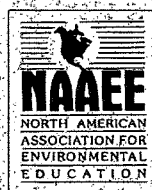


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The Environmental Education Collection: A Review of Resources for Educators Volume 3



*North American Association for
Environmental Education*



The Environmental Education Collection — A Review of Resources for Educators Volume 3 represents another in a series of documents published by the North American Association for Environmental Education as part of the National Project for Excellence in Environmental Education.

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Special thanks to the teachers, curriculum developers, educational administrators, environmental education specialists, business and industry representatives, and environmental scientists who took time from their busy schedules to review the curriculum materials. We would also like to express our gratitude to Lori Mann, Environmental Education Consultant and David Starnes, Training, International and Affiliates Coordinator at NAAEE for hosting review sessions.

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The contents of this document do not necessarily reflect the views and policies of EPA nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

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Additional copies of this book can be obtained from the NAAEE Publications and Membership Office, P.O. Box 400, Troy OH 45373, USA

phone and fax: (937) 676-2514 e-mail: jthoreen@erinet.com web site: www.naaee.org

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Welcome

With literally thousands of education materials to select from, knowing which ones may be best for a particular group of students can be a daunting task. *The Environmental Education Collection — A Review of Resources for Educators Volume 3* is designed to help educators find curricula, multimedia resources, and other educational materials that can enhance teaching about the environment in a variety of settings. It is our hope that this resource guide will assist educators as they plan, develop, and implement creative and effective environmental education programs. The *Environmental Education Collection* is part of a series of resource guides, each providing background information and reviews of some of the most widely available environmental education materials.

How Was The Environmental Education Collection Developed?

To collect a broad range of educational materials (e.g., curriculum guides, CD-ROMs, laser discs, video tapes), letters were sent to commercial publishers, not-for-profit organizations, government agencies, and other organizations that produce environmental education curricula asking them to submit materials for review. Quite obviously, it would not be practical to review all of the environmental education curriculum materials that have been produced. Consequently, the materials included in this resource guide represent a small sample of resources available. The materials included in *The Environmental Education Collection — A Review of Resources for Educators* were evaluated by teams of classroom teachers, content experts, and environmental educators. Each set of materials was reviewed by at least three people. In those cases where reviewers disagreed, the materials were evaluated by at least one more person.

The Review Criteria

Curriculum materials included in this compendium were evaluated using the *Environmental Education Materials: Guidelines For Excellence* developed by the North American Association for Environmental Education (NAAEE). The *Guidelines* provides a set of criteria for developing and selecting environmental education materials. These guidelines aim to help developers of activity guides, lesson plans, and other instructional materials produce high-quality products, and to provide educators with a tool to evaluate the wide array of available environmental education materials. Developed through a process of critique and consensus, the *Guidelines for Excellence* is grounded in a common understanding of effective environmental education. Over 1000 individuals and organizations (e.g., teachers, educational administrators, environmental scientists, curriculum developers) participated in its development.

The *Guidelines for Excellence* point out six key characteristics of quality environmental education materials. A series of guidelines are listed for each of these characteristics. Finally, each guideline is accompanied by several indicators that help gauge whether the materials being evaluated or developed follow the guidelines. The *Guidelines For Excellence* can be ordered from the NAAEE Publications and Membership Office in Troy, Ohio.

Summary of the Guidelines

#1 Fairness and accuracy: EE materials should be fair and accurate in describing environmental conditions, problems, and issues, and in reflecting the diversity of perspectives on them.

- 1.1 Factual accuracy
- 1.2 Balanced presentation of differing viewpoints and theories
- 1.3 Openness to inquiry
- 1.4 Reflection of diversity

#2 Depth: EE materials should foster an understanding and appreciation of environmental concepts, conditions, and issues, as appropriate for different developmental levels.

- 2.1 Focus on concepts
- 2.2 Concepts in context
- 2.3 Attention to different scales

#3 Emphasis on skills building: EE materials should build lifelong skills that enable learners to address environmental issues.

- 3.1 Critical and creative thinking
- 3.2 Applying skills to issues
- 3.3 Action skills

#4 Action orientation: EE materials should promote civic responsibility, encouraging learners to use their knowledge, personal skills, and assessments of environmental issues as a basis for action.

- 4.1 Sense of personal stake and responsibility
- 4.2 Self-efficacy

#5 Instructional soundness: EE materials should rely on instructional techniques that create an effective learning environment.

- 5.1 Learner-centered instruction
- 5.2 Different ways of learning
- 5.3 Connection to learners' everyday lives
- 5.4 Expanded learning environment
- 5.5 Interdisciplinary
- 5.6 Goals and objectives
- 5.7 Appropriateness for specific learning settings
- 5.8 Assessment

#6 Usability: EE materials should be well designed and easy to use.

- 6.1 Clarity and logic
- 6.2 Easy to use
- 6.3 Long lived
- 6.4 Adaptable
- 6.5 Accompanied by instruction and support
- 6.6 Make substantiated claims
- 6.7 Fit with state or local requirements

As a set of review criteria, the *Guidelines for Excellence* offers a standard to aim for when considering materials, and a set of ideas characterizing a well-rounded environmental education curriculum. It is not reasonable to expect that all environmental education materials will follow all of the guidelines. For example, a set of materials might not present differing viewpoints, as outlined in guideline #1.2. This shortcoming does not necessarily mean that the materials should not be used. An instructor could work them into a larger set of activities that explores different viewpoints and helps learners discern opinion and bias in individual presentations of the issue. Likewise, a curriculum project that focuses on the science behind water ecology might not include a discussion of social issues, but may still be used effectively as a science resource within a larger unit on water-related issues.

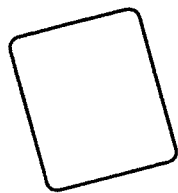

The write-ups included in *The Environmental Education Collection — A Review of Resources for Educators* point out the variety of factors an educator may wish to consider when deciding which materials are most appropriate for a particular group of students and how to use those materials most effectively. Of course, no set of evaluations can be complete, and some important considerations are bound to be missing. Although the reviewers made every effort to evaluate the materials using their professional judgement and their best understanding of the *Environmental Education Materials: Guidelines for Excellence*, it should be understood that the reviews are not perfect. Given this, *The Environmental Education Collection — A Review of Resources for Educators* should be used as a tool to inform decisions, contributing to more effective environmental education.

As you review the write-ups, keep these things in mind:

- ♦ The reviewers highlighted strengths and other considerations or constraints they felt educators would want to know about before selecting a resource. It is important to point out that what one reviewer might consider a weakness, another might consider a strength. At the same time, some reviewers felt more strongly about some issues than other reviewers. The write-ups are meant to guide you. Read the entire review to get a true feeling for the curriculum.
- ♦ If the materials were not designed to meet one of the key characteristics, this was noted in the write-up.
- ♦ Each item reviewed in this compendium was produced by an organization, agency, business or other institution that has its own goals, mission, and agenda. Many different kinds of organizations produced outstanding materials and all materials contained a certain perspective—just by the emphasis on certain subjects, activities, values, and methods.
- ♦ The key to effective education lies with educators. A mix of resources have been included in this guide to help educators select the materials that will help them build educationally sound units and programs.
- ♦ As much contact information as possible was included to help users find and order materials. However, items such as prices, phone numbers, and addresses often change. If you find an error, please let us know.
- ♦ Major subject areas are noted. Subject areas noted in the summaries were taken directly from those identified in the materials. Where no subjects were referenced, we did our best to assign headings.

About This Collection

The first section of this resource guide highlights approximately 50 environmental education curriculum materials. Entries are listed in alphabetical order. Each entry contains a summary of the curriculum (*In a Nutshell*), information about grade levels, subject areas, author, publisher, and price. *What the Reviewers Said!* lists comments specific to the six key characteristics, and a sampling of quotations from reviewers' evaluations are included in *The Bottom Line*. The second section contains an annotated listing of support materials. Following this is a matrix cross-listing all of the materials and various characteristics (e.g., grade level(s), topics covered, subjects). Finally, we have included a short Feedback Form. Since we plan to produce future volumes in this series, we would appreciate your input.

	<h3>Curriculum Title</h3>	<table border="1"> <tr> <th>Key Characteristics</th> <th>Strengths Noted</th> <th>Other Considerations</th> </tr> </table>	Key Characteristics	Strengths Noted	Other Considerations
Key Characteristics	Strengths Noted	Other Considerations			
<div>Ordering information</div>	 IN A NUTSHELL	What the REVIEWERS Said!			
<div>SUBJECTS</div>	<div>A brief description of the curriculum and its contents.</div>	<div>Fairness and Accuracy</div> <div>Depth</div> <div>Emphasis on Skills Building</div> <div>Action Orientation</div> <div>Instructional Soundness</div> <div>Usability</div>			
<div>Core curriculum areas emphasized</div>	<div>Grade Length Date</div>	<div>Summary of reviewer comments concerning the curriculum.</div>			
		<div>Six Key Characteristics identified in <i>EE Materials: Guidelines for Excellence</i></div>			
<div>BOTTOM LINE</div>	<div>Quotes from the reviewers.</div>				

Reviews

The following materials were reviewed using *Environmental Education Materials: Guidelines for Excellence*. The synergy between the various parts — the summary of reviewer comments, the subjects, the brief description of the curriculum, and the reviewers' quotes — creates the richness and integrity of the reviews. It is strongly recommended that educators read both pages of each review in order to take in the full flavor of the curriculum.

The following reviews are provided to allow individual educators to make their own decisions about the materials and to determine how they can best be used.



City Kids and City Critters!

Activities for Urban Explorers



IN A NUTSHELL

Written by: Janet Wier Roberts & Carole Huelbig

Learning Triangle Press
McGraw Hill Inc.
860 Taylor Station Road
Blacklick, OH 43004

phone: (800) 262-4729

fax: (614) 759-3644

e-mail: customer.service

@mcgraw-hill.com

website:

www.mcgraw-hill.com

Cost: \$15.95 + s&h

SUBJECT

Language Arts

Mathematics

Physical Education

Science

Social Studies

The activities in this book encourage children to become "nature detectives" and to sharpen their observation skills in order to locate, recognize and understand the animals that they encounter. The activities in the first chapter focus on sensory awareness. Subsequent chapters address specific locations where wildlife might be found, such as ponds, backyards, streets, and vacant lots. Children are thus exposed to creatures as diverse as ants, caterpillars, raccoons, foxes, and pigeons. Students are encouraged to keep observation journals, develop and test hypotheses, and are provided with field guides to direct their investigations. Activities include searching for animal tracks, counting and identifying animals and plants in different locations, playing simulation games involving animal feeding habits, and worm composting. Environmental concepts, such as habitat and adaptation, are explored in the process. Students are given the subjects, skills, concepts, and necessary materials to attract animals. Teachers are advised how to keep outdoor experiments safe. Each chapter is followed by a list of recommended readings. In addition, the book includes a glossary, an index, bibliography, and resource list.

Grade Level

3-6

Length

155 pages

Date Published

1996

**THE BOTTOM
LINE**

"The tactile learner would excel with these activities because of the great emphasis on learning and observing with the senses."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Sources of information are well documented. Activities encourage students to explore and to make their own observations.

Unclear if content has been through peer reviews. Diversity of children involved in "kid testing" not specified. Students featured in drawings appear to be all caucasian.

Depth

Very strong on building awareness.

No conceptual framework or connections between the different activities.

Emphasis on Skills Building

Makes use of a number of observation and reasoning skills.

Weak on creative thinking processes.

Action Orientation

N o t A p p l i c a b l e .

Instructional Soundness

Diverse lessons provide for different learning styles. Makes connections to learners' everyday lives. Many activities involve taking the students outdoors.

Does not include learner outcomes. Curriculum is very teacher-driven.

Usability

Illustrations and masters of handouts are clear and easy to use. Overall structure is very clear. Background material is brief and to the point.

Lessons were not organized sequentially. Some materials might be difficult to obtain.

"The proposed activities are well thought out; they are fun and basics will be learned.

"What do we do with what we have learned? That is missing."

"Specific to urban kids, but could be used for other neighborhoods."



Composting: Waste to Resources



IN A NUTSHELL

Written by: Jean F. Bonhotal &
Marianne E. Krasny

Media Services
Distribution Center
7 Cornell Business &
Technology Park
Cornell University
Ithaca, New York 14850

phone: (607) 255-2080

fax: (607) 255-9946

e-mail: dist_center@cornell.edu

Cost: \$8.00 + s&h

SUBJECTS

Fine Arts
Science

This package includes a thirty-eight page teacher's guide, a series of cards describing different composting systems, a progress tracking sheet, and two posters which illustrate the composting process and provide suggestions on making composting more successful. The materials explain: how composting works, how to design and set up different composting systems (e.g., mounds vs. turning units), reasons for composting, and ways to investigate and solve problems with existing compost piles. The guide includes several investigations in which students measure their pile's temperature, draw pictures of microscopic and visible creatures which inhabit their piles, measure the rate at which different items decompose and under what conditions, and experiment with using their compost to help grow plants. The guide includes a glossary and lists additional sources of information about composting. Illustrations include diagrams and black-and-white drawings.

Grade Level

4-8

Length

38+ pages

Date Published

1994

THE **BOTTOM**
LINE

"Provides great facts and accurate directions
for building bins."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Very open to inquiry.

Some supportive data may be outdated. Does not present a balanced explanation of different viewpoints.

Depth

Focuses on concepts.

Gives little attention to different geographic scales.

Emphasis on Skills Building

Many activities involve teamwork. Facilitates critical thinking. Strong on action skills.

Does little to connect skills to issues. Focus is on final product.

Action Orientation

N o t A p p l i c a b l e .

Instructional Soundness

Encourages teaching inside and outside the classroom. Many activities are learner-centered and encourage student involvement.

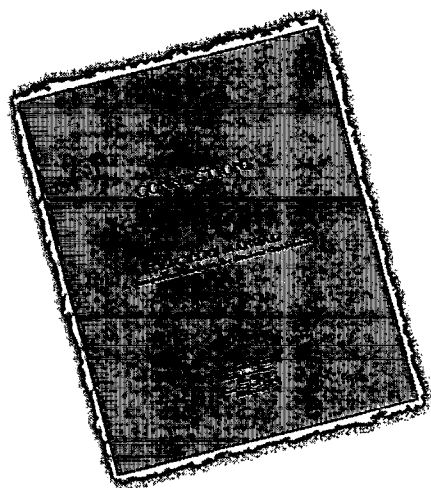
Lessons are not particularly interdisciplinary. Does relatively little to connect composting to learners' everyday lives.

Usability

Activities are clear, logical and easy to follow. Materials are easily reproducible.

"Discusses the issue of waste reduction, but there could be more of an emphasis so that students feel a personal responsibility."

"Would do well in an activity center or special project area."



Connections:

Guide to a Healthy Environment



IN A NUTSHELL

Written by: John Poore, Alexis Adams, & Deanne Roquet

Eco Education
275 East Fourth Street
Suite 821
Saint Paul, MN 55101

phone: (612) 222-7691

fax: (612) 222-3425

e-mail: ecoed@minn.net

website: www.blacktop.com/ecoeducation

Cost: \$39.95 + s&h Teachers Manual & one Guide Book
\$2.50 + s&h for each additional Guide Book

SUBJECTS

Fine Arts
Language Arts
Science

Connections is a guidebook to help students learn to take care of the environment. Individual chapters address habitat destruction, population growth, pollution, and other environmental concepts and issues. Students are routinely encouraged to provide their own artwork to blank spaces in the text. Each chapter contains background information and provides examples of "Eco-Warriors", students who have taken on environmental projects or challenges. A number of "Eco Assignments" are provided, where students and their families work together to measure their household use of resources. An Eco Guide at the back of the student book provides additional suggestions for action projects. Included are a lengthy resource list and a bibliography. The teacher's manual provides additional background information, calendars, pre- and post-tests with answers, data sheets, and masters of handouts. It also contains investigations and demonstrations, each listing a learner outcome, duration, and discussion or journaling suggestions.

Grade Level

5-8

Length

195 pages

Date Published

1994



**BOTTOM
LINE**

"Very few materials so clearly delineate the use of kinesthetic activities—this is a godsend for those looking to integrate movement into the curriculum."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Open to inquiry.

Factual information is rarely referenced. Opposing viewpoints generally not included.

Depth

Numerous activities build awareness. Chapters build on individual concepts. Addresses regional, local, and global scales.

Emphasis on Skills Building

Develops communication and higher-level thinking skills.

Does not encourage students to arrive at their own conclusions.

Action Orientation

Teaches self-efficacy and personal responsibility. Very action oriented.

Instructional Soundness

Activities build on previous knowledge. Provides for a varied learning environment. Very interdisciplinary and learner-centered.

Learner outcomes are very general.

Usability

Adaptable to any location in the U.S. Background information is thorough and helpful. Lessons are well-written and easy to use.

Does not identify grade level or target audience.

"Most activities could be done without the student workbook."

"Great sense of humor throughout the curriculum - keeps a 'heavy' topic 'light'."



Creepy Crawlies & the Scientific Method

Over 100 Hands-On Science
Experiments for Children



IN A NUTSHELL

Written by: Sally Stenhouse
Kneidel

Fulcrum Publishers
350 Indiana Street
Suite 350
Golden, CO 80401

phone: (800) 992-2908

fax: (800) 726-7112

e-mail: fulcrum@concentric.net

website: www.fulcrum-books.com

Cost: \$17.95 + s&h softcover

SUBJECTS

Science

This book familiarizes students with the scientific method by having them practice the formulation of questions and hypotheses, developing methods, collecting data and reviewing results. The subjects for their inquiries are a variety of creatures, including spiders, worms, ant lions, slime mold, tadpoles, and mantises. The questions researched can be as simple as "Do crickets prefer houses with one door or two doors?" or "Do worms prefer damp or dry conditions?" More complicated research questions include the effect of temperature on the development of fruit flies. Hypotheses are suggested, along with ways to test them. The author provides blank charts, tables, and other data gathering devices to enable students to research these questions and to record their findings. The text provides an overview of the scientific method and background information on all of the creatures studied, including materials lists and information on how to obtain and keep critters for classroom use. Appendices include lists of supply companies, a bibliography, and an index. Illustrations consist of photographs, drawings and diagrams.

Grade Level

K-6

Length

224 pages

Date Published

1993



"Some of the richest learning environments I have seen
are in classrooms using the activities in this text."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Focuses on acquiring information. Open to inquiry. Photographs show a diverse student body.

Sources of specific pieces of information are not cited.

Depth

Includes chapter on connections between the experiments. Experiments appropriate to developmental level of children.

Does little to reflect connections of the animals to their environment.

Emphasis on Skills Building

Critical thinking is strongly developed: hypothesizing, observing, identifying, analyzing data, etc.

Action Orientation

N o t A p p l i c a b l e .

Instructional Soundness

Experiments are learner-centered.

Book lacks goals and objectives. Little attention given to ethics of keeping animals in classroom or using them for experiments.

Usability

Instructions are clear, concise, and easy to follow. Material is long-lived.

Contains no glossary or teacher support. Vocabulary may not be age-appropriate.

"Would like to see a workshop accompany this. Not many teachers would feel comfortable bringing creatures into their classroom that they would more than likely kill in their home."

"Kids love bugs, and these experiments would really interest young children."



Cycling Back to Nature:

with Biodegradable Polymers



IN A NUTSHELL

Written by: Robert L. Horton, Joe E. Heimlich, & James R. Hollyer

National 4-H Supply Service
7100 Connecticut Avenue
Chevy Chase, MD 20815-4999

phone: (301) 961-2934

fax: (301) 961-2937

website: www.fourhcouncil.edu/

Cost: \$5.00 + s&h

SUBJECT

Language Arts

Science

Social Studies

Using a combination of laboratory experiments, classroom discussion, scavenger hunts, reading, map drawings, and other activities, this book introduces students to some of the issues surrounding solid waste and some of the possible solutions. The book begins by exploring a number of natural cycles (e.g., water cycle and carbon cycle) and goes on to discuss what happens when those cycles are interrupted or disturbed.

Attention focuses on factors necessary for decomposition, problems associated with the disposal of plastics, and possibilities of using biodegradable polymers for different products.

Basic suggestions are given for developing a home compost pile. Activities come with a materials list and suggestions for processing the activity. Illustrations include drawings, charts, and maps. Appendices include a list of different polymer labels for recycling and tips for writing letters to politicians.

Grade Level

10 & up

Length

68 pages

Date Published

1996

**THE BOTTOM
LINE**

"Activities allow students to explore various aspects of natural and manufactured materials."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Material was reviewed by a variety of experts. Some of the information presented is clearly referenced.

Only presents single viewpoint on recycling. Promotes use of biodegradable polymers.

Depth

Includes a conceptual framework and ideas are presented logically. Focus is on explaining facts and issues in context.

Emphasis on Skills Building

Encourages learners to collect and draw conclusions from data.

Does not emphasize critical thinking or action skills.

Action Orientation

Encourages learners to take personal responsibility.

Instructional Soundness

Includes both classroom and field-based activities.

Activities do not always meet stated objectives.

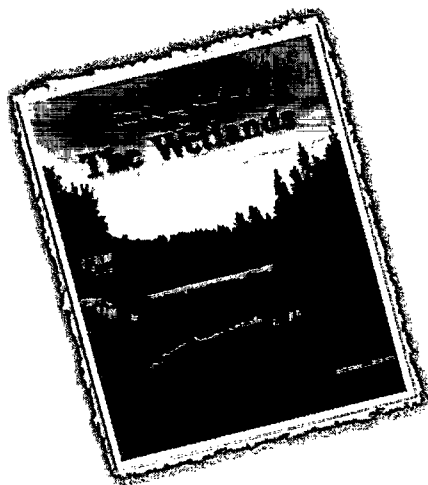
Usability

Materials were well laid out and easy to use.

Contains insufficient safety instructions (e.g., for the use of knives.)

"The whole piece is fragmented; it doesn't feel like it's all there."

"The outer packaging (water soluble and biodegradable) is great!"



The Digital Field Trip to the Wetlands



IN A NUTSHELL

Digital Frog, International
Trillium Place
7377 Culfass Road, RR2
Puslinch, Ontario
Canada N0B 2J0

phone: (519) 766-1097

fax: (519) 767-9994

e-mail: info@digitalfrog.com

website:

www.digitalfrog.com

Cost: Individual \$99.00 + s&h
Lab Pack (5 Users) \$249.00 + s&h

SUBJECT

Science
Social Studies

This CD-ROM program offers students an opportunity to learn about wetlands and their ecology. Although largely based on Cloud Lake in Ontario, Canada, the program is designed to be used in conjunction with local wetland field trips as well. The software consists of five principal screens. Study of a Bog provides information on succession and adaptation in bogs, as well as a description of wetland food webs. Field Trip to the Bog is a virtual visit to Cloud Lake. It contains photographs of numerous sites and allows students to retrieve additional information on species of flora or fauna they encounter. Wetland Types provides information on the different types of wetlands and includes an on-line quiz. Mechanics of a Wetland provides information on nutrient cycles and explains how wetlands prevent erosion. Our Endangered Wetlands provides information on the dangers facing wetland habitats and some of the consequences of wetland destruction. Some of the screens include brief movies with audio narration. The accompanying binder provides both teacher and student editions of a workbook, which includes a field guide, questions, quizzes, charts for documenting observations, and suggestions on using the software program.

Grade Level
8-12
Length
CD-ROM & Book
Date Published
1996

**THE BOTTOM
LINE**

"Materials could easily be integrated into established curriculum and are useful for a wide variety of grades."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information is accurate. Students are encouraged to develop own ideas and conclusions.	Does not cite sources of information. Does not present all perspectives (e.g., agriculture). Some statistics will require updating.
Depth	Concepts are clear.	Some topics are given only superficial treatment.
Emphasis on Skills Building	Relies heavily on observation and classification skills.	Weak on analytic and creative thinking skills.
Action Orientation	N o t A p p l i c a b l e.	
Instructional Soundness	Lists learning objectives. Provides resources for further research.	Provides limited connections to learners' everyday lives. Format is rigid, "cookbook" style.
Usability	Presentation of material is clear and inviting.	Graphics are of poor quality.

"This is an example of a really good outline misused as software."

"A great resource, particularly if used in conjunction with field trips to wetlands."



Earth Day to Arbor Day: An Opportunity for Stewardship



IN A NUTSHELL

The National Arbor Day
Foundation
Member Services
100 Arbor Avenue
Nebraska City, NE 68410

phone: (402) 474-5655
fax: (402) 474-0820
website: www.arborday.org

Cost: \$16.45 + s&h

SUBJECTS

Fine Arts
Language Arts
Science
Social Studies

This kit provides information and resources for those interested in developing an Arbor Day celebration built upon the concept of stewardship. The first section of the guide provides lessons and activities dealing with food chains, the importance of trees, personal beliefs and values, and paper consumption. Lesson plans include community tree surveys, paper-making, collages and billboards, and service projects. Instructions are provided for planting trees, choosing proper trees for planting, and identifying planting sites. The guide's second section contains ideas for developing an Arbor Day celebration. It contains suggestions for organizers, such as sample schedules and information about fund-raising, as well as songs, plays and poems about trees. Some of the text comes in both English and Spanish versions. An audiotape contains a reading of Giono's *The Man who Planted Trees* and fictional interviews with Herodotus, Theodore Roosevelt, and the founder of Arbor Day. The kit also includes sample proclamations, brochures, and two color posters.

Grade Level

5-6

Length

74 pages &
audiotape

Date Published

1996



**THE BOTTOM
LINE**

"A very nice way to introduce students to making
a commitment to stewardship."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information is accurate. Many activities reflect openness to inquiry.	Biased against treeless ecosystems (e.g., prairie, desert).
Depth	Explains interdependence. Encourages students to build awareness of their own neighborhood.	
Emphasis on Skills Building	Applies skills to issues. Emphasizes citizenship skills. Makes use of math and data collecting skills as well as creative expression.	Weak on critical thinking skills.
Action Orientation	Encourages student action and cooperation with other individuals/organizations. Teaches personal responsibility.	
Instructional Soundness	Utilizes different ways of learning. Incorporates activities from different subject areas.	Does not provide goals and objectives. Does not specify grade level.
Usability	Information is long-lived. Materials are easy to use and are adaptable.	

"More helpful for a non-formal educator, since it has good basic ideas but not sound educational structure."

"Very useful in terms of planning an Arbor Day celebration."



Earthways:

Simple Environmental Activities for Young Children



IN A NUTSHELL

Written by: Carol Petrash

Gryphon House
P.O. Box 207
Beltsville, MD 20704-0207

phone: (301) 595-9500

fax: (301) 595-0051

website: www.ghbooks.com

Cost: \$16.95 + s&h

SUBJECTS

Fine Arts

Health

The activities in this book are divided into four chapters, one representing each season of the year. Each chapter then has four sections. The first offers suggestions for making the classroom environmentally friendly, such as by using non-toxic or reusable supplies. The second provides seasonal recommendations for the development of an indoor garden. The third is a collection of ideas for seasonal craft projects. The author calls the fourth section "supplying the missing links"; these activities are designed to help students recognize and appreciate the connections between everyday objects and their natural origins.

Among the activities are rolling candles from sheets of beeswax and creating desserts from berries the students have picked. The text includes lists of mail-order supply companies, background reading for teachers, environmental education organizations, and an index.

Grade Level
PreK -2
Length
206 pages
Date Published
1992

**THE BOTTOM
LINE**

"An atypical resource with a focus on using things from nature and recycled materials to develop an awareness of our earth's ways."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Provides numerous references.

Depth

Sequencing of activities helps make connections clear.

Concepts were given scant attention.

Emphasis on Skills Building

Strong on action skills and on encouraging creativity.

Does not develop critical thinking skills.

Action Orientation

Involves children in recycling, composting, and the use of environmentally-friendly materials.

Does not really address the student's role in nature.

Instructional Soundness

Time and age group specified for each activity. Allows for learning outside the classroom.

Does not state goals or objectives. Often calls for children to use potentially dangerous objects (needles, candles, etc.)

Usability

Activities are long-lived and sequentially organized. Uniform structure is employed throughout.

Some of the materials are not easily obtained.

"The author wants us to watch what we consume, but the activities consume things from nature, rather than the store."

"Although it lacks science-based content, this book provides clear directions for fun nature crafts."



Eco-Inquiry

A Guide to Ecological Learning Experiences for the Upper Elementary/Middle Grades



IN A NUTSHELL

Written by: Kathleen Hogan
Kendall-Hunt Publishing
Company
4050 Westmark Drive
Dubuque, IA 52002-1840

phone: (800) 228-0810
fax: (800) 772-9165
website: www.kendallhunt.com

Cost: \$36.95 + s&h

SUBJECT

Science

This curriculum involves students in experiments and research that will provide an understanding of ecological processes and how they affect a specific site in their local environment. The text is divided into three modules, each of which addresses a particular concept area: food webs, nutrient cycling, and decomposition. During the course of this program, students become familiar with composting, seed growth, development of environmental impact statements, and evaluating the experience and training of scientists. Each module gives students opportunities to generate theories, conduct research, and evaluate and process data. Individual lesson plans alert teachers to desired outcomes, needed materials, important vocabulary, preparation instruction, safety concerns, and ongoing means of assessment. Teachers are provided with narratives for introducing and describing the topics and activities, as well as suggestions for extensions. The text includes student worksheets, game cards, and illustrations.

Grade Level

5-8

Length

392 pages

Date Published

1994

THE **BOTTOM**
LINE

"I like the development of making science and scientists seem real and interesting."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Illustrations show diversity. Information is current. Materials focus on inquiry.

Lists reviewers, but not their affiliations.

Depth

Allows for investigations over several weeks. Concepts are taught in context.

Material is locally focused and may lack regional and global relevance.

Emphasis on Skills Building

Develops lab, creative problem solving, and observation skills. Students develop their own experiments. Uses group skills.

Action Orientation

Encourages sense of personal responsibility.

Instructional Soundness

Involves parents in learning process. Inquiry is learner-centered. Encourages many forms of assessment.

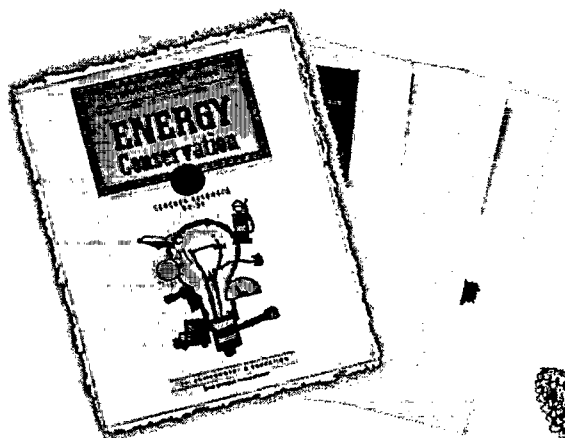
Materials could be more interdisciplinary.

Usability

Materials are long-lived, adaptable, and have a clear and helpful format.

"Allows for different perspectives to be introduced and explored."

"This text would best be used in situations where the teacher has one to two months or more to devote to these topics."



Environmental ACTION!



IN A NUTSHELL

Developed by: E2: Environment
& Education

Dale Seymour Publications
P.O. Box 5026
White Plains, NY 10602
phone: (800) 872-1100
fax: (800) 551-7637

Cost: \$13.95 + s&h
each teacher's guide
\$5.95 + s&h each student guide

For Workshop Information Contact:
E2: Environment & Education
P.O. Box 20515
Boulder, CO 80308-3515
phone: (303) 442-3339
fax: (303) 442-6633
website: www.enviroaction.org

SUBJECT

Economics
Health
Language Arts
Science
Social Studies

Environmental ACTION (Analyze, Consider Option, Take Action In Our Neighborhood) is a series of six modules, each addressing a different environmental issue. The issues covered include energy conservation, food choices, biodiversity, chemicals, resource management, waste reduction, and water use. The modules can be used independently, consecutively, or in any combination. Each module

contains a teacher guide and a student guide. Each is composed of several one-hour lessons which students can perform on their own or in small groups. Lessons include suggestions for follow-up that students can do at home.

Modules conclude with students developing an action proposal. Masters of student worksheets, discussion questions, and wrap-up ideas are provided in the student editions. Student guides also include background information and a glossary. Teacher guides provide additional suggestions for facilitating the lessons, itemized concepts and objectives, special vocabulary, student responses to discussion questions, and masters of quizzes with answers.

Grade Level

8-12

Length

varies per book

Date Published

1998

**THE BOTTOM
LINE**

"The strength of this material is its action orientation. Action steps are clear and explain concepts in community/school context."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Reviewed by educators and content specialists. Graphics represent a variety of cultures. Very open to inquiry.	Extent of balance is questionable in some modules. Facts will need updating.
Depth	Addresses concepts in context.	Provides minimal background information.
Emphasis on Skills Building	Encourages critical and creative thinking. Builds investigative and action skills.	
Action Orientation	Presents idea that individual actions make a difference. Strong on action component.	
Instructional Soundness	Makes clear connections to learners' lives. Highly learner-centered.	
Usability	Both student and teacher guides are clear. Support material and workshops are available.	Cost of entire set may be prohibitive.

"May be too young-looking for secondary students."

"Modular format allows for a wide variety of customizing options."



Environmental Resource Guide:

Air Quality - Grades 3-5



IN A NUTSHELL

Written by: Air and Waste
Management Association
Education Council

Customer Service
P.O. Box 1020
Sewickley, PA 15143

phone: (800) 275-5851
(412) 741-1288
fax: (412) 741-0609

Cost: \$30.50 + s&h for Air &
Waste Management
Association Members
\$40.50 + s&h for non-members

SUBJECTS

Fine Arts
Health
Language Arts
Mathematics
Science
Social Studies

The lessons in this guide are designed to provide elementary school students with an introduction to air, air quality issues, and pollution control and prevention. Topics include effects of air pollution on human health, ways to detect radon and carbon monoxide, acid precipitation, smog, wind scales, global warming, and the dispersion of air pollutants. Individual lessons last from one to four class periods and consist of several related activities; many have different versions for specific grades. Activities include scientific experiments, discussion, drama, making nontoxic cleaners, creating mobiles, puzzles, and readings.

The guide lists topics, time requirements, subjects, objectives, required materials, follow-up and extension activities. Resource lists are also provided for each lesson. The curriculum contains a glossary, fifteen pages of fact sheets, masters for worksheets and handouts, and diagrams to illustrate experiments. Parallel modules are available for grades K-2 and 6-8.

Grade Level

3-5

Length

250 pages

Date Published

1996

THE **BOTTOM**
L I N E

"I liked the coverage of indoor air quality. It is in-depth and covered familiar sources that students can do something about."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Information appears to be accurate.

Weak in terms of showing consequences of poor air quality, except in regards to humans.

Depth

Clusters activities around concepts. Addresses historical context.

Little linkage to social or economic issues.

Emphasis on Skills Building

Uses some critical and creative thinking skills. Applies skills to specific issues.

Action Orientation

Identifies action steps to take at home.

Instructional Soundness

Connects information to learners' everyday lives. Builds upon prior knowledge. Contains some outdoor activities.

Safety instructions are not always made clear to students. Some information may be too advanced for 3rd - 5th graders.

Usability

Instructions are clear and complete. Lessons are adaptable. Most equipment is inexpensive and easily obtained.

"The connection between level of consumption and the level of air pollution was not adequately made."

"There is a wide range of lessons, from extremely simple to extremely challenging."



Environmental Science: Water & Air



IN A NUTSHELL

Written by: Lee Hunter, Richard Goodman, MaryJo Diem, Steve Middleton & Carrie Casey

Globe Fearon Customer
Service Center
4350 Equity Drive
P.O. Box 2649
Columbus, OH 43216-2649

phone: (800) 848-9500

fax: (614) 771-7361

website:

<http://www.globefearon.com>

Cost: \$8.95 + s&h

SUBJECT

Science

Social Studies

This student textbook explores some of the environmental concerns associated with water and air. The text begins by discussing the chemical composition of water, and goes on to describe how water travels through air and soil, sources of fresh-water, how much water is used and treated, and how the learner is affected by water quality and availability. The second half of the book discusses the chemical properties of air, air pollution, acid precipitation, and climate change. The text is interspersed with laboratory and field activities, review and discussion questions, and a series of challenges entitled "You Solve It." The text includes a glossary, an index, and a resource directory. Illustrations consist of photographs, drawings, and charts. Important vocabulary words appear in bold type.

Grade Level

6 & up

Length

92 pages

Date Published

1995

THE **BOTTOM**
L I N E

"The information and activities provide a teacher with a supplement for a broad-based unit on water and air."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Some information is ambiguously phrased and could lead students to inaccurate conclusions. Fails to cite some data sources.

Depth

Addresses and identifies concepts. Provides students with context for information.

Emphasis on Skills Building

Provides laboratory, field studies, and case studies for application of skills.

Weak on creative thinking skills.

Action Orientation

Provides age-appropriate suggestions for action.

Assumes that some courses of action are preferable or are a goal for students.

Instructional Soundness

Opportunities to learn through a variety of sources and activities.

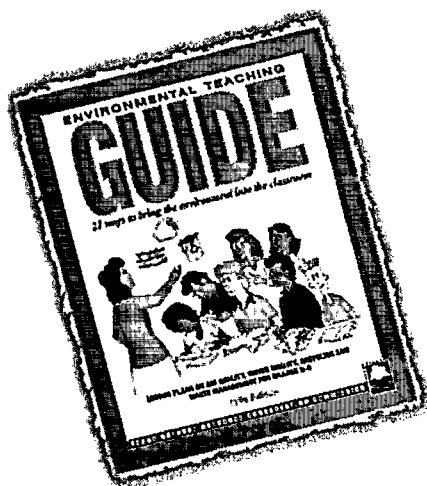
Largely teacher driven.

Usability

Logical, easy to follow sequence.

"'You Solve It' sections add a lot. Nice lab activities."

"Seems to be more issue than concept driven. More of a social studies than a science book."



Environmental Teaching Guide

21 Ways to Bring the Environment into the Classroom



IN A NUTSHELL

Texas Natural Resource
Conservation Commission
P.O. Box 13087
Austin, TX 78711-3087

Publication GI-207

phone: (512) 239-0028

fax: (512) 239-4488

TDD: (800) RELAY TX

website: www.tnrcc.state.tx.us

Cost: No charge for first copy.
Additional copies \$3.25

SUBJECT

Science
Social Studies

This three-part manual contains twenty-one lesson plans. The first section deals with air quality and includes activities that teach about air pressure, temperature inversion, the role of plants in producing oxygen, and the use of scrubbers to prevent air pollution. Section two is concerned with waste management and recycling, and includes projects that involve reusing materials and increase awareness of waste. The third section addresses water quality and includes making models of aquifers, experiments with water and oils, and exploring sources of water pollution. Each activity lists a purpose, appropriate grade, objective, background information, materials required, and the source from which the activity was taken. Several activities also include discussion ideas, suggestions for enrichment, or assessment tools.

Grade Level

K-6

Length

62 pages

Date Published

1996

**THE BOTTOM
LINE**

"A great resource for primary education."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Cites sources. Open to inquiry.

Some activities do not promote multiple viewpoints.

Depth

Thematic in approach. Builds awareness of pollution and how people respond to pollutants. Builds on what students already know.

Emphasis on Skills Building

Skills are tied to issues. Builds analytic and critical thinking skills.

Action Orientation

Encourages students to identify alternatives to their current consumer behavior.

Instructional Soundness

Makes connections to learners' everyday lives. Activities are interdisciplinary and learner-centered. Uses cooperative learning groups.

Goals are identified by number but not spelled out. All learning takes place in the classroom.

Usability

Text is clear and easy to use. Materials required are affordable and simple.

"Not very balanced, but intended for open-ended activities."

"Highly usable laboratory activities."



For Earth's Sake:

Lessons in Population and the Environment



IN A NUTSHELL

Written by: Deborah E. Brouse
& Pamela B. Wasserman

Zero Population Growth
1400 Sixteenth St. NW,
Suite 320
Washington, DC 20036

phone: (202) 332-2200

fax: (202) 332-2302

website: www.zpg.org

Cost: \$19.95 + s&h

SUBJECT

Economics
Language Arts
Mathematics
Science
Social Studies

This kit consists of materials and lessons designed to teach students about human population and its connection to the environment. The materials include a teacher's guide, which explains the content of the kit and provides suggestions for use; a poster giving population data for the world in 1992; a list of resources on the topic of population; and seventeen activity modules. The kit also includes an informational master, complete with a glossary and discussion questions, designed to provide students with basic information about population issues. A brochure provides a collection of 150 actions that individuals can take to make a difference. Each activity module lists a concept, objective, and related subject areas, gives background information or suggestions for extended learning, and includes form masters and worksheets when appropriate. Illustrations are charts, diagrams, and drawings.

Grade Level

6-10

Length

70+pages

Date Published

1992

**THE BOTTOM
LINE**

"Poses questions which could lead to in-depth discussion or study."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Encourages student inquiry. Explores different cultures and cultural norms.

Some information is dated. Presents single viewpoint and does not address those who claim that population is not a problem. Some materials appear prescriptive in nature.

Depth

Clearly states concepts. Explains the complexity of and connections between different topics.

Emphasis on Skills Building

Builds skills in mathematics, data collection, cost benefit analysis, and other critical thinking skills.

Some materials guide students to canned responses and thus limit critical thinking. Some suggested actions may not be age appropriate.

Action Orientation

Encourages personal sense of responsibility.

Instructional Soundness

Offers a variety of approaches and diversity in teaching styles (visual, tactile, etc.). Includes group activities.

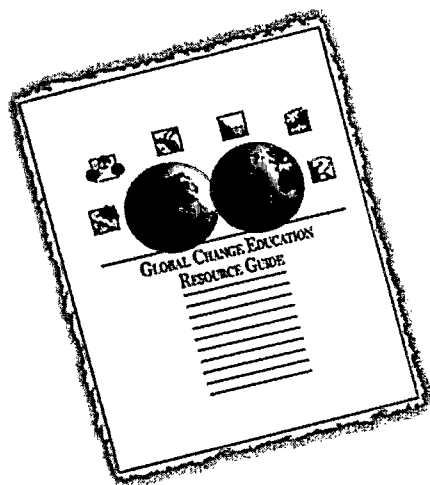
Usability

Activities are user-friendly and require few materials. Layout is clear and easy to follow.

Could benefit from having more background information for teachers.

"This is a heavy topic and it is treated sensitively."

"Anyone wanting ideas for lessons on population can benefit from this package, but it should be developed further."



Global Change Education Resource Guide



IN A NUTSHELL

Edited by: Lynn L. Mortensen
Office of Global Programs
National Oceanic and
Atmospheric Administration
attn: John Kermond
1100 Wayne Avenue,
Suite 1225
Silver Spring, MD 20910
phone: (301) 427-2089 ext. 28
fax: (301) 427-2222
e-mail: gray@ogp.noaa.gov

Cost: No charge
(while supplies last)

SUBJECT

Mathematics
Science
Social Studies

Developed by the National Oceanic and Atmospheric Administration, this collection of materials brings together scientific journal articles, selections from activity guides, and lessons from other educational materials to comprise a teaching unit on the scientific discussion of global temperature change. Chapters address natural climate changes, the greenhouse effect, the rise in sea levels, ozone depletion, and how the global ecosystem is responding to these stressors. Social effects and considerations are also addressed. A final chapter looks at decision-making around these scientifically uncertain issues. Most information is given in text form although some activities and experiments are included. Also available is a set of 48 full-colored transparency masters and a videotape showing several scientists discussing and explaining climate change issues. The material is illustrated with photographs, drawings, charts, maps, and tables. A bibliography of related materials is also provided. Many of the chapters come from United Nations and U.S. Government publications, and are available in different languages.

Grade Level
K-12
Length
402 pages
Date Published
1994

**THE BOTTOM
LINE**

"As it is, this is a resource guide. It provides a great deal of information that could add to an educator's information base."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Presents global and national positions. Includes many primary sources. Materials are referenced and peer-reviewed.

Depth

Gives attention to scale, awareness, and concepts.

Emphasis on Skills Building

Includes many opportunities for practicing scientific inquiry and evaluation skills.

Action Orientation

Not Applicable.

Instructional Soundness

Provides a variety of formats. Some lessons connect subject matter to students' lives.

Provides much information but few lesson plans for teachers. Not designed for learner-centered instruction. Contains few hands-on activities.

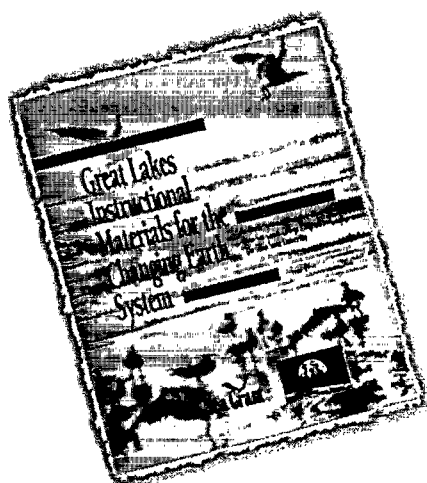
Usability

Provides helpful background information.

Some sections may be too complicated even for high school students.

"Any teacher would be glad to have this as a reference in the classroom."

"An incredible package covering scientific and social issues."



Great Lakes Instructional Material for the Changing Earth System (GLIMCES)



IN A NUTSHELL

Edited by: Heidi Miller &
Amy Schaefer

Ohio Sea Grant Publications
The Ohio State University
1314 Kinnear Road
Columbus, OH 43212-1194

phone: (614) 292-8949
e-mail: cruickshank.3@osu.edu
website: sg.ohio-st.edu

Cost: GLIMCES \$3.00 (EP080)
Scenarios \$6.00 (EP078)
price includes s&h

SUBJECT

Health
Language Arts
Science
Social Studies

This book contains thirty-one exercises and supporting information dealing with global climate change and the specific consequences these changes might have for the Great Lakes region. The consequences are examined in a number of different contexts, from the very general to the very specific. Chapters address the effects that climate change could have on bird populations, forest succession, exotic species, agriculture, recreational water use, and shipping. Students participate in role plays, argue mock trials, solve mathematical equations, review maps and charts, and conduct laboratory experiments with lake nutrients.

Each activity lists objectives, materials needed or suggested, review questions (with answers), masters of handouts and worksheets, extensions, and references. The introduction provides a brief abstract explaining each of the activities. Each is also correlated and cross-referenced to one of ten 'scenarios'. These are brochures of background information on specific questions or issues surrounding climate change. Illustrations consist of drawings, charts, maps, graphs, and cartoons.

Grade Level

5-12

Length

204 pages

Date Published

1995

**THE BOTTOM
LINE**

"Great for the teacher who wants to add more depth to his/her science teaching."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Clearly cites sources of information. Text is open to inquiry and provides a balanced presentation of differing views.

Focuses almost exclusively on Great Lake states. Some data will need updating. Provides little information on use of Great Lakes by different cultures.

Depth

Discusses local and global aspects of issues. Fosters awareness. Makes correlations between natural and built environments.

Emphasis on Skills Building

Employs cost/benefit analysis, problem solving, laboratory skills. Students apply scientific and analytic skills to issues.

Action Orientation

Students reflect on their values regarding specific policies and legislation.

Weak on self-efficacy. Does not really focus on action.

Instructional Soundness

Uses expanded learning environment. Lessons are interdisciplinary and make use of different learning styles. Material is made relevant to learners' lives.

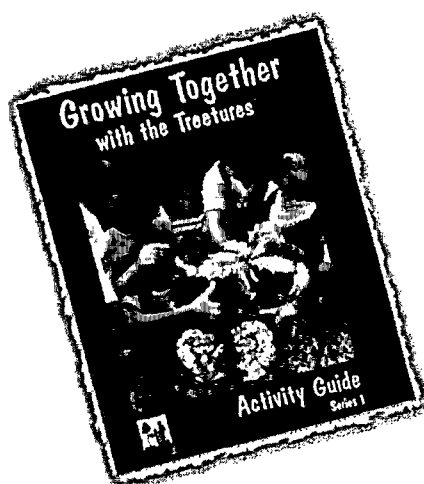
Usability

Activity abstracts are helpful. Correlated with national science standards and benchmarks for scientific literacy.

Layout is rather confusing at first.

"Seems to reflect the current state of scientific debate of global climate change."

"Gives students/teachers a choice of how much to get into this through the extension sections of each activity."



Growing Together with the Treetures:

Activity Guide Series 1



IN A NUTSHELL

Written by: Bobbi Schnell

For ordering information

phone: (800) 863-7175

or visit

website: www.treetures.com

Cost: \$ 5.00 includes s&h

SUBJECT

Fine Arts

Health

Language Arts

Science

Treetures are imaginary characters crafted to help children learn about trees. With names such as Chlorophyllis, Rootie, and Arbor E. Tum, the characters provide mnemonics to teach important facts about trees and tree parts, and appear in stories that help explain tree biology. The book consists of two different sets of activities, one designed for K-3 and the other for grades 4-6. The K-3 section includes simple coloring and art activities that focus on identifying tree parts, making a Treetures book, and playing a photosynthesis game. The activities for 4-6 graders include experiments on transpiration, a community debate, tree word games, leaf rubbings and other art projects, and lessons about tree products. Student worksheets and handouts are included. Illustrations consist of drawings, charts, and diagrams.

Grade Level

PreK-6

Length

58 pages

Date Published

1997

**THE BOTTOM
LINE**

"A stimulating, creative approach to getting little ones into the magic that is trees."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Includes tree stories from diverse cultures. Information appears accurate.

Affiliations of contributors not cited.

Depth

Teaches different concepts for different age levels. Develops awareness of trees, their functions, and tree products.

Very simplistic presentation.

Emphasis on Skills Building

Encourages use of imagination. Stresses skills throughout.

Action Orientation

N o t A p p l i c a b l e .

Instructional Soundness

Correlates activities to science benchmarks. Makes use of different ways of learning.

Provides minimal background information for teachers. Lacks goals and objectives. May be too simplistic for grades 5 or 6.

Usability

Easily reproduced. Information is long-lived. Pages are easy to read and clearly laid out.

Does not substantiate all claims.

"Too much time is spent introducing the cute but stereotypic characters."

"I really like that K-3 had their own book to follow along, to color, and to make their own."



Hands-On Minds-On Science: Environmental Issues



IN A NUTSHELL

Written by: Pauline Chandler

Teacher Created Materials Inc.
6421 Industry Way
Westminster, CA 92683

phone: (800) 662-4321
(714) 891-7895

fax: (714) 892-0283

website: teachercreated.com

Cost: \$11.95 +s&h

SUBJECTS

Fine Arts
Health
Language Arts
Science
Social Studies

This book begins with a systematic introduction to the scientific method and science process skills. It goes on to provide suggestions on teaching and applying other learning skills relevant to the study of environmental issues, such as defining and identifying issues, determining who is affected by them, and providing a structure to use in analyzing different people's perspectives. Later chapters provide suggestions on structuring investigations into specific environmental issues, such as solid water management, air and water quality, and land use. For each issue, individual questions are posed along with ideas for engaging students in an experiential understanding of the issue. Activities include measuring the amount of recyclable material in garbage, listing household toxins, conducting experiments with gasses or soil types, and using pop bottles to simulate the greenhouse effect. Each activity includes suggestions for preparing the class for the activity, a list of materials needed, a description of the procedure, and suggestions for extensions and closure. The text provides masters of handouts, a glossary, bibliography, and assessment forms, and is illustrated with drawings and charts.

Grade Level

3-5

Length

96 pages

Date Published

1994

**THE BOTTOM
LINE**

"Individually, these are excellent activities and materials integrating life skill development and issues."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Expresses different viewpoints and encourages inquiry. Sources of information are referenced.

Includes some directive statements. Some fact sheets are time-sensitive and will require updating. Some perspectives are understated.

Depth

Establishes a broad awareness of environmental issues. Builds knowledge and understanding through experiences.

Emphasis on Skills Building

Utilizes critical thinking skills. Each issue incorporates a personal action component.

Action Orientation

Provides opportunities for students to think about personal and community actions. Develops sense of personal responsibility.

Instructional Soundness

Information is made relevant to students. Uses a variety of activities and learning styles. Includes assessment tools.

Lessons are very teacher-driven. Targeted age group is not clear. Objectives are not stated.

Usability

Materials are easily reproducible. Activities are organized in a consistent manner.

Provides little background information.

"The author tries to cover way too much, thus undermining the very skill building they seek."

"Good, clear science investigations."



How Can Biodiversity Be Preserved?



IN A NUTSHELL

Developed by: Jane Boston &
Stephen Commins

Stanford Program on
International and
Cross-Cultural Education
(SPICE) Institute for
International Studies
Littlefield Center, Room 14C
300 Lausen Street
Stanford, CA 94305-5013

phone: (800) 578-1114

fax: (650) 723-6784

e-mail:

spice.sales@forsythe.stanford.edu

website:

<http://www-iis.stanford.edu>

Cost: \$39.95 + s&h

SUBJECT

Economics

Science

Social Studies

This book contains a series of activities designed to teach students about important issues in biological preservation, as well as challenges and questions faced by policy makers. There are six principal activities in the collection dealing with species preservation, regenerative or sustainable use, the establishment of biosphere reserves, eco-tourism, public/private partnerships, and organizational structure behind policy decisions. For each activity, background information, an outline, extension questions, and handout masters are provided. Supportive materials include maps, charts, text, and lists of additional resources.

Supplementing the main activities are two orienting activities on the concept of biodiversity and a closing activity that involves developing a local action plan. The text of the Convention on Biological Diversity is included in the appendix. The package includes two extra sets of activity cards.

Grade Level

6-10

Length

120 pages

Date Published

1996

**THE BOTTOM
LINE**

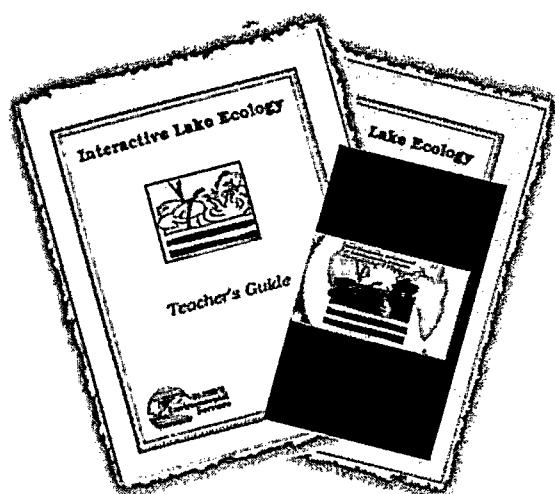
"Fosters an understanding of how issues can be investigated and plans developed."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Encourages research and inquiry. Ensures balance by involving students in role-play activities.	Little mention of the opinions of native people cited in case studies.
Depth	Includes both local and global concerns. Links concepts to real-life situations.	Student resource cards provide only minimal information.
Emphasis on Skills Building	Employs fact-finding, data analysis, and decision-making skills.	
Action Orientation	Demonstrates impact individuals can have.	
Instructional Soundness	Involves cooperative group work and other learning modes. Clearly states goals and objectives.	Only the final activity takes students out of the classroom.
Usability	Student materials are easy to reproduce. Binder format allows for addition of updated information or additional activities.	

"I wish there was more contact with the real world—I would do some of that at the onset, as an introduction."

"Enough of a variety of materials to make the whole worthwhile."



Interactive Lake Ecology



IN A NUTSHELL

Written by: Mark T. Denoncour

New Hampshire Department
of Environmental Services
6 Hazen Drive
Concord, NH 03301

phone: (603) 271-3503

fax: (603) 271-2867

e-mail: jconnor@des.state.nh.us

Cost: \$94.95 teacher's guide,
video, & 20 student guides
Individual pieces are available

SUBJECTS

Language Arts

Mathematics

Science

Social Studies

This curriculum contains seven lessons on lakes, water, and lake ecology. The student guide includes text, diagrams, instructions for conducting experiments, note sheets, and a glossary. Important vocabulary words are italicized throughout, and chapters conclude with review questions. Lesson topics include properties of water, succession, pollution, lake classification, food chains, and watersheds. A final chapter reviews the information of the seven lessons and encourages students to take part in action projects. The teacher's guide lists objectives for each lesson, answers to review questions, procedures for conducting experiments, and teaching instructions. The appendices include illustrations (diagrams, maps, or drawings) of the major ideas presented in the chapters, worksheet masters, time frame charts, suggestions for field trips, a final test, and a bibliography. An accompanying video covers the topics of the seven chapters and includes interviews with scientists and additional illustrations of the concepts covered.

Grade Level

5-8

Length

105 pages

Date Published

1991

**THE BOTTOM
LINE**

"This would be a beneficial resource for an environmental educator, especially when working with a classroom on a pre- or post-activity basis."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Information is factually accurate.

Presents a conservationist bias.

Depth

Emphasizes ecological concepts. Looks at change over time.

Emphasis on Skills Building

Makes use of critical thinking skills. Students develop hypotheses regarding experiments.

Action Orientation

Promotes action; encourages learners to share information with others. Identifies ways learners can make a difference.

Instructional Soundness

Combines hands-on activities, field trips, guest speakers, and other teaching strategies. Includes assessment options.

Does not state goals.

Usability

Materials are long-lived, easy to use, and adaptable.

Student book is uninviting. May not be relevant to those who do not live near a lake.

"The video is a good introduction to the written materials."

"An impressive piece of material to present limnology and related environmental issues."



The Intriguing Past: Fundamentals of Archaeology

A Teacher's Guide



IN A NUTSHELL

The eight lessons in this teacher's guide are drawn from an earlier, larger collection, *Intrigue of the Past: Investigating Archaeology*, which was a product of Utah's archaeology program. Lessons range from fifteen to ninety minutes in length and many are designed for classes divided into smaller groups. Students learn about the importance of studying the past and develop important cognitive skills, such as classifying different objects, forming hypotheses, and understanding the difference between observing and inferring. By means of games, discussions, and other activities, students become familiar with the nature of archaeological research, develop a timeline of important events in their own lives, and take part in an archaeological 'dig' in a pile of garbage. Each lesson is referenced for subject, skills, learning strategies, duration, and class size. Objectives, materials, important vocabulary, background information, and links to the larger curriculum are included. Each lesson also lists closure and opening suggestions, worksheets and masters. Illustrations consist of black-and-white drawings and charts.

Grade Level

4-7

Length

40 pages

Date Published

1997

Written by: Shelly Smith, Jeanne Moe, Kelly Letts, Danielle Paterson

U.S. Department of the Interior
Bureau of Land Management
Heritage Education Program
P.O. Box 758
Dolores, CO 81323

phone: (970) 882-4811 Ext.120
e-mail: dramsay@co.blm.gov

Cost: \$15.00 + s&h

SUBJECTS

Language Arts

Science

Social Studies

THE **BOTTOM**
LINE

"Activities require students to bring in photos or objects that represent their past—an excellent hook for instilling a sense of ownership."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Cites sources of information.
Field tested by a large number of teachers.

Few opportunities for inquiry. Does not reflect urban archaeology.

Depth

Increases awareness of built environments of the past.

Emphasis on Skills Building

Develops a wide range of critical thinking skills.
Learners are encouraged to draw their own conclusions.

Action Orientation

Promotes civic responsibility.

Addresses problem of artifact collecting, but does not provide suggestions for student action.

Instructional Soundness

Uses a variety of instructional methods. Clearly states goals and objectives. Material is made relevant to learners' lives.

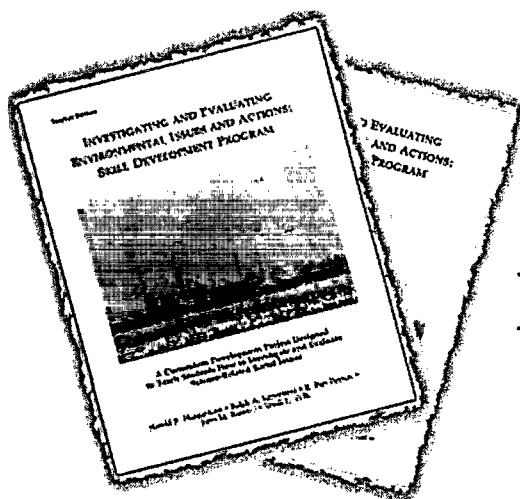
Relies heavily on paper and pencil activities.

Usability

Material is clear and easy to use. Workshops are available to help teachers incorporate archaeology into the classroom. Supplies needed are easily accessible.

"Not enough moving activities. Children in this age group need to move around."

"Good for teaching basic archaeological concepts."



Investigating & Evaluating Environmental Issues & Actions: Skill Development Program



IN A NUTSHELL

Written by: Harold Hungerford,
Ralph Litherland, R. Ben
Peyton, John Ramsey &
Trudi Volk

Stipes Publishing Company
10-12 Chester Street
Champaign, IL 61820

phone: (217) 356-8391

fax: (217) 356-5753

Cost: \$24.80 + s&h

teacher's edition

\$12.80 + s&h student's edition

SUBJECTS

Economics

Language Arts

Mathematics

Science

Social Studies

This material is designed to give students the tools to investigate and evaluate environmental issues.

Students are first introduced to definitions of 'environment,' then are led through processes of identifying issues and research questions, conducting investigations, interpreting data, and developing action strategies based on research. Topics addressed include: understanding the differences between conclusions and inferences, doing research on issues in libraries, recognizing values associated with belief statements, and how to organize and present data. As part of the curriculum, students are responsible for completing and reporting on an issue investigation. The material is interspersed with case studies, quotes from original documents on specific environmental discussions, cartoons, photographs, and charts. The teacher's guide provides additional background information, a discussion of environmental literacy, and suggestions for teaching the unit.

Grade Level

6-12

Length

270 pages

Date Published

1996

**THE BOTTOM
LINE**

"Great job on getting kids to think for themselves and to analyze their own ideas."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Case studies reflect diversity of issues and geographic areas. References sources of information. Provides balanced presentations and encourages inquiry.

Depth

Promotes an awareness of issues. Students encouraged to explore own beliefs. Teaches concepts in context.

Emphasis on Skills Building

Strong on critical thinking and application of skills to issues.

Action Orientation

Includes entire section on action. Stresses looking at problems from a variety of perspectives and acting only after careful reflection of the issues.

Instructional Soundness

Goals and objectives are clearly spelled out.

Relies largely on reading to learn skills. Involves few lab or field work exercises.

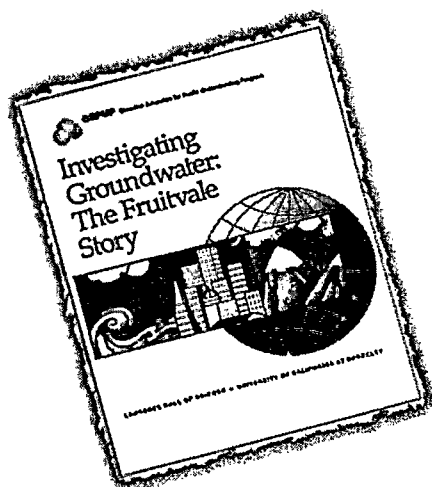
Usability

Adaptable and easy to use. Instructions are clear and concise.

Case studies and data will need to be updated.

"Teachers may have a little difficulty with the format, as it is not laid out in a linear 'do it this way' format."

"Teaches the learners how, not what, to think."



Investigating Groundwater: The Fruitvale Story



IN A NUTSHELL

Written by: Chemical Education
for Public Understanding
Program (CEPUP)

VWR Scientific Products
Science Education
P.O. Box 5229
Buffalo Grove, IL 60089

phone: (800) 727-4368

fax: (800) 676-2540

e-mail:

sarwel@sargentwelch.com

website: www.sargentwelch.com

Cost: \$19.99 + s&h teacher's guide
\$169.99 + s&h for complete kit

SUBJECTS

Health

Science

Social Studies

The book provides a structured series of lessons and activities in which students learn about groundwater and investigate a case of groundwater pollution. In the first two of the book's seven sections, students learn and experiment with basic facts about groundwater, such as water movement and concentration of chemicals. In sections three through five, students study and plan additional research on a groundwater contamination situation in the fictional town of Fruitvale. Working in small groups, students plan their own course of action and find the information necessary to determine the source of the pollution. The final two sections involve the students in role-play activities, where they act out a town meeting to decide how best to clean up the contamination. Supports include student sheets, masters of handouts and other project materials, complete instructions for setting up the experiments, background information, an achievement test, information on obtaining supplies, and a glossary. Illustrations consist of maps, charts, drawings, and photographs.

Grade Level

6-9

Length

84 pages

Date Published

1991

THE **BOTTOM**
LINE

"An inquiry-based, problem-solving approach to learning about the environment and the results of poor decision making."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Factually accurate. Provides different viewpoints and allows students to make their own decisions.

Depth

Students learn concepts in stages. Examines short- and long-term issues.

Emphasis on Skills Building

Makes use of both critical and creative thinking skills. Applies skills to issues. Uses interpersonal and group skills.

Action Orientation

Role-play gives an example of citizen involvement resulting in change.

Does not relate to learners' own community or personal behaviors.

Instructional Soundness

Very learner-centered. Clearly states goals and learner outcomes. Accommodates different learning styles.

All activities are designed as classroom activities.

Usability

Package is long-lived, clear, and easy to use. Can be adapted to different situations or locations.

"Very usable, even for teachers with little science background."

"Raises awareness of the problem and then follows through to a solution."



Investigating Your Environment



IN A NUTSHELL

Developed by: USDA Forest
Service, Pacific Northwest
Region

Natural Resource Education
Coordinator
U.S. Forest Service
Leavenworth Ranger Station
600 Sherbourne
Leavenworth, WA 98826

fax: (509) 548-5817
e-mail: Thomas_Susan_1/
r6pnw_wenatchee@fs.fed.us

Cost: No charge

SUBJECT

Fine Arts
Language Arts
Mathematics
Science
Social Studies

This large collection of activities on a number of different topics was originally developed by the U.S. Forest Service. The first of four sections, "Basic Environments", addresses such items as plants, animals, measuring skills, roles of species, and water volume. The next section, "Unique Environments", adds lessons on dunes, built environments, deserts, and ponds, among others.

"Extending Your Environment" incorporates activities that challenge students to study, compare and make decisions regarding land use, and includes area studies and simulation exercises. The final section,

"Investigation Spin-offs", gives suggestions to teachers for making the activities more meaningful to students. Each activity lists concepts, objectives, materials needed, processes used, time requirements, and suggestions for closure and transition. Masters are provided for handouts and student information pages. Appendices include supply lists, references, and learning goals for Oregon and Washington.

Grade Level

6-12

Length

964 pages

Date Published

1993

THE **BOTTOM**
L I N E

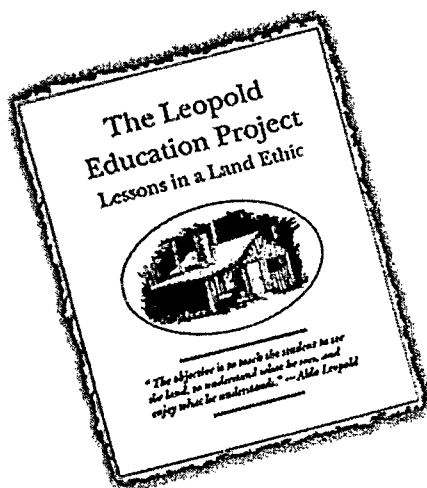
"This guide has good classroom activities to discuss basic environmental concepts."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information appears accurate. Inquiry is encouraged.	Does not cite references. Gives teachers and students a framework for investigating issues but does not address issues directly.
Depth	Covers a large number of environmental topics. Builds awareness.	No clear conceptual framework.
Emphasis on Skills Building	Strong in developing critical and creative thinking skills (data collection, analysis, interpretation, problem solving).	
Action Orientation	N o t A p p l i c a b l e .	
Instructional Soundness	Lists objectives, concepts and principles. Units are student-centered. Connects well to learners' everyday lives.	
Usability	Forms are reproducible. Connects to national standards. Activities are adaptable and long-lived.	Some activities require specialized supplies which may need to be ordered.

"Includes a lot of information and one class period activities."

"This is basically a group of good, solid activities."



The Leopold Education Project:

Lessons in a Land Ethic



IN A NUTSHELL

Leopold Education Project
1783 Buerkley Circle
Saint Paul, MN 55110

phone: (651) 773-2000

fax: (651) 773-5500

e-mail:

lep@pheasantsforever.org

website:

www.lep.org

Cost: Distributed in trainings
which require a fee.

SUBJECTS

Fine Arts

Language Arts

Mathematics

Science

Social Studies

This curriculum is based on the writings of Aldo Leopold, in particular the first section of his *A Sand County Almanac*. The curriculum contains the text of Leopold's original work, a teacher's guide, lesson plans, task cards, and a video. *Lessons in a Land Ethic*, the teacher's guide, offers twenty-one lessons on conservation and nature. The lessons are based on selections from Leopold's writings and are arranged thematically by season. Each lesson lists objectives, vocabulary, background information, location, and suggestions for evaluation and extension.

Masters of student worksheets are provided when appropriate.

The guide includes a glossary, bibliography, and list of references. *Environmental Heroes and Heroines* provides three lesson plans which discuss past and present heroes and explore students' values. A set of nineteen task cards provides students with ideas for specific observations or experiments to perform while walking through a natural area. A fifty-six minute biographical video describes the development of Leopold's land ethic. The project also produces newsletters and offers trainings to certify instructors to facilitate workshops.

Grade Level

5-8

Length

89 page
teacher's guide

Date Published

1995

**THE BOTTOM
LINE**

"Highly recommended due to unique topic, teacher resources, and potential to impact attitudes for life."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Information is straightforward and referenced. Attempts to give a balanced presentation of controversial issues.	Weak in terms of diversity.
Depth	Shows development of ideas and issues over time. Materials tie in ethical, historical, and cultural links.	
Emphasis on Skills Building	Promotes critical and creative thinking.	Few opportunities to apply skills. Unclear how students can share their discoveries/insights with others.
Action Orientation	One module includes examples of environmental heroes. Promotes personal responsibility.	
Instructional Soundness	Student worksheets are helpful. Assessment ideas are included. Provides both classroom- and outdoor-based exercises.	Not very learner-centered.
Usability	Provides ongoing support and training. Material is clear, logical, easy to use.	Assumes that learners live near habitat similar to Leopold's. Insufficient background material.

"Does not delve deeply into issues— mostly aesthetics and appreciation."

"I like the marriage between literature and conservation ethics."



Living in a Material World: Lessons on Commercialism, Consumption, & Environment



IN A NUTSHELL

Developed by: Environmental
Education Exchange

Center for Science in the
Public Interest
Attn: Products
1875 Connecticut Ave. NW
Suite 300
Washington, D.C. 20009-9110

phone: no phone orders taken
fax: (202) 265-4954
e-mail: circ@cspinet.org

Cost: \$ 15.00 + s&h

SUBJECTS

Economics
Fine Arts
Health
Language Arts
Social Studies

The eight lessons in this book address three facets of commercialism: pressures to consume, effects of commercialism and consumption, and countering commercialism. A bar graph in each lesson indicates the extent to which each of these facets is addressed. Students analyze advertising techniques, complete questionnaires regarding their responses to advertising, evaluate packaging used in common products, and analyze their feelings regarding happiness and quality of life. Activities include discussions, surveys, drama, discussion, and experiential exercises (such as trying to avoid advertising and commercialism for 72 hours). Each lesson lists a goal, subjects involved, materials needed, teacher notes, variations and extensions, and resources. Illustrations consist of transparency masters, charts, and photographs of actual advertisements. The text also includes a list of references and resources and several pages of additional activities.

Grade Level
8-12
Length
82 pages
Date Published
1996

**THE BOTTOM
LINE**

"I am pleased with the attempt to have students look deep into consumerism."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Reflects both local and international diversity. Promotes inquiry. Information is from respectable sources and is clearly referenced.	Most recent reference is from 1994. Did not include a perspective from the advertising industry or indicate role of advertising in democracy, free speech, etc. Promotes perspectives of a noncommercial society.
Depth	Pays attention to different ethnicities and scales from local to global. Develops concepts well.	
Emphasis on Skills Building	Encourages critical thinking.	Doesn't engage students in defining problems or developing surveys. Could emphasize communication skills more.
Action Orientation	N o t A p p l i c a b l e.	
Instructional Soundness	Builds on learners' previous knowledge. Encourages expanded learning environment. Connects to learners' everyday lives.	Material may be better suited for 11-12 grade students.
Usability	Lessons are adaptable, reproducible, and long-lived. Requires minimal equipment.	Overheads are very text-heavy.

"Subject is not integrated into broader subjects of civics or psychology. Too bad the authors don't take the risk of providing more balance."
 "Uses wide variety of life skills as it promotes student analysis."



Marine Ecology & Conservation: Teacher's Guide



IN A NUTSHELL

Written by: Donna Potter Parham

Sea World
500 Sea World Drive
San Diego, CA 92109-7995

phone: (800) 23-SHAMU

TDD: (800) TD-SHAMU

fax: (619) 226-3634

website: <http://www.seaworld.org>

Cost:

K-3 Teacher's Guide \$7.00 + s&h

4-8 Teacher's Guide \$7.00 + s&h

SUBJECTS

Fine Arts

Language Arts

Mathematics

Science

There are two different editions of this teacher's guide, one for grades K-3 and the other for grades 4-8. The two guides have identical introductory lessons and pages which describe some ocean-dwelling animals and introduce some basic concepts of ecology and conservation. The activities in both guides provide a basic introduction to animal adaptation, food chains, and some of the damage caused to wildlife by oil spills and waste. Activities for younger students include artwork, games, songs and experiments. Activities for 4-8 graders include several opportunities for students to practice decision making skills and to analyze conservation problems. Each activity lists objectives, background information, and materials needed. Each volume provides its own vocabulary list, statement of objectives for the unit, and list of additional resources. Illustrations include drawings and black-and-white photographs.

Grade Level
K-3, 4-8

Length
26 pages each

Date Published
1995

**THE BOTTOM
LINE**

"This curriculum really focuses on conservation and is good at presenting fair arguments from both sides."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Challenges students to see all sides of a situation. Information is largely accurate.

Facts are not referenced. Does not list affiliations or roles of scientific advisors. Contains at least one inaccurate scene of ocean life.

Depth

No obvious effort to tie the activities together. Touches on many concepts but in a simplified, general way.

Emphasis on Skills Building

Specific activities deal with observation, data collection, critical thinking, and action skills. Encourages use of a variety of media.

Action Orientation

Action is addressed in several activities.

Instructional Soundness

Makes use of a variety of activities in many subject areas. Clearly states goals.

Some reading material or activities may not be appropriate for given grade level.

Usability

Lessons are reproducible and inexpensive. Lessons are not site- or location-specific. Text is clear and easy to use.

"Discusses how humans interact with the ocean, but doesn't seem to emphasize our reliance on it."

"Very basic, simplistic introduction to marine ecology."



Migratory Birds:

Issue Pac



IN A NUTSHELL

Developed by: U.S. Fish &
Wildlife

Urban Wildlife Resources
5130 W. Running Brook Road
Columbia, MD 21044

phone: (410) 997-7161

fax: (410) 997-6849

website:

www.erols.com/urbanwildlife

Cost: \$6.95 + s&h

SUBJECT

Fine Arts
Mathematics
Science

This package of materials on bird migration was developed by the U.S. Fish and Wildlife Service. It consists of a leader overview, a page of action-based education projects dealing with birds, two student pages, three principal activities, and a poster showing the migration routes of four different songbirds. The leader overview provides information on the timing of migration, theories on why birds migrate and how they maintain direction, how scientists track bird migration, and dangers facing migratory birds. The three principal activities include learning objectives, time and setting, data sheets, review questions, and suggested follow-up activities. One activity is a game, one a simulation, and one an exercise in mapping bird movements based on bird banding information. The package also includes a glossary and a list of curriculum resources. Pages are illustrated with drawings.

Grade Level

3-7

Length

30 pages

Date Published

1995

**THE BOTTOM
LINE**

"The materials are comprehensive and touch on a range of issues associated with migratory bird populations."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	References are cited. Material stimulates inquiry.	Lacks different viewpoints.
Depth	Develops awareness.	Does not detail reasons for threats to birds. Does not focus on concepts.
Emphasis on Skills Building	Develops birding and observation skills (e.g., using binoculars and field guides).	
Action Orientation	Some of the action-based activities build on personal responsibility.	
Instructional Soundness	Includes multiple learning styles. Some action projects relate to students' homes or school.	Principal activities are weak on connecting to students' lives. Mapping may be too complicated for some students.
Usability	Easy to use and reproduce.	No suggestions for use in schools that are not in the path of migration routes.

"The materials do not indicate why the loss of migratory birds is important, other than a brief mention of indicators."

"Stimulates inquiry about problems of migratory birds."



Mud, Muck & Other Wonderful Things:

An Environmental Curriculum
for Five- to Eight-Year Olds



IN A NUTSHELL

Written by: Mary Kroll

National 4-H Supply Service
7100 Connecticut Avenue
Chevy Chase, MD 20815-4999

phone: (301) 961-2934

fax: (301) 961-2937

website: www.fourhcouncil.edu/

Cost: \$5.00 + s&h

SUBJECT

Fine Arts

Science

This is a structured, sequential curriculum designed to help introduce young learners to the world of nature, with an emphasis on wetland habitats. The book consists of seven chapters, each dedicated to a different topic and containing three different activities. Activities include puzzles, games, discussions, temperature measurements, weather study, drawings, and numerous outdoor explorations.

A side-bar for each lesson identifies relevant life skills, the preferred group size and adult/child ratio, age ranges, location, time requirements, and materials needed. An activity matrix charts the outcomes, preferred site, and time of year for each activity. The text includes student pages and masters of handouts. Each activity ends with a paragraph that begins "Being a steward of the environment means...", which is meant to be read to the students to provide ideas for additional discussion or exploration. A section at the beginning of the book provides information for the teacher on the abilities of five- to eight-year olds.

Grade Level

K-3

Length

76 pages

Date Published

1995

**THE BOTTOM
LINE**

"A useful basic book on a variety of ecological concepts for someone who is working with K-3 children."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Very open to inquiry.

Some bias detected regarding forestry. Does not cite sources of information.

Depth

Discusses concept as appropriate for developmental level. Begins by increasing awareness.

Emphasis on Skills Building

Pre-activity discussions are designed to prompt students to think. Allows for creative thinking, hypothesizing, and classifying.

Action Orientation

Encourages student responsibility. Builds on the concept of stewardship.

Instructional Soundness

Lessons are interdisciplinary, learner-centered, and relate to everyday life. Includes outdoor and hands-on activities. Uses many learning modalities.

Relevance of some activities not clear.

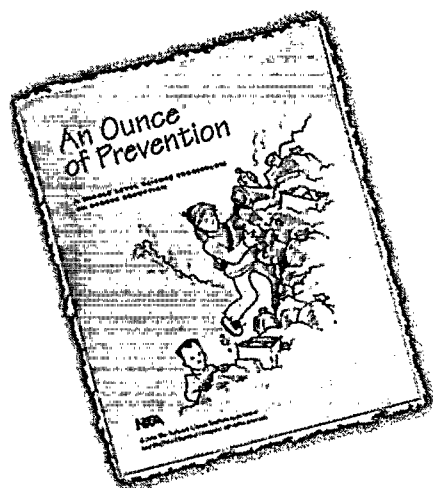
Usability

Well laid-out, easy to copy.

Does not provide additional resources. Contains no glossary.

"Many kindergartners lack the logic necessary for some of these activities."

"The 'teaching by asking questions' method allows for creative thinking."



An Ounce of Prevention:

A Middle Level Science Curriculum on Source Reduction



IN A NUTSHELL

Written by: Pam Ashford, Page Keeley, Inez Liftig, Janet Peeler & Pat Warren

The Dow Chemical Company
P.O. Box 1206
Midland, MI 48641-9823

phone: (517) 636-7155
e-mail: rakingsbury@dow.com

Cost: No charge

SUBJECTS

Health
Language Arts
Mathematics
Science
Social Studies

This curriculum, produced in conjunction with the National Science Teachers Association, focuses on reducing the amount of solid waste created rather than recycling or reusing items. Students first develop an awareness of solid waste problems by studying history, current methods of solid waste disposal, packaging, and solid and toxic waste in their own homes. Students then look at the waste produced in their own lives, weigh the consequences of using different materials, and consider alternatives to their current consumption. The final activities study how students can reduce waste at their school, and develop a plan of action for use at a state level. Each of the fifteen activities lists objectives, content areas, time requirements, discussion questions, and extensions. Student pages and handouts are provided, as are references, materials lists, and suggestions for adapting to different group sizes.

Grade Level

6-8

Length

128 pages

Date Published

1996

THE BOTTOM LINE

"One of the strengths of this package is the way it looks at various sides of real issues. Activities and exercises help learners understand some of the whys of plastic use."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Encourages inquiry. Cites sources of information. Treatment of information is largely balanced.

Data used in certain activities will need to be updated.

Depth

Encourages awareness. Introduces and builds on concepts in context.

Emphasis on Skills Building

Activities require many different kinds of thinking. Encourages learners to apply what they've learned.

Action Orientation

Learners examine their own responsibility regarding solid waste.

Does not include examples of successful action projects.

Instructional Soundness

Activities are interdisciplinary and learner-centered. Incorporates cooperative learning and involves families and school.

Usability

Structure is clear and easy to follow. Provides teacher background.

Instructions are unclear in at least one activity. Lacks instructional support.

"Very comprehensive coverage of the issue."

"This is an effective resource to use with middle-level students in conservation education."



Ranger Rick's NatureScope— Trees are Terrific!



IN A NUTSHELL

Written by: National Wildlife
Federation

McGraw-Hill
11 West 19th Street
New York, NY 10011-4285

phone: (800) 722-4726

website:

www.pbg.mcgraw-hill.com

Cost: \$12.95 +s&h

SUBJECT

Fine Arts

Health

Science

The lessons in this volume teach children the basics of tree ecology and biology. The first five chapters address tree structure and classification, how trees grow, the forest as an ecosystem, how forests are managed, and how trees have influenced human history. Lessons address not only trees themselves, but also the animals and plants which depend on trees for survival.

Activities range from the use of tree keys for identification to making recipes from foods harvested from trees. One chapter contains additional ideas for craft projects related to trees and forest ecology. A final section includes brief articles and background information on forest fires, urban forestry, and rainforest wildlife. Objectives, age ranges, materials, and related subjects are listed for each lesson, as are answers to questions and explanations of experiments for teachers. Student worksheets and handouts are included. The text is illustrated with photographs, drawings, maps, and charts. Appendices include a list of extra questions (along with answers), a glossary, and a bibliography.

Grade Level

K-8

Length

94 pages

Date Published

1998

**THE BOTTOM
LINE**

"Helps students understand how sensitive and how supportive trees are to us and to our environment."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Information is factual and up to date. There is a balance of reviewers and an openness to different viewpoints.

Depth

Ideas are developed and connected throughout material.

Lacks a conceptual framework.

Emphasis on Skills Building

Uses a variety of critical and creative thinking skills. Communication skills are practiced throughout.

Very little application of skills to issues.

Action Orientation

Discusses ways that people can attempt to help conserve the rainforest.

Instructional Soundness

Material is interdisciplinary and learner-centered. Employs different ways of learning and has both indoor and outdoor activities. Objectives are clearly stated for each activity.

A few activities may be too advanced for selected age group.

Usability

Lessons are clear and long-lived. Activities require inexpensive materials. Student pages can be copied easily.

"Valuable knowledge for students. This is very well put together."

"If an educator needed to teach a unit on trees, he or she only needs to pick up this booklet and get busy."



River of Words:

National Environmental Poetry & Poster Contest for Students - Teacher's Guide



IN A NUTSHELL

Written by: Pamela Martin &
Carolyn West

International Rivers Network
1847 Berkeley Way
Berkeley, CA 94703

phone: (510) 848-1155

fax: (510) 848-1008

e-mail: row@irn.org

website: www.irn.org

Cost: \$6.00 includes s&h

SUBJECTS

Language Arts

Science

Social Studies

The publication of this guide was prompted by the 1996 National Environmental Poetry Contest. The guide contains reprints of articles on the process of writing poetry, how to lead poetry writing sessions with students, and how to foster creativity. One section explores the concept of watershed, presents a map showing some of the principal watersheds in the country, describes factors affecting watersheds, and gives a basic introduction to issues related to water and water usage. Other chapters include reprints of articles on teaching in the out-of-doors and incorporating multidisciplinary approaches in teaching about the environment. The booklet is accented with samples of writings by teachers, students, and professional poets such as U.S. Poet Laureate Robert Haas. A poster accompanies the booklet and provides more specific information about the contest itself. A curriculum supplement includes readings, discussion questions, practice in the use of topographical maps, and a simple model of a watershed. Teacher workshops are available.

Grade Level

adult

Length

35 pages

Date Published

1996

THE **BOTTOM**
L I N E

"Encourages personal reflection and introspection.
Makes me want to use this with the students in
my classroom."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Represents diverse cultures and ages. Opens topic to inquiry and exploration.

Sources of specific facts on watersheds not cited.

Depth

Develops awareness of watershed. Identifies key concepts.

No suggestions for adjusting for different developmental levels.

Emphasis on Skills Building

Strong on creative thinking and applying creativity to study of watersheds.

Action Orientation

N o t A p p l i c a b l e .

Instructional Soundness

Material is very learner-centered and interdisciplinary.

Goals and objectives for activities are not clearly stated.

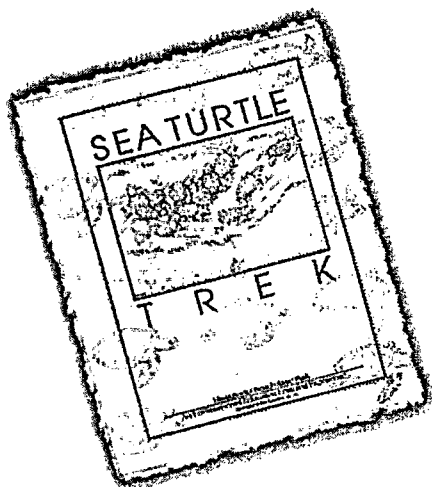
Usability

Provides large and helpful bibliography. Guide is readable and visually appealing. Information and pedagogical suggestions are adaptable and long-lived.

Content is poorly organized.

"Many teachers may lack the background to feel safe. This should not deter them; use this to bring the interdisciplinary nature of the project into play."

"Lots of detail for its size and stated purpose."



Sea Turtle Trek



IN A NUTSHELL

Developed by: Samuel S. Bland
& North Carolina Division of
Parks & Recreation

ERIC Document
Reproduction Service
7420 Fullerton Road
Springfield, VA 22153
Reference # ED 401095

phone: (800) 443-3742
e-mail: (for information)
marti_kane@mail.enr.st.nc.us
website: www.edrs.com or
[http://ils.unc.edu/parkproject/
ncparks.html](http://ils.unc.edu/parkproject/ncparks.html)

Cost: \$21.05 includes s&h

SUBJECTS

Language Arts
Mathematics
Science

Hammocks Beach State Park, North Carolina, is an important nesting ground for the loggerhead sea turtle. This guide provides on-site, pre- and post-visit activities for school groups visiting the park. Pre-visit activities include lessons on reptiles and adaptations, word searches, and turtle identification exercises. On-site activities include predator-prey games, scouting for nesting sites, and quiz games based on the park's slide show. Post-visit activities include analyzing nesting and migration data. Objectives, concepts, subject areas, materials lists, teacher background information, and time requirements are provided for each activity.

Important vocabulary words are printed in bold. Masters of student pages, worksheets, and puzzles are provided. Appendices include a glossary, fact sheets on different species of sea turtles, information on sea turtle conservation efforts, and forms for scheduling visits to the park. Illustrations consist of maps, drawings, and charts.

Grade Level

6-8

Length

124 pages

Date Published

1995

THE **BOTTOM**
LINE

"Offers a great storyline, fun and challenging activities, valuable information for critical thinking. Addresses important issues of marine conservation."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Presents balance of human and natural threats to turtles. Data is accurate and allows students to draw their own conclusions.

Depth

Focus on concepts is appropriate to developmental level. Addresses many aspects of biology and conservation.

Emphasis on Skills Building

Incorporates many science skills. Applies skills to actual issues. Incorporates both critical and creative thinking.

Action Orientation

Outdoor activities encourage stewardship and problem-solving.

Conservation actions are listed primarily in the appendix, rather than in the main curriculum.

Instructional Soundness

Provides a variety of activities to relate to different learning styles. Clearly states goals, objectives, and ties to North Carolina state standards. Makes use of outdoor setting.

Usability

Well organized and easy to use. Provides lists and contacts for additional information.

Very site specific. May not be useful to those unable to make a field trip.

"Classroom and outdoor learning are clearly linked."

"Very thoroughly presents an effective learning experience."



Search for the Great Sharks



IN A NUTSHELL

Written by: Science Museum of
Minnesota

Educational Resources
Science Museum of
Minnesota
30 E. Tenth Street
St. Paul, MN 55101

phone:
(800) 221-9444 ext. 4551
fax: (612) 221-4526

Cost: \$7.95 + s&h

SUBJECT

Fine Arts
Language Arts
Mathematics
Science
Social Studies

This activity guide was developed in conjunction with the Omnitheater film *Search for the Great Sharks*. However, the ten activities can be used independently of the film. Included are experiments designed to illustrate the shark's sense of smell, and a simulated town hall meeting during which community members express different concerns about sharks. Other activities include a board game about shark anatomy, developing shark models to study the properties of different sizes and shapes of fins, and an exercise mapping the contours of the ocean floor. Each activity lists materials needed, provides brief background information, and gives answers to specific objective questions. The material is illustrated with drawings, charts, and maps, and comes with student pages, information cards, a game board, and an annotated bibliography.

Grade Level

3-8

Length

40 pages

Date Published

1993

THE **BOTTOM**
LINE

"Makes students aware of what scientists are doing to help sharks on a global/international scale."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Facts concerning shark biology seem accurate. Annotated bibliography provided.

Sources and affiliations of authors are not specifically identified.

Depth

Increases student's awareness of sharks. Discusses the importance of sharks to humans.

Emphasis on Skills Building

Develops data organizing, problem solving and basic laboratory skills.

Some lessons are weak on hypothesizing and drawing conclusions from data.

Action Orientation

Not Applicable.

Instructional Soundness

Lists resources for further study. Includes lab work, role play, and creative arts. Makes connections to various disciplines.

Does not specify ages for individual activities. Limited description of goals and objectives.

Usability

Information appears to be long-lived. Instructions are clear and easy to follow. Most materials required are inexpensive and easily obtained.

"Includes interesting activities that a creative teacher could adapt to become more learner-centered."

"Excellent background information for teachers/students to learn more about sharks."



Teacher's Guide to World Resources



IN A NUTSHELL

Developed by: World Resources
Institute

Kendall Hunt
4050 Westmark Drive
P.O. Box 1840
Dubque, IA 52004

phone: (800) 770-3544
fax: (800) 772-9165
website: www.kendallhunt.com

Cost: books range from
\$8.90 to \$10.95 + s&h
video \$14.95 + s&h

SUBJECT

Economics
Health
Language Arts
Mathematics
Science
Social Studies

This set of materials includes eleven separate books, each focusing on a particular topic. Books address such issues as energy, poverty, global warming, sustainability, and biodiversity. Each book lists learning objectives, correlation to curricular standards, and teaching strategies. Student handouts, transparency masters, suggestions for further study, and bibliographies are provided for each unit. Lesson plans provide background information, discussion questions, vocabulary, ideas for beginning and ending lessons, and suggestions for student enrichment activities. Types of learning activities include research, interviewing, action projects, experiments, creative writing, and mathematical calculations. Many of the units involve case studies. A related video tape is also available featuring business representatives, politicians, and representatives of non-governmental organization discussing three main concerns: population, biodiversity, and global climate change.

Grade Level

7-12

Length

varies per book

Date Published

1997

**THE BOTTOM
LINE**

"Comprehensive materials with a healthy
overdose of information."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Presents accurate information. Different cultures and perspectives are presented and discussed.	Does not represent consumerist or economics positions. Seems to assume consensus on existence of problems. Information will need updating.
Depth	Demonstrates connections between different issues. Addresses local and global scales. Presents multiple aspects of different issues.	
Emphasis on Skills Building	Contains many analytical, critical and creative thinking activities.	Greater variety of skills found in enrichment activities.
Action Orientation	Repeatedly discusses personal responsibility. Entire unit is dedicated to action. Success stories from different countries are provided.	May be overwhelming and therefore discouraging.
Instructional Soundness	Lessons are interdisciplinary and related to everyday life. Activities rely on different learning styles.	Much is delivered by lecture/discussion.
Usability	Prices are reasonable. Clearly written. Abundant resources listed.	

"A more upbeat approach might elicit a more positive response—the video gives positive views but buries them among images of pessimism."

"These units lend themselves to action. Teachers should use the natural lead-ins."



Themeworks: Trees



IN A NUTSHELL

Written by: Joan Westley

Themeworks
Creative Publications
5632 W. 115th Street
Alsip, IL 60482

phone: (800) 624-0822
fax: (800) 624-0821
e-mail: www.mathland.com

Cost: \$18.95 + s&h

SUBJECT

Fine Arts
Health
Language Arts
Mathematics
Physical Education
Science
Social Studies

Using poetry, music, cooking, literature, drama, art, math, and science activities, this book exposes young children to the world of trees. The unit begins with a ceremony adopting a specific class tree. The eighteen subsequent lessons involve this tree and others and include journaling, sensory awareness, crafts representing tree-dwelling creatures, recipes for foods made from tree products, studies of different kinds of trees and how trees grow and change over time. The unit culminates with a ceremonial dance around the tree. Materials include reproducible masters, tree songs with guitar chords, a sample letter to parents explaining the unit, recipes, general suggestions for crafts and laboratory experiments, and a curriculum chart listing activities in different subject areas. Suggested supplementary readings are identified throughout the book and are summarized in a resource list.

Grade Level

Pre K-2

Length

64 pages

Date Published

1991

**THE BOTTOM
LINE**

"Many of the components allow teachers to view samples rather than long explanations. They quickly can determine what to include."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Information is factual, not likely to change. Addresses a few different cultures and their relationships to trees.

Depth

Emphasizes interdependence of trees and people. Looks at concept of ecosystem.

Provides overall theme, but no conceptual framework. Largely a collection of quick facts about trees.

Emphasis on Skills Building

Develops observation, inquiry, comparison, counting, and measuring skills.

Action Orientation

Not Applicable.

Instructional Soundness

Material is interdisciplinary, learner-centered, and addresses a variety of learning styles. Makes connections to everyday life.

Does not state objectives.

Usability

Uses readily available materials. Activity instructions are user-friendly and easy to follow.

Page numbering is off in some situations.

"Materials are appropriate for this age group and easy for the teacher to use."

"Trees seem to be the background for interdisciplinary activities, rather than the focus of the lesson."



Themeworks: Under the Ground



IN A NUTSHELL

Written by: Joan Westley

Themeworks
Creative Publications
5632 W. 115th Street
Alsip, IL 60482

phone: (800) 624-0822

fax: (800) 624-0821

e-mail: www.mathland.com

Cost: \$18.95 + s&h

SUBJECT

Fine Arts

Health

Language Arts

Mathematics

Physical Education

Science

Social Studies

Themeworks: Under the Ground offers a number of ideas for teachers of young children who are putting together a unit on animals, and other things underground. The unit kicks off with a hunt for buried treasure in the classroom. Studies of underground animals (such as moles, worms, groundhogs, bats, and ants) and plants (seeds, peanuts, and carrots) follow. Subways and caves are also examined. Activities include songs, games, recipes, plays, craft projects, riddles, stories, experiments with soil types, and growing plants from seeds. In the culminating activity, "Carnival in the Caves", students dress up as underground animals or as people who work underground. Contains numerous illustrations, masters for picture cards, a resource list, and a curriculum chart.

Grade Level

K-3

Length

64 pages

Date Published

1991

**THE BOTTOM
LINE**

"Great for young kids. Teachers can get lots of ideas from this."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Information is factual. Materials encourage inquiry.

Depth

Very strong on fostering awareness.

Emphasis on Skills Building

Challenges learners to use critical and creative thinking skills.

Action Orientation

Not Applicable.

Instructional Soundness

Material is learner-centered and interdisciplinary. Different ways of learning are employed.

Does not state goals or objectives.

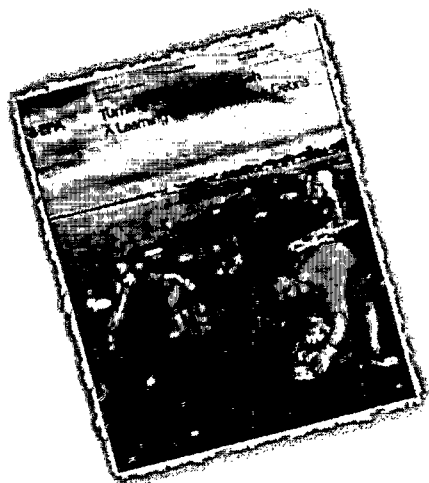
Usability

Materials are adaptable and long-lived.

Text supplies little information or support for teachers.

"An effort is made to involve parents as well as students."

"It is obvious that a career educator developed these materials."



Turning the Tide on Trash:

A Learning Guide on Marine Debris



IN A NUTSHELL

United States
Environmental Protection
Agency Office of Water

National Center for
Environmental Publications
& Information
P.O. Box 42419
Cincinnati, OH 45452
Reference #842-B-92-003

phone: (800) 490-9198
website: <http://www.epa.gov>

Cost: No charge

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science
Social Studies

The lessons in this collection are intended to provide students with an understanding of problems associated with marine debris. The first unit addresses the kinds of debris found in and near oceans, and traces that debris back to its source. It then looks at the human behaviors which led to it entering the ocean. The second unit addresses the damage done by marine debris. The final unit looks at efforts to clean beaches and marine areas and includes a community education campaign. Each unit consists of three to six activities and background material. Activities include board games, trash inventories, research projects, experiments, and artwork. Other features include a glossary, a resource list, nature clip-art designs, and listings of activities by subject matter and learning skills. Illustrations consist of charts, photographs, and drawings.

Grade Level

4-8

Length

78 pages

Date Published

1992

**THE BOTTOM
LINE**

"Many of these activities are long-term and really get the students involved."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Discusses international agreements. Provides information on regulations governing waste disposal at sea.	Does not list sources of information. Resource lists do not include economic or business organizations. Presentation not always balanced.
Depth	Clearly states concepts. Builds awareness of both local and global effects of marine debris.	Primary focus is on the United States.
Emphasis on Skills Building	Connects skills to issues.	Learning skills may be overstated.
Action Orientation	Looks at personal, national, and global responsibilities.	Advocates particular actions, rather than encouraging development of action steps.
Instructional Soundness	Makes use of a variety of learning styles. Activities build on each other and make connections to learners' lives.	Curriculum is not inquiry based.
Usability	Book is easy to photocopy. Lessons are not location-specific and are adaptable to river debris issues.	

"Activities may need more time than is available in school."

"Good information on sources, solutions, and prevention of marine debris."



Waste: A Hidden Resource



IN A NUTSHELL

Edited by: Michelle Racich

Keep America Beautiful, Inc.
1010 Washington Blvd.
Stamford, CT 06901

phone: (203) 323-8987

fax: (203) 325-9199

e-mail: keepamerbe@aol.com

website: www.kab.org

Cost: \$40.00 + s&h

SUBJECTS

Economics
Language Arts
Mathematics
Science
Social Studies

This is a collection of lessons and activities related to municipal solid waste, hazardous waste, and the issues related to them. The thirty-four activities can be used independently or as a unit. The text begins with overviews and background on waste and describes composting, types of plastics, toxicity, and disposal systems. The activities are divided into chapters entitled Solid Waste Issues, Solid Waste Solutions, and Enrichment Materials. Activities consist of simulation and board games, science experiments, model construction, household surveys, and development of databanks. Each lists time requirements, materials needed, objectives, key concepts, and vocabulary, as well as suggestions for extension and evaluation exercises. The text includes references, a glossary, safety instructions, and an activities list arranged by subject. Masters of handouts and worksheets are included.

Grade Level
9-12

Length
224 pages

Date Published
1993

**THE BOTTOM
LINE**

"Thorough and thought-provoking coverage of the waste management and recycling industry."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Facts are well documented. Reviews conducted by technical experts.

Many statistics are dated. Does not explore different viewpoints or encourage inquiry.

Depth

Fosters awareness of solid waste issues. Focus is on concept development.

Emphasis on Skills Building

Encourages creative and critical thinking. Employs analysis, calculation, and classification.

Weak on action skills.

Action Orientation

Materials encourage students to analyze their role in the issues discussed.

Sets stage for action but does not follow through.

Instructional Soundness

Lessons are interdisciplinary and make use of different learning styles. Makes connections to learners' everyday lives.

Not particularly learner-centered.

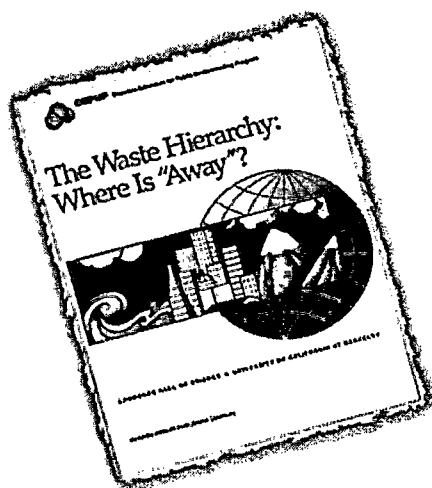
Usability

Easy to use. Lessons follow consistent format. Professional development programs are available.

Permission to copy materials is not given.

"Students learn that you can't please all of the people."

"Clear, concise and understandable to both learner and leader."



The Waste Hierarchy: Where is "Away"?



IN A NUTSHELL

Written by: Chemical Education
for Public Understanding
Program (CEPUP)

VWR Scientific Products
Science Education
P.O. Box 5229
Buffalo Grove, IL 60089

phone: (800) 727-4368

fax: (800) 676-2540

e-mail:

sarwel@sargentwelch.com

website: www.sargentwelch.com

Cost:

\$19.99 + s&h teacher's guide

\$224.99 + s&h for complete kit

SUBJECTS

Mathematics

Science

Social Studies

The waste hierarchy refers to four levels of waste treatment: landfill, incineration, reuse/recycle, and source reduction. This teaching unit uses this hierarchy to introduce the issue of solid waste, to make students aware of their own waste generation, and to give them practice in issue resolution. The first of six exercises introduces the hierarchy and involves students in measuring the waste created by their own household. In the four activities that follow, students conduct scientific and mathematical experiments on the four levels of waste treatment. The final activity is a role-play in which students consider the positive and negative consequences of different waste disposal plans. Activities list time requirements, background information, safety suggestions, discussion questions, and answers to student worksheets. Text includes a glossary, transparency masters, and a conceptual overview. A kit containing all the supplies needed for the activities is also available.

Grade Level

6-9

Length

154 pages

Date Published

1993

**THE BOTTOM
LINE**

"Shows students that science plays a useful role in their everyday lives, and that what they are learning in science will help them understand their environment."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Cites information sources and participants in field tests. Encourages inquiry and exploration of different viewpoints.

May understate the problems associated with landfills and incinerators.

Depth

Presents concepts in context. Addresses history as well as current issues. Includes problems faced in lower-income areas.

Emphasis on Skills Building

Makes use of math/science skills. Students are challenged to think critically.

Action Orientation

Challenges students to find ways to reduce their own waste generation.

Instructional Soundness

Makes connection to everyday lives. Clearly states goals and objectives. Activities are learner-centered and interdisciplinary.

Most learning is in the classroom. May be too advanced for stated age group.

Usability

Material is clear, logical, and easily adaptable.

Cost of kit (chemicals and supplies) is an additional expense.

"May be used by beginning and experienced educators."

"This is a great tool for teaching about waste reduction. It lets students experiment and form their own conclusions."



Written by: Judith Swift

Sea World
500 Sea World Drive
San Diego, CA 92109-7995

phone: (800) 23-SHAMU

TDD: (800) TD-SHAMU

fax: (619) 226-3634

website: <http://www.seaworld.org>

Cost:

K-3 Teacher's Guide \$7.00 + s&h

4-8 Teacher's Guide \$7.00 + s&h

SUBJECTS

Language Arts

Science

Water: Teacher's Guide



IN A NUTSHELL

These two guides contain activities designed to introduce students to the chemical and physical properties of water, and to the importance of water to people. The activities deal with water's molecular structure, heat conductivity, buoyancy, and ability to dissolve toxins. Through laboratory experiments and other research, students examine salinity, the movement of water in soil and through plants, water pressure, how animals deal with salt water, and the amount of water used in their own households. Although the guides are similar in structure and organization, each contains unique activities for its given age group.

Each includes a vocabulary list, objectives, a poster of the water cycle, background information on water's chemistry, and a list of additional resources. Illustrations consist of photographs, drawings, maps, and charts. Some extension activities are suggested.

Grade Level

K-3, 4-8

Length

24 pages each

Date Published

1995



"Good, basic information and water-related experiments for teachers."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Encourages different perspectives. Up to date information. Seems to be factually accurate.

Does not provide references for specific facts. Does not always provide all relevant information.

Depth

Covers molecular to global significance of water.

Weak connection between concepts and facts.

Emphasis on Skills Building

Provides some opportunities for creative thinking. Activities encourage learners to arrive at their own conclusions.

Experiments are weak in terms of analytical thinking.

Action Orientation

N o t A p p l i c a b l e .

Instructional Soundness

Includes some outdoor activities. Lists goals for unit and for individual activities. Provides pre- and post-tests.

Does not specify learner outcomes. Material is minimally interdisciplinary. Some of the K-3 activities may not be age-appropriate.

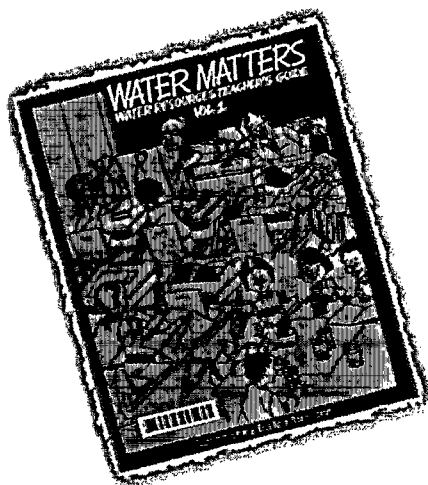
Usability

Very readable. Step by step instructions presented logically.

Background information may be insufficient.

"This material will be valuable for some, but probably is too basic for trained science teachers."

"A nice set of introductory water materials."



Water Matters:

Water Resources Teacher's Guide, Volume 1



IN A NUTSHELL

Written by: Sue Cox Kaufman

National Science Teachers
Association
P.O. Box 90477
Washington, D.C. 20090-0477

phone: (800) 722-NSTA

fax: (703) 522-6091

website: www.nsta.org

Cost: \$14.00 + s&h
(price reflects 10% membership discount)

SUBJECT

Mathematics

Science

Social Studies

The package consists of a thirty-two page teacher's guide and two sets of three posters. Each of the posters addresses a different water topic: how humans use water, how wastewater is treated, and the functions of wetland ecosystems. The reverse side of each poster contains background information and instructions for one or more learning activities. There are two different versions of text, allowing the posters to be used with diverse grade levels. The teacher's guide provides additional background information, teaching suggestions, a directory of government and private agencies that supply water education materials, a list of other resources, and brief descriptions of twelve additional activities. Among the activities are journaling, creating models of water filtration systems, conducting local research, and conducting personal water use surveys. Illustrations in the guide and posters consist of charts, graphs, and drawings.

Grade Level

3-8

Length

32 pages

Date Published

1994

**THE BOTTOM
LINE**

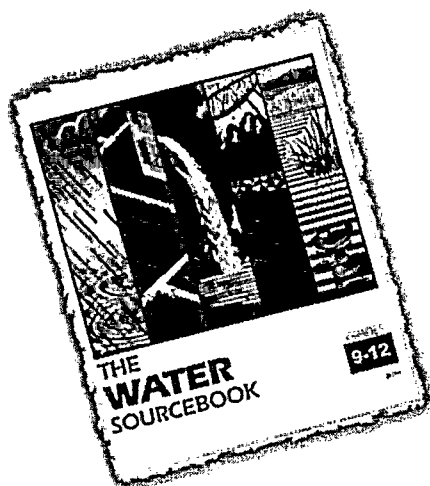
"The use of posters is a good technique to facilitate group interactive learning. A pleasant change from the usual textbook or CD-ROM."

What the REVIEWERS Said !

Key Characteristics	Strengths Noted	Other Considerations
Fairness and Accuracy	Identifies sources of information. Material appears factual.	Latest statistics are from 1990.
Depth	Very strong on building awareness.	Does not go into great detail on many topics.
Emphasis on Skills Building	Students are challenged to brainstorm and compare different solutions to water use problems.	Little emphasis on action skills.
Action Orientation	N o t A p p l i c a b l e .	
Instructional Soundness	Makes connection to learners' everyday lives. Activities suggest different teaching methods.	Does not list objectives and learner outcomes.
Usability	Information presented clearly. Posters are colorful and helpful. Provides suggestions for expansion and further research.	Would be difficult to use with larger classrooms due to size of posters.

"Could be used as supplemental material during water related instruction."

"Terms and concepts were reinforced by attractive poster illustrations."



The Water Sourcebook:

A Series of Classroom Activities for Grades 9-12



IN A NUTSHELL

Prepared by: Auburn University
at Montgomery & Troy State
University

Water Environment Federation
Publications Order Department
601 Wythe Street
Alexandria, VA 22314-1994

phone: (800) 666-0206
fax: (703) 684-2492
e-mail: msc@wef.org
website: www.wef.org

Cost: \$29.95 + s&h

SUBJECT

Economics
Fine Arts
Language Arts
Health
Mathematics
Science
Social Studies

This resource contains more than seventy classroom exercises focusing on water and water use issues. The activities are arranged by subject in five chapters: Introduction to Water, Drinking Water and Wastewater Treatment, Surface Water Resources, Groundwater Resources, and Wetlands and Coastal Waters. A complete set of water fact sheets is included. Lessons include student and teacher sheets, answer keys, objectives, time and material requirements, background information, and vocabulary. Extension activities and resources are also listed. Among the activities presented are simulation games, puzzles, laboratory experiments, study of water samples, discussions, research projects, and art projects. Appendices include a glossary and lists of resources by agency or organization type, some of which are divided by state. Illustrations consist of drawings, diagrams, graphs, and maps. An elementary level sourcebook for grades 3-5 is also available.

Grade Level

9-12

Length

886 pages

Date Published

1997

THE **BOTTOM**
LINE

"This project was well thought out. I'm impressed with the quality and depth of the knowledge presented."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Contains an abundance of factual information. Information is accurate and reflects different perspectives and approaches. Activities were field-tested in classrooms.

Some statistical information will need to be updated.

Depth

Includes simple to complex water issues. Concepts are well defined. Material is appropriate for different developmental levels.

Emphasis on Skills Building

Lessons encourage critical thinking, scientific investigations, and independent inquiry. Extensions encourage further application of skills.

Action Orientation

Not Applicable.

Instructional Soundness

Activities are interdisciplinary and connected to the learner's everyday life. Objectives are clearly stated.

Weak on assessment. Does not expand the learning environment beyond the classroom.

Usability

Binder format is helpful in that it makes pages accessible for copying.

"This unit can be used by social studies, language arts, or science classes. Very practical."

"This is the most in-depth coverage of the subject I've ever seen."



Wetlands:

Critical Issues/Critical Thinking Experiences for Youth



IN A NUTSHELL

Written by: Mary Kroll

National 4-H Supply Service
7100 Connecticut Avenue
Chevy Chase, MD 20815-4999

phone: (301) 961-2934

fax: (301) 961-2937

website: www.fourhcouncil.edu/

Cost: \$5.00 + s&h

SUBJECT

Science

Social Studies

This leader's guide contains four activities designed to increase knowledge about wetlands while developing critical thinking skills. Through these activities, students learn to identify wetlands, and decide where to direct limited dollars for wetland restoration. Two role plays involve making choices about wetland habitats. The guide provides step-by-step instructions, time requirements, background information, role play cards, worksheets, and discussion questions for each activity. A resource list, footnotes, and additional leader information on wetlands and on group management are also included. The text comes with a color poster that defines wetlands, gives reasons why students should be concerned about them, and shows a timetable of wetland conservation efforts from the 18th century to the present.

Grade Level

7-9

Length

28 pages

Date Published

1995

**THE BOTTOM
LINE**

"If you would like to involve your students in four great activities on wetlands that teach concepts and critical thinking, you'll love this booklet."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Encourages discussion of different perspectives. Information is referenced.

Depth

Emphasizes concept of interdependence. Builds on economic, social and environmental concerns.

Lacks a clear conceptual framework.

Emphasis on Skills Building

Encourages critical thinking, decision making, and communication skills.

Weak in basic laboratory and field observation skills.

Action Orientation

Students are encouraged to examine consequences of their own actions.

Actions listed are simulated; little link to local area or to actual steps that students can take.

Instructional Soundness

Includes both classroom and field-based activities.

Text does not list subject disciplines, goals, or objectives.

Usability

Material is clearly written. Activities are adaptable.

"A brief overview of wetland issues—too brief to be used alone."

"Contains lots of good, usable ideas."



Wetlands:

An Interdisciplinary Unit for Science and Language Arts



IN A NUTSHELL

Written by: Jean L. Pottle
J. Weston Walsh, Publisher
321 Valley Street
P.O. Box 658
Portland, ME 04104-0658

phone: (800) 558-2846
(207) 772-2846
fax: (207) 828-8818
website:
<http://www.walsh.com>

Cost: \$14.60 + s&h

SUBJECT

Fine Arts
Language Arts
Health
Science
Social Studies

The twenty-eight chapters in this book provide students with an introduction to different kinds of freshwater and saltwater wetlands. Lessons are arranged by wetland type including bogs, marshes, prairie potholes, swamps, estuaries, and tidal marshes. Each lesson provides brief information about a wetland organism or issue. Individual lessons are dedicated to specific wetland organisms, such as herons, muskrats, cranberries, mangroves, and carnivorous plants. Other chapters deal with phenomena of the wetland, such as succession, erosion, or quicksand. Some lessons invite students to write opinions on human interactions with different wetlands, such as the disappearance of prairie potholes or the environmental effects of farming peat. Students are frequently instructed to write or draw their thoughts and observations. The keeping of a journal is an important component of this curriculum. Learners are encouraged to review what they have learned in previous lessons, and two chapters are specifically designed to help students evaluate their learning. A bibliography of fiction and nonfiction works related to wetlands is included.

Grade Level

6-8

Length

76 pages

Date Published

1997

**THE BOTTOM
LINE**

"Even the introduction is interactive."

"Too complex for primary levels, and too simple for upper levels. It is unclear what audience this material is for."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Provides historical perspective and includes folklore from different cultures. Encourages learners to reflect on information and to form own opinions.

Does not cite sources of information. Questions are worded to elicit a preferred answer.

Depth

Provides information on changes in wetlands over time. Addresses related concepts such as interdependence of human and animal populations.

Uses vocabulary to explain concepts which may not be appropriate to targeted age group.

Emphasis On Skills Building

Promotes critical thinking skills and creative writing skills.

Some activities may unrealistically expect technical skills or other preparation on the part of the student.

Action Orientation

Provides examples of people who "make a difference."

Does not encourage personal action taking or provide suggestions of what students can do.

Instructional Soundness

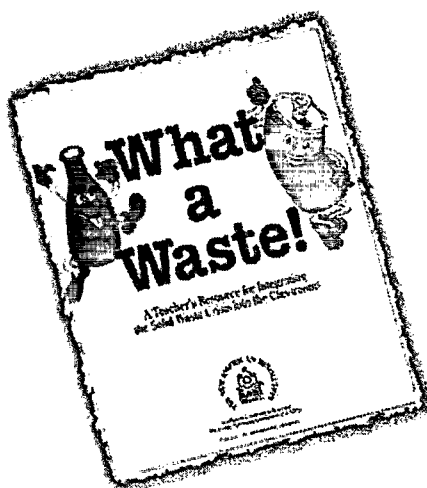
Geared mainly to independent study.

Usability

Includes clear illustrations.

Does not provide instructions for teachers such as time requirements, objectives or outcomes.

"Would probably be appropriate for a home schooling program. It requires a self-motivated learner with good reading skills. Material is structured but almost totally self-contained."



What a Waste!

A Teacher's Resource for Integrating the Solid Waste Crisis into the Classroom



IN A NUTSHELL

Edited by: Millie M. Horosko

The Southwest Connecticut
Regional Recycling
Operating Committee
125 East Avenue
Norwalk, CT 06856

phone: (203) 381-9571

fax: (203) 377-1930

e-mail: gmsm@pcnet.com

Cost: \$10.95 + s&h

SUBJECTS

Fine Arts
Language Arts
Mathematics
Science
Social Studies

The nine chapters of this book are designed to increase elementary school students' awareness of the scope and origins of solid waste problems, and their own role in addressing these problems. The first four chapters contain lessons and activities that define solid waste, and explore where it comes from, how it affects nature, and how people dispose of it. The remaining chapters introduce reusing, reducing, recycling, and composting, and offer suggestions on responsible consumerism. Activities consists of discussions, measurements of trash, field trips, word games, and independent research. Students are asked to design more efficient packaging for products, make art projects out of refuse, create their own recycled paper, complete poems or stories about trash, and to brainstorm ways that their actions can make a difference. Each activity lists related subjects, goals, focus, time requirements, and possible extensions. Worksheet masters are included when necessary. The text includes a glossary, resource lists, and suggestions for school recycling.

Grade Level

3-6

Length

100 pages

Date Published

1992

**THE BOTTOM
LINE**

"The materials offer a strong connection to learners' everyday lives, including having them bring waste items from home."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Cites references. Encourages students to form own opinions.

Some bias detected against packaging and landfills and in favor of recycling. Little reflection of cultural or regional differences.

Depth

Fosters awareness of built environment. Concepts are presented in historical context.

Emphasis on Skills Building

Promotes environmental problem solving.

Contains few opportunities for students to come up with new or unique solutions.

Action Orientation

Encourages students to assess their own behavior.

Does not include examples of successful action projects.

Instructional Soundness

Uses different styles to convey information. Makes subject relevant to learners' lives. Lists goals and objectives.

Usability

Layout is clear and easy to follow. Includes support materials and how to access instructional support.

Binding makes pages difficult to copy.

"One viewpoint is expressed over and over: the need to recycle within our communities."

"Our students and teachers would enjoy using many of these activities."



Wild About Life!

Activity Guide



IN A NUTSHELL

Written by: Mariam Westervelt
& Elizabeth Wooster

Publications Unit
National Conservation
Training Center
U.S. Fish and Wildlife
Service
Route 1, Box 166
Shepherdstown, WV 25443

phone: (304) 876-7203
fax: (304) 876-7689
website: www.fws.gov

Cost: No charge

SUBJECT

Health
Language Arts
Science
Social Studies

The video component of this package consists of four brief segments. The story follows four high school students who are trying to produce an educational film on biodiversity. In the process, they research information on the internet, review short films dealing with individual species, interview a leukemia patient who has been treated with medicine from a once-endangered plant, and discuss among themselves the importance of protecting biodiversity. Important vocabulary words appear in print on the screen. The accompanying activity guide contains overviews of the four segments along with objectives, key words, and a series of discussion questions and possible answers. The guide also contains ten complete activities, drawn from a number of sources, which can be used as extensions or reinforcement activities to complement the video. Activities include action projects, models, games, and surveys of community attitudes. Illustrations consist of charts, drawings, and photographs. An appendix lists field offices of the United States Fish and Wildlife Service.

Grade Level

4-12

Length

42 pages
& video

Date Published

1997

THE **BOTTOM**
LINE

"Positive tone and message. I would like to see how kids react to these activities."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Open to inquiry.

Does not list field testing information. Presentation is not well balanced.

Depth

Reflects and includes both local and global scales.

Focus is on large animals; doesn't adequately cover plants, insects, fish or other less charismatic creatures.

Emphasis On Skills Building

Focus is on data collection and analysis.

Action Orientation

Gives examples of successful interventions.

Instructional Soundness

Activities appear learner-centered.

Not all activities have goals or objectives listed.

Usability

Format of curriculum helpful. Guide and video are easy to use.

Short on background material.

"Most skills come from the Activity Guide. If these activities are not completed, it's just another video."

"Good overview of biodiversity, endangered and threatened species."



Wormania!

Live Worms & Song



IN A NUTSHELL

Written by: Mary Appelhof,
Bill Brennan, Canton Gauthier
& Barbara Loss Harris

Flower Press
10332 Shaver Road
Kalamazoo, MI 49024

phone: (616) 327-0108

fax: (616) 327-7009

e-mail:

nancy@wormwoman.com

website:

<http://www.wormwoman.com>

Cost: \$34.90 + s&h

SUBJECT

Science

This video features the "Worm Woman" (Mary Appelhof), teaching "Billy B." (Billy Brennan) and his family about the world of worms. Through photography and computer graphics, worms of North America and elsewhere in the world are shown and described. Worm reproduction, anatomy, feeding habits, and locomotion are explored, accented by four worm-related songs. Instructions for setting up a worm composting bin are given. A teaching guide includes a pre- and post-test with answers, learner outcomes, an index, and seven units covering different topics on the video. Each unit lists the time code to the corresponding section of the video, key ideas, vocabulary, extension questions, exploration activities, and trivia questions about worms. Related activities and readings from Appelhof's previous books are also cited.

Grade Level

3 & up

Length

video & teachers
guide

Date Published

1995

**THE BOTTOM
LINE**

"Excellent photography of worm behavior and physiology is interspersed with acting and singing."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Provides accurate and detailed information.

All people shown in video are middle-class Caucasians.

Depth

Discusses worm biology, physiology, and the importance of worms to humans and the ecosystem.

Emphasis on Skills Building

Activities involve classification and measurement.

Action Orientation

N o t A p p l i c a b l e .

Instructional Soundness

Provides cross-references to more complete curricula by the same author. Lists key ideas and defines important vocabulary.

Some children may be put off by the music and acting. Vocabulary is rather advanced for the targeted age group.

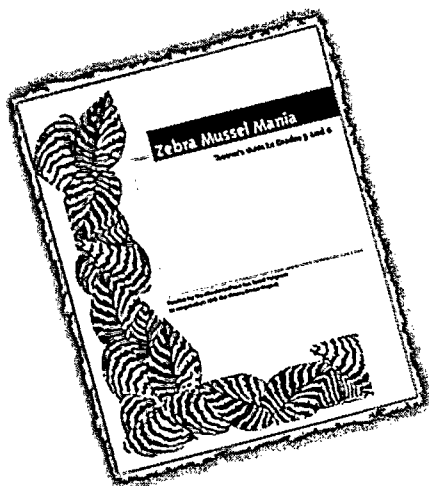
Usability

Photography in video is very clear and precise.

Teacher's Guide is too small to photocopy.

"Thirteen-year-olds, I imagine, would not find this video 'cool'."

"Thorough coverage of worm composting."



Zebra Mussel Mania:

Teacher's Guide for Grades 5 & 6



IN A NUTSHELL

Developed by: John Barger,
Marjorie Burgett, Jane Greenberg,
Marla Hostetler, Becky Keim, &
Katy Scukanec

Illinois-Indiana Sea
Grant Program
University of Illinois
65 Mumford Hall
1301 West Gregory Drive
Urbana, IL 61801

phone: (217) 333-9448
fax: (217) 333-2614
e-mail: r-goettel@uiuc.edu

Cost: \$35.00

SUBJECT

Fine Arts
Language Arts
Mathematics
Science
Social Studies

Zebra Mussel Mania was designed to be used in conjunction with the *Zebra Mussel Traveling Trunk*. The ten activities in this guide address specific features and problems caused by zebra mussels (e.g., their ability to clog water lines) as well as general problems and concerns raised by the introduction of exotic species into natural habitats. Activities are designed to fit into one or more 45-minute class periods. Each lists a scientific process skill, a concept to be explored, benchmarks for learning, objectives, instructions for students, connections to other areas of study, important vocabulary, and possible variations.

Some activities call for videos, actual mussels, or other materials from the traveling trunk. The guide also includes a pre- and post-test, fold out sheets describing different mussel types and their life cycles, fact cards, student sheets, a journal, transparency masters, and other material on laminated pages. It also includes suggestions for facilitating cooperative learning, a glossary, resource lists, and suggestions for using mussels in the classroom. The Traveling Trunk is available for rental or sale through the Sea Grant program.

Grade Level

5-6

Length

73 pages

Date Published

1997

THE **BOTTOM**
L I N E

"A good deal of science is conveyed through the activities and there are interdisciplinary linkages built in."

What the REVIEWERS Said !

Key Characteristics

Strengths Noted

Other Considerations

Fairness and Accuracy

Provides lists of agencies for further information.

Uses such terms as "evil," "menace," and "alien invaders" to describe zebra mussels.

Depth

Thorough discussion of the concept of population growth and rapid colonization.

Emphasis on Skills Building

Requires measurement, observation, classification, prediction, and other scientific skills. Encourages students to think about how they arrived at conclusions.

Action Orientation

Action plan is developed at the end of the unit.

Actions consists of educating the public. Weak in the area of personal stake.

Instructional Soundness

Lessons are learner-centered and interdisciplinary.

Uses mostly indoor activities. Connections to learners' lives are weak.

Usability

Instructions are well organized, clear and easy to follow. Provides helpful teacher support.

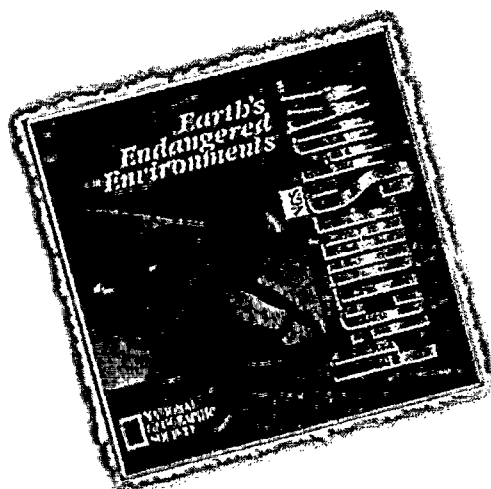
Most activities are specific to zebra mussels. Cost may be prohibitive.

"There are probably more exercises here than are required to convey a basic working knowledge of the zebra mussel problem."
 "Could be an excellent tool for teaching cooperative learning, but lacks incentive for the students to care about this particular species."

Reviews In Brief

The following materials do not contain a substantial teacher's guide and are therefore presented in a shorter format. These resources were reviewed using the same rigorous guidelines as those in the preceding section of this book.

These reviews are provided to allow individual educators to make their own decisions about the material and to determine how they can best be used.



Earth's Endangered Environments: Picture Show



IN A NUTSHELL

National Geographic Society
Educational Services
P.O. Box 10597
Des Moines, IA 50340

phone: (800) 368-2728
fax: (515) 362-3366
TDD: (800) 548-9797

Cost:
Individual \$45.95 + s&h (#81181)
Lab Pack (5 users)
\$137.95 + s&h (#82028)

SUBJECT

Science
Social Studies

Two movies are on this CD-ROM, one dealing with rainforests and the other with wetlands. Specific habitats described include both temperate and tropical rainforests, swamps, bottomlands, peat bogs, arctic tundra, marshes and prairie potholes. The importance of the different ecosystems is discussed, along with some of the issues facing their survival. Efforts to preserve the ecosystems are described. The movies are presented with or without captions, and as scripts of the movie. Spanish versions appear on the same CD. One screen provides suggestions for classroom activities, including two activity sheets for each movie. Both images and text can be printed or downloaded for reports. The student section includes a glossary, background information, and list of key points for each film. Technical assistance is available through a toll-free number.

Grade Level
4-9
Length
CD-ROM
Date Published
1994

What the REVIEWERS Said!

Other
Considerations
Strengths
Noted

This is a concise, basic introduction to two ecosystems. The graphics and visual presentation are of high quality. The information on wetland and rainforests is accurate, and the program covers concepts well. It is formatted like a television program, with little interaction and much passive viewing. The activities provided are simplistic. The program is easy to use, although some reviewers reported trouble printing information. Individual action and responsibility are not addressed.



Eco-Adventures in the Rainforest



IN A NUTSHELL

Chariot Software Group
3659 India Street
San Diego, CA 92103

phone: (800) 242-7468

fax: (619) 491-0021

website: www.chariot.com

Cost: Individual \$59.95 + s&h
Lab Pack (5 users) \$94.95 + s&h
Site Licence \$195.00 + s&h

SUBJECT

Science

This software consists of a number of simulated expeditions, in which the player journeys through the rainforest in search of one of several creatures. With the help of a mysterious guide, players travel through thick forests, across rivers, and over areas that have been burned for cattle pasture. The camera allows the player to photograph interesting sights along the way. Throughout the expeditions, students encounter natives, other researchers, and rangers, and must navigate away from poachers, snares, falling trees, and dangerous animals. After completing each expedition a team of reporters ask the player a number of questions about rainforest flora and fauna. The resource guide explains how to play the game and provides a glossary of animal and plant names, a bibliography of books on rainforest wildlife, maps of the world showing the locations of rainforests, and answers to selected questions about the game. A poster showing black-and-white drawings of the animals is also included.

Grade Level

3 & up

Length

1 CD-ROM

Date Published

1994

What the REVIEWERS Said!

Other
Strengths
Noted
Considerations

Information was largely accurate, although limited and date-sensitive. The program showed animals from different parts of the world in the same rainforest. Activities are learner-centered to a degree and involve the students in map reading, strategizing, and comprehending scientific information. The program is easy to use and follow. The different scenarios offer interesting information on rainforest issues, but did little to encourage original thought or point out alternatives. Reviewers differed on whether children would find it interesting or inviting.



A Guide to Groundwater Guardian: 1998 Program Year



IN A NUTSHELL

Written by: Groundwater Guardian
Management Team

The Groundwater Foundation
P.O. Box 22558
Lincoln, NE 68524-2558

phone: (800) 858-4844

(402) 434-2740

fax: (402) 434-2742

e-mail: info@groundwater.org

Cost: No charge

SUBJECT

Science

Social Studies

The *Groundwater Guardian* is a program designed to raise awareness of groundwater issues and assist communities in forming plans to protect groundwater. This community guide introduces the program and provides concrete and specific instructions to those wishing to participate. Planning is geared towards five types of results-oriented projects: public awareness, conservation, pollution prevention, public policy, and best management practices. Projects vary in length from one to several years. Chapters address the nature of the program, how to plan for projects, how to implement action plans, and how to apply for designation as a Groundwater Guardian community. Parallel chapters address the development of Groundwater Guardian Affiliates, which are entities that promote groundwater awareness and assist communities in their efforts. Appendices include application and planning forms, glossary of groundwater terms, and examples of the five different types of activities.

Grade Level
adult

Length
65 pages

Date Published
1998

What the REVIEWERS Said!

Strengths
Noted
Other
Considerations

This material is more of a how-to guide than an educational curriculum. The action component is very strong, and assumes that those using the materials share the organization's views and concerns about groundwater. The instructions provide an overview and suggest sources for further information, but do not go into much detail by themselves. The material focuses on grassroots organizing and the importance of involving a diverse cross-section of the local community.



North American Ecosystems



IN A NUTSHELL

Queue, Inc.
338 Commerce Drive
Fairfield, CT 06432

phone: (800) 232-2224

(203) 333-7268

fax: (800) 775-2729

e-mail: sales@queueinc.com

website: queueinc@aol.com

Cost: \$145.00 + s&h

SUBJECT

Science
Social Studies

This hybrid Macintosh/Windows CD-ROM introduces students to the concept of a biome and allows them to explore specific biomes in North America. Although six biomes are introduced and discussed, the program focuses on three: the desert, the Rocky Mountains, and the prairie. Each section provides brief movies with written and spoken narration, and looks at the climate, geography, flora and fauna that define each biome. Additional background material for instructors is provided in a separate folder, along with pre- and post-questions, instructions for using the program, and four quizzes presented with and without answers. The material also includes several maps showing the location of different biomes, as well as an on-line glossary that allows the students to review information on specific topics or ideas.

Grade Level

6-10

Length

1 CD-ROM

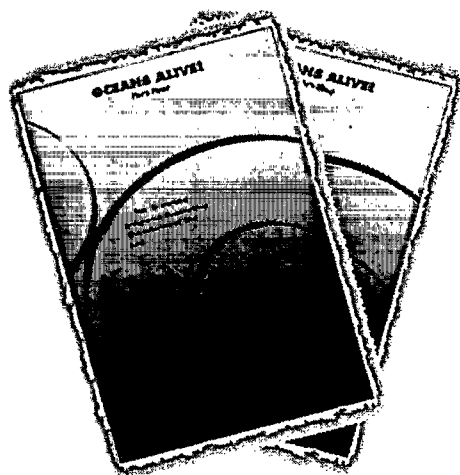
Date Published

1996

What the REVIEWERS Said!

Other
Considerations
Strengths
Noted

The information appears to be accurate and balanced, although there was little in the way of exploring different viewpoints. Reviewers described the materials as visually appealing and well-organized; the visuals received high marks, and the use of historical photographs and video footage added to the material. The teacher's guide is rather weak, and little was done to address skill development. The program is not very interactive, although the quizzes were found to be helpful.



Oceans Alive!



IN A NUTSHELL

Environmental Media
Corporation
P.O. Box 99
Beaufort, SC 29901-0099

phone: (800) 368-3382

fax: (803) 986-9093

e-mail: ggerber@envmedia.com

website: <http://www.envmedia.com>

Cost: \$179.00 for all four videotapes
\$49.95 + s&h for each videotape

SUBJECT

Science

This material consists of four fifty-minute videotapes and two teaching guides. Each videotape contains ten five-minute segments, each of which addresses a different aspect of ocean life. Topics include the classification of sponges, ways to identify fish, the role of zooplankton in the ocean, food chains, and homes used by sea creatures. A variety of oceanic life forms, from whales to sponges, are featured. Segments are narrated and feature color photography, much of it under water. The teaching guides include additional information on each of the forty topics, as well as suggestions for discussions or classroom investigations related to the segment topic. The first two videocassettes and accompanying teacher's guide are also available in Spanish.

Grade Level

5 & up

Length

videos &
teacher's guides

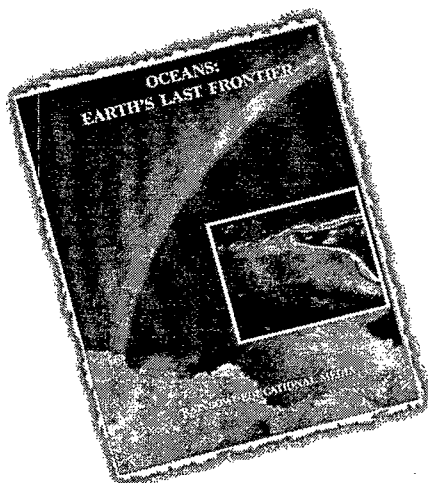
Date Published

1992

What the REVIEWERS Said!

Other
Considerations
Strengths
Noted

The photography in the videos is very clear and was well received. The information appears to be both accurate and fair in presentation. The suggestions for activities and discussion in the teacher's guide are helpful. Animals not frequently found in nature films are given attention here. The segments are in no particular order; all feature the same background music, and move rather slowly. As a result, they might become boring to some students if used for too long or too frequently. Related topics are sometimes scattered among segments, with unrelated footage in between. Some of the terminology used in the videotape is not defined.



Oceans:

Earth's Last Frontier



IN A NUTSHELL

Written & produced by:
Peter Cochran

Rainbow Educational Media
4540 Preslyn Drive
Raleigh, NC 27604-3177

phone: (800) 331-4047

fax: (919) 954-7554

e-mail:

rainbowedu@worldnet.att.net

Cost: \$89.00 + s&h

SUBJECTS

Science

This video provides a general overview of oceans. Attention is given to the topography of the ocean floor, the variety of wildlife in the ocean, the effect of water pressure on different kinds of marine life, the role of gravity on the creation of tides, and the formation and effects of waves and currents. Other topics include salinity, plate tectonics, and photosynthesis. Both scientists and students are shown exploring marine life. Live action photography is augmented with diagrams and maps. Male and female voices alternate narration. Examples of simple experiments demonstrating water pressure, effects of waves, and movement of water are given. The video comes with a thirty-page teacher's guide, which lists learning objectives for the video, a glossary, review questions, eight selected learning activities which can be done in the classroom, a bibliography, and the script. A separate sheet provides a multiple-choice test.

Grade Level

4-6

Length

24 minutes

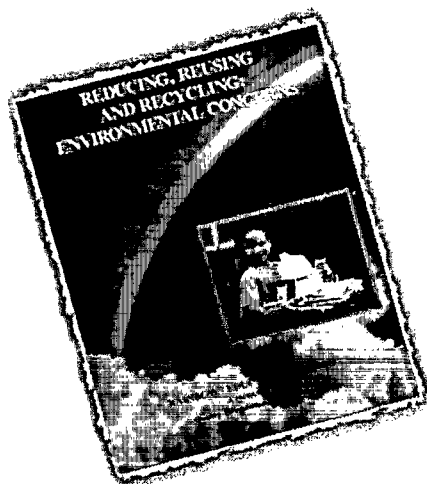
Date Published

1995

What the REVIEWERS Said!

Strengths
Noted
Other
Considerations

The photography is clear and the graphics informative. The film is strong on building awareness of the complexity of oceans and ocean life. The material was straightforward, accurate, and unbiased. The sound quality, however, is inconsistent. The video does little to explain some of the concepts mentioned; however, a teacher could easily stop the video and proceed with a discussion.



Reducing, Reusing and Recycling:

Environmental Concerns



IN A NUTSHELL

Rainbow Educational Media
4540 Preslyn Drive
Raleigh, NC 27604-3177

phone: (800) 331-4047

fax: (919) 954-7554

e-mail:

rainbowedu@worldnet.att.net

Cost: \$89.00 + s&h

SUBJECT

Health

Science

This video features a discussion of the different types of solid waste (including hazardous wastes), explains how it is disposed of, identifies some of the dangers of solid waste, and provides suggestions for young people to help prevent problems associated with garbage. Using computer-generated graphics and live photography, the program conveys the amount of garbage and solid waste created daily, the volume of discarded recyclables, and some of the benefits obtained when students reduce, reuse, and recycle. The videotape comes with a twenty-page teacher's guide, which includes learning objectives, a summary of the program, review questions with answers, the complete script of the videotape, a glossary, and a list of agencies and organizations to contact for more information. An additional sheet contains a ten-question multiple choice test.

Grade Level

4-6

Length

20 minutes

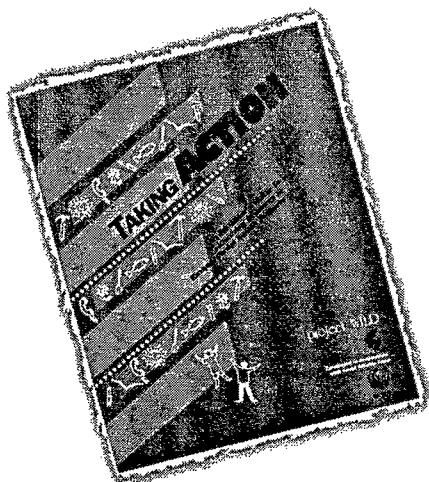
Date Published

1990

What the REVIEWERS Said!

Other
Considerations
Strengths
Noted

The video is well-sequenced and introduces concepts and vocabulary in a logical order. The script was helpful and would be especially useful to those with limited hearing. Some of the statistics mentioned need to be updated and corrected. The video emphasized individual responsibility with regard to solid waste, but offers minimal action strategies or skills. The narrator is a white male, and the homes shown in the video appear to be middle class.



Taking Action:

An Educator's Guide to Involving Students in Environmental Action Projects



IN A NUTSHELL

Written by: Darlene K. Stoner

Council for Environmental
Education/Project WILD
707 Conservation Lane
Suite 305
Gaithersburg, MD 20878

phone: (301) 527-8900

fax: (301) 527-8912

e-mail: info@projectwild.org

website: www.projectwild.org

Cost: \$7.00 + s&h

SUBJECT

Health

Language Arts

Science

Social Studies

This booklet was developed to give educators suggestions and examples of student environmental action projects. The first three sections describe some of the logistics of action project planning. These cover such topics as motivation, conflict resolution, connecting to the school's curriculum, interviewing skills, and tips for project assessment. The fourth section, which makes up the bulk of the book, is dedicated to examples of successful projects from around the country. Project descriptions are grouped by type (such as conserving energy, measuring water quality, or working with endangered species). A list of suggestions for additional projects, helpful publications, and organizations follows each grouping. Sections five through seven offer additional resources, such as a brief list of award and grant opportunities and an action matrix for planning action strategies.

Grade Level

7-12

Length

74 pages

Date Published

1995

What the REVIEWERS Said!

Other
Considerations
Strengths
Noted

This resource is strong in terms of skills building and in providing an overview of action projects. The resource lists are considered helpful. The examples of successful projects and the lists of ideas for further projects are very comprehensive. Reviewers felt that more detailed explanation of the steps for developing and choosing action projects, as well as research on their benefits, were needed.



Understanding Ecosystem Management



IN A NUTSHELL

Written by: Shelly Smith, Richard
Brook, & Mary Tisdale

Bureau of Land Management
The Environmental Education
& Volunteers Office
1849 C Street NW
MS-406LS
Washington, D.C. 20240

phone: (202) 452-5078

fax: (202) 452-5199

website: [http://www.](http://www.blm.gov/education/education.html)

[blm.gov/education/education.html](http://www.blm.gov/education/education.html)

Cost: No charge. Material can be
downloaded from the website.

SUBJECT

Science
Social Studies

These materials consist of a reprint of an article describing basic terms and concepts of ecosystems, how ecosystems are affected by humans, and the main ideas and practices of ecosystem management. An accompanying two-sided poster provides more details on the same topics, as well as a case study for student discussion. In addition, the article gives brief suggestions for sixteen activities dealing with ecosystem management that teachers can conduct in a school setting. The article is illustrated with color photographs, time lines, and drawings.

Grade Level

4-7

Length

8 pages

Date Published

1994

What the REVIEWERS Said!

Other
Considerations
Strengths
Noted

The material presented is balanced and unbiased. The authors show the link between current actions and long-term consequences, and make the information relevant to students. The materials stress citizenship and the importance of sound decision making. The activities lack objectives and specific goals, and at times are thin with regard to procedure.



WILD School Sites:

A Guide to Preparing Habitat Improvement Projects on School Grounds



IN A NUTSHELL

Written by: Paul Schiff & Cindi Smith-Walters

Council for Environmental Education / Project WILD
707 Conservation Lane
Suite 305
Gaithersburg, MD 20878

phone: (301) 527-8900

fax: (301) 527-8912

e-mail: info@projectwild.org

website: www.projectwild.org

Cost: \$5.00 + s&h

SUBJECT

Fine Arts
Language Arts
Mathematics
Science
Social Studies

This booklet provides instruction for students and educators who wish to develop areas on school grounds for habitat conservation and wildlife education activities. The first three chapters explain the rationale behind such projects, the seven major concept areas of Project WILD, and the basic components of a wildlife habitat. Included are suggestions for team building, selecting an appropriate site, developing and implementing an action plan, and obtaining the support of parents and community members. The text provides sample ideas to show how school areas can be turned into project areas. An appendix lists specific Project WILD learning activities that relate to developing habitat areas. Schools which complete these projects can apply for certification as a WILD School Site. The book is illustrated with black-and-white photographs.

Grade Level
adult

Length
56 pages

Date Published
1993

What the REVIEWERS Said!

Other
Considerations
Strengths
Noted

The goals of this work are clearly stated. Reviewers felt that it was a helpful and motivational how-to guide to developing a school site. They noted, however, that the guide lacks detail in many areas where educators would want more information, such as in describing some of the more complex projects. Connections are made between specific activities and curricular requirements. Students are involved with decision making and are encouraged to come to their own conclusions. The instructions were clear, sequentially ordered, and easy to follow. Learner outcomes and sources of information were not clearly identified.



Worm Worlds



IN A NUTSHELL

Written by: Alan R. Berkowitz &
Patrick Bohlen

NAAEE Publications &
Membership Office
P.O. Box 400
Troy, OH 45373

phone & fax: (937) 676-2514
e-mail: jthoreen@erinet.com
website: www.naaee.org

Cost:

\$2.45 + s&h for NAAEE members
\$2.70 + s&h for non-members

SUBJECT

Mathematics

Science

Worm Worlds is one of a series of schoolyard environmental investigations. It consists of a folder with instructions for conducting a multi-part experiment in worm habitats. Within the folder are masters of an equipment card, an action card explaining procedures, and a record sheet. Two different sites are used so students can compare how earthworms respond to different environmental factors. Students learn how to designate a quadrant for study and are given practice in observation and data collection. A materials list, preparation instructions, time factors for each part of the experiment, and suggestions for time and place are provided, as are debriefing questions and possible extension activities. There is also a brief list of additional resources on worms.

Grade Level

3-6

Length
4 pages

Date Published
1996

What the REVIEWERS Said!

Strengths
Noted
Other
Considerations

The instructions are concise but complete. Students are given an opportunity to engage in cooperative learning and to practice critical and analytical thinking skills. The information is long-lived and required materials are inexpensive. The experiment is simple to implement. Finding a location to conduct the experiment in urban settings or areas with heavily compacted earth could be a problem.

Appendices

Curriculum Matrix

Publisher Index

Author & Editor Index

Feedback Forms

Title & Page Number	Grade Level	Subjects								Medium		
		Economics	English/Lang. Arts	Fine Arts	Health/Physical Ed.	Mathematics	Science	Social Studies	Multimedia	Video	Print	
City Kids & City Critters p 6	3-6		x		x	x	x	x				•
Composting: Waste to Resources p 8	4-8			x			x					•
Connections: Guide to a Healthy Env. p 10	5-8		x	x			x					•
Creepy Crawlies & the Scientific p 12	K-6						x					•
Cycling Back to Nature p 14	10 & up		x				x	x				•
The Digital Field Trip to the Wetlands p 16	8-12						x	x	•			•
Earth Day to Arbor Day p 18	5-6		x	x			x	x				•
Earth's Endangered Environments p 106	4-9						x	x	•			
Earthways p 20	PreK-2			x	x							•
Eco-Adventures in the Rainforest p 107	3 & up						x		•			
Eco-Inquiry p 22	5-8						x					•
Environmental ACTION p 24	8-12	x	x		x		x	x				•
Environmental Resource Guide p 26	3-5		x	x	x	x	x	x				•
Environmental Science - Water & Air p 28	6 & up						x	x				•
Environmental Teaching Guide p 30	K-6						x	x				•
For Earth's Sake p 32	6-10	x	x			x	x	x				•
Global Change Education Resource p 34	K-12					x	x	x		•		•
GLIMCES p 36	5-12		x		x		x	x				•
Growing Together with the Treetures p 38	PreK-6		x	x	x		x					•
A Guide to Groundwater Guardian p 108	adult						x	x				•
Hands-On Minds-On Science p 40	3-5		x	x	x		x	x				•
How Can Biodiversity Be Preserved p 42	6-10	x					x	x				•
Interactive Lake Ecology p 44	5-8		x			x	x	x		•		•
The Intriguing Past p 46	4-7		x				x	x				•
Investigating & Evaluating Env. Issues p 48	6-12	x	x			x	x	x				•
Investigating Groundwater p 50	6-9				x		x	x				•
Investigating Your Environment p 52	6-12		x	x		x	x	x				•
The Leopold Education Project p 54	5-8		x	x		x	x	x		•		•
Living in a Material World p 56	8-12	x	x	x	x			x				•
Marine Ecology & Conservation p 58	K-8		x	x		x	x					•

Atmosphere (Weather, Climate & Quality)	Aquatic	Biodiversity	Ecology	Energy	Env. Issues	Forests/Plants	Geology & Soils	Population	Resource Mgmt.	Social Action	Solid Waste	Wildlife	Topics	Price	Title
	✓		✓									✓		\$15.95	City Kids & City Critters
							✓		✓		✓			\$8.00	Composting: Waste to Resources
✓	✓		✓		✓			✓						\$39.95	Connections: Guide to Healthy Env.
												✓		\$17.95	Creepy Crawlies & the Scientific
									✓		✓			\$5.00	Cycling Back to Nature
	✓	✓	✓		✓	✓						✓		\$99.00	Digital Field Trip to the Wetlands
			✓			✓				✓		✓		\$16.45	Earth Day to Arbor Day
	✓	✓			✓	✓				✓		✓		\$45.95	Earth's Endangered Environments
						✓			✓					\$16.95	Earthways
		✓				✓						✓		\$59.95	Eco-Adventures in the Rainforest
			✓			✓	✓					✓		\$36.95	Eco-Inquiry
	✓	✓	✓	✓	✓				✓	✓	✓			\$13.95/\$5.95	Environmental ACTION
✓	✓				✓									\$40.50	Environmental Resource Guide
✓	✓				✓				✓					\$8.95	Environmental Sci. - Water & Air
✓	✓											✓		no charge	Environmental Teaching Guide
✓			✓	✓	✓			✓	✓	✓	✓			\$19.95	For Earth's Sake
✓	✓				✓									no charge	Global Change Education Resource
✓	✓		✓		✓	✓				✓		✓		\$9.00	GLIMCES
					✓	✓			✓					\$5.00	Growing Together w/ the Treetures
	✓								✓	✓				no charge	A Guide to Groundwater Guardian
✓					✓				✓		✓			\$11.95	Hands-On Minds-On Science
		✓				✓			✓			✓		\$39.95	How Can Biodiversity Be Preserved
	✓		✓		✓				✓			✓		\$94.95	Interactive Lake Ecology
							✓				✓			\$15.00	The Intriguing Past
					✓	✓			✓		✓			\$24.80/\$12.80	Investigating & Eval. Env. Issues
	✓				✓		✓							\$19.99	Investigating Groundwater
	✓		✓		✓	✓	✓		✓			✓		no charge	Investigating Your Environment
			✓						✓			✓		varies w/ wkshp	The Leopold Education Project
									✓	✓	✓			\$15.00	Living in a Material World
	✓		✓		✓				✓		✓			\$7.00	Marine Ecology & Conservation

		Economics	English/Lang. Arts	Fine Arts	Health/Physical Ed.	Mathematics	Science	Social Studies	Multimedia	Video	Print
Title & Page Number		Grade Level	Subjects							Medium	
Migratory Bird: Issue Pac	p 60	3-7			x		x	x			•
Mud, Muck & Other Wonderful Things	p 62	K-3			x			x			•
North American Ecosystems	p 109	6-10					x	x	•		
Oceans Alive	p 110	5 & up					x			•	•
Oceans: Earth's Last Frontier	p 111	4-6					x			•	
An Ounce of Prevention	p 64	6-8		x		x	x	x			•
Ranger Rick's NatureScope: Trees	p 66	K-8			x	x		x			•
Reducing, Reusing, & Recycling	p 112	4-6				x		x		•	
River of Words	p 68	adult		x				x			•
Sea Turtle Trek	p 70	6-8		x			x	x			•
Search for the Great Sharks	p 72	3-8		x	x		x	x	x		•
Taking Action	p 113	7-12		x		x		x	x		•
Teacher's Guide to World Resources	p 74	7-12	x	x		x	x	x	x	•	•
Themeworks: Trees	p 76	preK-2		x	x	x	x	x	x		•
Themeworks: Under the Ground	p 78	K-3		x	x	x	x	x	x		•
Turning the Tide on Trash	p 80	4-8		x	x		x	x	x		•
Understanding Ecosystem Management	p 114	4-7						x	x		•
Waste: A Hidden Resource	p 82	9-12	x	x			x	x	x		•
The Waste Hierarchy	p 84	6-9					x	x	x		•
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Water Matters	p 88	3-8					x	x	x		•
The Water Sourcebook	p 90	9-12	x	x	x	x	x	x	x		•
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Wetlands: An Interdisciplinary Unit	p 94	6-8		x	x	x		x	x		•
What a Waste	p 96	3-6		x	x		x	x	x		•
Wild About Life	p 98	4-12		x		x		x	x	•	•
WILD School Sites	p 115	adult		x	x		x	x	x		•
Worm Worlds	p 116	3-6					x	x			•
Wormania	p 100	3 & up						x		•	•
Zebra Mussel Mania	p 102	5-6		x	x		x	x	x		•

Atmosphere (Weather, Climate & Quality)	Aquatic	Biodiversity	Ecology	Energy	Env. Issues	Forests/Plants	Geology & Soils	Population	Resource Mgmt.	Social Action	Solid Waste	Wildlife	Topics	Price	Title
												✓		\$6.95	Migratory Bird: Issue Pac
✓	✓		✓			✓	✓					✓		\$5.00	Mud, Muck & Other Wonderful
✓			✓			✓	✓					✓		\$145.00	North American Ecosystems
	✓		✓			✓						✓		\$179.00	Oceans Alive
✓	✓						✓					✓		\$89.00	Oceans: Earth's Last Frontier
					✓				✓		✓			no charge	An Ounce of Prevention
			✓		✓	✓	✓		✓			✓		\$12.95	Ranger Rick's NatureScope: Trees
									✓		✓			\$89.00	Reducing, Reusing, & Recycling
	✓													\$6.00	River of Words
			✓						✓			✓		\$21.05	Sea Turtle Trek
	✓		✓		✓	✓						✓		\$7.95	Search for the Great Sharks
	✓					✓				✓	✓	✓		\$7.00	Taking Action
✓	✓	✓		✓	✓			✓	✓	✓				\$8.90-\$14.95	Teacher's Guide to World Resources
			✓			✓						✓		\$18.95	Themeworks: Trees
						✓	✓					✓		\$18.95	Themeworks: Under the Ground
	✓				✓					✓	✓			no charge	Turning the Tide on Trash
		✓	✓						✓					no charge	Understanding Ecosystem Mgmt.
✓	✓				✓			✓		✓	✓			\$40.00	Waste: A Hidden Resource
					✓				✓		✓			\$19.99	The Waste Hierarchy
	✓					✓						✓		\$7.00	Water: Teacher's Guide
	✓		✓						✓					\$14.00	Water Matters
	✓	✓			✓	✓			✓					\$29.95	The Water Sourcebook
	✓				✓				✓					\$5.00	Wetlands: Critical Issues/Thinking
	✓		✓		✓	✓			✓			✓		\$14.60	Wetlands: An Interdisciplinary Unit
					✓				✓		✓			\$10.95	What a Waste
	✓	✓	✓		✓	✓				✓		✓		no charge	Wild About Life
		✓	✓						✓	✓				\$5.00	WILD School Sites
			✓									✓		\$2.70	Worm Worlds
			✓				✓				✓	✓		\$34.90	Wormania
	✓		✓		✓							✓		\$35.00	Zebra Mussel Mania

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Feedback Form

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Address: _____

Phone: _____

Please send this form to:

Bora Simmons

Northern Illinois University, Department of Curriculum and Instruction, DeKalb, IL 60115

The National Project for Excellence in Environmental Education

What does it mean to be environmentally literate? The **National Project for Excellence in Environmental Education**, initiated by the North American Association for Environmental Education (NAAEE) in 1993, is attempting to answer that question. Environmental education is a process that aims to develop an environmentally literate citizenry that can compete in our global economy, has the skills, knowledge and inclinations to make well-informed choices, and exercises the rights and responsibilities of members of a community.

Through the **National Project for Excellence in Environmental Education**, NAAEE is taking the lead in establishing guidelines for the development of balanced, scientifically accurate, and comprehensive environmental education programs. Quality environmental education programs facilitate the teaching of science, civics, social studies, mathematics, geography, language arts, etc. These guidelines will help educators develop meaningful environmental education programs that integrate across and build upon the high standards set by the core disciplines.

The **National Project for Excellence in Environmental Education** is a multi-year program designed to identify and provide examples of high quality environmental education practice. The Project is focusing on four interrelated efforts: 1) publication of *Environmental Education Materials: Guidelines for Excellence*; 2) creation of a series of educators' resource guides to quality environmental education materials (*The Environmental Education Collection — A Review of Resources for Educators Volumes 1-3*); 3) development of environmental education learner guidelines; and 4) development of a set of recommendations for the preparation and continuing education of teachers and other environmental educators.

The **National Project for Excellence in Environmental Education** is funded by the U.S. Environmental Protection Agency through the Environmental Education and Training Partnership (EETAP) — plus the National Environmental Education and Training Foundation, the National Fish and Wildlife Foundation, Northern Illinois University and World Wildlife Fund. For more information, please contact Bora Simmons, Northern Illinois University, Department of Curriculum and Instruction, DeKalb, Illinois 60115.

