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ABSTRACT

Four issues of this list (April, May, June, and July 1990) contain reviews of courseware for kindergarten through grade 12. Entries are classified by subject or application, i.e., communication skills, math, science, social studies, health, and utility software. Information on each software package includes title, publisher, copyright date, price, package contents, equipment required, suggested grade level, and program goals. This is followed by a detailed summary, a discussion of major strengths and weaknesses, and a statement of recommended uses. An annotated table of contents for each issue, arranged alphabetically by subject area, provides a quick reference to the contents of that list. (GL)

Advisory List of Computer Courseware

Media Evaluation Services

North Carolina Department of Public Instruction

April-July, 1990

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Advisory List of

Computer Courseware

Media Evaluation Services	April 1990
Department of Public Instruction	Raleigh, North Carolina

COMMUNICATION SKILLS

Title: MCGEE
Publisher: Lawrence Productions, Inc.
            1800 South 35th Street
            Galesburg, MI 49053-9687
Copyright: 1989
Price: $39.95
Contents of package: 2 program disks (3.5"), guide 2 p.
Systems (* indicates version previewed): Apple IIGS*, Macintosh
Equipment required: microcomputer, 1 disk drive (2 preferred), monitor (RGB
     color required), mouse
Grade level: Preschool (ages 3 and 4)
Goals: N/A

Using high resolution color graphics and digitized sound effects and speech,
MCGEE provides a framework for language development activities for young
students. The program follows the early morning explorations of the energetic
little boy, McGee. As McGee travels through his house, scenes and options are
presented in a similar format throughout the program's eight sections. In each
section users see a large picture of a room in McGee's house. Below is a row of
four boxes containing smaller pictures matching items in the large picture. The
pictures in the "choice" boxes are of objects such as puppets, telephones, or
doors. Students move the computer's mouse to manipulate an on-screen arrow onto
one of the four boxes. By clicking on the box, students cause McGee to do
something. For example, when students choose a box displaying a carton of dog
biscuits, McGee gives a biscuit to his dog; when students choose a box with a
picture of a door, McGee moves to another room. Because the arrow cannot move
into the main scene, only limited movement and precision are needed by young
users to make selections.

The program begins with a rumpled McGee waking and crawling out of bed into a
quiet house. McGee stands with his back to the user surveying his room. The
four choice boxes contain pictures of a rabbit puppet, a red ball, a stick horse,
and a door. By moving the arrow to the puppet picture and clicking on it, users
see McGee pick up the puppet and play with it for a moment. Each action features
realistic sound effects and human sounding speech. When the ball is selected,
McGee throws it across the room where it hits the wall with a noisy thud and
bounces back. When users tire of watching McGee play in his room, they can
choose the door picture that sends them to the upstairs hallway. McGee then has
the option of going downstairs, into his room again, into his mother's room, or
into the bathroom. In his mother's bedroom McGee greets his mother, talks to a
cat, and plays with a music box. While in the bathroom McGee goes to the sink
and brushes his teeth, takes a shower (without showing any skin), and uses the
toilet. When McGee uses the toilet, he first turns to the audience and sternly
points to the door. Users suddenly find themselves in the hall watching the door
close. After a short wait they hear a toilet flushing. Moving downstairs McGee
explores the living room, kitchen, and backyard. The program does not have a set
sequence of events or ending; instead students wander around the house as long as
they wish. The guide includes a half-page description of the program's purpose,
loading instructions, and a short description of the content.

WEAKNESSES: When McGee enters a new room, he immediately appears there witnout a transition. For example, when McGee leaves his room, he appears in the hall looking at three doors and a stairway. The door to his room is now in front and to the left of McGee rather than directly behind him as logic would dictate. Without a transition showing McGee going through the door into the hall, young students will have a hard time determining where McGee is and where he will go when they choose a door.

STRENGTHS: The program does not require users to read; indeed no words appear in the program. The limited movement choices dictated by the "choice" boxes will help students understand what options they may explore. The high quality graphics and digital sound are appealing.

USES: MCGEE is primarily a language development activity that allows students to talk about what they see and what will happen as they move through McGee's house. The program can be placed in a center supervised by a teacher or volunteer who can introduce the operation of the program and encourage students to describe what they see and do. Basic concepts of sequence can be introduced as students choose what just happened or what happens next. Under adult guidance students using the program can practice matching pictures, developing hand-eye coordination, and applying directional words. MCGEE is a fun method of introducing students to the computer as a learning tool.

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HEALTHFUL LIVING

Series Title: DRUG EDUCATION SERIES
Title: DRUGS: FRIEND OR FOE?
Publisher: Marshware
            P.O. Box 8082
            Shawnee Mission, KS 66208
Copyright: 1990
Price: $49.95
Contents of package: 1 double-sided program disk, guide 11 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color preferred),
     printer (preferred)
Grade level: 2-4
Goals: Health Education Grades 2-4 Chemicals and Substance Abuse CG 1

DRUGS: FRIEND OR FOE? helps young students differentiate between helpful and harmful drugs and actions. Users choose from two main activities listed on the menu. The first section is an interactive lesson during which information is presented and multiple-choice questions are interspersed to verify users' comprehension. The lesson contains three main topics. "Learn how drugs can be friends" mentions that drugs to combat diseases such as measles and strep throat have not always been available and that drugs can be used to kill germs, prevent illnesses, control diseases, and reduce pain. It also explains the difference between prescription and over-the-counter medicines. "Learn how drugs can be foes" emphasizes taking the correct dose of medicine at the right time, not taking someone else's medicine, and not accepting pills, medicine, or drugs from

friends, older children, or strangers. It also stresses the danger of breathing fumes from substances such as glue and gasoline. The short segment "Learn about drug safety" suggests keeping unsafe items out of the reach of younger siblings, discarding old medicines, and telling the truth if the wrong amount or type of medicine is taken. During "Be on the 'Safety Squad,'" the second main activity of this program, the screen displays a brief description of a situation which users identify as safe or dangerous. The program includes twenty-two descriptions from which ten are randomly chosen for use in a single Safety Squad session. If their selection is correct, users have two chances to guess letters in a mystery word. These words are taken from a group of eighteen words which are highlighted when first used in the text of the program and for which an on-screen dictionary is available. If users choose the right letter, they earn a chance to identify the word. If they do not determine the word in a single session, the program presents other opportunities to decipher it after more scenarios are accurately labeled. When students correctly identify conditions as dangerous, they have a chance to enter up to six lines of comment to answer a question about why the action is dangerous and up to a second six lines to tell how to rectify the situation. These minireports are saved for teachers to view on the screen or to print. The guide booklet explains how to operate the program, includes the questions and answer choices that students encounter in the lesson, lists the dictionary words with definitions, and groups the twenty-two Safety Squad descriptions as safe or dangerous.

WEAKNESSES: Since the three topics of the first main activity are separate menu choices, users do not expect that all three topics will be encountered by selecting the first topic.

STRENGTHS: Randomization in the Safety Squad activity makes this section appropriate for repeat usage by the same person or group. Asking young students to apply the key points to practical situations will help them fully understand and retain this information.

USES: DRUGS: FRIEND OR FOE? will help answer questions for youngsters who become confused about the difference between going to the drug store for legitimate reasons and the unsavory prospect of taking illegal drugs. The program's capacity for written expression encourages blending language arts with health lessons. This program's information is a precursor to the more specific information about addictive drugs necessary for upper elementary and middle grade students.

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MATHEMATICS

Series Title: ELEMENTARY LEARNING SERIES
Title: HANDS-ON MATH: VOLUME 2
Publisher: Ventura Educational Systems
            3440 Brokenhill Street
            Newbury Park, CA 91320
Copyright: 1988 (released in 1989)
Price: $49.95
Contents of package: 1 program disk, 1 data disk, guide 98 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color required), blank
    disk
Grade level: 1-6
Goals: None assigned; see USES section below

HANDS-ON MATH: VOLUME 2 is a tool designed to extend the use of manipulatives
from the concrete to the abstract thinking level. It touches on many topics,
such as addition, subtraction, multiplication, fractions, place value,
probability, problem solving, and symmetry. The program includes an exploration
"playground" and structured "exercise" sections for each of five manipulatives:
two-color counters, color tiles, mirrors, attribute blocks, and base ten blocks.
For example, during the playground opportunity for two-color counters (round,
flat objects that have a different color on each side), users choose the color
combination green/violet or orange/blue, place counters one at a time on a grid,
randomly toss counters, move pieces, and flip pieces one at a time or all at once
in order to become familiar with this manipulative on the computer. Three
activities--"skills," "fractions," and "nim"--comprise the two-color counter
exercise section. Students use "skills" to practice addition or subtraction
facts. An assortment of counters of two different colors appears on the screen
for addition. Students tally the counters to fill in the blanks of an equation
at the bottom of the screen by identifying the addends (number of each color) and
sum (total of both colors) for the problem shown. A subtraction screen begins
with counters of one color. Once this number is entered as the minuend, a
portion of the counters flips to another color. Students enter the number of
flipped counters as the subtrahend and then complete the subtraction problem.
For fraction practice students enter the number of single-colored counters as the
denominator and the number subsequently flipped to a second color as the
numerator. "Nim" is a strategy game students play against the computer. In
these exercises, and the one to three exercises provided for the other four
manipulatives, there are options for regulating problem difficulty. The guide
discusses each portion of the program and contains forty-six reproducible
activity sheets which direct students to use a playground or an exercise activity
for a specific manipulative in order to complete the sheet.

WEAKNESSES: The guide might be more helpful to teachers if organized by type of
manipulative rather than by playground, exercises, and worksheets. Some
directions are not adequate for novices. For some computer activities the
correct answer is never supplied, and users may try unsuccessfully forever.

STRENGTHS: Some activities are very challenging, such as "nim" and the "reflect" exercise for mirrors. The program quickly creates numerous problems for students to solve with the on-screen manipulatives. The activity sheets enhance program use. The variety of activities and difficulty levels included makes this program useful for students with varying abilities. Some sections offer immediate feedback as to the validity of an answer.

USES: HANDS-ON MATH: VOLUME 2 should not replace the use of manipulatives by students. Since this program has a broad scope but does not fully develop any particular topic, it is suitable as a supplement to classroom instruction. The activity sheets provide concrete starting places for program use, especially for beginners. Teachers must allow for significant preparation time in order to acquaint themselves with the entire program before introducing it to students. Concentrating on one manipulative at a time may be preferred in order to avoid feeling overwhelmed.

* * *

Title: MATHEMATICS EXPLORATION TOOLKIT
Publisher: International Business Machines Corporation
            P.O. Box 1328-W
            Boca Raton, FL 33429-1328
Copyright: 1988 (released 1989)
Price: $247.20
Contents of package: 1 program disk (3.5"), 2 program disks (5.25"), guide
      398 p.
Systems (* indicates version previewed): IBM-PS/2*, Tandy 1000
Equipment required: microcomputer (512K), 1 disk drive, monitor (color graphics
      adapter required), printer (optional)
Grade level: 7-12
Goals: Mathematics Grade 7 CG 2, 3, 4, 5, and 9
                     Grade 8 CG 2, 3, 4, 5, 10, and 11
        General Mathematics CG 1, 2, 3, 4, and 8
        Technical Mathematics CG 1, 2, 3, 4, 7, and 8
        Introductory Algebra Part I CG 1-9
        Introductory Algebra Part II CG 1-11
        Algebra I CG 1-9
        Geometry CG 10, 12, and 14
        Algebra II CG 1-16
        Advanced Mathematics CG 1, 2, 3, 4, 7, 9, 11, 12, and 13

The MATHEMATICS EXPLORATION TOOLKIT provides students and teachers with a powerful tool for mathematics instruction. The heart of the program is CALC, which functions as a calculator and plotter. As a calculator CALC can add, subtract, multiply, divide, exponentiate, and find roots of numbers. Logarithmic and exponential values, trigonometric functions, factorials, combinations, and permutations can be easily calculated and displayed using CALC. CALC can also manipulate symbols as a calculator manipulates numbers. It can factor polynomials, solve equations, generate solution paths, manipulate stored expressions, and perform differentiation and integration.

CALC consists of a screen separated into three segments. The Command Line, which appears at the bottom of the screen, allows students to enter expressions and commands into CALC. Students type expressions or one of the 114 commands that act on expressions. When an expression is entered in the Command Line, it appears in the second segment of the screen--the Expression Window. Located immediately above the Command Line, the Expression Window lists the expressions entered by users and the results of a command's action after it has been applied. Expressions in the Expression Window appear in proper mathematical format. They are displayed using the actual symbol for square root, and exponents appear on the screen in the Expression Window. For example, a student can enter the expression $(5-x)(x+7)$ into the Command Line. The expression then appears in the Expression Window. Users enter a command such as "Simplify" into the Command Line. The simplified expression $-x^2-2x+35$ would then appear in the Expression Window. The Function Plotter Window allows the user to graph many functions and relations. CALC can graph logarithmic, exponential, and trigonometric functions as well as relations such as circles, ellipses, and hyperbolas.

The **MATHEMATICS EXPLORATION TOOLKIT** contains a Defer Sequence option that is a complete programming environment for presenting mathematical concepts. Teachers can set up and present problems in a step-by-step format. They can add messages, present graphs of problems, and even have students interact with problems. A tutorial guides users through the operation of CALC and the Defer Sequence option. Students and teachers can work through demonstrations of many CALC commands and explore basic and advanced mathematics topics. The manual provides complete instructions on the technical aspects of the program and on using the program in the classroom. It also contains Guided Explorations, sample lesson plans for demonstrating a variety of mathematical topics using The MATHEMATICS EXPLORATION TOOLKIT.

WEAKNESSES: Students may find themselves entering long or advanced commands due to the need to use special keystroke combinations for square root symbols, subscripts, and superscripts.

STRENGTHS: The MATHEMATICS EXPLORATION TOOLKIT is a powerful tool for demonstrating or working with a wide variety of topics in the mathematics curriculum. Unlike other programs that cover one or two topics, the MATHEMATICS EXPLORATION TOOLKIT covers most realms of high school mathematics. The ability to function as a calculator and use the same commands to function as a factoring machine makes the program unique and very easy to use.

USES: Literally all high school mathematics concepts can be demonstrated using MATHEMATICS EXPLORATION TOOLKIT. It can be used as an electronic blackboard to introduce concepts from basic algebra through trigonometry, matrix theory, and beginning calculus. The symbol manipulator allows the teacher to show simple operations such as positive and negative numbers through more advanced topics such as factoring. Teachers can graph equations quickly and create interesting and informative demonstrations. The multicolor lines available in graphing make this program excellent for comparing different types of graphs. Students can use the program to experiment and explore mathematical concepts on their own.

* * *

SCIENCE

Title: LEARN ABOUT: PLANTS
Publisher: Sunburst Communications, Inc.
            39 Washington Avenue
            Pleasantville, NY 10570-2898
Copyright: 1990
Price: $65.00
Contents of package: 1 program disk, 1 double-sided data disk, 1 back-up
     program disk, 1 double-sided back-up data disk, guide 68 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer (128K); 1 disk drive; monitor (color
     preferred); printer (optional, color ribbon preferred); Muppet Learning
     Keys, Koala Pad, joystick or mouse (optional)
Grade level: K-3
Goals: K-3 Science CG 1

LEARN ABOUT: PLANTS introduces fundamental information about plants and offers
students opportunities to indulge their creativity. The first of eight group-
oriented activities, "What Is a Plant?," examines the nature of plants by
contrasting them to animals, by pointing out that plants are alive, and by
showing that plants grow. In "Plant Parts" students become familiar with plant
terms as they match roots, stems, leaves, and flowers onto the outline of a whole
plant. "Plant Homes" shows different scenes, such as a forest, a pond, and a
garden, then asks students to match a series of plants to these habitats.
"Seeds" shows that plants grow from seeds and that insects pollinate flowers,
allowing reproduction in plants. In "Growth" students examine plants' dependence
on water, light, sun, and air. Students are shown several examples of plants
that lack one of the elements and are asked to determine which element is
missing. "Plants and People" shows students the relationship between common
foods and products derived from plants. Students examine plants to determine
where on the plant a vegetable grows. For example, is it a root, leaf, or seed?
Students then match common products such as a shirt, a straw hat, and a table
with plants supplying the original materials for the product. Students also
match popular foods such as French fries, popcorn, and jelly to their original
plant forms. "Worlds" allows students to examine several habitats (prairie,
jungle, pond, and forest) to locate and label plants and animals. After
examining a habitat, students can move to a "blank" scene where they can create a
habitat complete with animals and plants. Students can write short stories
directly onto the created scene and print the scene and story. "Create," the
final activity, allows students to create fantasy plants from a collection of
flower petals, leaves, branches, and other parts. After creating a new plant,
students can write a story describing their creation. The extensive teacher's
guide offers detailed lesson plans that include precomputer, computer, and
postcomputer activities and descriptions of each segment of the program.

WEAKNESSES: When the program's first disk is loaded, the program prompts users
to insert the "Student Disk." However, the only other disk in the package is
labeled "Data Disk." Though a minor problem, this mislabeling will lead to a
moment of confusion. Students are often required to place objects in a specific
place or in a specific order. For example, in "What Is a Plant?" students must

plant nine seedlings. The plants must be planted in the same order as they appear in the flat, and they must be placed "just right" within the garden to grow. Nowhere in the guide is this precise placement requirement mentioned. Similar quirks occur in a few other segments of the program. Teachers will need to determine where these quirks occur and prepare students to cope with them.

STRENGTHS: The colorful graphics and animation will encourage students to interact with the program. Students will be motivated by their ability to manipulate scenes, enter text to create their own stories, and print colorful scenes with labels or their own stories. The teacher's guide provides excellent support to teachers who wish to integrate the program into their instruction.

USES: LEARN ABOUT: PLANTS is a group activity for younger students offering a variety of opportunities for integrating language arts and science conten' information. This program demands that teachers take an active role in its use. Users who are not prepared for its open-ended nature will be frustrated.

* * *

Title: PROJECT CLASSIFY: MAMMALS
Publisher: National Geographic Society
            Educational Services
            Department 89
            Washington, DC   20036
Copyright: 1989
Price: $139.95
Contents of package: 2 double-sided program disks, 2 double-sided back-up disks,
    1 sound filmstrip, 15 student booklets 8 p., catalog cards, 12 reproducible
    activity sheets, guide 32 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer (128K), 1 disk drive, monitor (color
    preferred), mouse (optional)
Grade level: 5-9
Goals: Integrated Science Grade 7 CG 4

Student zoologists in PROJECT CLASSIFY: MAMMALS embark on simulated field research projects to identify mammals from the twenty orders and videotape them in their native habitats. The package contains a sound filmstrip that introduces mammal classification. Then students use the program and the accompanying student guide illustrated with color photographs to complete missions that pose identification or verification dilemmas such as helping a fellow student draw a picture of an animal that uses its tail like a third hand or determining whether a small mammal seen jumping into a river lined with exotic plants is dangerous. Investigators receive initial clues from a zoologist who assigns missions and then explore the individual orders in search of the right mammal. Missions on the first disk cover rodents and lagomorphs, carnivores, perissodactyls and proboscideans, and primates. The second disk deals with marsupials and monotremes, artiodactyls, cetaceans and sirenians, and the other orders. Within an order students select an unlabeled picture of a mammal to identify by answering questions posed by the computer about the animal's attributes (the presence or absence of horns, for instance). The program also displays closeup contrastive pictures of animals with hard-to·distinguish traits such as narrow- or wide-spaced nostrils. When students select the correct combination of traits,

the program provides the name of the mammal and additional information about it. Students determine whether the identified mammal completes their mission (reviewing the assignment if necessary) or whether they need to examine a new mammal. Students then locate the habitat of a promising mammal on a world map and submit their field work for evaluation by videotaping the animal in action. If their mammal is the correct one, students receive positive feedback and a clever mission-related reward such as a canoe trip down a river where tapirs swim. If not, they can request an extra clue for the same mission or start a new one. The program keeps a list of missions accomplished (i.e., animals identified) for up to forty students. Each disk offers thirty-six missions with three levels of difficulty that vary according to the explicitness of clues in the assignments and the number of traits that distinguish the mammals. The guide contains suggestions for using and integrating the whole package; program description, objectives, and screen samples; follow-up activities; a chart of mission levels and animals; and a glossary. Twelve reproducible activity sheets accompany the guide.

WEAKNESSES: Although graphics are generally effective and appealing, occasional details are not clearly visible. Students receive only one chance to locate habitats on the world map.

STRENGTHS: The package will appeal to students with a variety of learning styles and offers teachers flexibility for use in many classroom situations. The program combines content and multistep problem solving in a clever and engaging manner. Its missions relate the animal world and the work of zoologists to daily life. The program also reinforces geography skills.

USES: PROJECT CLASSIFY: MAMMALS supplements the study of mammal characteristics and classification. The package provides a combination of materials for whole class, group, and individual use. Teachers will want to encourage students to take notes as they discover clues.

* * *

SOCIAL STUDIES

Title: GEOGRAPHIC JIGSAW
Publisher: ECLAT MicroProducts
            P.O. Box 570-756
            Miami, FL 33257-0756
Copyright: 1989
Price: $39.95
Contents of package: 1 program disk, guide 12 p.
Systems (* indicates version previewed): Apple II family (5.25" disk), Apple
    IIGS (3.5" disk)*
Equipment required: microcomputer, 1 disk drive, monitor (color preferred)
Grade level: 2-5
Goals: Social Studies Grades 2, 3, and 5 Skills CG 5

GEOGRAPHIC JIGSAW offers activities to introduce and/or review the shape and geographic location of all fifty states, the capital city of each state, and tidbits of information about each state. Users choose an exercise from the main menu. "Jigsaw" is an electronic version of a United States puzzle with three

difficulty levels. Users pick a puzzle piece from an assortment of all fifty states on the first sc een and place it on a second screen that acts as the puzzle board. At the easy level the puzzle board includes an outline of each state, and notification of correct placement of a state is the presentation of the state's name and capital city on the screen. For medium difficulty the puzzle board includes only the outline of the continental United States (as well as inserts with outlines for Alaska and Hawaii), and successful state placement results in the opportunity for students to enter the name of the state, which is followed by the appearance of the name of the capital. Puzzle pieces may be upside down and/or backwards at the difficult level, and users have the opportunity to enter both state name and capital city. An incorrectly placed puzzle piece remains misplaced until users correct it in subsequent play, but the program replaces erroneous answers to state and/or capital questions with correct ones. The next user option, "Map Quiz," also has different levels of complexity. The program displays an unlabeled map of the fifty states. At the easy level users choose to identify on the map the state that is named or the state in which the capital city is located. For more difficult challenges users choose from "Cities," "Flowers," "Capitals," "Miscellaneous," and "Nicknames" to receive a qu stion to which they respond by using a cursor to select a state from the map. When users respond incorrectly, the program supplies the right answer. "Map Facts" contains a screen of information for each state, including items such as area, population, population rank among the fifty states, per capita personal income, nickname, flower, and bird. Users request information by identifying a state on a map. The "Map Facts" section cannot be updated or searched. The ten highest scores for percentage of the puzzle completed and/or number of questions answered correctly are stored in a list called the "Hall of Fame." The guide booklet explains program operation and options.

WEAKNESSES: Wyoming's shape is distorted on the map. Labels used in the guide and on the screen to name the activities are not the same. Neither puzzle completion in progress nor student records can be saved. Including the District of Columbia in "Jigsaw" and "Map Facts" may confuse young users since it is not a state. Changing players requires rebooting the disk if the "Hall of Fame" is to be employed.

STRENGTHS: The colorful, clear, and generally accurate map will appeal to the targeted audience. The program is fun to use and may motivate some students to review this material. The variety of difficulty levels allows students with different abilities to be challenged.

USES: GEOGRAPHIC JIGSAW serves as a review of states and their capitals as well as a refresher of the shape and geographic location of each state. Students might enjoy using this program in pairs or small groups. Conscientious and capable students could use this program as an introduction to these topics.

* * *

Title: TIME NAVIGATOR
Publisher: Minnesota Educational Computing Corporation
            3490 Lexington Avenue
            St. Paul, MN 55126
Copyright: 1989
Price: $59.00
Contents of package: 1 double-sided program disk, 1 back-up disk, guide 64 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer (128K), 1 disk drive, monitor (color
    preferred)
Grade level: 7-12
Goals: Social Studies Grade 8 Knowledge CG 12-15
                        Grade 11 Knowledge CG 13, 14, 16, 17, and 18
                        Grades 7-11 Skills CG 2, 3, 4, and 6
        Library/Media and Computer Skills Grades 7-12 CG 1 and 2

In TIME NAVIGATOR students locate information about historical events in
reference materials then place those events into chronological order. As "Time
Navigators," students use a time machine to travel back in time to the beginning
of the twentieth century. In order to return to the 1980s, users must decide
which of three events occurred last or which of three items existed last. Since
the information needed to determine the sequence of items is not in the program,
students must consult reference resources. On arriving at each stop in time,
students see a computer screen showing the current date (e.g., 1923), a street
scene typical of that date, and four icons representing categories of events or
items users must sequence. The first category is 'Headlines," which displays
three newspaper headlines of historic events. The "Conversations" category
features three overheard discussions about topics of interest to residents of a
specific year. In the "Books" category students must choose which of three book
titles holds the latest copyright. In "Songs" students decide which of three
songs was released last. The "Movies" category requires students to decide which
of three motion pictures was released last. In "Artifacts" students must decide
what year an item such as presliced bread was introduced or became popular. Four
topics out of the six are offered to users at each stop during the journey
through time. After correctly identifying which of the three items within a
category occurred last chronologically, students are rewarded by traveling ahead
in time to the date of the item or event. Incorrect answers result in either
being sent back in time or staying at the current stop. The program has two
levels of difficulty. At the "Discovery" level students need only answer
questions correctly to move forward in time. After students correctly sequence
items and events, their time machine moves toward their next destination. At the
"Adventure" level two elements are introduced--hazards and fuel. Hazards include
"storms" and "bumps" that can either throw time travelers backward in time or
drain their fuel supply. Fuel is needed so that students can maneuver their time
machines to avoid hazards. Running out of fuel will bring a premature end to a
time journey. Students who successfully navigate back to the 1980s are rewarded
with a graphics screen showing a blue ribbon and an announcement that they are
promoted.

Students working at the "Adventure" level score points that are recorded in the
"Hall of Fame." Games in progress can be saved for later retrieval and
completion. Management options allow teachers to determine what years between
1900 and 1980 are included in students' travels, the number of years students can

jump between stops to answer questions, which categories of questions students
are asked, and whether students are allowed to work on the "Discovery" level or
the "Adventure" level (or allowed to choose for themselves).

WEAKNESSES: The program does not include reference materials containing the
information required for students to sequence the items and events mentioned in
the program. Teachers must confirm that the reference materials listed in the
teacher's guide are available to students.

STRENGTHS: The program provides students with an entertaining and motivating
reason to consult a variety of reference materials in order to correctly
determine the time when items and events occurred in history.

USES: The TIME NAVIGATOR provides students with an opportunity to use reference
materials and sharpen their research skills while learning more about the
sequence of events of modern history. Teachers must be aware that the answers to
the sequencing questions asked by the program can only be found by using
reference materials not included with the program. Students who do not have
access to outside reference materials will be forced to guess.

* * *

Title: USA GEOGRAPH
Publisher: Minnesota Educational Computing Consortium
            3490 Lexington Avenue North
            St. Paul, MN 55126
Copyright: 1989
Price: $139.00
Contents of package: 1 program disk (3.5"), 1 information disk (3.5"), 2 Quick
    Reference Cards, USA GEOGRAPH User's Guide 190 p., USA GEOGRAPH Classroom
    Guide approximately 150 p.
Systems (* indicates version previewed): Apple IIGS*
Equipment required: microcomputer (768K minimum), 1 disk drive (3.5"; 2
    preferred), RGB monitor, mouse, printer (preferred), blank disks
Grade level: 6-12
Goals: Social Studies Grades 6-10 Skills CG 2-5
        Library/Media and Computer Skills Grades 6-12 CG 2 and 3
                                           Grades 7-9 CG 6
                                           Grades 10-12 CG 1

USA GEOGRAPH is a reference resource that combines on-screen maps of the United
States (all fifty states and six territories) with a database of demographic and
geographic information. The program operates under the Apple desktop user
interface, which features pull-down menus and mouse-controlled cursor movement.
On beginning the program students have the option of looking at one of four map
views. The "Overview Map" displays a wide-angle view of the Northern Hemisphere
and part of the Southern. The "Fifty States" map displays a view of the
forty-eight continental states, Hawaii, and Alaska. The "Region Map" allows
users to select one of six maps featuring regions of the United States. The
"Close-up" map shows one or more states or territories in detail. Using these
kinds of maps, the program can create five types of maps based on information
found in the program's database component. "Theme Maps" shows students
color-coded maps that compare and contrast information about twenty-four topics
such as acid rain, elevation, energy consumption, land use, temperature, and

territorial expansion. "Comparison" maps permit students to choose a state or
territory and compare its rank to that of other states and territories in one of
ninety-three categories of demographic or geographic information. "Contrast"
allows students to create a map based on a search of the database. Students
select appropriate criteria (called "rules") for a search, and the program
displays a color-coded map. For example, students can select one rule to locate
and display all places with a birth rate of more than 15 percent and another to
search for places with a death rate less than 10 percent. The program displays a
color-coded map showing all the states that match the first rule in one color and
all the states that match the second rule in another color. All states matching
both rules are shown in a third color and all the states that match neither rule
in a fourth color. The "Quartile" map option allows students to display the
ranking of states and territories within a category. For instance, a quartile
map based on population density data would show a four-color map. One color
would represent the places where population falls into the highest fourth among
the states and territories. The second, third, and lowest quartiles are
represented by three other colors. The "Equal Steps" map divides the states and
territories into four equal levels based on the range of data. Unlike the
"Quartile" map, which guarantees that states and territories will be divided into
four groups, the "Equal Steps" map ranks places according to where they fall into
the range of numeric data. This type of ranking can result in a map where all
the states and territories fall into only one or two of the four groups.
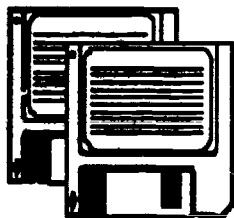
Information in the database component of USA GEOGRAPH can be viewed in two ways.
"Data Cards" gives information in note card format. Each data card lists 105
categories of information such as agricultural commodities, death rate per 1,000,
educational levels, climate zones, elevation, and natural features. Students can
view the data cards of any state or territory by selecting the country on one of
the many maps displayed in the atlas section and then switching to its data card.
Students can limit the number of items of information displayed on the data card
by choosing only those categories they wish to examine. The "Data Table" lists
the same information as data cards but in tabular format, and the information can
be selected and delimited in the same way. The database can be sorted
alphabetically or numerically by category in descending and ascending order,
allowing students to compare the ranking of states and territories based on any
of the categories. When using the Data Table, students can ask the program to
create a graph comparing places. The program also allows users to search the
database for text appearing anywhere within the "Data Card" or "Data Table."

The maps and database are linked to each other. Therefore, students can use the
program to search for, organize, and analyze a wide variety of information which
is then displayed in either text (database) or visual (atlas) form. The program
provides an option for students to save the results of various searches into
reports that can be stored on blank disks. Maps, data cards, and data tables can
be printed. Users of Apple Imagewriter·II printers with color ribbons can print
maps in color. A teacher management segment allows teachers to add information
in three categories to the database, but original data cannot be altered or
deleted. Documentation consists of two volumes: USA GEOGRAPH User's Guide,
which provides general operating instructions, an introductory tutorial,
reference sections, and an index; and USA GEOGRAPH Classroom Guide, which
provides teachers with lesson plans for activities and games. Two Quick
Reference Cards, one for teachers and one for students, are furnished to help
users navigate through the pull-down menus and special features of the program.
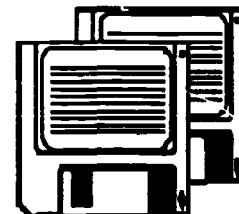
WEAKNESSES: Theme maps are not available at the regional or state level. The program uses a special typeface when printing information from the data table section of the program. This typeface, although quite attractive, makes printing reports extremely slow (a single data card with all data categories takes about ten minutes and three pages of paper to print). A draft report option allows users to print a less attractive version in considerably less time. Compared to a normal printout, however, even this option is slow.

STRENGTHS: The interrelation of the program's on-screen maps and the information database makes the program a unique processing tool for working with visual and printed information. The program's outstanding graphics add special appeal as does its ability to print colorful maps on the Imagewriter II. The program is so easy to use that students will find themselves exploring the database and atlas and engaging in serendipitous learning activities.

USES: USA GEOGRAPH is an extraordinary supplement to the study of geography and information processing. The program encourages students to explore complex relationships among various categories of information (e.g., how birth rate and death rate are related to per capita income). The database and atlas help students locate, organize, and analyze information. By using this program as a tool, students develop useful strategies for solving sophisticated problems through a process of defining questions, posing methods of answering questions, and testing hypotheses.

Advisory List of

Computer Courseware

COMMUNICATION SKILLS

Title: PLAYROOM
Publisher: Broderbund
            17 Paul Drive
            San Rafael, CA   94903-2101
Copyright: 1989
Price: $54.95
Contents of package: 2 program disks, 2 back-up disks, keyboard stickers,
     Pepper finger puppet, 1 program guide 46 pages, 1 teacher's guide 43 p.
Systems (* indicates version previewed): IBM, Tandy 1000*
Equipment required: microcomputer, 1 disk drive (2 preferred), monitor (color
     graphics monitor), mouse, printer (preferred)
Grade level: Preschool (age 4)-Grade 1
Goals: Communication Skills Grade K   Reading   CG 1, 3, 4, 5, and 10
                                        Writing   CG 8 and 9
                                        Viewing   CG 1 and 4
                             Grade 1   Speaking CG 4
                                        Reading   CG 1, 5, 10, 12, and 14
                                        Writing   CG 8 and 9
        Mathematics   Grades K-1   CG 1 and 2

PLAYROOM offers young students a variety of language development and mathematics
learning activities in an entertaining and motivating environment. The colorful
opening scene shows a bedroom filled with toys, furniture, and strange creatures.
Students use a mouse-controlled arrow to select items shown on the screen.
Selecting an object causes it to take an immediate action or act as a gateway to
a learning activity. Among the thirteen objects that take action are a bedside
radio that plays the "ABC" song, a drawer that opens to release a balloon that
floats around the room until popped by users, a purple dinosaur that roars, and a
shirt in a pile of clothes that waves its sleeve. The actions of each of these
objects are accompanied by amusing and appropriate sound effects or digitally
reproduced speech.

Selecting gateway objects leads to learning activities. The first gateway
activity, "Clock," features a cuckoo clock that leads to a time-telling activity
displayed on the computer's screen in five sections. The main section contains
the cuckoo clock. To the right are smaller sections displaying pictures of
Pepper the PLAYROOM mouse mascot at different times of the day (corresponding to
the time shown on the clock), a digital clock display showing the same time as
the cuckoo clock, a scene of a city skyline showing the sun or the moon
(depending on the time shown on the clock), and the time of day spelled out (for
example, eight o'clock). Students move the mouse-controlled arrow to a number on
the face of the cuckoo clock, and the clock hands move clockwise to that number.
When the hands reach the selected number, a cuckoo appears to sing a note for
each hour shown on the clock. As the bird sings, a musical note appears on the
screen to help users count along with the bird. Students have the option to
select the hub of the clock's hands and see a randomly selected hour chosen by
the program. As the clock changes, so do the mouse's picture, the city skyline,
the digital clock, and the spelled out time. "The Spinner Toy" activity shows
two spinner wheels, one with the numbers one to twelve, the other with twelve
different pictures. To explore the spinners, students use the mouse to select a
number which is then displayed above the wheels along with that number of

pictures. Students can choose a different picture from the picture spinner and
see it displayed along with the numeral. Once students are comfortable with the
operation of this activity, they have the option of playing a game. Pepper the
mouse chooses a random number of pictures to place on the screen. Students count
the pictures and select the correct number from the number spinner. Pictures
moving around the screen reward correct answers. The "ABC Book" activity
presents two scenes--a fantasy castle and a neighborhood scene. The letters of
the alphabet are arranged in order above the scene. A small box showing an
uppercase and lowercase "A" allows users to choose the type of letters displayed
in the two rows. When students select a letter, a picture of an object whose
name begins with that letter appears. Along with the picture is the name of the
object and the beginning letter in uppercase and lowercase. These objects can be
placed onto either of the scenes. There are different objects for each uppercase
and lowercase letter as well as for each scene. After students place objects
into the scene, it can be printed. The "Computer" activity allows students to
practice matching uppercase and lowercase letters and spelling. Students explore
the activity by selecting an uppercase letter on the keyboard (arranged in QWERTY
order). For each letter selected, the program displays a lowercase letter. When
ready to play the game, students select Pepper, who holds up a lowercase letter.
Students must select an uppercase letter to match from only a few letters
displayed by the program. An animated graphic of an object whose name begins
with the letter (e.g., jet for "j") is displayed as a reward. The "Mousehole"
activity presents a board game that can be played with another student or against
the computer. The game appears in three versions: short with fifteen spaces,
medium with forty-four spaces, and long with sixty-seven spaces. White and black
disks appear at random on spaces around the board. White disks will throw
students forward the number of spaces shown on the disk. Black disks will throw
students backward the number of spaces shown on the disk. The program rolls
three dice, one of which students can choose as the number of spaces they wish to
move. Students count the number of spaces to decide where they will land. The
disks add another element of counting as students decide which die number to
choose to avoid a disk or try landing on it. If students win the game, Pepper
appears on the screen and dances a lively jig. In "Mixup Toy" students can
combine the head, torso, and legs of ten different creatures to create a fantasy
creature. The program will randomly mix the creature parts if users desire. The
creatures can be printed.

The program guide contains descriptions of each activity, operating and loading
instructions, learning activities, and pictures of the program's characters for
coloring or finger puppets. The teacher's guide introduces the program and
provides a skills/activity matrix, activity sheets, and certificate masters.

WEAKNESSES: The program exhibited some tendency toward instability by crashing
twice during the review process. The crashes could not be duplicated, however,
and could be the result of running the program on different types of computers
during evaluation.

STRENGTHS: The program uses colorful animated graphics, music, sound effects,
and fun activities to fascinate and hold the attention of very young users. The
learning activities are well suited to the intended audience and help students
develop fundamental skills in language arts and mathematics.

USES: PLAYROOM should be introduced and supervised by an adult. To encourage
language development, an adult should be present to ask students what they see,
what they are doing, what just happened, and what will happen next. The
activities provide excellent practice in letter recognition, word recognition,
finding letters on a computer keyboard, telling time, counting, and recognizing
the correlation between numerals and objects.

* * *

Series Title: READING FUN
Title: FINAL CONSONANT SOUNDS
Publisher: Troll Associates
            100 Corporate Drive
            Mahwah, NJ 07498-0025
Copyright: 1989
Price: $39.95
Contents of package: 1 program disk, guide 5 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color preferred)
Grade level: K-2
Goals: Communication Skills Grades K-1 Reading/Literature CG 10
        Communication Skills Grade 2 Reading/Literature CG 12

The three exercises in FINAL CONSONANT SOUNDS offer review of the sounds made by
b, d, f, g, k, l, m, n, p, r, s, t, and x when they occur at the end of a word.
"Three to Get Ready" presents a target word, an illustration of that word, and an
uppercase and lowercase version of the word's final consonant. Below this array
are three pictures, with an identifying word minus the final letter underneath
each one. Users move the cursor to identify the two words that end with the same
sound as the target word. "Which Sound?" provides a target picture and word as
well as two picture/word answer choices. Students follow on-screen instructions
to identify the word that ends with the same or a different sound from the
target. "Sounds Like Fun" displays the uppercase and lowercase versions of a
letter at the top of the screen and three picture/word answer possibilities
underneath. Users select the one word that ends with the target letter sound.
Once a correct match is made, the letters move down to accompany the answer
picture. Representations for a different letter then appear at the top. The
process repeats with only two choices from which to pick. The entire cycle
repeats one more time in order to match the last answer choice with its final
consonant. Throughout the exercises, the program rewards correct answers with
animated features of the chosen picture while superimposing an x on incorrectly
chosen pictures. Teacher options allow for general adjustments to the program,
such as selecting the number of consonants (from 4 to 13) to be included in the
activities and deciding whether to have users select from the menu or have
questions from the three exercises presented automatically. For each exercise
teachers can determine the number of problems to be presented (0-99) and the
status of answer words (to be omitted, included with complete spelling, or
included minus the last letter) as well as make several other choices applicable
to a particular activity. The guide explains the exercises and teacher options.

WEAKNESSES: The final answer in a "Sounds Like Fun" question is obvious as only
one picture/word duo is left unaccompanied by letters. Student work is not
documented.

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STRENGTHS: Teachers can modify the program to suit the needs of students with different abilities. The illustrations are clear and motivating.

USES: FINAL CONSONANT SOUNDS offers a variety of practice formats for choosing similar or different ending sounds. Prereaders will need assistance throughout the sessions while readers should progress independently once they become familiar with the program.

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Series Title: SUPER SOLVERS
Title: MIDNIGHT RESCUE!
Publisher: The Learning Company
            6493 Kaiser Drive
            Fremont, CA 94555
Copyright: 1989
Price: $59.95
Contents of package: 1 program disk (3.5"), 2 program disks (5.25"), Ready
     Reference Card, Guide 63 p.
Systems (* indicates version previewed): Tandy 1000*, IBM-PC
Equipment required: Tandy 1000 (640K required for enhanced graphics) or IBM-PC
     (512K memory), 1 disk drive, monitor (monochrome or color graphics adapter
     required [EGA, VGA. or Tandy 16 color preferred])
Grades: 3-6
Goals: Communication Skills Grade 3 Reading/Literature CG 3 and 4
        Communication Skills Grades 3-6 Reading/Literature CG 5-8
        Thinking Skills Grades 3-6

In SUPER SOLVERS MIDNIGHT RESCUE!, students use reading comprehension skills to locate clues that help solve the mystery of Shady Glen School's robot invasion. Four menacing robots have suddenly appeared in the school and are busily painting it with invisible paint. Student detectives of the Super Solvers Club are asked to locate clues, photograph the robots, and finally determine which of the robots is actually the masquerading archvillain Morty Maxwell and thereby prevent the school from disappearing. The program features startlingly detailed, vividly colored animated graphics and excellent sound effects and music. Students begin their investigation by directing their detective to enter the school armed with only a camera and the students' own wits. The detective is a colorful cartoon character who sports yellow shorts, red sneakers, a balloonlike jacket, and a baseball cap. The detective moves through the halls of the school at the direction of the user, entering classrooms, the library, the principal's office, and the gymnasium in search of clues. Clues are solved by reading a passage and correctly answering a comprehension question about it. The reading passages are diary entries, newspaper articles, and narrative or informative paragraphs. The program contains a dictionary of hard words used in the passages. Users can ask to see a definition and pronunciation guide for unfamiliar words. At the end of each passage, Morty presents a rhyming riddle. The riddle/question tests users' abilities to describe details, recognize main ideas, or suggest appropriate titles for reading passages. Correct answers are rewarded by one of the clues needed to identify Morty's robot. Clues describe physical features of the robots such as wearing a hat or carrying flowers. As students direct the detective through the halls of the school, robots suddenly appear. Each robot throws an object at the detective or crashes into him. Each throws a different item--a

banana peel, a pie, a glob of paint, or three marbles. If a robot successfully throws its "weapon" or bumps into the detective, the robot will disappear, and the detective loses points. The detective must use his camera to photograph the robot, thereby collecting an otherwise invisible clue. Taking the robot's picture makes it disappear, and the detective is momentarily safe. As students photograph the robots and gather clues, they also consult their notes. The notes show pictures of the robots (if the detective has photographed them) and a list of clues from the reading passages. When enough clues are gathered, students can compare the list of clues with the pictures of the robots. When the clues match the features of the robot, students name the robot that Morty Maxwell is using as a disguise. Correctly identifying Morty results in his disguise disappearing, the other robots vanishing, and points for the detective. The program tracks the number of points students earn and moves them toward the ultimate level of champion.

The Ready Reference Card outlines a five-step strategy for solving the mystery and explains special keys used to access the notes, move the detective, pause or save the game, and turn the sound on or off. The guide contains detailed operating instructions, technical information about hardware required, and a list of words used in the game.

WEAKNESSES: As students use the program over and over (and they will if given a chance), they occasionally encounter the same reading passages. However, the program usually asks different questions about the passages when this occurs. If students become veteran users, they will find that the clues in the reading passages relate to a limited number of physical features of the robots. Therefore, they may guess which feature will be named by the passage, lessening the need to read the passage carefully. This problem will occur only when students reach very advanced levels of play.

STRENGTHS: The graphics, color, and sound of this program are outstanding. Students will be captivated by the excellent quality of images and delighted by the music and sound effects. The mystery is challenging, entertaining, and motivating. Students using the program will want to read the passages and answer questions correctly.

USES: SUPER SOLVERS MIDNIGHT RESCUE! is an excellent supplementary activity for reading comprehension practice and development of thinking skills. Students will enjoy the exciting game and terrific graphics while working hard to gather clues.

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GUIDANCE

Title: S.M.A.R.T. CHOICES
Publisher: Tom Snyder Productions
            90 Sherman Street
            Cambridge, MA 02140-9923
Copyright: 1990
Price: $119.95
Contents of package: 1 program disk (3.5"), 1 back-up disk (3.5"), guide 101 p.,
     30 student reference books 39 p. each
Systems (* indicates version previewed): Apple II family, IBM-PC, Tandy 1000*
Equipment required: microcomputer, 1 disk drive, monitor (color preferred),
     printer (preferred)
Grade level: 5-12
Goals: Guidance   Grades 5-7 CG 1 and 3
        Guidance   Grade 8 CG 3 and 4
        Guidance   Grade 9 CG 2-4
        Guidance   Grade 10 CG 3 and 4
        Guidance   Grade 11 CG 3
        Guidance   Grade 12 CG 4
        Healthful Living Grade 6 Health Education CG 4
        Healthful Living Grade 7 Health Education CG 1 and 3
        Healthful Living Grades 9-12 Health Education CG 1 and 3

Designed to teach and encourage responsible thinking, S.M.A.R.T. CHOICES presents
a scenario that offers students the opportunity to consider the goals, options,
and consequences that would be involved in handling a problem situation. The
beginning of the program sets up the problem using cartoons and captions. A
student sees his friend buying drugs from a dealer. When a teacher comes into
view, the friend and the dealer run, leaving the student standing alone with the
drugs on the floor at his feet. At this point four possible goals appear on the
screen ("help your friend," "stay out of trouble," "keep respect of others," and
"keep self-respect"). Students choose an order of priority for these goals.
Next they make a series of five behavior choices from various options offered by
the program (e.g., "leave the scene," "stay put," or "pick up the drugs").
Graphics and text with each choice (text can be viewed on the screen or printed)
offer ideas and questions for consideration as well as reminders of goals. Also
accompanying each option screen are numbered referrals to thought questions and
role-playing assignments in the student reference booklet. After each one of the
decisions, the program suggests possible consequences of the choice. The path of
the consequences varies according to the decisions made (the guide states that
there are about 300 possible paths). The end of the process is a self-evaluation
of how well users met their goals. A "random student picker" feature allows
teachers to let the computer select students to answer questions or otherwise
participate in discussions and role playing. Unfinished games can be saved and
returned to at a later time.

The student reference booklet contains definitions of the goals presented in the
program, 106 entries with questions and situations to be considered during use of
the program, and a glossary. The teacher's guide presents the purposes and
learning objectives of the program along with an overview of the steps in the
program. It also discusses preparing a class to use the program, using it with

different age groups and student populations (e.g., "at-risk" students), and making the program and drug education a collaborative effort of school, home, and community. The guide provides lesson plans for both before and after program use. Included in the lessons are such topics as peer pressure, making good decisions, setting goals, drugs in our society, outside influences, refusing drugs, and self-esteem. Many activity sheets are provided in the guide and focus heavily on self-esteem, alternatives to drug use, drug information, making decisions, and facing consequences. A teacher/parent reference section contains a list of drug and alcohol terminology, suggestions for helping children stay away from drugs, description of the symptoms of drug use, statistics on drug use, definitions and effects of different drugs, and referrals to various prevention and assistance programs.

WEAKNESSES: The interest level of the program itself is limited because the same scenario is presented each time students use it.

STRENGTHS: The teacher's guide offers good guidance in leading discussions and presenting activities that will help students clarify their values and goals, become more aware of the importance of self-esteem, and understand effective decision making. The student reference booklet should lead students to many thoughts, questions, consequences, and concerns they might not have considered on their own.

USES: S.M.A.R.T. CHOICES is most suitable for and effective in a group setting. It is easily usable in a one-computer classroom. Teachers and guidance counselors may find this program especially beneficial to at-risk students. Time should be allowed for unhurried listening and discussion when using this program.

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MATHEMATICS

Title: BLOCKERS AND FINDERS II
Publisher: Sunburst Communications, Inc.
            39 Washington Avenue
            Pleasantville, NY 10570-2898
Copyright: 1989
Price: $65.00
Contents of package: 1 program disk, 1 back-up disk, guide 70 p.
Systems (* indicates version previewed): Apple II family*, IBM-PC, Tandy 1000
Equipment required: microcomputer, 1 disk drive, monitor (color preferred)
Grade level: 3-12
Goals: Mathematics Grades 1-12 Thinking Skills

In BLOCKERS AND FINDERS II students develop problem-solving skills as they locate hidden barriers that alter the course or stop probes moving through a four-by-four-block grid. The probes, called "finders," normally travel in a straight line and exit the grid opposite their entry point. If a finder hits a barrier, or "blocker," its path may be altered. Students encounter several types of blockers during the games. One is a "Tiltie," a diagonal line that causes finders to turn 90 degrees from their original path. An "Alternating Tiltie" is like a regular Tiltie except that every time it is hit by a finder it rotates 180

degrees. "Arrows" cause finders to alter their paths to follow the direction of the arrow. Finders hitting an arrow could turn 90 degrees or 180 degrees or, if approaching from the same direction that the arrow is pointing, continue on their original path. "Detours" are horizontal or vertical lines that cause finders traveling perpendicular to them to turn 90 degrees. Finders not traveling perpendicular to a detour can pass through without their path being altered. "Dead Ends" cause finders to vanish. "Stripey Arrows" affect only special kinds of finders. One type of Stripey Arrow, a "Stripey," causes special "Stripey Finders" to alter their path to match the direction of the arrow. Regular solid finders are not affected by Stripey Arrows. A "Stripey-Solid" diverts both solid and stripey finders. Stripey finders are not affected by solid arrows.

The program features four games that use different combinations of blockers to challenge students. Each game has twelve levels. At the first level students search for a single blocker hidden on the grid. Students working at the twelfth level must locate and identify twelve blockers. "Mixed Blockers" presents students with the challenge of finding hidden Arrows, Detours, and Tilties. The games "Alternating Tilties," "Detours and Dead Ends," and "Stripey Arrows" feature only the blockers associated with the game's name. The guide contains a complete description of each of the four games, descriptions of each blocker and finder, suggested lesson plans, instructional objectives, and reference and activity sheets.

WEAKNESSES: The program has no provision for recording students' progress.

STRENGTHS: The difficulty levels of each game provide challenges for different ability levels and ages. By allowing more than one solution to each game, the program encourages students to discover alternative answers to the problems posed.

USES: BLOCKERS AND FINDERS II is a challenging and enjoyable supplement to classroom instruction covering critical thinking and problem solving. The program encourages students to use logic and deductive reasoning.

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SAT

Title: ESSENTIAL SKILLS FOR THE SAT
Publisher: National Association of Secondary School Principals
         1904 Association Drive
         Reston, VA 22091
Copyright: 1989
Price: $79.00
Contents of package: 3 program disks, 1 management disk, quick reference
     sheet, "Progress Chart," guide 16 p.
Systems (* indicates version previewed): Apple II family, IBM-PC*
Equipment required: microcomputer, 1 disk drive, monitor (color preferred),
     printer (optional)
Grade level: 10-12
Goals: NA

ESSENTIAL SKILLS FOR THE SAT provides practice exams, explanatory answers, and
score analyses to prepare students for the verbal, mathematics, and standard
written English (TSWE) components of the Scholastic Aptitude Test. Test
questions in the program parallel the scope and content of the SAT. The
program's verbal section includes antonym, analogy, sentence completion, and
reading comprehension questions. Math examples pertain to arithmetic, geometry,
and algebra. The segment on standard written English presents usage and sentence
correction items. For any of the three types of sample tests, students work in
either the tutorial or test mode, each of which includes sixty questions in two
parts for math, two forty-question sections for verbal, and fifty questions for
the TSWE. In the tutorial mode students receive immediate feedback for each test
question, including the correct response, a rationale or procedure for obtaining
it, and appropriate hints or test-taking strategies. The test mode is timed, and
students receive no feedback until they have completed a test. At that point
they can use the explanation mode to see the correct answer with optional
clarification for each question, for each question missed, or for any selected
question number(s). They can also select a score analysis feature that displays
the total number of questions; the number correct, incorrect, and skipped; raw
and converted scores; and a similar breakdown for each type of question such as
antonym or geometry. Students can print their score analyses or record them
manually on the program's "Progress Chart." A management disk enables teachers
to save student work on partially finished tests, display a list of student names
for which records are available, or print detailed records for selected students.
The package contains a quick reference sheet, a reproducible progress chart, and
a user's manual that introduces the program and describes the menus, function
keys, and other options.

WEAKNESSES: The program presents the same questions in the same order for both
the test and tutorial modes. Figures for geometry problems are displayed in the
guide rather than on the screen. The "Progress Chart" leaflet breaks each type
of question down into subcategories (such as specific subject areas for reading
comprehension passages). The program itself, however, does not utilize the
subcategories to help diagnose weaknesses in these areas.

STRENGTHS: The program exposes students to the types and formats of questions they will encounter on the SAT. Explanatory feedback is excellent in terms of provision of problem-solving models, accessibility, and design features such as screen windows and the use of color or highlighting.

USES: ESSENTIAL SKILLS FOR THE SAT is appropriate for individual student use. The test mode is helpful as a diagnostic tool. The tutorial mode provides guided practice in the target content areas for the SAT. Although the program does not address systematic skill development, teachers or students can use the score analyses to develop individualized study plans.

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SCIENCE

Title: STARS AND PLANETS
Publisher: Advanced Ideas Inc.
            2902 San Pablo Avenue
            Berkeley, CA 94702
Copyright: 1989
Price: $44.95
Contents of package: 1 program disk (3.5"), errata sheet, guide 41 p.
Systems (* indicates version previewed): Apple IIGS*, Macintosh, IBM-PC,
     IBM-PCjr, Tandy 1000
Equipment required: microcomputer (Apple IIGS 512K), 1 disk drive, monitor (IBM
     requires CGA or EGA graphics adapter)
Grade level: K-3
Goals: Science Grades 2-3 CG 3
        Mathematics Grade K CG 1
        Communication Skills Grade K Reading/Literature CG 9
                              Grade 1 Reading/Literature CG 8
                              Grades K-2 Viewing CG 2

In STARS AND PLANETS primary students explore the solar system and practice early math and reading skills with six learning games that feature colorful space scenes, animation, sound effects, and musical themes. "Planet Matching" begins with a display of the nine planets arranged in order from the sun. A graphic replica of one of the planets appears, and students must match the replica with the appropriate planet in the original lineup. In "Space Station" children choose a rocket or planet to build from the program's collection. Guided by color, pattern, and shape, they direct a robot to select the three component parts. This activity also contains a design option in which students can combine any color or pattern. In "Moon Rocks" a lunar lander randomly displays a number of rock samples needed (from one to nine in three difficulty levels). Players count and move an astronaut to pick up the designated number of rocks one by one. In "Planet Sequencing" students first watch each planet move onto the screen in its position away from the sun and then view from one to three planets (depending on difficulty level) rotate off the screen. Players must replace each planet in the proper order. The "Constellations" game focuses on pattern recognition, offering four levels of difficulty that involve matching the constellation patterns (with connected or unconnected stars) with the graphic representation

typically associated with the constellation (such as Leo the lion or Orion the hunter). At the most difficult level, the name of the constellation appears instead of a picture of it. The last game, "Planet Naming," requires students to place a randomly displayed name beside the appropriate planet. In all of the games, students can make repeated attempts until they discover the correct answer and are rewarded by special sounds and animation such as planet songs or rocket rides. The guide contains an introduction, program description with screen facsimiles, coloring sheets with information about each planet, poems with a space theme, instructions for supplementary activities (doing flashlight experiments and a planet dance or making a moonscape model, an astronaut snack, a constellation viewer, and a clay model of the solar system), a book list, and a glossary.

WEAKNESSES: An extensive errata sheet hampers the effectiveness of the guide. Parts of the program load rather slowly for eager users.

STRENGTHS: This program integrates science content with opportunities to practice basic reading and math skills in the context of an enjoyable encounter with the computer. Guide activities are creative and diverse.

USES: STARS AND PLANETS is an excellent primary science resource especially appropriate for use in centers. The program utilizes sound extensively and effectively, but teachers can turn it off or adjust the volume. Four of the six games require no reading and should appeal to kindergarten or first grade students.

* * *

SOCIAL STUDIES

Title: INSTANT SURVEY
Publisher: Minnesota Educational Computing Corporation
            3490 Lexington Avenue North
            St. Paul, MN 55126
Copyright: 1989
Price: $89.00
Contents of package: 1 program disk, 1 back-up disk, guide 87 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive (2 preferred), monitor, printer
     (preferred), blank disk
Grade level: 7-12; teacher use
Goals: Thinking Skills Grades 7-12
        Social Studies Grades 7-11 Skills CG 2-4

INSTANT SURVEY helps students and teachers design, produce, administer, and evaluate surveys. Users design surveys by selecting the types of questions they wish to ask. The program provides seven types of questions: multiple choice, multiple response, word completion, numeric completion, opinion scale, rank/order, and personal information. Working within the general framework of these types of questions, users may enter their own words. Options enable users to customize questions, for example by allowing them to skip questions or to enter comments before answering questions. When students complete the design and preparation stage, they can print a survey or create an interactive survey disk.

A survey disk loads and runs independently of the program disk. By making
multiple copies of the survey disk, several users can take the survey at one
time. When students finish taking the computer-based survey, the program
compiles an analysis of responses by me·· ng all copies of the survey disk. The
analysis portion of the program produce: ·sstab tables, frequency tables,
percent tables, bar graphs, pie charts, meaɪ, median, mode, high and low values,
range, and standard deviation. The program prints all analysis forms including
graphs.

The guide states objectives for the program and details program operation. It
stresses careful planning and analysis of surveys. A problem-solving and
thinking skills matrix and subject area use suggestions help teachers decide how
to integrate ᵗʰe program. Suggested classroom activities feature the use of
different content areas. The guide stresses proper planning and interpretation
of surveys.

WEAKNESSES: Neither the program nor guide provides assistance for users who must
analyze printed surveys. Users must conduct the analysis manually or enter the
answer to each question from each survey onto a survey disk.

STRENGTHS: The program offers users a quick and easy means of creating,
administering, and analyzing surveys. The guide offers excellent background
material about using the program in a variety of instructional situations.

USES: Surveys are a common part of everyday life and provide useful information.
INSTANT SURVEY provides a flexible and simple way for students to learn about the
importance of properly planning and analyzing surveys. It can help teach problem
solving and critical thinking skills in almost any subject. In consumer math,
for example, students could predict how consumers react to certain sales
promotions. A language arts application can help determine how people feel about
censorship or ascertain television viewing habits. For science the program can
help collect data about the local environment or exercise habits. It can also
help students examine topics in social studies like the changing role of the
family or cultural backgrounds.

* * *

UTILITY

Title: CLASSROOM TOOLBOX
Publisher: Sunburst Communications, Inc.
            39 Washington Avenue
            Pleasantville, NY 10570
Copyright: 1989
Price: $75.00
Contents of package: 1 program disk, 1 data disk, 2 back-up disks, guide 108 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor, printer, blank disks
     (optional)
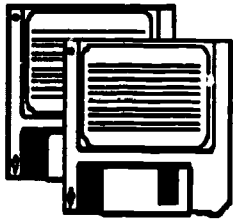Grade level: Teacher use
Goals: N/A

The CLASSROOM TOOLBOX is a utility that helps teachers print tests and activity
sheets in a variety of formats. With "Create," users originate a file containing
a test or worksheet in one of eight formats: multiple choice, matching,
completion, word jumble, word find, crossword, true/false, or free form (essay
style). The program prompts teachers to enter a set of instructions to appear on
the test or worksheet immediately before the questions. Users then enter the
text of the questions, a correct answer for each, and several other answer
choices. Information entered in one format can be transferred into another. For
example, a multiple-choice test can be converted into a crossword puzzle or
matching activity. Files in True/False and Free Form formats, however, do not
allow transfers. Files can be saved onto the program disk or onto a data disk
for later editing or printing. "Edit" allows teachers to change any part of the
instructions, questions, or answers from previously designed files. "Print"
offers options for printing files that include the type of format (e.g., multiple
choice, word find, etc.), the order in which questions appear, whether an answer
key is printed, margins and tabs, and mixing different formats on a single
printout. "Fonts" provides different styles of type (italics, Spanish, French,
German, Greek, Old English, script, and symbols 1) for printing tests and
activity sheets. Diacritical marks, subscripts and superscripts, and
mathematical and scientific symbols are included in the program's alternative
keyboard mode. Text from other word processing programs can be imported into the
program if very specific formatting and compatibility requirements are met. The
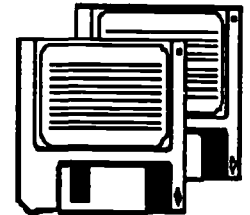indexed guide contains detailed instructions on using the program's many
features.

WEAKNESSES: Reviewers noted no significant weaknesses.

STRENGTHS: The program offers teachers an extremely flexible tool for developing
a variety of attractively printed learning activities and tests and eliminates
much of the drudgery of creating printed activity sheets. It even provides an
easy means of producing different versions of tests and worksheets with questions
and answers arranged in random order.

USES: Teachers who wish to produce more interesting and varied tests and work-
sheets will find CLASSROOM TOOLBOX a valuable resource.

Advisory List of

Computer Courseware

ARTS EDUCATION

Title: COLOR 'N' CANVAS
Publisher: Sunburst Communications
            101 Castleton Street
            Pleasantville, NY 10570
Copyright: 1990
Price: $99.00
Contents of package: 1 program disk (3.25"), 1 back-up disk, guide 68 p.
Systems (* indicates version previewed): Apple IIGS*
Equipment required: microcomputer (1 M minimum), 1 disk drive, color monitor,
     printer (optional), blank disk (preferred)
Grade level: 3-12
Goals: Arts Education Grades 3-12 Visual Arts CG 2 and 3
        Library/Media & Computer Skills Grades 3-12 CG 4

COLOR 'N' CANVAS is a drawing and painting tool for arts education or general
use. Lessons in the guide are designed for elementary students, but the program
can be used at middle or secondary levels as well. Students use a pull-down menu
bar, a tools bar at the top of the screen, and a color palette at the bottom of
the screen. Users select and draw on the canvas (screen area) with the mouse.
The menu bar features typical file functions (such as open, close, save, data
disk format, and page setup including rotation, reduction, and normal or
condensed print) and edit activities (cut, copy, paste, and clear) as well as
font and style options for text. Color options on the menu bar access the RGB
(red, green, blue) editor or the RYB (red, yellow, blue) editor. The distinctive
RYB editor enables students to see the effects of mixing primary colors. If they
select the brown box, a series of adjacent bars shows the proportions of red,
yellow, blue, and white that combine to make brown. The bars are adjustable so
that students can experiment by adding more or less of any color and viewing the
immediate change in the original brown. More refined mixing can occur with the
RGB editor. Teacher options control access to most of the color and effect
choices on the menu bar. Other color choices from the menu bar include changing
the background color and restoration of the Apple Standard Palette. Special
effects options include editing brush shape, setting the delay time before the
picture is drawn on the screen, setting the grid, selecting one of nine mirrors
of symmetry, creating a background that will load automatically for student use,
image inversion, and horizontal or vertical flips.

The tools bar offers a brush tool; ten different brush shapes; rectangle,
triangle, and circle shapes (each with or without outline or center color); a ray
tool to make line segments from a center point; a paint can; a text tool; an
eraser; a cut and paste marquee; a hand tool for moving the canvas; a magnifier
for zooming in; and an undo option. Most of the tools have special features that
are noted in the guide. The color bar at the bottom of the screen displays the
current palette (Apple Standard, RYB, or RGB) and the active color (which can be
changed with the mouse). Colors in printed designs may not exactly match colors
from the palettes displayed on the screen.

The guide contains introductory notes on teaching with the computer in elementary
art, an overview, a "getting started" section, program description, and eleven
classroom lessons that cover line, shape, the color wheel, warm and cool colors,
complementary colors, symmetry, pattern, motion, texture, landscape, and using
text. Each lesson includes art objectives, program features used, concept

summary, vocabulary, art to view (lists of pieces of art that exemplify the lesson content), warm-up topics or exercises, activities off and on the computer, "next steps" for extension or enrichment, and worksheets when needed.

WEAKNESSES: An introductory session (in the guide or on the screen) on program mechanics would be very helpful.

STRENGTHS: This program encourages creativity and self-expression while introducing students to a computer-assisted design environment with an impressive array of options. The teacher menu enables instructors to reduce the number of options available for younger users. The primary color editor, background capability, and symmetrical mirrors features are unusual. The guide provides concise instructions for using the program options featured in each lesson.

USES: COLOR 'N' CANVAS is appropriate in arts education or as a tool for content area classes or open exploration. Teachers familiar with the Macintosh will find this program easier to use if they review its special features, multiclick options, and differences in mouse operation. Students will need varying amounts of time to learn how to navigate the program.

* * *

COMMUNICATION SKILLS

Title: THE DINOSAUR DISCOVERY KIT
Publisher: First Byte
            3333 E. Spring Street
            Suite 302
            Long Beach, CA 90806
Copyright: 1989
Price: $39.95
Contents of package: 1 program disk (3.5"), 2 program disks (5.25"), handbook
      11 p.
Systems (* indicates version previewed): Tandy 1000*, Commodore Amiga, Apple
      IIGS, IBM-PC, Macintosh
Equipment required: microcomputer, 1 disk drive, monitor (color preferred),
      printer (optional), mouse (optional), speech synthesizer (required for IBM
      only)
Grade level: PreK-3
Goals: Communication Skills   Grade K   Listening   CG 2 and 5
                                         Reading/Literature   CG 1, 3, and 6
                               Grade 1   Listening   CG 2 and 5
                                         Reading/Literature   CG 1, 2, 3, 6, and 12
                               Grade 2   Listening   CG 2 and 5
                                         Reading/Literature   CG 1 and 3
                               Grade 3   Reading/Literature   CG 1, 4, and 6

THE DINOSAUR DISCOVERY KIT allows students to browse through and add color to pictures of dinosaurs, construct stories by completing sentences, and match dinosaurs in a "Concentration" style memory game. The program features detailed, colorful graphics and synthesized speech to attract students' interest. Zug, an anthropomorphic Megasaur, acts as the program's host and appears throughout. The program consists of three main activities that students select from the main

menu's picture icons. In the "Coloring Book" activity, students see a scene showing a monochrome picture of a dinosaur in a prehistoric setting. The dinosaur's name (e.g., Brontosaurus, Pteranodon, Triceratops) appears in text below the scene, and the program's synthesized voice pronounces it. The program displays and pronounces a key word, such as "water," "head," or "tail." Students then select a color from a set of crayon-shaped icons, causing the named portion of the scene to be filled with that color. The program's voice speaks the name of the color and the object filled (for example, "light blue water"). At this point, an interesting fact about the dinosaur appears on the screen and is read in a "Did you know . . ." format. "Story Maker" presents three preset stories that are completed by users. Students are shown a blank screen and a fill-in-the-blank sentence. After the sentence is read, students may choose a word to complete the sentence. Then a scene corresponding to the word appears on the screen. Students proceed through the story completing sentences. At the end of each story, students may choose to review it by looking at the pictures alone or listening to the sentences read by the program. The story and pictures can be printed. "Dinosaur Match" is a variation on the well-known "Concentration" memory/matching game. Students choose among three versions of the game: they match pictures of real dinosaurs in version one, dinosaurs' silhouettes in version two, and pictures of Zug wearing different costumes in version three. Students may choose to play alone, against another student, or against Zug (the computer). When students have completed a round, they are awarded a certificate that can be printed. A short handbook describes the program's operation and installation routine.

WEAKNESSES: The program is limited to the three stories and six dinosaur scenes mentioned above. Students will not be likely to use the program over and over again since they will not see new material.

STRENGTHS: The use of the ever popular dinosaur theme will attract and interest students. Children at a variety of developmental levels can use the program because of its synthesized speech capability. The relationship between the printed word and its meaning is emphasized as colors and key words are matched on the screen. "Dinosaur Match" allows students to practice visual discrimination skills and memorization. The story maker activity reinforces concepts of main idea and sequence.

USES: THE DINOSAUR DISCOVERY KIT can be useful with children ages three to six. Prekindergarten children (ages three to four) can use all three sections of the program and will enjoy the novelty and repetition. Older children will tire more quickly of repeating the same activities. Exposure to key words and colors will help build an experience base. Children in kindergarten through first grade (ages five to six) will get more appropriate use from the "Story Maker" finishing the sentences to create a story. The use of icons in the menus allows younger students to use the program with some independence. This program is most appropriately used for enrichment and reinforcement.

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Series Title: EXPLORE-A-CLASSIC
Title: STONE SOUP
Publisher: William K. Bradford Publishing Company
            P.O. Box 1355
            Concord, MA 01742
Copyright: 1989
Price: $75.00
Contents of package: 1 double-sided program disk, 1 double-sided activity/story
    maker disk, 1 double-sided program back-up disk, story guide 8 p., user's
    manual 16 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color preferred),
    printer (optional; color ribbon preferred), blank disks
Grade level: PreK-3
Goals: Communication Skills Grades K-3 Listening CG 2, 3, 5, 6, and 7
                                          Speaking CG 4 and 7
                                          Reading/Literature CG 1-10
                                          Writing CG 8 and 9
                                          Viewing CG 1, 3, and 4
                              Grades 1-3 Reading/Literature CG 11
                              Grade 1 Reading/Literature CG 11-19
                                        Writing CG 7

STONE SOUP uses colorful animated graphics to provide extended language
development activities and retell the classic story of the village that learns
the value of sharing. The program has three separate segments. The first,
"Story Teller," contains an illustrated version of Stone Soup. Users are
introduced to a hungry beggar who enters a town of selfish people. Students see
a series of scenes with the beggar approaching the town and going from house to
house asking for food. After the townspeople refuse to share their food, the
beggar tricks them into sharing with his stone soup recipe. In each scene
animated characters and objects appear. With a mouse, joystick, or keyboard to
select characters or objects, students or teachers can explore each scene. For
example, users can select the beggar and guide him down the path to the village.
In another instance users can select a bird that flies around the screen. In
some scenes users can move people around the screen or open doors to reveal
hidden objects. Dialogue balloons and scroll-shaped icons denote text
instructions and printed dialogue between characters. The second segment, "Story
Maker," presents all the scenes from Stone Soup without dialogue balloons or
instruction boxes so that storytellers can create their own version of the story.
A menu bar at the top of the screen allows students to select pictures of
characters and objects as well as words and phrases to add to the story.
Students can also enter text from the computer keyboard directly onto the scene.
Student stories can be saved to data disks or printed. "Activities," the third
segment, presents five follow-up activities. Story Ideas lets users create their
own stories based on one of seven "starter pictures" intended to stimulate
students' imaginations. Students have the same options for creating their own
stories as those found in the "Story Maker" section. The Puppets menu option
allows students to print pictures of Stone Soup characters for use as finger
puppets. Treasure Hunt features two scenes in which students read and follow
instructions to uncover a treasure. In Recipes, students match the correct
number of vegetables to a numbered list of soup ingredients. A second activity
asks students to choose ingredients to make a soup they would like to eat. Party
Invitation permits students to fill in the date, time, and location of a party on
a predesigned party invitation, then print it. The user's guide indicates the

required computer equipment and also includes program description, use
instructions, and a guide for parents using the program with their children. The
story guide gives the script to Stone Soup, describes each of the fifteen scenes,
and offers brief suggestions about how to present each scene.

WEAKNESSES: The activities section of the program lacks depth. Story Idea has
only two story starter scenes, and Treasure Hunt has only two scenes to explore.
In Recipes, students are given no indication of whether their choices are right
or wrong.

STRENGTHS: The program's flexibility allows students of different ages and
ability levels to use it successfully. The color graphics, animation, and
ability of users to manipulate and discover hidden objects encourage exploration.
The "Story Maker" segment allows students to label screens and write their own
words on the screen. Although limited, the "Activities" segment does provide
suggestions for extending the use of the story through finger puppets and writing
activities.

USES: STONE SOUP is an excellent enrichment activity to support reading Stone
Soup. The program's version of Stone Soup can be told by a teacher or student to
other students or used by an individual student. Students can use the story
screens without text to create their own stories, a process that provides a basis
for writing activities, vocabulary development, and oral language development.
Since the program permits entering text onto scenes, it encourages writing and
publishing. The ability to manipulate objects on the screen and particularly to
"uncover" the layered objects enhances users' desire to explore, share, and tell
stories. These components make this program a strong language development tool
for students from preschool through second grade.

* * *

Title: PODD
Publisher: Sunburst Communications, Inc.
            101 Castleton Street
            Pleasantville, NY 10570-3498
Copyright: 1990
Price: $65.00
Contents of package: 1 program disk, 1 back-up disk, guide 30 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color optional)
Grade level: 2-4
Goals: Communication Skills Grades 2 and 3 Reading/Literature CG 11
                                              Study Skills CG 4
                              Grade 4 Reading/Literature CG 1
                                       Study Skills CG 2
        Thinking Skills Grades 2-4

PODD, which combines the study of verbs with problem-solving skills, takes its
name from an oval-headed, smiley-faced creature, sometimes with a body, who is
the focus of the program's action. The first menu choice, "Find the actions Podd
knows," challenges students to use trial and error to identify the 128 verbs Podd
recognizes. The screen displays a still and silent Podd with the sentence
starter "Podd can _____." If one of the right verbs is entered with correct

spelling, Podd responds by performing the action of that verb. If a misspelled verb or one that is not part of the program is entered, the response "Oh, no I can't!" appears on the screen. Once many of Podd's verbs have been discovered, users are ready to move on to the second menu selection, "Join the actions together." Students enter from two to five verbs for Podd to act out sequentially. The verb possibilities include synonyms for which the illustrative action will be exactly alike. For instance, Podd's facial motion is the same whether "chew," "chomp," "devour," "eat," or "munch" is entered. The guide lists the mystery verbs as a resource for teachers with directions not to share them with students. The guide also includes lesson plans with correlated reproducible worksheets. The three precomputer activities familiarize students with Podd (including making a Podd puppet) and the nature of the computer program and also review action verbs. Four exercises to use with the computer encourage spelling words accurately, developing strategies for identifying the verbs, observing word/action relationships, and using the Podd puppet to perform actions. The concept of synonyms is also mentioned. The postcomputer lessons include sequencing (reading and creating comic strips), synonyms and antonyms (comparing and contrasting Podd's actions in response to different words), and review of some of the action verb vocabulary (by providing pictures to help students recall words). The guide lists seven extended activities and explains program operation and objectives.

WEAKNESSES: Letters of on-screen text look out of date with stairstep sides, and some are hard to distinguish, such as lowercase n̲ and w̲ which look like uppercase H̲. Some of Podd's interpretations of verbs may confuse youngsters, such as "stretch" causing his face to expand rather than stretching his arms or legs.

STRENGTHS: Students work with a wide variety of verbs, including some with which they may not be familiar such as "chortle" and "grimace." Users also encounter meanings of words which may be new to them. For instance "color" and "flush" are not commonly interpreted by children, as they are by the program, to indicate a change of complexion resulting from embarrassment. Some students will find these activities intriguing and enjoyable.

USES: PODD will challenge some students and frustrate others. Beginning discovery of usable verbs requires teacher direction. This program will serve as a supplement to the study of verbs, synonyms, and antonyms as well as provide enrichment activities to encourage the use of thinking skills, dictionaries, and thesauruses. Sound is used throughout the program and cannot be turned off.

* * *

Series Title: READING FUN
Title: VOWEL SOUNDS
Publisher: Troll Associates
            100 Corporate Drive
            Mahwah, NJ 07498-0025
Copyright: 1990
Price: $39.95
Contents of package: 1 program disk, guide 4 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color required)
Grade level: K-1
Goals: Communication Skills Grade K Reading/Literature CG 10
                              Grade 1 Reading/Literature CG 10 and 20

VOWEL SOUNDS provides two practice activities with long and short sounds for the
letters a, e, i, o, and u. "Crazy Crayons" displays a chalkboard divided into
four sections. Within each section are a black-and-white picture and the name of
that item. Students use a crayon-shaped cursor to identify the one to three
pictures that represent words starting with the same vowel sound as a word that
appears above the blackboard. Correct selections allow students to pick one of
four colors for filling in the picture. If a picture is chosen in error, the
program responds by placing an x over it. When all correct choices have been
made, the program advances to a new target word and set of pictures. After
students complete work with five sets of pictures, the program returns to the
main menu. Within a set of five problems, the initial target sound is constant,
such as a long a or a short i. If "Crazy Crayons" is selected again, a different
sound will be focused on. Answer choices sometimes include words beginning with
the correct letter but wrong sound as well as words that begin with letters other
than the target. Long vowel sounds appear to be practiced most often. Out of
nine sets tried sequentially, eight used target words beginning with a long
vowel. The second activity, "Brush-Ups," asks users if two words presented on
the screen have the same middle vowel sound. A conveyor belt moves across the
screen carrying an item that pictures one of the target words, such as "rope" or
"bug." If students respond correctly, a little girl pushes a large pot of paint
along the conveyor belt toward the pictured item. Users select which of four
colors to paint the item. If users respond to the vowel question incorrectly,
the program indicates that they must try again, and a new question appears. A
single session of ten questions includes a variety of long and short vowel
sounds. The guide sheet briefly explains program operation and describes each
activity.

WEAKNESSES: Teachers have no control over which letter or sound (long or short)
will be covered at any given time. Waiting for the transition from one problem
to the next becomes tedious. There is no record of student progress. The guide
offers no ideas for implementation of the program.

STRENGTHS: In the process of providing practice with vowel sounds, this program
exposes young users to a variety of vocabulary words (such as alien, eel, igloo,
overalls, and unicycle) accompanied by an explanatory illustration. It offers
exercises with vowel sounds for those whose computers do not have speech
capabilities.

USES: VOWEL SOUNDS offers practice for students who have been introduced to long
and short sounds fo. all five vowels. Teachers need to interpret directions and
ensure that pictures are correctly identified (e.g., that an eel is not referred

to as a snake or a fish). The nature of the rewards for correct answers and the slow advancement from one question to another limit the use of the program to the primary grades.

* * *

Series Title: READY, SET, READ
Title: CLASSIFICATION
Publisher: The Continental Press, Inc.
            520 E. Bainbridge Street
            Elizabethtown, PA 17022
Copyright: 1990
Price: $39.95
Contents of package: 1 program disk, 1 back-up disk, 5 reproducible sheets,
     guide 15 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color optional),
     printer (optional)
Grade level: 1-3
Goals: Communication Skills Grades 1-3 Thinking Skills

READY, SET, READ: CLASSIFICATION provides three activities for primary students that focus on related objects, words, and concepts. The activities are progressively more complex. Each provides an introductory example and six to eight exercises randomly selected from a pool of sixteen to twenty items. In "Does it belong?" the program displays the name of a category (e.g., pets, things to eat, animals, or places) with an illustrative graphic in a window at the top of the screen. In a window below, students view a succession of words and must indicate whether each word belongs in the category. If an answer is wrong, the program provides a brief explanation and shows the right answer. When students answer correctly, they receive praise and the word is placed in the category window, which includes four related items at the end of the exercise. In "How do they go together?" students view four words (such as "cricket," "bee," "ant," and "fly") in the top window and must select the word or phrase to complete a sentence that describes the inclusive category (e.g., "These are bugs."). For incorrect answers students are prompted to think about the words and try again. On a second error the program explains the right answer. At the end of each exercise the correct answer is placed in the sentence. In "Which does not belong?" a wise and friendly owl points to four words (such as "soup," "paper," "cheese," and "egg") on an easel and asks students to select the one that does not belong. Students have two opportunities to respond correctly before the program provides the answer. Feedback for correct answers states the relationship among the elements (e.g., "These words are things to eat.").

After each activity the program indicates how many attempts and how many correct answers the student had. If at least seventy percent of the answers are correct, an animated graphic appears. If less than half of the answers are correct, the program suggests that the student ask for help. A summary report of performance on each activity (number correct and number of tries) in the current session is also available on the screen or for printing. The guide provides objectives, an overview, instructions for program operation (with screen facsimiles), descriptions of each activity, and classroom activities for preparation (including using real objects, a listening exercise, and curriculum connections) and follow-up (including a circle game, learning folders, and bulletin boards).

The package also includes four reproducible worksheets (with answer keys in the guide) and a progress chart.

WEAKNESSES: The program offers limited potential for repeated use.

STRENGTHS: Screen displays are attractive. Reinforcement and sequencing are well designed and appropriate. For instance, at the end of "Which does not belong?" the word that is out of place is removed from the easel, leaving only the group of related words for students to review.

USES: READY, SET, READ: CLASSIFICATION is most appropriate for first and second graders as a reinforcing activity or for third graders with remedial needs.

* * *

MEDIA

Series Title: BOOKWHIZ
Title: BOOKWHIZ JR.
Publisher: Educational Testing Service
            Library and Reference Services, 30-B
            Princeton, NJ 08541
Copyright: 1990
Price: $199.00
Contents of package: 1 program/game disk, 1 back-up disk, 8 data disks (2 data
     disks for 3.5" version), 1 title-author search/utilities disk, book list 23
     p., reproducible bookmark master, 60 book spine labels, guide 24 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive (2 preferred), monitor (color
     optional), printer (preferred), blank disks
Grade level: 3-6
Goals: Library/Media & Computer Skills Grades 3-6 CG 5

BOOKWHIZ JR. includes a database of over 1,000 fiction and nonfiction books for students to search for reading suggestions. Users begin by choosing to select information about books by topic, author, or title. The program offers an optional series of questions with multiple answer choices designed to assist users in focusing on subjects of interest to them. The seven topics are "Funny," "Animals," "Mystery & Adventure," "Sports, Games & Amazing Facts," "Biography & Stories from the Past," "Fantasy & Magic," and "Growing Up." Once users pick a topic, the screen presents subtopics to further refine interest selections. For example, the subtopics for "Mystery & Adventure" are "funny stuff," "scary stuff," "adventure," and "who did it?". An "All-Star Books" disk, with an assortment of titles taken from the other seven data disks, is included for those who do not pick a topic. Next, users work through menus to choose length of book (short, medium, long, or don't care), reading level (challenging, medium, easy, or don't care), users' grade level (third or under, fourth, fifth, or sixth or higher), and main character (male, female, or don't care). The program responds by directing users to place a particular color-coded data disk in the disk drive and then offers information for up to ten titles for users to scroll through and/or print. The initial screen for a book includes title, author, number of pages, and a two-line interest teaser. Two additional screens may be accessed for a more lengthy annotation, additional titles by the author,

and other books that might be of interest. When requested, all information
except for the long annotation is printed. Author and title searches are
conducted by entering the first two letters of the desired category. Then users
scroll through listings that begin with those letters until they find the one
they seek. Media coordinators can customize the predone database by adding call
numbers and student ratings of books, changing reading levels, and marking
entries not to appear when topic searches are conducted. Forty additional titles
can be added to each topic. Ancillary materials include a list of the database's
book titles organized by author's last name, reproducible bookmarks with space
for brief comments about the book, and spine stickers for books in the collection
included in the program's database. The guide explains how to operate the
program and offers additional information about it, such as what the book length
categories mean for each grade level, the number of books included for each
topic, and the criteria used by the producer for book selection.

WEAKNESSES: Author and title searches may not be as efficient as users would
like. Disk switching with the 5.25-inch disks is a minor but constant annoyance.

STRENGTHS: The program is easy to use and helps motivate young readers to
explore a variety of books. Media coordinators will appreciate the database
customizing features and information provided in the guide.

USES: In addition to encouraging reading for leisure or in conjunction with a
classroom assignment, BOOKWHIZ JR. gives its young users experience with
searching a database. Media coordinators will want to read all of the guide to
be aware of the program's few quirks, such as the fact that those books marked
not to appear will not be offered to students in a topic search but will appear
in author and title searches.

* * *

UTILITY

Title: HYPERSCREEN
Publisher: Scholastic, Inc.
          P.O. Box 7502
          2391 E. McCarty Street
          Jefferson City, MO 65102
Copyright: 1990
Price: $99.95
Contents of package: 1 program disk, 1 graphics disk, 1 sample stacks disk,
     1 teaching guide 38 p., guide 176 p.
Systems (*.indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive (2 preferred), monitor (color
     preferred), printer (optional), mouse or joysticks (optional), Pioneer
     LD-V4200 videodisc player and cable (optional), Apple II Video Overlay Card
     (optional), blank disks
Grade level: K-12; teacher use
Goals: N/A

HYPERSCREEN, like the Macintosh program HYPERCARD, permits users to create their
own computer programs by displaying and arranging "stacks" of computer screens.
The program's structure is based on a note card analogy which equates individual

screens to single paper note cards and groups of computer screens to "stacks" of note cards. Users can arrange this stack of computer screens in any order they desire. Individual screens are linked together using "buttons." A button is an area of the screen, usually marked by some type of graphic, that when selected links users to another screen, plays sound bites, presents pop-up text windows, and/or shows images from a videodisc player. An array of paint tools, graphic backgrounds, fonts, clip art, and sound effects is available to design screens and make transitions between screens. Users can create two types of screens: text or graphics. A text screen can be created using the program's simple text editor or by importing text from a ProDOS format word processing document. With the text editor users edit text, select fonts, and choose character and background colors. Graphics screens can be created using a set of drawing tools supplied by the program. These tools enable users to draw lines, ovals, and rectangles; fill in areas with color; and copy, flip, and reposition graphics on the screen. Full-color high-resolution graphics can be imported from other graphics design programs. Transitions between screens can be enhanced by special effects such as wipes, dissolves, and spirals. Sound can be used with any screen. Users can choose from familiar tunes such as the "William Tell Overture," "Call to the Races," "Charge," "Beethoven's Fifth," and many more. The program provides over thirty sound effects, including birds chirping, drums, Morse code, knocks, heartbeats, and rushing water. The program's fifteen speech effects include "attention," "good-bye," and "correct." The comprehensive guide contains step-by-step instructions for using the program, suggestions for use in the classroom, and samples of graphics, borders, fonts, and clip art.

WEAKNESSES: Editing a graphic screen is clumsy if not impossible. The fill option within the drawing component of the program works only with black or white areas. The delete tool works with rectangles but not with circles or irregular shapes. Once entered, text in the graphic mode cannot be edited.

STRENGTHS: HYPERSCREEN is an unlimited tool for creating classroom materials. With this program teachers can create content area databases, art projects, maps and diagrams, and many other instructional materials.

USES: HYPERSCREEN is a useful tool for creating customized computer programs supported by graphics, sound, interaction, and even videodisc playback. As a utility program for instructors, HYPERSCREEN can be used to support competency goals at almost any grade level. Students using the program can benefit from the planning and creation of a stack to create electronic reports. Skills development in areas such as problem solving, sequencing, graphic arts, and language arts can be supported by this program.

* * *

WORD PROCESSING

Title: MERCURY
Publisher: Minnesota Educational Computing Corporation
        3490 Lexington Avenue North
        St. Paul, MN 55126
Copyright: 1989 (released 1990)
Price: $89.00
Contents of package: 1 program disk (3.5"), 1 system disk (3.5"), 1 back-up of
    each, guide 104 p.
Systems (* indicates version previewed): Apple IIGS*
Equipment required: microcomputer (1 M minimum), 2 disk drives (3.5"), monitor
    (color preferred), printer, mouse
Grade level: 3-12
Goals: Communication Skills Grades 3-8 Writing CG 1-9
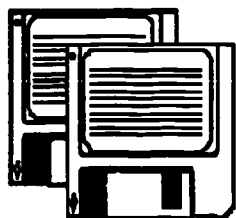   English I-IV Writing CG 1-5

MERCURY is a word processing program especially designed for use with the Apple
IIGS computer. It enables users to create documents that combine a variety of
text formats (e.g., fonts, styles, and sizes) with graphics from the program's
clip art collection or from other graphics programs. After the program loads, a
blank work area appears. Above the work area is a command menu featuring
pull-down menu boxes. Clicking on a command menu choice brings a list of
options, from which users select the one they desire. Immediately below the
command menu is a ruler that displays margins and tabs. The graphics portion of
the program is accessed through the command menu or by clicking on an icon
displayed below the command menu. Nine fonts or type styles are available, each
in several sizes. Fonts can be further customized using the "Style" menu, from
which users can select boldface, underlining, italics, and shadow or outlined
text. This menu also allows users to change uppercase to lowercase and vice
versa or capitalize the first letter of each word in a section of text. Using
the "Format" menu students set tabs; select the justification of text to left,
right, center, or full; and choose line spacing. With the "Document" menu they
can set a beginning page number, create headers and footers, and review document
statistics that include the amount of memory in use, length of document, and
number of words, lines, pages, and paragraphs. The "Edit" menu permits users to
delete, copy, or move letters, words, or blocks of text. The "search" command
allows documents to be searched for specific characters and font styles. The
"replace" option searches the text for a specified set of characters and
substitutes another set of characters. Text from MECC OUTLINER, THE PRESENTER,
MECC WRITER, and APPLEWORKS or any file saved in ProDOS ASCII format can be
imported into MERCURY. Once users have entered, edited, and formatted all text,
graphics can be added to the document. Since text does not automatically wrap
around graphics, users must create space for graphics by opening holes in the
text or by adjusting margins. Selecting the "Graphics" icon or "Graphics" on the
command menu, students access a set of drawing tools. With this "graphics
toolbox" they can draw lines, rectangles, circles, and arcs. Users can fill any
closed object with colors or patterns. Clip art is included with the program and
can be inserted into documents using the "Import Picture" command. Imported
graphics can be halved or doubled in size repeatedly to fit them into a document.
Graphics can be converted to a gray scale instead of their original colors for
better print quality when using a laser printer.

The guide contains a tutorial designed to introduce the main features of the program as users create a sample document. It also explains in detail each menu item and program feature. Suggestions for introducing the program to students are included. Several sample documents are stored on the program disk.
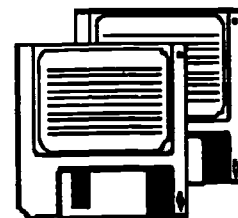
WEAKNESSES: MERCURY requires users to create open spaces in order to insert graphics. Unlike desktop publishing programs, MERCURY does not automatically wrap text around graphics. In MERCURY, graphics will cover and hide text if placed on top of it. If users change the size or style of text after graphics have been added, the graphics will likely hide portions of the text or disappear completely. Like most Apple IIGS programs, MERCURY gobbles up memory quickly. Users must save their work often or face the possibility of running out of memory and losing their work. The program lacks a spelling checker.

STRENGTHS: The program offers a variety of text and graphics options for creating attractive printed documents. It will reproduce color graphics if documents are printed on an Imagewriter II printer with a color ribbon. MERCURY addresses Laserwriter printers and operates over the Appleshare network.

USES: MERCURY allows students to create, edit, revise, and publish text, thereby supporting writing activities and writing process instruction. The program supports and encourages students in publishing their own work by allowing them to produce visually appealing printed documents combining a variety of text styles and graphics.

Advisory List of

Computer Courseware

Media Evaluation Services
Department of Public Instruction

July 1990
Raleigh, North Carolina

COMMUNICATION SKILLS

Title: THE BANK STREET PREWRITER
Publisher: Scholastic, Inc.
            730 Broadway
            New York, NY 10003
Copyright: 1990
Price: $59.95
Contents of package: 1 program disk, 1 prompted activity disk, guide 129 p.
Systems (* indicates version previewed): Apple II family*, IBM-PC, Tandy 1000
Equipment required: microcomputer, 1 disk drive, monitor (monochrome
     preferred), printer (preferred), blank disk
Grade level: 5-12
Goals: Communication Skills Grades 5-12 Writing CG 1

THE BANK STREET PREWRITER combines a word processing environment, three program
modules (for brainstorming, prompted writing activities, and outlining), and
extensive teacher support for lesson planning and management. Brainstorming
activities include freewriting (with a timer and no backspace permitted),
invisible writing, nutshelling (with reduced writing space), and goal setting
(with prompts for subject/topic, audience, purpose, and key ideas). More than
twenty prompted writing files guide students through the prewriting phase for a
variety of assignments: an opinion paper, "in-character" (role-playing) or
conventional book reports, a business letter, the explanation of a process,
descriptive word pictures, an autobiographical movie script or a television show
review, a newspaper story, an advertisement, a diary, a short story, a comic
strip, a feature article (interview and organization), a variety of poems, and
developing ideas from a suggestion bank. Teachers can also create their own
prompted writing activities. The outlining module enables students to organize
ideas and information with up to four automatically indented levels. Students
can perform the usual word processing functions in the outline headings (limited
to one line each) and can also move, copy, or delete blocks of headings.
Students can condense the outline display by collapsing levels and label the
outline in traditional, numerical, or custom formats. Users can print prompts,
writing, and outlines.

The manual includes a teaching guide, a getting started activity, an outlining
tutorial, a reference guide describing program features, and appendices
(including six reproducible activity sheets, notes on using this program with
other word processors, sample policies on software copyright, and an index).
The teaching guide offers extensive support for using THE BANK STREET PREWRITER.
It provides an educational overview; suggestions for using the program in lab or
classroom settings and for managing printed and handwritten work, the time
factor, student grouping, and limited computer access; and a bibliography. The
teaching guide also offers an extended lesson for each of the modules
(brainstorming, prompted writing, and outlining). Each lesson includes teacher
pages and student pages. Teacher pages provide goals, prerequisite skills,
grouping suggestions, materials needed, preparation notes, activities
description, and additional activities in several content areas. Activities
include on- and off-computer phases, discussion ideas, and follow-up or expansion
exercises (often involving drafting or other stages in the writing process).
Most activities have suggestions for evaluation by the teacher and for student
self-evaluation.

WEAKNESSES: The one-line restriction on outline headings is limiting. The collapsed outline cannot be printed easily.

STRENGTHS: This program offers a range of options, particularly in the prompted writing module. The word processor is easy to use and is compatible with BANK STREET WRITER III. The guide provides accessible, friendly, and thorough teacher support with solid pedagogical foundations.

USES: THE BANK STREET PREWRITER supports language arts objectives with a process writing focus and facilitates writing activities in all subject areas. It is useful in a lab setting or in a classroom center. Students need some experience with the keyboard to use this program to best advantage.

* * *

Title: THE LITERARY MAPPER
Publisher: Teacher Support Software
            1035 N.W. 57th Street
            Gainesville, FL 32605
Copyright: 1990
Price: $159.95
Contents of package: 2 student program disks, 1 teacher utility disk, 1 student
    utility disk, 2 blank disks for scores and maps, guide 39 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color optional),
    printer (optional)
Grade level: 1-8
Goals: Communication Skills Grades 2-3 Reading/Literature CG 6, 8, and 11
                                          Viewing CG 1
                             Grades 4-8 Reading/Literature CG 1 and 7

With THE LITERARY MAPPER, students improve reading comprehension through identification of story grammar elements in popular children's books. Teachers or students can also create their own literary maps. The Level I program disk provides character, setting, and action maps for <u>Petunia</u>; <u>One Fine Day</u>; <u>Pinkerton, Behave</u>; <u>Courage of Sarah Noble</u>; and <u>Wonderful World of the Mushroom Planet</u>. The Level II disk has maps for <u>Velveteen Rabbit</u>; <u>A Wrinkle in Time</u>; <u>Caddie Woodlawn</u>; <u>Harriet the Spy</u>; and <u>Are You There God? It's Me, Margaret</u>. Screen displays for each type of map (character, setting, and action) show the book title in the center with boxes labeled by subheadings surrounding it. Students can choose a type of map to work with, print the map or the list of words or phrases that appear on it, or work with two activities. In one activity, users select words and phrases that pertain to one subheading of a story element (character, setting, or action). For example, students could be required to pick words that are in the "Found in the Meadow" section of the setting map. In the other activity, users see a story element map with several headings (e.g., "Found in the Meadow" and "Where the Animals Were" for a setting map) and must decide under which heading each presented word or phrase belongs. Scores for these activities are saved on a disk formatted through teacher utilities. The words used in the story maps are from the works of literature, but the vocabulary of the directions is controlled at below fourth grade level.

The student utility disk allows users to create, edit, delete, or print a literary map and to print the word list. Students can make any of the three types of maps at the beginner and champion levels, and the program can generate activities for these maps, which are saved on a formatted disk. The teacher utility disk allows teachers to make maps, view or print student scores, and format disks.

The guide includes an overview with program and utility schematics, notes on learning processes involved, instructions for classroom use, and a bibliography. It also provides program description and a resource section with extension suggestions such as modified cloze passages, illustrated maps or mobiles, story map notebooks, story frames, creative expression, process writing, and outlining.

WEAKNESSES: The manual does not list the books mapped on the program disks. The student program schematic in the guide does not correspond exactly to program structure. In making an action map, many students will find the champion level more comprehensible because instructions for the beginner level are confusing. The guide does not elaborate on the implied relationship of the story action to sequence, plot, or cause and effect.

STRENGTHS: This program is educationally sound and provides an organized yet flexible approach. It reinforces students' awareness of story structure, which in turn boosts reading comprehension and provides a model for response to literature. The program offers an alternative to the often bland basal readers by exposing students to the vocabulary and context of real literature.

USES: THE LITERARY MAPPER supports elementary language arts programs, especially literature-based curricula. It can be used in the regular classroom, in special reading programs, with at-risk students, and for individual or group projects. When used with illustrated books, the program promotes visual literacy. The program can be used as a teacher or student utility through the middle grades.

* * *

MATH

Series Title: EXAM IN A CAN
Title: BASIC MATH SKILLS
Publisher: ips Publishing, Inc.
            31316 Via Colinas, Suite 110
            Westlake Village, CA 91362
Copyright: 1989
Price: $79.95
Contents of package: 2 program disks (Apple) and 2 program disks (IBM), "Basic Math Skills Objectives" sheet, guide 8 p.
Systems (* indicates version previewed): Apple II family*, IBM-PC
Equipment required: microcomputer, 1 disk drive, monitor, printer
Grade level: 5-12; teacher utility
Goals: N/A

EXAM IN A CAN: BASIC MATH SKILLS generates criterion-referenced test items in multiple-choice or free-response format for math objectives involving operations with whole numbers; decimals and money; fractions and the relationships among decimals, percents, and fractions; percents, ratios, and proportions; and word

problems and other applications (such as graphs, area, and perimeter). To create
a test item, users specify an objective number from the provided list, and the
algorithm-driven program constructs a corresponding problem. Tests in the Apple
version contain a maximum of thirty items. The tests can be printed with test
questions only; with test questions and a key; and with questions, an answer
sheet (with an optional format for machine scoring), and a key. The Apple
version saves the last test printed. For the next test, the teacher can either
select new items or edit the last test by inserting, adding, or deleting items.
Any test can be printed in up to twenty-five different forms based on the same
specified objectives. Sample problems for each objective are not included in the
guide or displayed on the screen, but users can print a list of representative
problems for objectives in each of the major topic areas. An abbreviated user's
guide as well as a list of topics and objectives can also be printed. Some
features, such as number of tests saved and maximum number of different forms
printed, differ slightly in the IBM version. The brief guide includes operating
instructions and program description for both the Apple and IBM versions. The
"exam can" also contains a sheet with topics and objectives listed.

WEAKNESSES: Problems are not displayed on the screen. In the Apple version, the
screen remains blank during most of the printing process. Questions are based
only on standard objectives with no teacher options (to set number ranges, for
example). Contexts for some kinds of word problems (e.g., bar or circle graphs)
have no variation (although numbers in the problems do change). The program
prints problems in one narrow column per page, except for word problems which
extend across the page.

STRENGTHS: This program is flexible and easy to use. Graphs and other
mathematical notations print clearly. The program's most attractive feature is
its capability for generation of several tests covering identical objectives.
This is a convenient timesaver for make-up tests and quizzes.

USES: EXAM IN A CAN: BASIC MATH SKILLS allows teachers to produce worksheets,
quizzes, and tests to support general mathematics objectives. Many problems are
useful in the upper elementary grades. Teachers can easily and quickly create
customized worksheets to meet individual student needs.

* * *

Title: FRACTION FAIRY TALES WITH THE BOARS
Publisher: Pelican Software, Inc.
            768 Farmington Avenue
            Farmington, CT 06032
Copyright: 1989
Price: $39.95
Contents of package: 1 double-sided program disk, 1 backup disk, guide 8 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color preferred)
Grade level: 1-3
Goals: Mathematics Grades 1-3 CG 3

FRACTION FAIRY TALES WITH THE BOARS offers two activities that blend fraction
practice (halves, thirds, and quarters) with scenes from traditional children's
stories ("The Three Little Pigs," "The Princess and the Pea," and "The Ugly
Duckling"). The cartoon-style boars are joined by other animal characters to
represent the story characters. Users begin with "What Is It?". A randomly

presented story scene which nearly fills the colorful screen includes a component (window, door, lampshade, etc.) that has been divided into two, three, or four equal parts. Some or all of the parts flash to represent a fraction. Students choose from the four numeric representations of fractions that appear across the bottom of the screen. The correct choice brings animation and sound as rewards. Once chosen, incorrect answers disappear until users are left with only the right answer. "Find and Fill!" employs the same scenes as the first activity. This time a single fraction appears at the bottom of the screen in both numbers and words. An object on the screen is divided into the number of parts matching the fraction's denominator. Users first direct a fairy to the object and then use the fairy's wand to shade the number of parts that corresponds to the numerator. Additional chances and prompts are offered to help those who make errors completing either task. The program appears to present problems in either section as long as users want to continue. The guide describes the two activities, explains program operation, and offers a few extension ideas for teachers.

WEAKNESSES: The command for turning off the sound does not work. The weak guide would be more useful to educators if it listed all the stories referred to in the program and gave ideas for integrating the study of fractions and stories. The program keeps no records of student work.

STRENGTHS: The bright graphics will appeal to the intended audience. Reference to at least fifteen (the number observed by the reviewer) children's stories sets the framework for coordinating math and reading tasks.

USES: The frequent, entertaining use of uncontrollable sound dictates that the entire class be involved with FRACTION FAIRY TALES WITH THE BOARS unless provisions can be made to isolate users or employ headphones. This supplementary fraction practice should follow classroom instruction. Teachers can challenge students to identify the stories represented, ask them to identify the picture clues to each title, and encourage reading to discover unfamiliar stories by making copies of the tales accessible.

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Series Title: IBM ALGEBRA
Title: ALGEBRA I: PART 1
Publisher: IBM
            P.O. Box 2150
            Atlanta, GA 30055
Copyright: 1988 (released 1989)
Price: $216.00
Contents of package: 1 program disk (3.5") and 4 program disks (5.25"), guide
     approx. 150 p.
Systems (* indicates version previewed): IBM-PC*
Equipment required: microcomputer, 1 disk drive, monitor (color preferred),
     printer (optional)
Grade level: 9-12
Goals: Mathematics Grades 9-12 Introductory Algebra (Part I) CG 1-11

ALGEBRA I: PART 1 offers three units (on algebraic expressions, linear equations, and systems of equations and inequalities) that include structured lessons, exploratory exercises facilitated by special "CALC" commands, and problem sets. The unit on algebraic expressions covers the order of operations; use of variables, coefficients, and exponents; combination of like terms; and

solution of linear equations in one variable. The unit on linear equations includes the evaluation and graphing of linear relations and functions as well as the slope-intercept, point-slope, and two-point forms of linear equations. The last unit covers graphic and algebraic solutions for equations and systems of equations or inequalities. Each unit contains an introduction and several lessons. Lessons include "expository" activities that provide objectives and explanatory screens, interactive "Your Turn" screens, and "Think" screens that ask students to summarize the main point of the activity. In each lesson's "Exploration" activity, students use the program's "CALC" commands for a variety of purposes: calculation, symbol manipulation to solve expressions for variables, or graphing functions. A problem set for each lesson allows students to practice application of concepts. The lessons are designed for sequential use, with students moving through the program via menus and function keys. The scoring function reviews concepts presented and provides a display of the number of problems attempted, problems possible, and problems answered correctly on the first and second tries. Scores can be printed. The program records each student's "bookmark" location (the unit, lesson, and activity number completed last). Teacher options include monitoring the user list (with student name, bookmark, number of activities completed, and total time used), assigning particular activities by changing a student's bookmark, and setting program options. Teachers can also create and save customized "defer sequences" for later use in classroom demonstration, for special study or review, or for interactive sequences.

The guide includes series and program overviews; "getting started" information; instructions for using the activities; program description; complete commentary on CALC commands grouped by math areas (algebra, graphing, matrix, and calculus) and other categories (get, status, display, color, and special features); instructions for creating, editing, and using defer sequence files; and appendices that include a program message summary, technical reference, teaching ideas, and teacher menu information.

WEAKNESSES: Reviewers found no significant weaknesses.

STRENGTHS: This comprehensive program is well organized and offers a variety of learning activities. It is technically smooth and appealing. Objectives are stated and reviewed for students. Students can select CALC commands to perform tedious or time-consuming operations so that they can focus on concepts and problem solving.

USES: ALGEBRA I: PART 1 supports most first semester introductory algebra objectives. The program is helpful for reinforcement, enrichment, or remediation. Teachers can also use the program for demonstration or individual study plans.

* * *

Series Title: MATH MIND BENDERS
Title: MATH MIND BENDERS A-1
Publisher: Midwest Publications
            P.O. Box 448
            Pacific Grove, CA 93950
Copyright: 1990
Price: $45.00
Contents of package: 1 program disk, 1 backup disk, guide 8 p.
Systems (* indicates version previewed): Apple II family* (enhanced IIe)
Equipment required: microcomputer, 1 disk drive, monitor (monochrome preferred)
Grade level: 7-12
Goals: Grades 7-12 Thinking Skills

MATH MIND BENDERS A-1 includes twenty-one crossnumber puzzles (like crossword
puzzles with numbers for answers instead of words) presented in order of
increasing difficulty. General rules state that there is only one digit (0-9)
entered per grid block and that no answer number begins with zero. Each puzzle
includes a grid ranging from three by three to seven by seven blocks, clues for
across and down answers, and an introductory passage of several sentences. The
passage often provides information that is essential to calculating the answers.
For example, the passage for puzzle seven reads as follows: "Michael and Nerina
are different ages and heights. The sum of their ages (years) is 16. The sum of
their heights (inches) is 98. If years and inches could be added the sum of ne
age and height of one of them would be 54." A major step in solving these
puzzles is to deduce which clue can be solved first, as that correct response
will then be used to solve other clues. Students solve math problems with paper
and pencil and enter their solutions onto the puzzle displayed on the monitor.
The program encourages the use of calculators. No help is offered to users.
Students may request to view the solution to the puzzle. If users view the
solution after having filled in a completely correct grid, there is a minor
celebration of sound. If users view the solution while the grid is incomplete or
contains incorrect answers, users simply examine the correct choices. Each time
a new puzzle is tackled, the screen offers choices for viewing solutions only
after a puzzle is completed or for viewing solutions at any time. Whenever
viewed, the presentation of the solution precedes termination of work on that
puzzle. Users may then pick from any of the twenty-one puzzles to start solving.
The guide explains the purpose of the program and provides answer grids for each
of the puzzles accompanied by a brief explanation of the rationale used to reach
the first answer.

WEAKNESSES: Although teachers might prefer students to view the solution only
after completing a puzzle, it is easy for students to change this choice. Keys
required to enter information are not listed in the guide, nor are they easily
retrievable from the program once one is solving a puzzle. There is no
indication that the program requires an enhanced Apple IIe as was the case with
the copy reviewed. Dashes used in clue labels (one across is 1-A) might be
confused at first with minus signs. Instructions presented throughout the
program spell <u>with</u> as <u>win</u>.

STRENGTHS: When the solution is displayed, incorrect answers are retained and
correct responses are placed next to them for comparison. The answer key that
appears on the screen is accompanied by the solution rationale so that users can
r apitulate their strategies. Some students will be very motivated to master
these challenging puzzles which include reference to palindromic numbers as well
as require users to be able to distinguish between adding numbers and adding the
digits that compose numbers.

USES: MATH MIND BENDERS A-1 is useful as a class demonstration to show how to use reasoning skills to solve math problems. Small group use encourages students to share and support their ideas. Individuals will also enjoy these enrichment exercises. In addition to problem solving and deductive reasoning skills, students also gain estimation and computation practice.

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Series Title: SUPER SOLVERS
Title: OUTNUMBERED!
Publisher: The Learning Company
            6493 Kaiser Drive
            Fremont, CA 94555
Copyright: 1990
Price: $59.95
Contents of package: 1 program disk (3.5"), 2 program disks (5.25"), Ready
     Reference Card, guide 68 p.
Systems (* indicates version previewed): IBM-PC*, Tandy 1000
Equipment required: IBM-PC (512K) or Tandy 1000 (640K required for
     enhanced graphics), 1 disk drive, monitor (monochrome or color graphics
     adapter required [EGA, VGA, or Tandy 16 color preferred])
Grade level: 3-6
Goals: Mathematics Grades 3-6 CG 2 and 7
        Thinking Skills Grades 3-6

In SUPER SOLVERS: OUTNUMBERED! young sleuths stalk the Shady Glen TV station, solving math word problems and short drills to collect clues that will help them locate the hideout of the Master of Mischief before time runs out. Students assume the role of a Super Solver Club member who patrols the station's halls and five rooms on two floors. In each room, the player can approach several objects (such as a map or machine) and may be asked to solve a word problem (often involving a chart or graph) to receive a set of "room clues" displayed on a "decoder" screen as a strip of four small icons (different for each room in each game). The decoder screen also includes a key with four spaces for the elements of a secret code that will eventually match one of the sets of room clue icons. The elements of the code are revealed one at a time as the student completes brief drills. Opportunities to display prowess in drills occur when the sleuth has random encounters with the robotic monitor Telly and zaps this drill master when its screen is lit up. If Telly is not lit up, it can hurl lasers at or play tricks on the player. Another obstacle is the snakelike LiveWire, a wriggling plug and cord that surprises students. Players must zap these adversaries or avoid them with keyboard arrows. Gradually, through a combination of room challenges and Telly drills, the solver can decide where the Master of Mischief is lurking by matching the secret code elements with one of the sets of room clues. The rules for a match become more complex at higher levels of play, as do the scope and number of problems presented. The program saves cumulative scores as players move through seven ranks that incorporate four levels of difficulty. Players can use an optional calculator or select customized play with choices of level of difficulty, types of operations used (addition, subtraction, multiplication, or division), numbers used in drill problems (from zero to twelve), and the format of drill problems (where the question mark appears in the standard horizontal presentation). Students can also practice math facts without playing the game by using the "Drill for Skill" component.

The guide includes an educational note (on the relationship among basic math, problem solving, and thinking skills), getting started tips, instructions for playing the game, and a quick reference guide. A separate ready reference card summarizes game mechanics, goals and procedures, and the score and rank structure. An addendum sheet provides special instructions for IBM PS/2 users with short keyboards that have no separate numeric keypad.

WEAKNESSES: The word problem frameworks become somewhat familiar with repeated use, but this is a minor problem since the actual numbers ir problems and the circumstances of each game vary sufficiently.

STRENGTHS: This program appeals and motivates with excellent graphics, animation, user-controlled movement across several screens, sound effects and snappy theme music, and a cool character whose shoes players will eagerly fill. The complex environment challenges players to monitor their progress towards the overall goal, keep track of time and energy available, move through the station, deal with unexpected encounters, and solve both drill segments and word problems with a real-world flavor. Success requires initiative and persistence as well as a knowledge of basic math facts.

USER: SUPER SOLVERS: OUTNUMBERED! provides outstanding support for the elementary mathematics curriculum and thinking skills objectives. Since students move at their own pace and program options also allow for individualization, this courseware has flexibility of use for reinforcement, enrichment, remediation, or educational enjoyment.

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Title: WHAT DO YOU DO WITH A BROKEN CALCULATOR?
Publisher: Sunburst Communications, Inc.
            101 Castleton Street
            Pleasantville, NY 10570-3498
Copyright: 1989
Price: $65.00
Contents of package: 1 program disk, 1 backup disk, guide 33 p.
Systems (* indicates version previewed): Apple II family*, IBM-PC, IBM-PCjr,
      IBM PS/2, Tandy 1000
Equipment required: microcomputer, 1 disk drive, monitor (color optional),
      printer (preferred), blank disk
Grade level: 5-12
Goals: Grades 5-12 Thinking Skills

WHAT DO YOU DO WITH A BROKEN CALCULATOR? combines basic math operations practice (addition, subtraction, multiplication, and division) and problem solving. The screen displays a simple, four-operation calculator. Users, who select options from a menu, should begin by becoming familiar with the calculator in its normal and "leading digit" modes. The "normal" calculator operates realistically with an added feature that allows users to disable a numeric or operation key or keys. The "leading digit" mode means that the calculator allows only a single digit from one through nine to be part of a number. Some valid numbers for this mode would be 7, 70, and .0007. Once comfortable with the calculators, users can choose to solve problems the program presents by working through several menus to define the problem desired. The choices include eight problem types (place value, pattern of digits, addition without +, subtractions without -, multiplication without x, division without /, estimation with + and -, and

estimation with x and /), integers or decimals, all digits or leading digits, and easy or hard difficulty levels. For example, an easy "addition without +" problem would show the number 182 as the answer or "goal" and the addition operation key as disabled. Users subtract, multiply, or divide to reach the answer. A hard "place value" problem using decimals and a normal calculator is to attain the goal of 8408.4 with the 1, 3, 8, +, and - keys disabled. When students reach the correct answer, the screen displays the number of steps used to complete the problem. Users can save and print up to forty steps per problem and recall a saved p·~blem to view the steps taken to solve it. In addition to problems users save, the program provides sixteen problems for users to explore with solutions available to examine. Additional data disks can be created. Teachers can select one to eight problem types so that a disk will randomly present particular kinds of problems. Problems created with the normal or leading digit calculator can also be saved on to user-made data disks. However, the technique involved for saving user-created problems requires that at least one solution step must also be saved and be available for students to view. The guide describes the program, lists the saved problems with solutions, and offers several ideas for using the program.

WEAKNESSES: When teachers create problems for students to solve, they may not want to have a step toward the solution available. When working problems other than those that have already been solved and saved, there are no help resources for those who may be conf   .

STRENGTHS: The program provides a framework for student exploration, and the broken calculator will intrigue users. Some students will fi 1 solving problems a challenge while others will like creating problems for their peers. Students should enjoy the dual display of the memory and active calculation, which are not typically displayed simultaneously.

USES: WHAT DO YOU DO WITH A BROKEN CALCULATOR? serves as enrichment and purposeful recreation. Students gain experience with mental computation, estimation, working problems backwards, and problem-solving strategies. Program use will increase when competition arises among students to see who can achieve goals with the fewest steps.

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SCIENCE

Title: CHAOS PLUS...
Publisher: EduTech
            1927 Culver Road
            Rochester, NY 14609
Copyright: 1989
Price: $75.00
Contents of package: 1 program disk, 1 data disk, 2 backup disks, guide 92 p.
Systems (* indicates version previewed): Apple II family*
Equipment required: microcomputer, 1 disk drive, monitor (color preferred),
    printer (preferred), blank disk
Grade level: 9-12
Goals: N/A

CHAOS PLUS... provides a framework for exploration with topics relatively new to
the fields of science and math and only beginning to be part of high school
students' vocabulary. Users select from a main menu to work with one of eight
topics which include "Cellular Automata," "The Game of 'Life,'" "Graphs of
Chaos," "Attractors," "Fractal Lines," "Random Walks," "The Mandelbrot Set," and
"Three Body Orbits." Once a topic has been chosen, submenus appear, customized
to meet the needs of each topic. Users' input affects the resulting computer
generated graphs and displays as the intent of these investigations is to
discover "What happens if...?". For example, in "Graphs of Chaos" chaos is
demonstrated by contrasting an exponential growth graph (no chaos) with a
logistics equation in which chaos operates with the use of certain values of the
variable. Hours may be spent exploring with trial and error attempts. Students
begin to realize that mathematicians cannot always predict when and where chaos
is going to operate in mathematical expressions. Program results can be saved,
and some can be printed. The guide is divided into two major sections: the
"instructions and activities" and the "workbook." The first portion offers a
general overview, general operating instructions, a bibliography for additional
reading suggestions, and information about each topic such as displaying the main
submenu, working through a sample exercise, explaining functions of special keys,
and suggesting briefly why the topic is of interest or what it might relate to in
more concrete terms. The "workbook" contains a section for each topic offering
some specific steps for getting involved with the activities, tips for working
with the different menus, and opportunities to apply concepts in noncomputer
exercises.

WEAKNESSES: Editing errors (misspelled words, inconsistent spacing and
punctuation) detract from the guide. Novices would appreciate a glossary,
perhaps one for each topic.

STRENGTHS: A sincere effort has been made to bridge the gap between the level of
users' experience and the complexity of the program's simulations. This program
will enhance understanding of chaos and the study of dynamical systems while
allowing students to explore iterations and orbits of certain identified
functions. Interested users will find experimentation efforts rewarded by the
wonder of "What happens if...?"

USES: CHAOS PLUS... is intended for inquisitive teachers and students as the activities will provoke more questions than answers. As a demonstration to the entire class, this program will expose students to these new concepts. For instance, a teacher could describe fractals in a general way, explain how successive enlargements of a fractal show the same design, and then load the Mandelbrot set as a demonstration. Although it would require an entire class period for the set to be generated on a high-resolution monitor, this would be a dramatic example of how iteration works. This enrichment program holds potential for generating ideas for science and math projects.