. Available only through a six hour workshop offered throughout the state. Contact Project Learning Tree, Wisconsin DNR, P.O. Box 7921, Madison, WI 53707.

Project WILD: Elementary and Secondary Guides.

Western Regional Environmental Education Council. Published in 1985. Available only through co-sponsoring states at six hour teacher workshops. Contact Project WILD, Wisconsin DNR, P.O. Box 7921, Madison, WI 53707.

Sharing Nature With Children

Joseph Bharat Cornell. Published by Ananda Publications of Nevada City, CA in 1979. Available through bookstores.

A Guide to Curriculum Planning in Environmental Education

Wisconsin Department of Public Instruction. Published by and available from the Wisconsin Department of Public Instruction, 125 South Webster Street, P.O. Box 7841, Madison, WI 53707

Resources Used by Each Grade Level

K-3

Project Learning Tree
Project WILD
Sharing Nature with Children
Nature with Children of All Ages
Living Lightly in the City

4-6

Project Learning Tree
Project WILD
Sharing Nature with Children
Living Lightly in the City

7-9 and 10-12

Project Learning Tree
Project WILD
The CLASS Project
Investigating and Evaluating Environmental Issues and Action Skill Development Modules
Living Lightly on the Planet

Environmental Activities Section

Principle #1

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	Designing With the Sun p. 165	

Content Areas		
Language Arts	Science	Social Studies
	Energy Alternatives p. 15	
	A Treasure Hunt... p. 135	A Treasure Hunt... p. 135
	Energy for the 21st Century p. 156 Designing With the Sun p. 165	Energy for the 21st Century p. 156 Designing With the Sun p. 165

Principle #2

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Flip the Switch for Wildlife! p. 129	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		What Is Radiation? p. 107

Content Areas

Language Arts	Science	Social Studies
	Energy Alternatives p. 15	A Look At Conflicting Viewpoints p. 37
	A Treasure Hunt... p. 135	A Treasure Hunt... p. 135
Flip the Switch For Wildlife! p. 129	Flip the Switch For Wildlife! p. 129	Flip the Switch For Wildlife! p. 129
	What Is Radiation? p. 107 Energy for the 21st Century p. 156	Energy for the 21st Century p. 156

Grades 10 - 12

Principle #3

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Earth's energy balance

Content Areas		
Language Arts	Science	Social Studies
	Cycles and Energy p. 182	Cycles and Energy p. 182

Principle #4

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Weather & climate
Water cycle
Biosphere
Oceanography

Content Areas

Language Arts	Science	Social Studies
	The Earth's Sponge p. 51	
	Snow Use p. 91 Water We Doing? p. 94	Snow Use p. 91 Water We Doing? p. 94
Stormy Weather p. 3	Stormy Weather p. 3	Stormy Weather p. 3
	When the Gears Don't Mesh p. 43 Out To Sea? p. 94 The Big Chill p. 131	When the Gears Don't Mesh p. 43 Out To Sea? p. 94 The Big Chill p. 131

Principle #5

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Health
CLASS Project	Make a Place For Wildlife p. 93 A Place Endangered p. 111	
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Polar Bears in Phoenix? p. 105 Flip the Switch For Wildlife! p. 129 Improving Wildlife Habitat.. p. 131	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Interaction
Interdependence
Habitat
Niche
Decomposition
Erosion

*-See Appendix for Additional Activities

Content Areas

Language Arts	Science	Social Studies
A Place Endangered p. 111	As Pen Pals p. 49 Using Topographic Maps p.77 Locating Wetlands p. 79 Making a Place For Wildlife p. 93 A Place Endangered p. 111	
	Soil Compaction p. 83 pH and Plants p. 85 Wildlife Habitat p. 117 Build an Ecosystem p. 125	
Wild Words p. 9 Habitrekking p. 57 Who Fits Here? p. 87 Flip the Switch For Wildlife! p. 129 Improving Wildlife Habitat.. p. 131 *	Wild Words p. 9 Habitrekking p. 57 Who Fits Here? p. 87 Succession Transect p. 97 Polar Bears in Phoenix? p. 105 *	Habitrekking p. 57 Oh Deer! p. 107 Flip the Switch For Wildlife! p. 129 Improving Wildlife Habitat.. p. 131 Which Niche? p. 151
	The Rain Forest Burger p. 21 Endangered! p. 27 Balance In an Aquatic Community p. 38	The Rain Forest Burger p. 21 Endangered! p. 27

Grades 10 - 12

Principle #6

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Time Lapse p. 93	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Continental Drift
Change
Succession
Evolution
Diversity
Adaptations
Camouflage

Content Areas

Language Arts	Science	Social Studies
	Locating Wetlands p. 79	
The Changing Forest p. 119	Climax Forest p. 121	
Time Lapse p. 93	Time Lapse p. 93 Succession Transect p. 97 I'm Thirsty p. 219	

Grades 10 - 12

Principle #7

Environmental Education Resources	Content Areas Art	Health
CLASS Project	Making a Place For Wildlife p. 93	
Project Learning Tree (Secondary)	Food Mobile p. 129	
Project WILD (Secondary)	Improving Wildlife Habitat.. p. 131	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Energy transfer
Photosynthesis
Respiration
Biogeochemical cycles
Food webs
Renewable resources

Content Areas

Language Arts	Science	Social Studies
	Taking a Closer Look p. 43 Making a Place For Wildlife p. 93 Fowl Play p. 103	
Johnny Appleseed On Mars p. 15	Johnny Appleseed On Mars p. 15 Predator Prey p. 123 Build an Ecosystem p. 125 Food Mobile p. 129	Johnny Appleseed On Mars p. 15 Economic Web of Life p. 46 Would You Like that Wrapped? p. 157 ..And a Side Order of Paper p. 161 A Look At Lifestyles p. 184
Improving Wildlife Habitat.. p. 131	Improving Wildlife Habitat.. p. 131 Birds of Prey p. 217	Improving Wildlife Habitat.. p. 131
	Meadow Mouse Math p. 9 Balance In an Aquatic Community p. 38 When the Gears Don't Mesh p. 43 Cycles and Energy p. 182	When the Gears Don't Mesh p. 43 Cycles and Energy p. 182

Principle #8

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project	Making a Place For Wildlife p. 93	
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Time Lapse p. 93 Improving Wildlife Habitat.. p. 181 Photos Keep It Happening p. 139	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	What's Our Carrying Capacity? p. 30	The Sahel Famine p. 13

Concept: Population
Birth/Death rate
Human population growth
Carrying capacity
Homeostasis
Limiting factors

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
	Who Planted the Maple on Elm St.? p. 47 As Pen Pals p. 49 Making a Place For Wildlife p. 93 Fowl Play p. 103 For the Enjoyment of Future Generations p. 107	For the Enjoyment of Future Generations p. 107
	Wildlife Habitat p. 117 Predator-Prey p. 123 Endangered Species p. 124	Endangered Species p. 124
Animal Charades p. 1 Time Lapse p. 93 Here Today, Gone Tomorrow p. 115 Improving Wildlife Habitat.. p. 131 Deer Crossing p. 183	Animal Charades p. 1 Time Lapse p. 93 Oh Deer! p. 107 Here Today, Gone Tomorrow p. 115 Improving Wildlife Habitat.. p. 131 *	Oh Deer! p. 107 Here Today, Gone Tomorrow p. 115 Improving Wildlife Habitat.. p. 131 Photos Keep It Happening p. 139 Deer Crossing p. 183 *
	Meadow Mouse Math p. 9 The Sahel Famine p. 13 Endangered! p. 27 The Commons Dilemma p. 34	The Sahel Famine p. 13 Endangered! p. 27 What's Our Carrying Capacity? p. 39 The Commons Dilemma p. 34 Who's Who Among Energy Users? p. 145 *

Principle #9

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Polar Bears in Phoenix? p. 105	Nosiy Neighbors p. 137
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	Cooperative Creativity p. 200	Changing Water Systems To Meet Our Needs p. 67

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
Key Mangrove: A System In Conflict p. 83	Key Mangrove: A System In Conflict p. 83	Key Mangrove: A System In Conflict p. 83
The Power of Literature p .48	Water We Doing? p. 94	Forest Products All Around Us p. 19 Native American Web of Life p. 39 Pioneers In the Wilderness p. 41 The Power of Literature p. 48 Water We Doing? p. 94
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Cooperative Creativity p. 200	Changing Water Systems To Meet Our Needs p. 67 The Big Chill p. 131 Cooperative Creativity p. 200	Changing Water Systems To Meet Our Needs p. 67 The Big Chill p. 131 Who's Who among Energy Users p. 145 Cooperative Creativity p. 200

Principle #10

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	Cooperative Creativity p. 200	

Concept: Psychological needs of humans

Content Areas		
Language Arts	Science	Social Studies
		ORVs and Us p. 167
Cooperative Creativity p. 200	Cooperative Creativity p. 200	Who's Who Among Energy Users p. 145 Cooperative Creativity p. 200

Concept: Use of materials & energy
Pollution
Cultural attitudes
Values

*-See Appendix for Additional Activities

Content Areas

Language Arts	Science	Social Studies
The Conscientious Consumer p. 7 Key Mangrove: A System In Conflict p. 83	Meter Monitors p. 3 The Power Puzzle p. 11 Key Mangrove: A System In Conflict p. 83	The Conscientious Consumer p. 7 The Power Puzzle p. 11 Going...Going...Gone p. 17 Rubbish Research p. 33 Key Mangrove: A System In Conflict p. 83
Tree Verse p. 6 Johnny Appleseed On Mars p. 15 The Power of Literature p. 48 How Much Is Enough? p. 77	Johnny Appleseed On Mars p. 15 Green Mufflers p. 18 pH and Plants p. 85 Hard Choices p. 106 Pollution Search p. 133 *	Johnny Appleseed On Mars p. 15 Green Mufflers p. 18 Forest Products All Around Us p. 19 Community Land Use p. 29 Where Are the Cedars of Lebanon? p. 33
Wildlife Issues p. 29 Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 Here Today, Gone Tomorrow p. 115 No Water Off a Duck's Back p. 119 *	Wildlife Issues p. 29 Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 Animal Research p. 69 Here Today, Gone Tomorrow p. 115 *	Wildlife Issues p. 29 Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 Animal Research p. 69 Here Today, Gone Tomorrow p. 115 *
Learning About Nuclear Weapons p. 127 Cooperative Creativity p. 200	Endangered! p. 27 The Commons Dilemma p. 34 When the Gears Don't Mesh p. 43 Blowin' In the Wind p. 55 The Acid Rain Debate p. 58 *	Endangered! p. 27 The Commons Dilemma p. 34 When the Gears Don't Mesh p. 43 Blowin' In the Wind p. 55 The Acid Rain Debate p. 58 *

Principle #12

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		Noisy Neighbors p. 137
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Human's ecological domination of Earth

Content Areas

Language Arts	Science	Social Studies
	Noisy Neighbors p. 137	Noisy Neighbors p. 137
	Endangered! p. 27	Endangered! p. 27

Principle #13

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project	Rubbish Research p. 33 A Place Endangered p. 111	
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Flip the Switch For Wildlife! p. 129 Planning for People and Wildlife p. 187	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	The Gross National By-Product p. 85 The Tip of the "Wasteberg" p. 100	The Tip of the "Wasteberg" p. 100

Concept: Effects of humans on ecosystems
Social interactions

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
Key Mangove: A System In Conflict p. 83 A Place Endangered p. 111	Key Mangove: A System In Conflict p. 83 A Place Endangered p. 111	Rubbish Research p. 33 Who Decides? p. 35 Key Mangove: A System In Conflict p. 83
Local Recreation Preferences p. 25 For Better or for Worse p. 99		Local Recreation Preferences p. 25 Where Are the Cedars of Lebanon? p. 33 Urban Open Space p. 69 We Can Work It Out?! p. 75 For Better or for Worse p. 99
Enviro-Ethics p. 41 Here Today, Gone Tomorrow p. 115 Flip the Switch For Wildlife! p. 129	Enviro-Ethics p. 41 Here Today, Gone Tomorrow p. 115 Flip the Switch For Wildlife! p. 129 Planning for People and Wildlife p. 187	Enviro-Ethics p. 41 Here Today, Gone Tomorrow p. 115 Flip the Switch For Wildlife! p. 129 Planning for People and Wildlife p. 187
	The Rain Forest Burger p. 21 Endangered! p. 27 A Sour Forecast? p. 49 Blowin' In the Wind p. 55 The Gross National By-Product p. 85 *	The Rain Forest Burger p. 21 Endangered! p. 27 Blowin' In the Wind p. 55 The Gross National By-Product p. 85 Not In My Backyard! p. 88 *

Principle #14

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		The Gentle Rain p. 29 Toxic Nightmare p. 61
Project Learning Tree (Secondary)		
Project WILD (Secondary)	What Did Your Lunch Cost Wildlife? p. 203	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	What's Our Carrying Capacity? p. 30 The Gross National By-Product p. 85	The Sahel Famine p. 13 Splitting Atoms for Energy p. 114

Concept: Human population growth & technology: its effect on ecosystems

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
	The Gentle Rain p. 29 Toxic Nightmare p. 61	Toxic Nightmare p. 61
For Better or for Worse p. 99		For Better or for Worse p. 99 Would You Like It Wrapped? p. 157 You've Come a Long Way p. 164 Lovin' It To Death p. 168
No Water Off a Duck's Back p. 119 What Did Your Lunch Cost Wildlife? p. 203	No Water Off a Duck's Back p. 119 What Did Your Lunch Cost Wildlife? p. 203	No Water Off a Duck's Back p. 119 What Did Your Lunch Cost Wildlife? p. 203
	The Sahel Famine p. 13 A Sour Forecast? p. 49 Blowin' In the Wind p. 55 The Gross National By-Product p. 85 Not In My Backyard! p. 88 *	The Sahel Famine p. 13 What's Our Carrying Capacity? p. 30 Blowin' In the Wind p. 55 The Gross National By-Product p. 85 Not In My Backyard! p. 88 *

Principle #15

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Health
CLASS Project	Exploring Wetlands p. 81	
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Drawing on Nature p. 67	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		The Nuclear Power Debate p. 127

Concept: Effects of values on human behavior: its impact on ecosystems

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
	Exploring Wetlands p. 81	Indentifying Issues p. 27 A Look at Conflicting Viewpoints p. 37
Artisans in Wood p. 36 The Power of Literature p. 48 Superstitions... p. 50 Environmental Editorials p. 57 Environmental Advertisements p. 59 *	The Value of Wildlife p. 90	Artisans in Wood p. 36 Native American Web of Life p. 39 The Power of Literature p. 48 Superstitions... p. 50 Ticky Tacky p. 52 *
Wild Words p. 9 Does Wildlife Sell Cigarretes? p. 23 The Power of a Song p. 25 Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 *	Wild Words p. 9 Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 Enviro-Ethics p. 41 Drawing on Nature p. 67 *	Does Wildlife Sell Cigarretes? p. 23 The Power of a Song p. 25 Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 Philosophical Differences p. 39 *
The Nuclear Power Debate p. 123	The Commons Dilemma p. 34 Not In My Backyard! p. 88 Energy for the 21st Century p. 156	The Commons Dilemma p. 34 Not In My Backyard! p. 88 The Nuclear Power Debate p. 123 Energy for the 21st Century p. 156

Principle #16

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)	Biography of a Favorite Thing p. 152	
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		What Is Radiation? p. 107

Concept: Built environments are influenced by ecosystems

Content Areas		
Language Arts	Science	Social Studies
	Biography of a Favorite Thing p. 152	The Three Little Pigs p. 22 How Clean Is Clean? p 101 Which Should I Buy? p. 149 Biography of a Favorite Thing p. 152 Plan Your Community's Future p. 175
	Not In My Backyard! p. 88 What Is Radiation? p. 107 The Day Our City Stood Still p. 179	Not In My Backyard! p. 88 Who's Who Among Energy Users p. 145 The Day Our City Stood Still p. 179

Principle #17

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		The Gentle Rain p 29
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Time Lapse p. 93	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	What's Our Carrying Capacity? p. 30	The Sahel Famine p. 13 The Legacy of Love Canal p. 78 What Is Radiation? p. 107 Splitting Atoms for Energy p. 114

Principle #18

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	Cooperative Creativity p. 200	Changing Water Systems to Meet Our Needs p. 67 Splitting Atoms for Energy p. 114 Learning About Nuclear Weapons p. 127

Principle #18

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	Cooperative Creativity p. 200	Changing Water Systems to Meet Our Needs p. 67 Splitting Atoms for Energy p. 114 Learning About Nuclear Weapons p. 127

Concept: Physcial & chemical components of ecosystems: their effect on humans

Content Areas

Language Arts	Science	Social Studies
		Urban Open Space p. 69 Lovin' It To Death p. 168 Plan Your Community's Future p. 175 Design With Nature p. 183
Learning About Nuclear Weapons p. 127 Cooperative Creativity p. 200	Changing Water Systems to Meet Our Needs p. 67 Splitting Atoms for Energy p. 114 Learning About Nuclear Weapons p. 127 The Day Our City Stood Still p. 179 Cooperative Creativity p. 200	Changing Water Systems to Meet Our Needs p. 67 Splitting Atoms for Energy p. 114 Learning About Nuclear Weapons p. 127 The Day Our City Stood Still p. 179 Cooperative Creativity p. 200

Principle #19

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		Hazardous Substances Simulation Game p. 65
Project Learning Tree (Secondary)	Biography of a Favorite Thing p. 152	
Project WILD (Secondary)	Flip the Switch For Wildlife! p. 129 Wildlife! p. 129 Wild Edible Plants p. 171 What Did Your Lunch Cost Wildlife? p. 203	Wild Edible Plants p. 171
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	The Gross National By-Product p. 85 The Tip of the "Wasteberg" p. 100	The Tip of the "Wasteberg" p. 100 Splitting Atoms for Energy p. 114 The Nuclear Power Debate p. 123

Concept: Human needs & values: their effect on ecosystems

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
Key Mangove: A System In Conflict p. 83	Are There Any Clearcut Answers p. 53 Hazardous Substances Simulation Game p. 65 Key Mangove: A System In Conflict p. 83 Key Mangrove: A Conflict of Interests p.87	Identifying Issues p. 27 Who Decides? p. 35 A Look at Conflicting Viewpoints p. 37 Are There Any Clearcut Answers p. 53 Hazardous Substances Simulation Game p. 65 *
Superstitions... p. 50 Wasted Words p. 54 Environmental Editorials p. 57 Environmental Advertisements p. 59 What Is Wise use? p. 76 *	The Value of 100 Acres of Forest Land p. 109 Biography of a Favorite Thing p. 152	Native American Web of Life p. 39 Indian Summer... p. 40 Superstitions... p. 50 Wasted Words p. 54 Environmental Editorials p. 57 *
Does Wildlife Sell Cigarretes? p. 23 The Power of a Song p. 25 Wildlife Issues p. 29 Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 *	Wildlife Issues p. 29 Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 Enviro-Ethics p. 41 Flip the Switch For Wildlife! p. 129 Wildlife! p. 129 *	Does Wildlife Sell Cigarretes? p. 23 The Power of a Song p. 25 Wildlife Issues p. 29 Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 *
The Nuclear Power Debate p. 123	The Rain Forest Burger p. 21 The Commons Dilemma p. 34 Blowin' In the Wind p. 55 The Acid Rain Debate p. 58 The Gross National By-Product p. 85 *	The Rain Forest Burger p. 21 The Commons Dilemma p. 34 Blowin' In the Wind p. 55 The Acid Rain Debate p. 58 The Gross National By-Product p. 85 *

Principle #20

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)	What Did Your Lunch Cost Wildlife? p. 203	Noisy Neighbors p. 137
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Interrelationships

Content Areas		
Language Arts	Science	Social Studies
		Who Decides? p. 35
		Economic Web of Life p. 46 Plan a Trip p. 172
Wildlife Bibliography p. 145 What Did Your Lunch Cost Wildlife? p. 203	We're In This Together! p. 135 Noisy Neighbors p. 137 What Did Your Lunch Cost Wildlife? p. 203	We're In This Together! p. 135 Noisy Neighbors p. 137 What Did Your Lunch Cost Wildlife? p. 203
	The Rain Forest Burger p. 21 Endangered! p. 27	The Rain Forest Burger p. 21 Endangered! p. 27

Principle #21

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Feedback mechanisms of ecosystems

Content Areas

Language Arts	Science	Social Studies
	Taking a Closer Look p. 43	

Principle #22

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Flip the Switch For Wildlife! p. 129	Noisy Neighbors p. 137
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	The Gross National By-Product p. 85	

Concept: Synergistic effects

Content Areas		
Language Arts	Science	Social Studies
A Letter from Archy p. 44 The Continuing Adventures... p. 165	A Letter from Archy p. 44 Hard Choices p. 106	A Letter from Archy p. 44 Hard Choices p. 106
Flip the Switch For Wildlife! p. 129	Flip the Switch For Wildlife! p. 129	Flip the Switch For Wildlife! p. 129
	The Gross National By-Product p. 85 The Big Chill p. 131	The Gross National By-Product p. 85 The Big Chill p. 131

Principle #23

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		Hazardous Substances Simulation Game p. 65 Hazardous Waste: A Complex Industrial Issue p. 71
Project Learning Tree (Secondary)	Natural Materials Art p. 9	
Project WILD (Secondary)	Wild Edible Plants p. 171	Wild Edible Plants p. 171
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		The Sahel Famine p. 13 Changing Water Systems to Meet Our Needs p. 67 The Legacy of Love Canal p. 78 The Nuclear Power Debate p. 123

Concept: Human impact on ecosystems
Appreciation of the environment
Appreciating ecosystems and their components

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
Hazardous Waste: A Complex Industrial Issue p. 71 Key Mangove: A System In Conflict p. 83	Who Planted the Maple on Elm St.? p. 47 The Earth's Sponge p. 51 Are There Any Clearcut Answers? p. 53 Hazardous Substances Simulation p. 65 Hazardous Waste: A Complex Industrial Issue p. 71 *	Who Decides? p. 35 Are There Any Clearcut Answers? p. 53 Hazardous Substances Simulation p. 65 Hazardous Waste: A Complex Industrial Issue p. 71 Key Mangove: A System In Conflict p. 83 *
A Guide To Local Recreation p. 27 A Letter from Archy p. 44 Wasted Words p. 54 Environmental Editorials p. 57 What Is Wise Use p. 76	A Letter from Archy p. 44 The Value of 100 Acres of Forest Land p. 104 Wildlife Habitat p. 117 Impact Statements p. 139 *	A Guide To Local Recreation p. 27 A Letter from Archy p. 44 Wasted Words p. 54 Environmental Editorials p. 57 Who Runs This Place? p. 67
Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 Philosophical Differences p. 39 Here Today, Gone Tomorrow p. 115 Wildwork p. 153 *	Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 Animal Research p. 39 Oh Deer! p. 107 Fire Ecologies p. 111	Pro and Con p. 33 Rare Bird Eggs for Sale p. 35 Philosophical Differences p. 39 Animal Research p. 69 Oh Deer! p. 107
The Nuclear Power Debate p. 123	The Sahel Famine p. 13 The Rain Forest Burger p. 21 The Commons Dilemma p. 34 Changing Water Systems to Meet Our Needs p. 67 The Legacy of Love Can. . p. 78 *	The Sahel Famine p. 13 The Rain Forest Burger p. 21 The Commons Dilemma p. 34 Changing Water Systems to Meet Our Needs p. 67 The Legacy of Love Canal p. 78 *

Grades 10 - 12

Princi[illegible] #24

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		Toxic Nightmare p. 61
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	The Gross National By-Product p. 85 The Tip of the "Wasteberg" p. 100	The Sahel Famine p. 13 The Legacy of Love Canal p. 78 The Tip of the "Wasteberg" p. 100 Learning About Nuclear Weapons p. 127

Concept: Barriers to ecosystem harmony

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
	Toxic Nightmare p. 61	Who Decides? p. 35 Toxic Nightmare p. 61
		Would You Like That Wrapped? p. 157
	Fire Ecologies p. 111	Fire Ecologies p. 111
Learning About Nuclear Weapons p. 127	The Sahel Famine p. 13 The Rain Forest Burger p. 21 The Legacy of Love Canal p. 78 The Gross National By-Product p. 85 Not In My Backyard! p. 88	The Sahel Famine p. 13 The Rain Forest Burger p. 21 The Legacy of Love Canal p. 78 The Gross National By-Product p. 85 Not In My Backyard! p. 88 *

Principle #25

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		Hazardous Substances Simulation Game p. 65
Project Learning Tree (Secondary)	Natural Materials Art p. 9	
Project WILD (Secondary)	Drawing on Nature p. 67 Photos Keep It Happening! p. 139	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
Key Mangove: A System In Conflict p. 83	Hazardous Substances Simulation Game p. 65 Key Mangove: A System In Conflict p. 83	Hazardous Substances Simulation Game p. 65 Key Mangove: A System In Conflict p. 83
Sylvan Serenade p. 4 Tree Verse p. 6 A Cassette Tour of Neighborhood Trees p. 11	A Treasure Hunt p. 135	A Cassette Tour of Neighborhood Trees p. 11 Indian Summer.. p. 40 A Treasure Hunt p. 135
Stormy Weather p. 3 Cartoons and Bumperstickers p. 21 The Power of a Song p. 25 Drawing on Nature p. 67 When a Whale Is a Right p. 139	Stormy Weather p. 3 Drawing on Nature p. 67 Photos Keep It Happening! p. 139 When a Whale Is a Right p. 139	Stormy Weather p. 3 Cartoons and Bumperstickers p. 21 The Power of a Song p. 25 Drawing on Nature p. 67 Photos Keep It Happening! p. 139
	Out To Sea? p. 94 Cycles and Energy p. 182	Out To Sea? p. 94 Where It's A.T.? p. 151 Cycles and Energy p. 182

Principle #26

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		Learning About Nuclear Weapons p. 127

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
The Changing Forest p. 119 Careers In Forestry p. 174	The Value of 100 Acres of Forest Land p. 109 Impact Statements p. 139 Careers In Forestry p. 174	Participatory Democracy p. 63 Ownership Objectives p. 73 How Clean Is Clean? p. 101 The Value of 100 Acres of Forest Land p. 109 Impact Statements p. 139 *
Philosophical Differences p. 39 Wildwork p. 153 History of Wildlife Management p. 155 Who Pays For What? p. 191	Wildwork p. 153 History of Wildlife Management p. 155 Who Pays For What? p. 191	Philosophical Differences p. 39 Wildlife As Seen on Coins and Stamps p. 141 Wild Bill's Fate p. 143 Wildwork p. 153 History of Wildlife Management p. 155 *
Learning About Nuclear Weapons p. 127	Learning About Nuclear Weapons p. 127 Cycles and Energy p. 182	Learning About Nuclear Weapons p. 127 Cycles and Energy p. 182

Grades 10 - 12

Principle #27

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project	Exploring Wetlands p. 81	Down in the Dumps p. 63 Hazardous Waste: A Complex Industrial Issue p. 71
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	The Tip of the "Wasteberg" p. 100	The Sahel Famine p. 13 The Legacy of Love Canal p. 78 Splitting Atoms for Energy p. 114 The Tip of the "Wasteberg" p. 100

*-See Appendix for Additional Activities

Content Areas		
Language Arts	Science	Social Studies
Hazardous Waste: A Complex Industrial Issue p. 71	Down In the Dumps p. 63 Hazardous Waste: A Complex Industrial Issue p. 71 Exploring Wetlands p. 81	Identifying Issues p. 27 Down In the Dumps p. 63 Hazardous Waste: A Complex Industrial Issue p. 71
How Much Is Enough? p. 77		Who Runs This Place? p. 67 How Much Is Enough? p. 77 Mining and Renewable Resources p. 103 Christmas Trees p. 153 Would You Like That Wrapped? p. 157
Here Today, Gone Tomorrow p. 115 Wildlife Bibliography p 145	Here Today, Gone Tomorrow p. 115	Here Today, Gone Tomorrow p. 115 Wildlife Bibliography p 145
Module IV p. 105-126 (any or all) Module V p. 127-130 (all)	Module IV p. 105-126 (any or all)	Module IV p. 105-126 (any or all) Module V p. 127-130 (all)
	The Sahel Famine p. 13 The Rain Forest Burger p. 21 Endangered! p. 27 The Acid Rain Debate p. 58 The Legacy of Love Canal p. 78 *	The Sahel Famine p. 13 The Rain Forest Burger p. 21 Endangered! p. 27 The Acid Rain Debate p. 58 The Legacy of Love Canal p. 78 *

Principle #28

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		The Legacy of Love Canal p. 78 Splitting Atoms for Energy p. 114

Concept: Importance of ecosystem processes & changes

Content Areas		
Language Arts	Science	Social Studies
	Key Mangove: A Conflict of Interests p. 87	Key Mangrove: A Conflict of Interests p. 87
A Letter from Archy p. 44	A Letter from Archy p. 44	A Letter from Archy p. 44 Would You Like That Wrapped? p. 157
Wildlife Bibliography p 145		Wildlife Bibliography p 145
Module IV p. 105-126 (any or all)	Module IV p. 105-126 (any or all)	Module IV p. 105-126 (any or all)
	Endangered! p. 27 The Acid Rain Debate p. 58 The Legacy of Love Canal p. 78 Splitting Atoms for Energy p. 114	Endangered! p. 27 The Acid Rain Debate p. 58 The Legacy of Love Canal p. 78 Splitting Atoms for Energy p. 114

Principle #29

Grades 10 - 12

Environmental Education Resources	Content Areas Art	Health
CLASS Project		Toxic Nightmare p. 61 Down In the Dumps p. 63
Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		Changing Water Systems to Meet Our Needs p. 67 The Legacy of Love Canal p. 78

Concept: Causes of ecosystem changes & their consequences

Content Areas		
Language Arts	Science	Social Studies
	Toxic Nightmare p. 61 Down In the Dumps p. 63	Toxic Nightmare p. 61 Down In the Dumps p. 63
A Letter from Archy p. 44 Where to Plant p. 71	A Letter from Archy p. 44	A Letter from Archy p. 44 Would You Like That Wrapped? p. 157 ORVs and Us p. 167 Where to Plant p. 71
Module IV p. 105-126 (any or all)	Module IV p. 105-126 (any or all)	Module IV p. 105-126 (any or all)
	The Acid Rain Debate p. 58 Changing Water Systems to Meet Our Needs p. 67 The Legacy of Love Canal p. 78	The Acid Rain Debate p. 58 Changing Water Systems to Meet Our Needs p. 67 The Legacy of Love Canal p. 78

Principle #30

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Content Areas: Health
CLASS Project		Hazardous Substances Simulation Game p. 65
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Improving Wildlife Habitat.. p. 131	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	The Tip of the "Wasteberg" p. 100	Changing Water Systems to Meet Our Needs p. 67 The Tip of the "Wasteberg" p. 100

Concept: Action strategies

Content Areas

Language Arts	Science	Social Studies
Key Mangove: A System In Conflict p. 83	Are There Any Clearcut Answers? p. 53 Hazardous Substances Simulation Game p. 65 Key Mangove: A System In Conflict p. 83 For the Enjoyment of Future Generations p. 107	Are There Any Clearcut Answers? p. 53 Hazardous Substances Simulation Game p. 65 Key Mangove: A System In Conflict p. 83 For the Enjoyment of Future Generations p. 107
Where to Plant p. 71		Who Runs This Place? p. 67 Where to Plant p. 71 Would You Like That Wrapped? p. 157 ORVs and Us p. 167 Lovin It to Death p. 168
Does Wildlife Sell Cigarretes? p. 23 Enviro-Ethics p. 41 Improving Wildlife Habitat.. p. 131	Enviro-Ethics p. 41 Improving Wildlife Habitat.. p. 131	Does Wildlife Sell Cigarretes? p. 23 Enviro-Ethics p. 41 Improving Wildlife Habitat.. p. 131
Module VI p. 131-167		Module VI p. 131-167
	Changing Water Systems to Meet Our Needs p. 67 The Tip of the "Wasteberg" p. 100	Changing Water Systems to Meet Our Needs p. 67 The Tip of the "Wasteberg" p. 100

Grades 10 - 12

Principle #31

Environmental Education Resources	Content Areas: Art	Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Improving Wildlife Habitat.. p. 131	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)	The Tip of the "Wasteberg" p. 100 Cooperative Creativity p. 200	The Tip of the "Wasteberg" p. 100

Concept: Analyzing & evaluating alternative action strategies

Content Areas

Language Arts	Science	Social Studies
Key Mangove: A System In Conflict p. 83	Key Mangove: A System In Conflict p. 83 For the Enjoyment of Future Generations p. 107	A Look At Conflicting Viewpoints p. 37 Key Mangove: A System In Conflict p. 83 For the Enjoyment of Future Generations p. 107
Where to Plant p. 71		Where to Plant p. 71 Lovin' It to Death p. 168
Improving Wildlife Habitat.. p. 131 Know Your Legislation p. 205	Improving Wildlife Habitat.. p. 131 Know Your Legislation p. 205	Improving Wildlife Habitat.. p. 131 Wild Bill's Fate p. 143 Know Your Legislation p. 205
Action Analysis Criteria p. 144		Action Analysis Criteria p. 144
Cooperative Creativity p. 200	The Tip of the "Wasteberg" p. 100 Cooperative Creativity p. 200	The Tip of the "Wasteberg" p. 100 Which Path to Peace? p. 135 Cooperative Creativity p. 200

Concept: Adopting action strategies

Content Areas		
Language Arts	Science	Social Studies
Where to Plant p. 71		Where to Plant p. 71
Improving Wildlife Habitat.. p. 131 Know Your Legi. ion p. 205	Improving Wildlife Habitat.. p. 131 Know Your Legislation p. 205	Improving Wildlife Habitat.. p. 131 Know Your Legislation p. 205
A Closer Look at the Modes of Action p. 147-163		A Closer Look at the Modes of Action p. 147-163
Cooperative Creativity p. 200	Cooperative Creativity p. 200	Which Path to Peace? p. 135 Cooperative Creativity p. 200

Principle #33

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Health
CLASS Project		
Project Learning Tree (Secondary)		
Project WILD (Secondary)	Improving Wildlife Habitat - p. 131	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Principle #33

Grades 10 - 12

Environmental Education Resources	Content Areas: Art	Health
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Project Learning Tree (Secondary)		
Project WILD (Secondary)	Improving Wildlife Habitat - p. 131	
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Implementing action strategies

Content Areas

Language Arts	Science	Social Studies
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Improving Wildlife Habitat.. p. 131 Know Your Legislation p. 205	Improving Wildlife Habitat.. p. 131 Know Your Legislation p. 205	Improving Wildlife Habitat.. p. 131 Know Your Legislation p. 205
Applying Environmental Action Skills p. 164-167		Applying Environmental Action Skills p. 164-167
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Principle #34

Grades 10-12

Environmental Education Resources	Content Areas: Art	Health
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Project Learning Tree (Secondary)		
Project WILD (Secondary)		
Investigating & Evaluating Environmental Issues & Actions Skill Development Modules (Modules IV-VI)		
Living Lightly on the Planet (Volume II)		

Concept: Monitoring & evaluating policies

Content Areas

Language Arts	Science	Social Studies
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Taking Action p. 140		Taking Action p. 140

Concept: Monitoring feedback & adjusting actions as necessary

Content Areas		
Language Arts	Science	Social Studies
Know Your Legislation p. 205	Know Your Legislation p. 205	Know Your Legislation p. 205

Concept: Monitoring feedback & adjusting actions as necessary

Content Areas

Language Arts	Science	Social Studies
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Additional E.E. Curriculum Resources

Acclimatizing. 1972.
Acclimatization. 1974.
Sunship Earth. 1979.

Steve Van Matre. Published by the American Camping Association in Martinsville, IN 46151 and the Institute for Earth Education, P.O. Box 288, Warrenville, IL 60555.

Van Matre first popularized the sensory approach to environmental study--immersing people in a swamp, blindfolding them through the forest, and digging their hands into soil. By experiencing the environment with all of our senses, we will come to know, and appreciate it better. Acclimatizing and Acclimatization describes short activities and adventures to discover the outdoors. Sunship Earth is a carefully structured five-day residential outdoor program. The magic and discovery is still there, but with an emphasis on the larger picture of ecology and human interaction.

Biological Science: An Ecological Approach. Fourth ed. 1978.

Biological Sciences Curriculum Study (BSCS), Rand McNally, P.O. Box 930, Boulder, CO. An excellent secondary biology text that emphasizes ecology throughout. Picked as one of the best biology textbooks used in the nation's high schools. Eighteen books were studied by a group commissioned by People for the American Way. This was one of the three excellent textbooks which they described as "doing an excellent job of covering evolutionary theory and the field of biology.

Central Wisconsin Environmental Resource Manual. 1981

Central Wisconsin Environmental Station (CWES), University of Wisconsin, Stevens Point, National Science Foundation Special Training Project in Ecology and Environmental Education.

Provides listings of community resources that can be used as field trips or speakers. Three volumes cover resources in the following counties: Adams, Wood, Columbia, Kewaunee, Green Lake, Sauk, Waushara, Portage, Marathon, Langlade, Lincoln, Waupaca, Clark, Oneida, Shawano, Taylor, and Winnebago. Resources have been located and analyzed and are presented in an organized format in order to provide a practical, relevant, and ready reference that can facilitate resource use by teachers at all grade levels. Focuses specifically on resource use for environmental education.

Connections: A Curriculum in Appropriate Technology for Fifth and Sixth Grades. 1980.

Written by and available from the National Center for Appropriate Technology. Box 3838, Butte, Montana 59701.

This activity guide for elementary teachers provides exciting ideas and information in solar energy, water conservation, transportation, recycling, nutrition, and gardening--a good beginning for understanding many current issues.

Conserving Soil.

U.S.D.A. Soil Conservation Service. Published and distributed in 19__. Currently available from the National Association of Conservation Districts Service Dept., P.O. Box 855, League City, TX 77' -9989.

Color transparencies, ditto masters, activities, and background information help teachers convey information about soil and its wise use.

The Cousteau Almanac: An Inventory of Life On Our Water Planet.

Jaques Ives Cousteau and Cousteau Staff. Published by Doubleday Company in New York, 1981. Available through bookstores.

The Almanac is a treasure of information on environmental issues around the world in the 1980's. Articles are well written, well documented, and arranged in a unique order. Scattered throughout are vignettes of people and organizations who work toward the solutions to environmental problems, usually on a local level, and usually successfully. The last section provides information on organizing around an issue and taking action.

Environmental Science: An Introduction. Second edition.
Living in the Environment. Fourth edition.
G. Tyler Miller. Published by Wadsworth Publishing Company in Belmont, CA. 1986. Available as text.

Both texts fairly represent the variety of perspectives that color environmental issues. Environmental Science covers the issues in less depth than Living in the Environment. Written for college students.

Environmental Science: Managing the Environment. Second edition.
P. Walton Purdom and Stanley H. Anderson. Merrill Publishing Co. 1983.

Textbook designed to create a threefold understanding of: (1) all facets of the environment that affect ecosystems and human life; (2) the impacts of human activities on various aspects of environmental quality; and (3) the environmental, economic, and cultural factors that shape urban development.

Humanizing Environmental Education: A Guide for Leading Nature and Human Nature Activities.
Clifford Knapp and Joel Goodman. Published by the American Camping Association in Martinsville, IN, 1981. Available from the American Camping Association, Martinsville, IN, 46151-7902.

Introduction to Environmental Studies.
Jonathan Turk and W.B. Saunders. 1980.

This secondary-college text is divided into the following study units:

I. Introduction and Social Background
II. The Biological Background
III. Human Population
IV. Resources and Energy
V. Rural Land Use
VI. Pollution

This book was written to provide environmental education to a wide variety of people. It gives an overview of various social, economic, technical, and political issues. The problems of ecological disruptions, growth of human population, land use, energy, nuclear power, food supplies, pesticides, air and water pollution, solid waste, and noise are covered. Specific features of this text include: case histories, take-home experiments, problems and questions for class discussions, chapter summaries, glossary, and use of the metric system.

Investigating Your Environment. June, 1980.
U.S. Forest Service-U.S. Dept. of Agriculture, U.S. Government Printing Office.

A set of separate activities for secondary teachers designed for investigating different components of the environment. Techniques such as collecting observable data, making inferences, setting up investigations to check inferences, communicating feelings and awareness are used in these activities. Many of the investigations are wholly or partially conducted outside and all stress active participation by the learner. Some of the activities cover such topics as water, wildlife, soils, forestry, land use, and human communities.

Manatees.

For information, write: Florida Department of Natural Resources, 3900 Commonwealth Blvd., Tallahassee, FL 32302.

The excellent educator's guide to the natural history, habitat, problems and conservation of the Order Sirenia (manatees) contains thorough information, excellent illustrations and innovative activities for use with students. Also included is a color poster, "Sirenians of the World," a reference sheet for further information and a manatee fact sheet. A 23 minute videotape program, "Silent Sirens: Manatees in Peril," is available.

Nature Scope.

National Wildlife Federation. Periodical. Produced 4-6 times a year by the National Wildlife Federation, 1412 Sixteenth Street, Washington D.C. 20036.

Nature Scope targets a new area of the environment each issue: wetlands, mammals, birds, deserts, weather, insects, etc. Each 64 page booklet is packed with teacher background, interdisciplinary activity ideas, resources, handout masters, and ideas to extend the theme. Back issues are available.

Nature With Children of All Ages

Edith Sisson. Published by Englewood Cliffs of NJ in 1982. Available through bookstores.

Earthworm races, seed planting, aging a tree, winter temperature, migration reporting, and water testing are some of the many activity ideas that fill this 200 page guide to nature study. It includes good ideas for early elementary explorations.

OBIS. Outdoor Biology Instructional Strategies.

Available at the Schlitz Audubon Center Shop, 1111 E. Brown Deer Road, Milwaukee, WI 53217.

OBIS is an outdoor program in module form that offers young people fun and challenging opportunities to investigate ecological relationships in their local environments. It consists of a series of one hundred activities that can be used together or individually. One may use them as the core for an outdoor education program or to provide some challenging biology activities that also stress language, math and problem-solving skills.

The Ocean: Consider the Connections...

Written, published and available from the Center for Environmental Education, 6624 9th Street, Washington D.C. 20001, 1985.

Information and activities on our global waterways: waves, tides, animals, adaptations, ecosystems, and people are covered.

Our Great Lakes Connection: A Curriculum Guide for Grades Kindergarten Through Eight.

Lynn Entine. Wisconsin Sea Grant Program of the University of Wisconsin-Madison, Environmental Resource Center, 1450 Linden, Madison, WI 53706. 1985.

Preparing for Tomorrow's World.

Louis Iozzi. Written from Rutgers University, Newark, NJ and available from Sopris West Inc., 1120 Delaware Ave., Longmont, CO 80501. 1982.

Twelve curriculum modules include a Teacher's Guide and Student Guide in this interdisciplinary program for grades 7-12. Issues such as energy, communications, technology, bioethics, and transportation are presented with background readings and dilemmas--situations with no good resolution, to help students practice seeing multiple viewpoints, communicating their ideas, and making decisions on tough ethical issues.

Project Creation. Concern Regarding the Environment and Technology in our Nation/Neighborhood.

Title IV, ESEA, Developed at La Salle-Peru Township High School, District #120, La Salle, IL. 1978. Available through: The Environment and Technology Project, 1633 N. Burling, Chicago, IL 60614. Telephone: (312) 280-8163.

A series of sixteen environmental and technology units that cover the major concepts of energy, land use, urban management, and pollution. "The overall goal of CREATION is the development of students as citizens who will hold a strong environmental ethic." Five universal objectives appear in this curriculum as follows: interdependence, impact, maintenance, quality of life, and improvement.

Teaching Environmental Education.

Harold Hungerford and R. Ben Payton. 1976. Published by J. Weston Walch, Portland, ME 04104.

A source of information for middle and secondary school teachers who are responsible for curriculum development and/or instruction in this field. Provides components of environmental literacy, an introduction to ecological foundations, analysis of an environmental issue, suggestion for environmental action training, and a summary of selected environmental education programs for possible use. Suggested activities are provided to guide the teacher in developing and implementing environmental education strategies.

Thinking Globally and Acting Locally: Environmental Education Teaching Activities.

Lori Mann and William B. Stapp. Published by and available from ERIC/SMEAC, Ohio State University, 1200 Chambers Road, Third Floor, Columbus, OH 43212. 1982.

Environmental issues are larger than any one municipal boundary and are tightly intertwined with issues of culture, economics, politics, history, and science. This manual provides activities for upper elementary through high school students that help distill the global consequences of local issues and actions.

Understanding the Game of the Environment: An Illustrated Guide to Understanding Ecological Principles.

David R. Houston. Published by and available from the US Forest Service, US Dept. of Agriculture, Washington D.C. as the Agricultural Information Bulletin No. 426. 1979.

Here is one of the few ecological texts published for high school students. Major ecological principles are summarized and organized into a game, complete with players, rules, boundaries, etc. Detailed illustrations provide the basis for in-depth discussions.

The Wholeschool Book: Teaching and Learning in the 20th Century.

Bob Samples, Cheryl Charles, and Dick Barnhart. Published by Addison-Wesley Publishing Company, Reading, MA. 1977. Available at bookstores.

This book offers a humanistic, people-oriented philosophy of education complete with suggestions for questions, discussions, and activities that encourage students to participate in the learning process.

Wildlife Habitat Conservation Teacher's PAC Series.

Environmental education teaching aids available from the National Institute for Urban Wildlife. Write: National Institute for Urban Wildlife, 10921 Trotting Ridge Way, Columbia, MD 21044.

The PAC's were originally developed by the U.S. Fish and Wildlife Service and targeted at the fourth through seventh grade level student. The contents of each teacher's PAC component are: poster (1), teaching overview (1), lesson plans (3), student centered pages (2-6), and a folder. The following PAC's are available: Urban Areas; Freshwater Marshes; Beaches, Dunes and Barrier Islands; Wetland Conservation and Uses; Endangered Species; Migrating Birds; Hunting and Wildlife Conflicts; and Wildlife Conflicts.

Concept Index

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