APPENDIX C

NATIONAL SCIENCE RESOURCES CENTER

ELEMENTARY SCIENCE

INFORMATION DATABASE

National Science Resources Center
National Academy of Sciences—Smithsonian Institution

Smithsonian Institution, Arts & Industries Building, Room 1201
Washington, DC 20560

SECURITY CLASSIFICATION OF THIS PAGE

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19. ABSTRACT *(Continue on reverse if necessary and identify by block number)*
Appendix C consists of the records from the National Science Resources Center (NSRC) elementary science information database. The database includes brief annotations, as well as bibliographic information about the materials in the elementary sciences resource collection of the NSRC.

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DD FORM 1473, 84 MAR 83 APR edition may be used until exhausted. All other editions are obsolete.

SECURITY CLASSIFICATION OF THIS PAGE

National Science Resources Center
Elementary Science Resource Database

The National Science Resources Center has developed a resource collection and information database of elementary science teaching materials with support from the U.S. Department of Education. The resource materials in the collection include the following:

- Elementary science resource materials produced by federally-supported science curriculum development projects.
- Elementary science resource materials developed in recent years by science museums and school systems, including local adaptations of the major elementary science project materials.
- Elementary science materials developed in other countreies, including Great Britain, Australia, and some third-world countries.

The NSRC now has approximately 3,000 volumes in the NSRC elementary science collection, housed in the NSRC library in the Smithsonian Arts & Industries Building on the Mall. To obtain these materials, hundreds of commercial publishers were contacted for items that are currently *in print*. Exemplary science resource materials which were produced for local ro regional use and not available from commercial publishers were acquired for the NSRC elementary science resouce collection by requesting them from the local school systems, science museums, university teaching centers, and other organizations participating in the NSRC Network. Original copies of the elementary science teaching units produced by federally-supported science curriculum projects that are out-of-print, such as the Elementary Science Study (ESS) materials, were donated to the NSRC by the members of the network. In addition, the NSRC purchased *Science Helper K-8*, an elementary science archival videodisk that contains out-of-print materials.

In addition to collecting elementary science teaching resources, the NSRC has developed an elementary science information database. The database includes brief annotations, as well as bibliographic information about the materials in the elementary science resource collection. The NSRC resource collection and information database of elementary science teaching materials are available for use by school systems and regional science education centers planning elementary science program improvement eefforts and by participants in NSRC workshops and conferences. As new resources become available, they will be added to the NSRC collection and database.

The elementary science resource collection and information database have been produced by the National Science Resources Center, established in 1985 as a joint undertaking of the National Academy of Sciences and the Smithsonian Institution. The NSRC's mission is to contribute to the improvement of science and mathematics teaching in the nation's schools by establishing a science and mathematics curriculum resources center and information database, developing and disseminating resource materials for science and mathematics teachers, and offering a program of outreach and leadership-development activities.

NO 1
DE December 22, 1987
CA BIgd01
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Educational Services Incorporated), 1967. SMALL THINGS: AN INTRODUCTION TO THE MICROSCOPIC WORLD. St. Louis: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI SMALL THINGS: AN INTRODUCTION TO THE MICROSCOPIC WORLD
AU Elementary Science Study (Educational Services Incorporated)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO St. Louis, MO
DP 1967
PG 146
IL b&w
BI yes
IS 07-019369x
AV out of print; new edition from Delta Education
PR $16.40 Delta, 11/87
AL 4,5,6
RL 4,5,6
DS biology
; cells
; lens
; magnification
; microorganisms
; microscopes
; microscopic life
; pond life
; slides
AN Children discover the microscopic world through use of water drop lenses, hand lenses, and microscopes. They explore the concept of magnification and become acquainted with various tools and techniques for magnifying small objects. They learn to make and stain slides, and examine onion cells and single-celled organisms. Emphasis is placed on independent investigation, careful observation of similarities and differences among specimens, and recording and discussing results. Eleven sequential lessons, with student worksheet masters. (MDB)
TN 11 sessions, 35-45 minutes each
MT supplies from Delta Education
RE Brine Shrimp; Drops, Streams, and Containers; Microgardening; Pond Water
OR in library

NO 2
DE December 22, 1987
CA BIgd02
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1967, 1987. TEACHER'S GUIDE FOR SMALL THINGS: AN INTRODUCTION TO THE MICROSCOPIC WORLD. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR SMALL THINGS: AN INTRODUCTION TO THE MICROSCOPIC WORLD.
AU Elementary Science Study (Education Development Center)
PU Delta Education, Inc.
LO Nashua, NH
DP 1967, 1987
PG 120
IL b&w
BI no
IS 007019369x
LC QH206 b .E38 1967
AV in print
PR $16.40
AL 4,5,6
RL 4,5,6
DS biology
; cells
; lens
; magnification
; microorganisms
; microscopes
; microscopic life
; pond life
; slides
AN Children discover the microscopic world through use of water drop lenses, hand lenses, and microscopes. They explore the concept of magnification and become acquainted with various tools and techniques for magnifying small objects. They learn to make and stain slides, and examine onion cells and single-celled organisms. Emphasis is placed on independent investigation, careful observation of similarities and differences among specimens, and recording and discussing results. Eleven sequential lessons with student worksheet masters. (MDB)
TN 11 sessions, 35-45 minutes each
MT from Delta
RE Brine Shrimp; Drops, Streams, and Containers; Microgardening; Pond Water
OR in library

NO 16
DE January 20, 1988
SU General Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1968. TEACHER'S GUIDE FOR CHANGES. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Studies (ESS)
TI TEACHER'S GUIDE FOR CHANGES
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1968
PG 26
IL b&w photos
BI no
IS 07-17494-x
AV out of print
AL 1,2,3,4
RL 1,2,3,4
DS bacteria
; biology
; change
; elementary science methods
; general science
; growth
; melting
; mold
; rust
; decay
AN CHANGES provides children with the opportunity to observe, discuss, record, and predict natural changes brought about by both living and nonliving processes. Children place common materials such as bread, seeds, ice cubes, nails, rocks, candles, and oranges into separate glass jars and leave them in a safe place. As time passes, children compare their observations and attempt to determine what changes, if any, have occurred, and why. They can investigate the effects of moisture, light, temperature, or preservatives. They are encouraged to apply their findings to changes occurring outside the classroom, for example, in rusty bicycles, trash cans, or neighborhood ponds. (MDB)
TN 2 weeks, 15-20 minutes per day, plus 1 week 2-3 sessions, 45 minutes each
MT locally available
RE Microgardening, Mystery Powders, Small Things, Where is the Moon?, Ice Cubes, Kitchen Physics
OR in library

NO 17
DE January 20, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), Inc., 1969, 1985. TEACHER'S GUIDE FOR EGGS AND TADPOLES. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR EGGS & TADPOLES
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1969, 1985
PG 22
IL b&w photos
BI no
IS 07-18478-x
AV out of print, new edition from Delta Education
PR guide $5.15, kit $86.70 from Delta Education January, 1988
AL K,1,2,3,4,5,6
RL K,1,2,3,4,5,6
DS amphibians
; animal behavior
; animal care
; animals
; biology
; development
; eggs
; elementary science methods
; life cycle
; pond life
; tadpoles
; water
AN EGGS AND TADPOLES provides the opportunity for children to examine frog eggs, to observe their hatching into tadpoles and, if scheduling permits, their complete development into frogs. Children are encouraged to generate questions about the life cycle, behavior and ecology of this amphibian, to develop their own strategies for observation and data collection in search of answers, and to discover new questions. The guide contains detailed information on collecting or purchasing eggs, on caring for the developing animal, and proper techniques for release. (MDB)
TN 3-7 days, 15-45 minutes per day for tadpoles only
; 8-20 weeks, 2-3 sessions per week, 30-45 minutes each for full development
MT locally available, or from commercial suppliers
RE Brine Shrimp, Butterflies, Earthworms, Small Things, Changes, Pond Water
OR in library

NO 18
DE January 20, 1988
SU Physical Science
; Mathematics
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1968. TEACHER'S GUIDE FOR MIRROR CARDS. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR MIRROR CARDS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1968
PG 44
IL b&w, photos and drawings
BI yes
IS 07-18417-x
AV out of print
AL K,1,2,3,4,5,6
RL K,1,2,3,4,5,6
DS attributes
; elementary science methods
; geometry
; mirrors
; optics
; physical science
; reflection
; shapes
; symmetry
; mathematics
AN The MIRROR CARDS unit offers direct experience in the mathematical and physical concepts of bilateral symmetry. Children juxtapose small mirrors and picture cards to experiment with reflection patterns. Through investigating the effects of angle and distance, they learn in the process what a mirror can and cannot do, or where in relation to a design it must be placed in order to create a particular reflection. The guide encourages informal experimentation among small groups of children, and provides supplemental information on the mathematical basis for the activities. (MDB)
TN informal, 15-20 minutes per session
MT no longer commercially available
RE Light and Shadow, Optics, Attribute Games and Problems, Mapping
OR in library

NO 19
DE January 20, 1988
SU Skill Development
; Mathematics
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1970, 1986.
PATTERN BLOCKS TEACHER'S GUIDE. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI PATTERN BLOCKS TEACHER'S GUIDE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1970, 1986
PG 38
IL b&w photos and drawings
BI no
IS 0-87504-027-6
AV Delta Education, Inc.
PR guide $5.35, kit $24.00, 44 activity cards $20.55 January, 1988
AL K,1,2,3,4,5,6
RL K,1,2,3,4,5,6
DS attributes
; elementary science methods
; geometry
; mathematics
; patterns
; shapes
; skill development
; symmetry
; tangrams
AN PATTERN BLOCKS may be used to encourage children in experimenting with shapes and patterns. Using colored wooden blocks of six different geometric shapes, children invent their own designs or attempt to solve puzzles and problems, filling in outlines, investigating perimeter and area, or experimenting with symmetry. Mirrors may also be added to the activities. Informal, small group work or learning stations are suggested. The guide contains detailed description of materials to facilitate easy local production, and it also provides supplemental information in some of the mathematical principles involved. (MDB)
TN Informal, 15-30 minutes per session
MT kit from Delta Education, or homemade
OR in library

NO 20
DE January 20, 1988
SU Earth Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), Inc., 1970. TEACHER'S GUIDE FOR SAND. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR SAND
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1970
PG 48
IL b&w photos and drawings
BI yes
IS 07-17683-x
AV out of print
AL K,1,2,3
RL K,1,2,3
DS earth science
; elementary science methods
; mathematics
; pendulums
; sand
; sifting
; sorting
; time
; weighing
AN In the SAND unit, children investigate the physical properties of sand. They observe the color, shape and texture of different grades of sand, they investigate how it behaves when wet or dry, and they compare it with other materials such as dirt, sugar, or salt. Activities in sifting and sorting, timing, weighing, and measuring are suggested, with ideas for additional projects such as jewelry-making and creative writing. The guide contains instructions for coloring sand, for making sand paper and sand pendulums, and useful hints about classroom management. (MDB)
TN up to 6 weeks, 3-5 hours per week
MT locally available
RE Mystery Powders, Pendulums, Primary Balancing
OR in library

NO 21
DE January 20, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971, 1985.
SPINNING TABLES TEACHER'S GUIDE. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI SPINNING TABLES TEACHER'S GUIDE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1985
PG 18
IL b&w photos and drawings
BI no
AV Delta Education, Inc.
PR guide $9.20, kit $199.90 January, 1988
AL 1,2,3
RL 1,2,3
DS centrifugal force
; circular motion
; elementary science methods
; motion
; observation
; physical science
; prediction
; speed
AN SPINNING TABLES provides an opportunity to investigate circular motion, to make predictions, and observe how various materials behave when placed on a revolving surface. Chalkboard or pegboard disks are set into motion by turning the crank on an adjacent drive wheel. Children may attempt to predict how a chalkline drawn on the disk will appear when set into a spin, and whether it will change as the disk's speed is changed. They can experiment with the paths of marbles or cubes on the spinning table, or observe the effects of revolution on closed containers of liquid or powder. The guide suggests small group work, offering ideas for classroom management and related activities. (MDB)
TN 6-8 weeks, 2 sessions per week, 45 minutes each
MT Kit from Delta Education, or homemade
RE Drops, Streams, and Containers; Pendulums; Primary Balancing; Optics
OR in library

NO 22
DE January 20, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971. TEACHER'S GUIDE FOR STARTING FROM SEEDS New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR STARTING FROM SEEDS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1971
PG 25
IL b&w photos
BI no
IS 07-017726-0
AV out of print
AL 1,2,3,4,5,6,7
RL 1,2,3,4,5,6
DS biology
; botany
; elementary science methods
; leaves
; plants
; roots
; soil
; life cycle
; flowers
AN In STARTING FROM SEEDS, children experiment with various types of seeds, containers, and growth media to explore questions about how plants develop. They investigate the effects of moisture or lack of moisture, discover what happens when plants are grown in the dark, and find ways to change the direction of plant growth. Ideas for further experimentation include the effects of salt or temperature, the presence of parasitic insects, the impact of making cuttings, and attempts to grow plants from parts other than seeds. The unit emphasizes independent inquiry and encourages students to develop their own strategies for collecting, analyzing and sharing data. The guide also contains helpful information about classroom gardening techniques and problems. (MDB)
TN 3 sessions per week, 30-45 minutes each
MT locally available
RE Growing Seeds, The Life of Beans and Peas, Budding Twigs, Microgardening
OR in library

NO 23
DE January 20, 1988
SU Physical Science
; Skill Development
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), Inc., 1970, 1985. TEACHER'S GUIDE FOR STRUCTURES. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR STRUCTURES
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1970, 1985
PG 47
IL b&w photos
BI yes
IS 07-017696-5
AV out of print, new edition from Delta Education
PR guide $10.80, kit $80.60 January 1988
AL 2,3,4,5,6
RL 2,3,4,5,6
DS architecture
; bridges
; building
; design
; elementary science methods
; mathematics
; physical science
; properties
; skill development
; structures
AN In STRUCTURES, children explore the physical properties of materials and experiment with various design configurations. By working with such materials as clay, straws, paper, wood, dry spaghetti, or cardboard, children learn the possibilities for building towers, bridges, and other structures. They experiment with height, stability, and strength, designing strategies for testing their constructions. Opportunities for small group work as well as whole class activities are offered. The guide also provides ideas for additional building projects and suggestions for supplemental classroom tools and supplies. (MDB)
TN 6-10 weeks, 2-3 sessions per week, 30-45 minutes each
MT locally available, or kit from Delta Education
RE GeoBlocks, Pattern Blocks, Primary Balancing, Senior Balancing, Clay Boats
OR in library

NO 24
DE January 20, 1988
SU Earth Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1968. WHERE IS THE MOON? TEACHER'S GUIDE. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI WHERE IS THE MOON? TEACHER'S GUIDE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1968
PG 55
IL b&w photos and drawings
BI no
IS 07-17447-x
AV out of print
AL 3,4,5,6,7
RL 3,4,5,6,7
DS astronomy
; change
; earth science
; elementary science methods
; moon
; observation
; patterns
; planets
; sky
; stars
AN WHERE IS THE MOON? presents an informal introduction to observational astronomy. Through the use of written "reminders", teachers encourage their students to keep an eye on the after school sky, observing the position and apprearance of the moon and prominent planets such as Venus or Jupiter. Children record their observations in journals and on charts and discuss them in class. Over a period of time they to notice patterns of movement and change and begin to make more accurate predictions. The guide contains a calendar with useful information about finding and describing the moon, and hints on preparation of reminders. A student guide entitled WHERE WAS THE MOON? accompanies this unit. (MDB)
TN 12 weeks, 3-5 sessions per week, 5-45 minutes each
MT locally available
RE Changes, Daytime Astronomy, Light and Shadows, Mapping
OR in library

NO 25
DE January 20, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969. TEACHER'S GUIDE FOR ANIMAL ACTIVITY - ACTIVITY WHEELS. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR ANIMAL ACTIVITY - ACTIVITY WHEELS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1969
PG 15
IL b&w drawings
BI no
IS 07-17518-x
AV out of print
AL 4,5,6
RL 4,5,6
DS animal behavior
; animal care
; animals
; biology
; elementary science methods
; gerbils
; hamsters
; mice
; mouse
; rats
AN ANIMAL ACTIVITY introduces children to techniques for observing and measuring the activity levels of small mammals such as mice, gerbils, or hamsters. An exercise wheel in the animal's cage is linked to a counter that monitors the animal's activity. Children observe and record activity levels, investigating the effects of diet, age, temperature, time of day, size of cage, and classroom noise levels. The guide contains specifications for building an exercise wheel. A student guide entitled EXPERIMENTS ON ANIMAL ACTIVITY accompanies the unit. (BW &MDB)
TN Informal, 8 weeks
MT locally available, homemade, or from commercial supplier
RE Behavior of *Mealworms*, *Earthworms*, Animals in the Classroom, Tracks
OR in library

NO 26
DE January 20, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1966, 1986. TEACHER'S GUIDE FOR BEHAVIOR OF MEALWORMS. Nashua, NH: DElta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR BEHAVIOR OF MEALWORMS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1966, 1986
PG 57
IL b&w photos and drawings
BI yes
IS 07-019350-9
AV out of print, new edition from Delta Education
PR guide $7.50, kit $15.80, 35 activity cards $5.60, readers 6 for $8.50 from Delta
AL 4,5,6,7,8
RL 4,5,6,7,8
DS animal behavior
; animal care
; animals
; biology
; elementary science methods
; entomology
; insects
; invertebrates
; life cycle
; mealworms
; observation
AN In BEHAVIOR OF MEALWORMS, the study of larval insects provides an opportunity for children to develop skills in scientific inquiry. Unstructured observation of mealworms opens the unit, leading students to formulate questions about the biology and behavior of these organisms. In devising experiments to answer their questions, the children collect data, keep records, and come to conclusions that they can share with classmates. The guide contains extensive background information on mealworms with instructions for their care, and suggestions for further experimentation, evaluation, and classroom management.
TN 15-30 sessions, 30-45 minutes each
MT Locally available, commercial suppliers, or kit from Delta
RE Animals in the Classroom, Brine Shrimp, Crayfish, Earthworms, Animal Activity, Butterflies
OR in library

NO 27
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1974, 1987. TEACHER'S GUIDE FOR GASES AND "AIRS": NATURE OF AIR AND BEHAVIOR OF GASES. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR GASES AND "AIRS": NATURE OF AIR AND BEHAVIOR OF GASES
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1974, 1987
PG 138
IL b&w photos and drawings
BI no
IS 0-07-018519-0
LC QC161 b .E38 1974
AV out of print, new edition from Delta Education
PR guide $16.40, 6-student kit $57.10, teacher's kit $134.65, 70 activity cards $9.70 from Delta, January 1988
AL 5,6,7,8
RL 5,6,7,8
DS air
; atmosphere
; change
; elementary science methods
; evaporation
; gas
; gases
; oxidation
; oxygen
; physical science
; rust
AN In GASES AND AIRS, children investigate the nature of air and how it behaves under certain conditions. Suggested experiments demonstrate the existence of air, and show how the gases in air can change and be changed by interactions with materials such as candles, steel wool, germinating seeds, and water. The activities contribute to content knowledge, while fostering development of problem-solving skills, such as collection and analysis of data, prediction, and conclusion. The guide contains very detailed instructions for organizing the students' investigations. There are also student worksheets keyed to specific laboratory experiments. (MDB)
TN 16-30 sessions, 45 minutes each
MT commercial suppliers, or kit from Delta
RE Balloons and Gases, Kitchen Physics, Changes
OR in library

NO 28
DE January 21, 1988
SU General Science
; Mathematics
; Skill Development
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969, 1985.
TEACHER'S GUIDE FOR GEO BLOCKS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR GEO BLOCKS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1969, 1985
PG 26
IL b&w photos and drawings
BI no
IS 07-017524-x
AV out of print, new edition from Delta Education
PR guide $4.50, kit $80.00, 42 activity cards $20.55 from Delta
January 1988
AL K,1,2,3,4,5,6
RL K,1,2,3,4
DS attributes
; elementary science methods
; geometry
; mathematics
; shapes
; skill development
; surface area
; symmetry
; volume
AN GEOBLOCKS is a unit that enables young children to become familiar with surface area and volume relationships. As children create designs and constructions with the blocks, either in free play or during more directed activity, they learn to recognize geometric shapes, and to see how the shapes relate to one another. The guide contains complete details as to the number and dimensions of blocks appropriate for the activities. (MDB)
TN informal
MT homemade, locally available, or kit from Delta
RE Mirror cards; Pattern Blocks; Mapping; Structures; Attributes, Games and Problems
OR in library

NO 29
DE January 21, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1963, 1986. GROWING SEEDS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI GROWING SEEDS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1963, 1986
PG 14
IL b&w photos
BI no
AV out of print, new edition from Delta Education
PR guide $5.80, kit $26.50, 28 activity cards $3.65, Readers 6@ $8.50 from Delta January 1988
AL K,1,2,3
RL K,1,2,3
DS biology
; botany
; elementary science methods
; flowers
; leaves
; life cycle
; plants
; roots
; soil
; classification
AN GROWING SEEDS enables children not only to observe the life cycles of plants, but also to engage in such scientific processes as classification, measurement, prediction, and experimentation. They begin by examining a collection of small items, and establishing criteria for determining which of the objects are, in fact, seeds. They then sort, plant, and observe growth of these "seeds", collecting and sharing data with their classmates. The guide contains suggestions for classroom management, as well as a list of seeds and non-seeds that have been used effectively. (MDB)
TN 3-8 weeks, 2-3 sessions per week, 30-45 minutes each
MT locally available, or kit from Delta
RE Budding Twigs, The Life of Beans and Peas, Starting From Seeds, Microgardening
OR in library

NO 30
DE January 21, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969. TEACHER'S GUIDE FOR THE LIFE OF BEANS AND PEAS. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR THE LIFE OF BEANS AND PEAS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1969
PG 24
IL b&w photos
BI yes
IS 07-017525-x
LC SB327 b .E38 1969
AV out of print
AL 1,2,3,4
RL 1,2,3,4
DS biology
; botany
; elementary science methods
; flowers
; genetics
; leaves
; life cycle
; plants
; roots
; seeds
AN THE LIFE OF BEANS AND PEAS offers children the opportunity to observe the life cycle of plants from seed to second generation. Quick-growing, hardy legume seeds are examined, sprouted, planted, and their growth monitored. Following the appearance of flowers and the production of seed pods, the children harvest their crop, using some of the seeds for eating, and others for further planting. Children can use data from the first generation to make predictions about the second, comparing the life cycle and growth rates. The guide suggests grocery store sources for seeds of various kinds, and contains helpful information concerning classroom plant care (MDB)
TN 12-24 weeks, 1-3 sessions per week, 30-45 minutes each
MT locally available
RE Growing Seeds, Starting From Seeds
OR in library

NO 31
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1967, 1986. TEACHER'S GUIDE FOR KITCHEN PHYSICS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR KITCHEN PHYSICS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1967, 1986
PG 103
IL b&w photos and drawings
BI yes
IS 07-0199364-9
LC 372.35 b E38t
AV out of print, new edition from Delta Education
PR guide $7.30, kit $45.90 from Delta, January 1988
AL 5,6,7,8
RL 5,6,7,8
DS absorption
; density
; elementary science methods
; fluid
; liquid
; physical science
; surface tension
; viscosity
; water
AN KITCHEN PHYSICS is an investigation of the physical properties of liquids, using familiar household tools and materials to introduce the scientific processes of observation, prediction, experimentation, data collection, and analysis. Students compare the surface tensions of various liquids, and conduct experiments on viscosity, density, and absorption rates. A section on constructing and using balances enables students to create equipment for some of their experiments. The guide contains a detailed list of materials, student worksheets, and provides helpful background information for each set of activities. (MDB)
TN 8-12 weeks, 2-3 sessions per week, 45 minutes each
MT locally available or kit from Delta
RE Drops, Streams, and Containers; Colored Solutions; Sink or Float; Spinning Tables: Senior Balancing; Slips and Slides; Gases and "Airs"
OR in library

NO 32
DE January 21, 1988
SU Earth Science
; Skill Development
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971, 1985.
TEACHER'S GUIDE FOR MAPPING. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR MAPPING
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1985
PG 82
IL b&w photos and drawings
IS 07-017718-x
LC GA102.5 b .E38 1971
AV out of print, new edition form Delta Education
PR guide $19.30, kit $229.50 from Delta January 1988
AL 5,6,7
RL 5,6,7
DS distance
; earth science
; elementary science methods
; elevation
; geography
; mapping
; maps
; proportion
; scale
; topography
AN In MAPPING, children become familiar with the ways in which data can be arranged to communicate location, direction, or sequence to others. Activities include use of classroom materials for creating miniature environments, and exploration of the school and its locale to answer "life-sized" questions. As children explore problems of scale, proportion, point of view, and distance, they learn to see the relationships between the three dimensional world and its two-dimensional representation on paper. The guide contains detailed information on required materials and suggested supplementary items. (MDB)
TN 5-6 weeks, 1-3 sessions per week, 45 minutes each
MT locally available, commercial suppliers, of kit form Delta
RE Daytime Astronomy, Geo Blocks, Light and Shadows, Match and Measure, Mirror Cards, Pattern Blocks, Stream Tables, Tangrams
OR in library

NO 33
DE January 21, 1988
SU General Science
; Skill Development
; Mathematics
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969, 1985. MATCH AND MEASURE. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI MATCH AND MEASURE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1969, 1985
PG 57
IL b&w photos
BI yes
AV out of print, new edition form Delta Education
PR guide $17.45, kit $183.60
AL K,1,2,3,4
RL K,1,2
DS comparison
; elementary science methods
; mathematics
; measurement
; skill development
AN MATCH AND MEASURE suggests contexts across the curriculum in which young children can match and compare objects, gradually approaching an understanding of formal measurement. While engaged in classroom activities such as building with blocks, growing plants, or listening to stories, children are encouraged to find out how big, how far, how small things are, and how they compare with other things, like lengths of string, or width of hands. Activities for measuring area and volume are suggested as well, and the guide contains a list of useful classroom measuring materials. (MDB)
TN informal; or 4-8 weeks, 1-3 sessions per week, 30-45 minutes each
MT locally available, or kit form Delta
RE Geo Blocks, Growing Seeds, Light and Shadows, Pattern Blocks, Primary Balancing, Sand, Structures
OR in library

NO 34
DE January 21, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Devlopment Center), 1976, 1985. MICROGARDENING, AN INTRODUCTION TO THE WORLD OF MOLD: TEACHER'S GUIDE. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI MICROGARDENING, AN INTRODUCTION TO THE WORLD OF MOLD: TEACHER'S GUIDE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1976, 1985
PG 136
IL b&w photos
BI yes
IS 07-018583-2
AV out of print, new edition from Delta Education
PR guide $24.25, kit $60.20 from Delta
AL 2,3,4,5,6,7
RL 4,5,6
DS bacteria
; biology
; culture (laboratory)
; development
; elementary science methods
; fungus
; lens
; life cycle
; microbiology
; microorganisms
; microscopes
; mold
; slides
; spores
AN MICROGARDENING introduces children to the nature of molds and how they grow. Children learn about sterile procedures, and conduct experiments with common materials to discover where molds come from, influences on their growth rates, and how they can be used. The guide contains substantial background information, as well as thorough instructions for preparing and completing experiments. (MDB)
TN 15 sessions, 45 minutes each
MT commercial suppliers, or kit from Delta
RE *Changes, Small Things*
OR in library

NO 25
DE January 20, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969. TEACHER'S GUIDE FOR ANIMAL ACTIVITY - ACTIVITY WHEELS. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR ANIMAL ACTIVITY - ACTIVITY WHEELS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1969
PG 15
IL b&w drawings
BI no
IS 07-17518-x
AV out of print
AL 4,5,6
RL 4,5,6
DS animal behavior
; animal care
; animals
; biology
; elementary science methods
; gerbils
; hamsters
; mice
; mouse
; rats
AN ANIMAL ACTIVITY introduces children to techniques for observing and measuring the activity levels of small mammals such as mice, gerbils, or hamsters. An exercise wheel in the animal's cage is linked to a counter that monitors the animal's activity. Children observe and record activity levels, investigating the effects of diet, age, temperature, time of day, size of cage, and classroom noise levels. The guide contains specifications for building an exercise wheel. A student guide entitled EXPERIMENTS ON ANIMAL ACTIVITY accompanies the unit. (BW &MDB)
TN Informal, 8 weeks
MT locally available, homemade, or from commercial supplier
RE Behavior of Mealworms, Earthworms, Animals in the Classroom, Tracks
OR in library

NO 26
DE January 20, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1966, 1986. TEACHER'S GUIDE FOR BEHAVIOR OF MEALWORMS. Nashua, NH: DElta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR BEHAVIOR OF MEALWORMS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1966, 1986
PG 57
IL b&w photos and drawings
BI yes
IS 07-019350-9
AV out of print, new edition from Delta Education
PR guide $7.50, kit $15.80, 35 activity cards $5.60, readers 6 for $8.50 from Delta
AL 4,5,6,7,8
RL 4,5,6,7,8
DS animal behavior
; animal care
; animals
; biology
; elementary science methods
; entomology
; insects
; invertebrates
; life cycle
; mealworms
; observation
AN In BEHAVIOR OF MEALWORMS, the study of larval insects provides an opportunity for children to develop skills in scientific inquiry. Unstructured observation of mealworms opens the unit, leading students to formulate questions about the biology and behavior of these organisms. In devising experiments to answer their questions, the children collect data, keep records, and come to conclusions that they can share with classmates. The guide contains extensive background information on mealworms with instructions for their care, and suggestions for further experimentation, evaluation, and classroom management.
TN 15-30 sessions, 30-45 minutes each
MT Locally available, commercial suppliers, or kit from Delta
RE Animals in the Classroom, Brine Shrimp, Crayfish, Earthworms, Animal Activity, Butterflies
OR in library

NO 27
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1974, 1987. TEACHER'S GUIDE FOR GASES AND "AIRS": NATURE OF AIR AND BEHAVIOR OF GASES. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR GASES AND "AIRS": NATURE OF AIR AND BEHAVIOR OF GASES
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1974, 1987
PG 138
IL b&w photos and drawings
BI no
IS 0-07-018519-0
LC QC161 b .E38 1974
AV out of print, new edition from Delta Education
PR guide $16.40, 6-student kit $57.10, teacher's kit $134.65, 70 activity cards $9.70 from Delta, January 1988
AL 5,6,7,8
RL 5,6,7,8
DS air
; atmosphere
; change
; elementary science methods
; evaporation
; gas
; gases
; oxidation
; oxygen
; physical science
; rust
AN In GASES AND AIRS, children investigate the nature of air and how it behaves under certain conditions. Suggested experiments demonstrate the existence of air, and show how the gases in air can change and be changed by interactions with materials such as candles, steel wool, germinating seeds, and water. The activities contribute to content knowledge, while fostering development of problem-solving skills, such as collection and analysis of data, prediction, and conclusion. The guide contains very detailed instructions for organizing the students' investigations. There are also student worksheets keyed to specific laboratory experiments. (MDB)
TN 16-30 sessions, 45 minutes each
MT commercial suppliers, or kit from Delta
RE Balloons and Gases, Kitchen Physics, Changes
OR in library

NO 28
DE January 21, 1988
SU General Science
; Mathematics
; Skill Development
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969, 1985.
TEACHER'S GUIDE FOR GEO BLOCKS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR GEO BLOCKS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1969, 1985
PG 26
IL b&w photos and drawings
BI no
IS 07-017524-x
AV out of print, new edition from Delta Education
PR guide $4.50, kit $80.00, 42 activity cards $20.55 from Delta
January 1988
AL K,1,2,3,4,5,6
RL K,1,2,3,4
DS attributes
; elementary science methods
; geometry
; mathematics
; shapes
; skill development
; surface area
; symmetry
; volume
AN GEOBLOCKS is a unit that enables young children to become familiar with surface area and volume relationships. As children create designs and constructions with the blocks, either in free play or during more directed activity, they learn to recognize geometric shapes, and to see how the shapes relate to one another. The guide contains complete details as to the number and dimensions of blocks appropriate for the activities. (MDB)
TN informal
MT homemade, locally available, or kit from Delta
RE Mirror cards; Pattern Blocks; Mapping; Structures; Attributes, Games and Problems
OR in library

NO 29
DE January 21, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1963, 1986. GROWING SEEDS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI GROWING SEEDS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1963, 1986
PG 14
IL b&w photos
BI no
AV out of print, new edition from Delta Education
PR guide $5.80, kit $26.50, 28 activity cards $3.65, Readers 6@ $8.50 from Delta January 1988
AL K,1,2,3
RL K,1,2,3
DS biology
; botany
; elementary science methods
; flowers
; leaves
; life cycle
; plants
; roots
; soil
; classification
AN GROWING SEEDS enables children not only to observe the life cycles of plants, but also to engage in such scientific processes as classification, measurement, prediction, and experimentation. They begin by examining a collection of small items, and establishing criteria for determining which of the objects are, in fact, seeds. They then sort, plant, and observe growth of these "seeds", collecting and sharing data with their classmates. The guide contains suggestions for classroom management, as well as a list of seeds and non-seeds that have been used effectively. (MDB)
TN 3-8 weeks, 2-3 sessions per week, 30-45 minutes each
MT locally available, or kit from Delta
RE Budding Twigs, The Life of Beans and Peas, Starting From Seeds, Microgardening
OR in library

NO 30
DE January 21, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969. TEACHER'S GUIDE FOR THE LIFE OF BEANS AND PEAS. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR THE LIFE OF BEANS AND PEAS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1969
PG 24
IL b&w photos
BI yes
IS 07-017525-x
LC SB327 b .E38 1969
AV out of print
AL 1,2,3,4
RL 1,2,3,4
DS biology
; botany
; elementary science methods
; flowers
; genetics
; leaves
; life cycle
; plants
; roots
; seeds
AN THE LIFE OF BEANS AND PEAS offers children the opportunity to observe the life cycle of plants from seed to second generation. Quick-growing, hardy legume seeds are examined, sprouted, planted, and their growth monitored. Following the appearance of flowers and the production of seed pods, the children harvest their crop, using some of the seeds for eating, and others for further planting. Children can use data from the first generation to make predictions about the second, comparing the life cycle and growth rates. The guide suggests grocery store sources for seeds of various kinds, and contains helpful information concerning classroom plant care (MDB)
TN 12-24 weeks, 1-3 sessions per week, 30-45 minutes each
MT locally available
RE Growing Seeds, Starting From Seeds
OR in library

NO 31
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1967, 1986. TEACHER'S GUIDE FOR KITCHEN PHYSICS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR KITCHEN PHYSICS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1967, 1986
PG 103
IL b&w photos and drawings
BI yes
IS 07-0199364-9
LC 372.35 b E38t
AV out of print, new edition from Delta Education
PR guide $7.30, kit $45.90 from Delta, January 1988
AL 5,6,7,8
RL 5,6,7,8
DS absorption
; density
; elementary science methods
; fluid
; liquid
; physical science
; surface tension
; viscosity
; water
AN KITCHEN PHYSICS is an investigation of the physical properties of liquids, using familiar household tools and materials to introduce the scientific processes of observation, prediction, experimentation, data collection, and analysis. Students compare the surface tensions of various liquids, and conduct experiments on viscosity, density, and absorption rates. A section on constructing and using balances enables students to create equipment for some of their experiments. The guide contains a detailed list of materials, student worksheets, and provides helpful background information for each set of activities. (MDB)
TN 8-12 weeks, 2-3 sessions per week, 45 minutes each
MT locally available or kit from Delta
RE Drops, Streams, and Containers; Colored Solutions; Sink or Float; Spinning Tables: Senior Balancing; Slips and Slides; Gases and "Airs"
OR in library

NO 32
DE January 21, 1988
SU Earth Science
; Skill Development
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971, 1985. TEACHER'S GUIDE FOR MAPPING. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR MAPPING
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1985
PG 82
IL b&w photos and drawings
IS 07-017718-x
LC GA102.5 b .E38 1971
AV out of print, new edition form Delta Education
PR guide $19.30, kit $229.50 from Delta January 1988
AL 5,6,7
RL 5,6,7
DS distance
; earth science
; elementary science methods
; elevation
; geography
; mapping
; maps
; proportion
; scale
; topography
AN In MAPPING, children become familiar with the ways in which data can be arranged to communicate location, direction, or sequence to others. Activities include use of classroom materials for creating miniature environments, and exploration of the school and its locale to answer "life-sized" questions. As children explore problems of scale, proportion, point of view, and distance, they learn to see the relationships between the three dimensional world and its two-dimensional representation on paper. The guide contains detailed information on required materials and suggested supplementary items. (MDB)
TN 5-6 weeks, 1-3 sessions per week, 45 minutes each
MT locally available, commercial suppliers, of kit form Delta
RE Daytime Astronomy, Geo Blocks, Light and Shadows, Match and Measure, Mirror Cards, Pattern Blocks, Stream Tables, Tangrams
OR in library

NO 33
DE January 21, 1988
SU General Science
; Skill Development
; Mathematics
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969, 1985. MATCH AND MEASURE. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI MATCH AND MEASURE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1969, 1985
PG 57
IL b&w photos
BI yes
AV out of print, new edition form Delta Education
PR guide $17.45, kit $183.60
AL K,1,2,3,4
RL K,1,2
DS comparison
; elementary science methods
; mathematics
; measurement
; skill development
AN MATCH AND MEASURE suggests contexts across the curriculum in which young children can match and compare objects, gradually approaching an understanding of formal measurement. While engaged in classroom activities such as building with blocks, growing plants, or listening to stories, children are encouraged to find out how big, how far, how small things are, and how they compare with other things, like lengths of string, or width of hands. Activities for measuring area and volume are suggested as well, and the guide contains a list of useful classroom measuring materials. (MDB)
TN informal; or 4-8 weeks, 1-3 sessions per week, 30-45 minutes each
MT locally available, or kit form Delta
RE Geo Blocks, Growing Seeds, Light and Shadows, Pattern Blocks, Primary Balancing, Sand, Structures
OR in library

NO 34
DE January 21, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Devlopment Center), 1976, 1985.
MICROGARDENING, AN INTRODUCTION TO THE WORLD OF MOLD: TEACHER'S GUIDE.
Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI MICROGARDENING, AN INTRODUCTION TO THE WORLD OF MOLD: TEACHER'S *GUIDE*
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1976, 1985
PG 136
IL b&w photos
BI yes
IS 07-018583-2
AV out of print, new edition from Delta Education
PR guide $24.25, kit $60.20 from Delta
AL 2,3,4,5,6,7
RL 4,5,6
DS bacteria
; biology
; culture (laboratory)
; development
; elementary science methods
; fungus
; lens
; life cycle
; microbiology
; microorganisms
; microscopes
; mold
; slides
; spores
AN MICROGARDENING introduces children to the nature of molds and how they grow. Children learn about sterile procedures, and conduct experiments with common materials to discover where molds come from, influences on their growth rates, and how they can be used. The guide contains substantial background information, as well as thorough instructions for preparing and completing experiments. (MDB)
TN 15 sessions, 45 minutes each
MT commercial suppliers, or kit from Delta
RE Changes, Small Things
OR in library

NO 35
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1968. THE MUSICAL INSTRUMENT RECIPE BOOK. Trial Teaching Edition. Newton, MA: Education Development Center.
SE Elementary Science Study (ESS)
TI THE MUSICAL INSTRUMENT RECIPE BOOK
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Education Development Center
LO Newton,MA
DP 1968
PG 10, 21 receipe cards
IL b&w photos and drawings
BI yes
AV out of print
RL K,1,2,3,4,5
DS acoustics
; elementary science methods
; music
; musical instruments
; physical science
; sound
; vibration
AN Use of the MUSICAL INSTRUMENT RECIPE BOOK provides an opportunity to e2xplore the acoustic properties of various materials, and to combine these materials in the construction of sound-producing devices. The guide contains a list of useful materials, with instructions for building and playing twenty different instruments.
TN 3-15 sessions, 45 minutes each
MT locally available, homemade
RE Whistles and Strings
OR in library

NO 36
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1968, 1985.
OPTICS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI OPTICS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1968, 1985
PG 57
IL b&w photos and drawings
BI no
AV out of print, new edition form Delta Education
PR guide $7.15, kit $123.40 from Delta, January, 1988
AL 4,5,6
RL 4,5,6
DS color
; light
; optics
; elementary science methods
; eyes
; optical illusions
; physical science
; reflection
; refraction
; vision
AN In OPTICS, children analyze the properties of light, observing its interaction with various transparent, opaque, or reflective objects. They explore mirrors shadows and colored light, comparing their observations to what they already know about reflections and color. They experiment with refraction, trying different ways of bending light. The guide contains detailed information on materials and their use in the unit. (MDB)
TN 5-6 weeks, 2 sessions per week, 1 hour each
MT locally available, or kit from Delta
RE Mirror Cards, Light and Shadow, Spinning Tables
OR in library

NO 37
DE January 21, 1988
SU Mathematics
; Skill Development
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1974, 1986.
TEACHER'S GUIDE FOR PEAS AND PARTICLES: LARGE NUMBERS AND ESTIMATIONS.
Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR PEAS AND PARTICLES: LARGE NUMBERS AND ESTIMATIONS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1974, 1986
PG 42
IL b&w photos
BI yes
IS 07-018526-3
AV out of print, new edition from Delta Education
PR guide $12.20, kit $41.80, 58 activity cards $8.65 January, 1988
AL 4,5,6
RL 4,5,6
DS approximation
; area
; elementary science methods
; estimation
; mathematics
; measurement
; ratio
; skill development
; volume
; weight
AN PEAS AND PARTICLES is a unit concerned with large numbers, approximation, and estimation. Using real-life situations, common objects, or photographs, children learn various methods for estimating area, volume, weight, quantity, and distance. They discover when precision is necessary, and when approximations are appropriate. The guide contains many photos for use in the activities, and includes some entertaining examples from literature that illustrate the value of estimation. (MDB)
TN 8-15 sessions, 45 minutes each
MT locally available, or kit from Delta
RE Geo Blocks, Match and Measure, Pattern Blocks, Mapping, Pendulums
OR in library

NO 38
DE January 21, 1988
SU Physical Sciences
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969, 1985. *TEACHER'S GUIDE FOR PENDULUMS*. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR PENDULUMS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1969, 1985
PG 33
IL b&w photos and drawings
BI yes
IS 07-017568-3
LC QA862.P4 b E38 1969
AV out of print, new edition from Delta Education
PR guide $11.20, kit $402.90 from Delta January, 1988
AL 4,5,6
RL 4,5,6
DS elementary science methods
; force
; gravity
; motion
; physical science
; swing
AN PENDULUMS offers an opportunity to investigate swinging things. Children use fishline to suspend various objects from a crossbar, then conduct experiments to compare the effects of the length of line, the weight and shape of the suspended object, and the distance and rate of swing. There are additional activities suggested for hand-held pendulums, coupled swings, and salt pendulums, as well as hints for constructing classroom equipment. (MDB)
TN 4-8 weeks, 2 sessions per week, 30 minutes each
MT locally available, or kit from Delta
OR in library

NO 39
DE January 21, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969. TEACHER'S GUIDE FOR POND WATER. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR POND WATER
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1969
PG 36
IL b&w photos
BI yes
IS 07-017574-8
LC QH98 b .E38 1969
AV out of print
AL 1,2,3,4,5,6,7
RL 3,4,5,6
DS animal behavior
; animals
; aquariums
; biology
; elementary science methods
; lens
; microorganisms
; microscopes
; microscopic life
; observation
; pond life
; snails
AN POND WATER introduces children to the wide variety of life in a pond. By using hand lenses and microscopes, children discover that pond water is teeming with tiny living creatures whose behavior can be observed easily. The guide contains complete information on collecting pond water, with suggestions for observations and experiments. Accompanying activity cards provide detailed instructions for building and maintaining an aquarium, for preparing slides, and for recognizing and caring for pond organisms. (MDB)
TN 3-6 weeks, 3-5 sessions per week, 45 minutes each
MT locally available
RE Changes, Crayfish, Eggs and Tadpoles, Small Things, Brine Shrimp
OR in library

NO 40
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969. TEACHER'S GUIDE FOR SLIPS AND SLIDES, Trial Teaching Edition. Newton, MA: Education Development Center, Inc.
SE Elementary Science Study(ESS)
TI TEACHER'S GUIDE FOR SLIPS AND SLIDES
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Education Development Center, Inc.
LO Newton, MA
DP 1969
PG 90
IL b&w photos and drawings
BI no
AV out of print
AL 4,5,6
RL 4,5,6
DS elementary science methods
; force
; forces
; friction
; motion
; mass
; physical science
; surface
AN SLIPS AND SLIDES is an investigation of forces and friction. Children conduct experiments to discover how "slippery" various surfaces are, and to determine how the weight and surface area of an object affects the amount of force required to move it. Students are encouraged to record results and compare their findings with those of their classmates. The guide contains suggestions for many activities and experiments, though instructions are not explicit. (MDB)
TN 15-30 sessions, 45 minutes each
MT locally available
RE Pendulums, Spinning Tables
OR in library

NO 41
DE January 21, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1970. TEACHER'S GUIDE FOR BUTTERFLIES. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR BUTTERFLIES
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1970
PG 42
IL b&w photos and drawings
BI yes
IS 07-017682-5
AV out of print
AL K,1,2,3,4,5
RL K,1,2,3,4,5
DS animals
; animal care
; biology
; butterflies
; butterfly
; chrysalis
; development
; elementary science methods
; insects
; invertebrates
; larva
; life cycle
; metamorphosis
; moths
; observation
; pupa
; caterpillars
AN BUTTERFLIES provides an opportunity for children to closely observe the life cycle and characteristics of these familiar insects. While witnessing the metamorphoses of the organisms from egg to adult, the children learn how to handle and care for them. Students are encouraged to generate their own questions about the butterflies, and to seek answers through careful observation. The guide contains complete instructions on acquiring and caring for butterflies, provides information on common species and their habits, and offers advice on construction of nets and cages. (MDB)
TN six weeks, 2-3 sessions per week, 30 minutes each (care & feeding 5 minutes daily)
MT locally available, commercial suppliers, or kit from Delta Foundation
RE Behavior of Mealworms, Earthworms, Pond Water, Eggs and Tadpoles, Crayfish, Changes, Brine Shrimp, Animals in the Classroom
OR in library

NO 42
DE January 21, 1988
SU Earth Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971. TEACHER'S GUIDE FOR DAYTIME ASTRONOMY. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR DAYTIME ASTRONOMY
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1971
PG 74
IL b&w photos and drawings
BI yes
IS 07-017717-1
AV out of print
AL 5,6,7,8
RL 4,5,6,7,8
DS astronomy
; calendar
; earth science
; eclipse
; elementary science methods
; equinox
; geography
; globe
; light
; moon
; observation
; planets
; sextant
; shadows
; solar system
; solstice
; stars
; sun
; sundial
AN DAYTIME ASTRONOMY enables children to approach an understanding of their universe through investigation of such familiar phenomena as shadows, the sun's daily motion, and the phases of the moon. Children keep records of the sun's movement by watching shadows overa period of time, make moon observations, and through analysis and discussion of their data, gradually discover that the changes they have observed fit into predictable patterns. The guide contains a list of useful materials, detailed advice for conducting indoor and outdoor classroom activities, and instructions for making models. (MDB)
TN Through-year, 1-5 sessions per week, 15-45 minutes per session
MT locally available, homemade, or from commercial suppliers
RE light and shadows, Mirror Cards, Where is the Moon?, Mapping
OR in library

NO 43
DE January 21, 1988
SU Earth Science
TY Teacher's Guide
CI Elementary Science Study (Educational Development Center), 1976. LIGHT AND SHADOWS: SPACE RELATIONSHIPS THROUGH THE PHENOMENA OF SHADOWS. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI LIGHT AND SHADOWS: SPACE RELATIONSHIPS THROUGH THE PHENOMENA OF SHADOWS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1976
PG 29
IL b&w photos and drawings
BI yes
IS 07-018582-4
AV out of print
RL K,1,2,3
DS light
; observation
; shadows
; sun
; earth science
AN LIGHT AND SHADOWS provides an informal introduction to the investigation of light, shadow, and spatial relationships. Through photographs and sparse text, the guide illustrates ways of engaging young children in such indoor and outdoor activities as tracing shadows, catching each other's shadows, and following flashlight beams. Because it contains no detailed instructions, the book functions more as an inspiration than as a lesson plan. (MDB)
TN Informal, 15-45 minute sessions, through-year
MT locally available
RE Daytime Astronomy, GeoBlocks, Mirror Cards, Optics, Pattern Blocks,
OR in library

NO 44
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1968, 1985. WHISTLES AND STRINGS TEACHER'S GUIDE. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI WHISTLES AND STRINGS TEACHER'S GUIDE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1968, 1985
PG 51
IL b&w photos
BI no
AV out of print, new edition from Delta Education
PR guide $6.65, kit $132.60, 57 activity cards $11.15, readers(6) $8.50 January, 1988
AL 3,4,5,6
RL 3,4,5,6
DS acoustics
; amplitude
; elementary science methods
; frequency
; music
; musical instruments
; physical science
; pitch
; sound
; vibration
AN WHISTLES AND STRINGS offers children the opportunity to investigate the acoustic properties of common materials, and to construct and play their own musical instruments. Students experiment with plastic tubing, straws, string, paper cups, and other familiar materials, manipulating them in various ways to discover amplitude, pitch, and tone quality, and to discern the relationships between a material and the sound it produces. The guide provides a materials list, instructions for the activities, and examples of how some children have worked with the unit. (MDB)
TN 3-5 weeks, 2-3 sessions per week, 1 hour each
MT locally available, or kit from Delta
RE Musical Instrument Recipe Book
OR in library

NO 45
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971, 1985. TEACHER'S GUIDE FOR WATER FLOW. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR WATER FLOW
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1971, 1985
PG 58
IL b&w photos and drawings
BI no
IS 07-017733-3
AV out of print, new edition from Delta Education
PR guide $14.60, kit $140.75
AL 5,6,
RL 5,6
DS air pressure
; circulation
; elementary science methods
; physical science
; pipes
; plumbing
; pumps
; water
; water flow
; water level
; water pressure
AN In WATER FLOW, children observe the circulation of water in closed systems. Children combine clear plastic tubing with other common materials to construct pathways for water flow. They make predictions, then use various tubing configurations to conduct experiments on rate of flow, water levels, and effects of air pressure. Children are encouraged to devise their own problems and to create strategies for solving them. The guide contains many helpful suggestions for activities and classroom management. (MDB)
TN 6-16 sessions, 45 minutes each
MT locally available, commercial suppliers, or kit from Delta
RE Batteries and Bulbs; Colored Solutions; Drops, Streams, and Containers; Gases and "Airs"; Kitchen Physics, Sink or Float, Stream Tables
OR in library

NO 46
DE January 21, 1988
SU Chemistry
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971, 1985. TEACHER'S GUIDE FOR BALLOONS AND GASES. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR BALLOONS AND GASES
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1971, 1985
PG 42
IL b&w photos and drawings
BI no
AV Delta Education
PR guide $13.10, kit $229.50, consumable kit $127.50 January, 1988
AL 5,6,7,8
RL 5,6,7,8
DS acids and bases
; chemistry
; elementary science methods
; gas
; gases
; indicators
; properties
; reaction
; solutions
AN BALLOONS AND GASES enables children to investigate the properties of various gases: to demonstrate that although they might be invisible, gases do exist, and can be identified and differentiated. Students begin by experimenting with acids, bases, and indicators, observing chemical reactions and learning ways of distinguishing similar fluids. They then generate gases and, by measuring weight and observing reactions and effects, begin to recognize the unique properties of each. The guide contains explicit safety recommendations, instructions for conducting lab experiments, and supplementary suggestions for preparing solutions and equipment. (MDB)
TN 12-20 sessions, 1 hour each
MT locally available, commercial suppliers, or kit from Delta
RE Gases and "Airs", Mystery Powders, Senior Balancing, Kitchen Physics
OR in library

NO 47
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971, 1985. TEACHER'S GUIDE FOR HEATING AND COOLING. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study
TI TEACHER'S GUIDE FOR HEATING AND COOLING
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1971, 1985
PG 58
IL b&w photos and drawings
BI no
AV Delta Education
PR guide $15.05, kit $183.60 January, 1988
AL 5,6,7,8
RL 6,7,8
DS conduction
; cooling
; elementary science methods
; heating
; physical science
AN HEATING AND COOLING enables children to experiment with a variety of materials, and to discover similarities and differences in their rates of heat conduction. Using an assortment of metal or glass rods; sheets of aluminum, lead, or copper; mesh screens, wire, and candles, children conduct tests to determine which materials heat fastest and which take longest to cool. They observe that heat goes into materials, that it can be transferred from hot areas to cool ones, and that heating an object can cause measurable expansion. The guide offers safety instructions, and brief background information is for each activity. (MDB)
TN 20 sessions, 45 minutes each
MT locally available, commercial suppliers, or kit from Delta
RE Gases and "Airs", Ice Cubes, Batteries and Bulbs
OR in library

NO 48
DE January 21, 1988
SU Earth Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971, 1985. GUIDE AND CARDS FOR STREAM TABLES. Nashua, NH: Delta Education Inc.
SE Elementary Science Study (ESS)
TI GUIDE AND CARDS FOR STREAM TABLES
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1971, 1985
PG 23, with 10 photo cards
IL b&w photos and drawings
BI no
AV Delta Education
PR guide $7.15, kit $80.60
AL 4,5,6,7,8,9
RL 4,5,6
DS earth science
; elementary science methods
; erosion
; geography
; sand
; sediment
; sedimentation
; soil
; streams
; water
; water currents
; water flow
; waves
AN With STREAM TABLES, children investigate the action and effects of water circulating in currents, streams, and waves. A waterproof box equipped with a pump and plastic tubing provides an environment to which children add sand, gravel, and water. As the water courses through the box, children can observe how it moves, and how its motion affects the land. The guide contains suggestions for building landscapes to erode, creating wind currents, and other activities. There are detailed instructions for using materials and for classroom management. A set of photo cards illustrates various uses of the table, but the quality and composition of the pictures reduce their effectiveness. (MDB)
TN 3-7 weeks, 1-3 sessions per week, 1 hour each
MT locally available, commercial supplier, or kit from Delta
RE Mapping, Sand, Water Flow, Rocks and Charts
OR in library

NO 49
DE January 21, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1968, 1985. TEACHER'S GUIDE FOR BATTERIES AND BULBS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR BATTERIES AND BULBS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1968, 1985
PG 106
IL b&w photos and drawings
BI yes
IS 07-017491-1
AV out of print, new edition form Delta Education
PR guide $9.40, kit $198.90, 40 activity cards $19.15, Readers (6) $8.50 from Delta January, 1988
AL 4,5,6,7,8
RL 4,5,6
DS batteries
; battery
; bulbs
; circuits
; conductivity
; electricity
; electromagnets
; elementary science methods
; energy
; forces
; magnets
; physical science
; wires
AN BATTERIES AND BULBS introduces children to the study of electricity and magnetism. Using common objects such as flashlights, batteries, small bulbs, wires, and magnets, children are challenged to predict and trace the path of electricity in a circuit, to find out what's inside a battery, to make and use their own light bulbs and electromagnets. The guide contains detailed lists of materials for each activity, as well as complete instructions for the experiments and suggestions for classroom discussions. (MDB)
TN 7-12 weeks, 2-3 sessions per week, 45 minutes each
MT locally available, or kit from Delta
RE water flow
OR in library

NO 86
DE December 22, 1987
CA BIgd01
SU Biology
TY Teacher's Guide
CI Elementary Science Study, 1967. SMALL THINGS: AN INTRODUCTION TO THE MICROSCOPIC WORLD. St. Louis: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI SMALL THINGS: AN INTRODUCTION TO THE MICROSCOPIC WORLD
AU Elementary Science Study
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO St. Louis, MO
DP 1967
PG 146
IL b&w, drawings & photos
BI yes
IS 07-019369x
AV out of print; new edition from Delta Education
PR guide: $16.40 from Delta, 11/87
AL 4,5,6
RL 4,5,6
DS biology
; cells
; elementary science methods
; lens
; magnification
; microorganisms
; microscopes
; microscopic life
; pond life
; slides
AN Children discover the microscopic world through use of water drop lenses, hand lenses, and microscopes. They explore the concept of magnification and become acquainted with various tools and techniques for magnifying small objects. They learn to make and stain slides, examining onion cells and single-celled organisms. Emphasis is placed on independent investigation, on careful observation of similarities and differences among specimens, and on recording and discussing results. Eleven sequential lessons, with student worksheet masters. (BW & MDB)
TN 11 sessions, 35-45 minutes each
MT supplies from Delta Education
RE Brine Shrimp; Drops, Streams and Containers; Microgardening; Optics; Pond Water
OR in library

NO 87
DE December 22, 1987
CA BIgd02
SU Biology
TY Teacher's Guide
CI Elementary Science Study, 1987. TEACHER'S GUIDE FOR SMALL THINGS:
AN INTRODUCTION TO THE MICROSCOPIC WORLD. Nashua, NH: Delta Education.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR SMALL THINGS: AN INTRODUCTION TO THE MICROSCOPIC WORLD.
AU Elementary Science Study
PU Delta Education, Inc.
LO Nashua, NH
DP 1987
PG 120
IL b&w, drawings & photos
BI no
AV in print
PR $16.40
AL 4,5,6
RL 4,5,6
DS biology
; cells
; elementary science methods
; lens
; magnification
; microorganisms
; microscopes
; microscopic life
; pond life
; slides
AN Children discover the microscopic world through use of water drop lenses, hand lenses, and microscopes. They explore the concept of magnification and become acquainted with various tools and techniques for magnifying small objects. They learn to make and stain slides, examining onion cells and single-celled organisms. Emphasis is placed on independent investigation, on careful observation of similarities and differences among specimens, and on recording and discussing results. Eleven sequential lessons with student worksheet masters. (BW & MDB)
TN 11 sessions, 35-45 minutes each
MT from Delta
RE Brine Shrimp, Drops, Microgardening, Optics, Pond Water
OR in library

NO 88
DE December 23, 1987
CA BIgd
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1970. ANIMALS IN THE CLASSROOM: A GUIDE FOR TEACHERS. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI ANIMALS IN THE CLASSROOM: A GUIDE FOR TEACHERS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1970
PG 56
IL b&w, drawings and photos
BI yes
IS 07-017706-6
LC SF413 b .E38
AV out of print
PR n/a
AL 1,2,3
RL 1,2,3
DS animals
; animal care
; biology
; elementary science methods
; gerbils
; lizards
; mealworms
AN ANIMALS IN THE CLASSROOM encourages teachers to keep animals of all kinds in the classroom and to use them in teaching language arts, mathematics, and social studies, as well as in science and nature study. The guide is divided into four sections. The first is an account of a year with desert animals in a primary classroom. The second section contains a checklist for care of a variety of animals. The third and fourth sections describe methods that have worked successfully in caring for gerbils and lizards. Some simple, inexpensive cages are described for use with small animals. A resource list is included, but due to the age of this edition, it is somewhat outdated. (BW & MDB)
MT source list in guide
RE Animal Activity; Bones; Brine Shrimp; Butterflies; Crayfish; The Curious Gerbils; Earthworms; Eggs and Tadpoles; How Barn Owls Hunt; How a Moth Escapes From Its Cocoon; Mosquitoes; Pond Water; Tracks
OR in library

NO 89
DE December 23, 1987
CA PSgd
SU *Physical Science*
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1974, 1985. TEACHER'S GUIDE FOR COLORED SOLUTIONS: DENSITY AND LAYERING OF LIQUIDS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study
TI TEACHER'S GUIDE FOR COLORED SOLUTIONS: DENSITY AND LAYERING OF LIQUIDS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1974, 1985
PG 45
IL b&w, drawings and photos
BI no
IS 0-07-018517-4
AV out of print, new edition from Delta
PR $6.70, Delta; kit $122.40, Delta (12/87)
AL 3,4,5,6,7,8
RL 3,4,5,6,7,8
DS density
; elementary science methods
; fluid
; liquid
; physical science
; solutions
AN COLORED SOLUTIONS is an introduction to density and the layering of liquids. Children observe the patterns created by food coloring as it spreads in plain water. They test for the effects of temperature and color concentration on the behavior of liquids, and then investigate what happens when salt water and fresh water are combined. They experiment with various concentrations of salt water, each dyed a different color. The liquids are layered in transparent straws according to their density. Eventually the children develop a scheme for ordering liquids according to "weight for the same amount." Sample prediction sheets are included, as are suggestions for evaluation. (MDB)
TN 12-20 sessions, 35-45 minutes each
MT local purchase, or Delta kit
RE Drops, Streams and Containers; Kitchen Physics; Optics; Sink or Float; Water Flow
OR in library

NO 90
DE December 24, 1987
CA BIgd
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971. TEACHER'S GUIDE FOR EARTHWORMS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study
TI TEACHER'S GUIDE FOR EARTHWORMS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1971
PG 30
IL b&w, drawings and photos
BI no
IS 07-017707-4
AV out of print, new edition from Delta
PR $5.15, Kit $35.70 from Delta (12/87)
AL 4,5,6
RL 4,5,6
DS animals
; animal behavior
; animal care
; biology
; earthworms
; elementary science methods
; environment
; habitat
; invertebrates
; life cycle
AN Children observe the developmental stages and investigate the behavioral patterns of these abundant and easy-to-care-for animals, EARTHWORMS. Students design and carry out experiments to determine the kind of environment earthworms prefer: light or dark, moist or dry, warm or cool. They experiment with different soil types in the earthworm's habitat. By creating mini-environments in clear plastic tubes or boxes, they observe how worms move, and what they do underground. Outdoor lessons provide an opportunity to compare classroom observation with the actual earthworm environment. Children test their classroom experiences by predicting where they will find earthworms outdoors. The guide provides information on collecting, purchasing, caring for, housing, and feeding earthworms. (BW & MDB)
TN 3-7 sessions, 35-45 minutes each
MT locally available, or Delta kit
RE Brine Shrimp, Butterflies, Crayfish, Eggs and Tadpoles, Mosquitoes
OR in library

NO 91
DE December 24, 1987
CA PSgd
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1974, 1986. TEACHER'S GUIDE FOR ICE CUBES: MELTING RATES OF ICE. Nashua, NH: Delat Education, Inc.
SE Elementary Science Study
TI TEACHER'S GUIDE FOR ICE CUBES: MELTING RATES OF ICE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1974, 1986
PG 66
IL b&w, drawings and photos
BI no
IS 0-07-018522-0
AV out of print, new edition from Delta Education
PR $7.50, kit $96.90 from Delta
AL 3,4,5
RL 3,4,5
DS conduction
; conductivity
; elementary science methods
; heat
; ice
; insulation
; melting
; physical science
; surface-volume ratio
; temperature
; thermometer
; water
AN ICE CUBES presents a number of activities and questions about the effects of heat, surface area, and conductivity on melting rates of ice. Children measure the time it takes for an ice cube to melt in air and in different amounts of water; they compare the melting rates of unusually shaped ice cubes to develop ideas about surface-volume relationships; and they compare the melting rates of ice in contact with metal, wood, and other materials. Children collect data from their observations and experiments, learn to use a thermometer, and construct tables and graphs to report their findings. The guide includes three worksheets to give children experience in measuring elapsed time, six problem cards to stimulate independent investigations as free-time projects or homework, and a reproducible article entitled "Can You Make a Better Ice Cube Keeper?" which encourages children to continue their investigation of insulators. (MDB)
TN 15 - 35 sessions, 35 - 45 minutes each
MT locally available, or Delta kit
RE Heating and Cooling
OR in library

NO 92
DE January 12, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1985. TEACHER'S GUIDE FOR BRINE SHRIMP. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR BRINE SHRIMP
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1985
PG 26
IL b&w, photos and drawings
BI no
AV Delta Education, Inc.
PR Guide: $4.25
; Kit: $29.60
; Activity Cards (30): $5.10
; Readers (6): $8.50 ea.
AL k,1,2,3,4,5
RL 1,2,3,4
DS animals
; animal behavior
; biology
; brine shrimp
; crustaceans
; development
; elementary science methods
; lens
; life cycle
; microorganisms
; microscopic life
; water
AN BRINE SHRIMP provides a simple, inexpensive way to introduce children to the study of living things and to the workings of a life cycle. Students maintain a saltwater environment in which these tiny crustaceans hatch, grow, and eventually produce offspring. Although designed for grades one and two, the unit also includes more formal experiments for third and fourth grades. Children are encouraged to observe carefully as they conduct simple activities to determine the effects of light, temperature, and salt concentrations. (Brine shrimp take about six weeks to mature, a factor which should be considered in planning the unit.) (MDB)
TN six weeks, two to three sessions per week, 30 minutes each.
MT locally available, or Delta kit.
RE Butterflies, Eggs and Tadpoles, Pondwater, Crayfish
OR in library

NO 93
DE 1/12/88
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1970. TEACHER'S GUIDE FOR BUDDING TWIGS. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR BUDDING TWIGS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1970
PG 44
IL b&w, photos and drawings
BI yes
IS 07-017698-1
LC QK645 b .E38 1970
AV out of print
AL 4,5,6
RL 4,5,6
DS biology
; botany
; elementary science methods
; flowers
; leaves
; life cycle
; plants
; shrubs
; trees
AN In BUDDING TWIGS, children examine the structure of twigs brought into the classroom, and observe the development of buds forced into leaf or bloom ahead of season. The children note external features of "bare" winter twigs: bark color and texture, leaf scars, thorns, and hairs. During development of buds, the students observe position, number, covering, and arrangement on the twig. They dissect buds and stems to reveal internal structure, and use colored water to observe water conduction in twigs. They also experiment with methods for accelerating bud development. The guide contains information on collecting, cutting, and caring for twigs. There are also drawings of common twigs and buds, and a budding sequence chart. (BW & MDB)
TN 6-8 weeks, 2-3 sessions per week, 45 minutes each; late winter, early spring
MT locally available
RE Butterflies, The Life of Beans and Peas, Starting from Seeds
OR in library

NO 94
DE January 12, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969, 1985.
TEACHER'S GUIDE FOR CLAY BOATS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR CLAY BOATS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1969, 1985
PG 21
IL b&w, photos and drawings
BI no
IS 07-017562-4
LC QC148.2 b .E38
AV out of print, new edition from Delta Education
PR guide: $3.50, kit $63.25, 42 activity cards $7.40, readers 6 @ $8.50 from Delta Education January 1988
AL 2,3,4,5,6
RL 3,4,5,6
DS buoyancy
; density
; elementary science methods
; float
; fluid
; physical science
; sinking
; water
AN In this investigation of buoyancy, children discover how an object such as a lump of clay, which might ordinarily sink in water, can be made to float. By shaping the clay in various ways, the children discover that some designs float better than others. They then load their boats with common classroom objects or small uniform weights to find out how much "cargo" the boats can carry, and which designs support the most weight. The children go on to experiment with plastic cups, aluminum foil, and other materials to test their ideas about buoyancy. Younger students may have less patience than older ones in conducting the more formal experiments, a factor which should be considered in lesson planning. (MDB)
TN 15 sessions, 35-45 minutes each, for grades 4,5,6; less time for grade 3.
MT locally available, or Delta Education kit
RE Sink or Float
OR in library

NO 95
DE January 12, 1988
SU Biology
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969. TEACHER'S GUIDE FOR CRAYFISH. New York: Webster Division, McGraw Hill Book Company.
SE Elementary Science Study (ESS)
TI TEACHER'S GUIDE FOR CRAYFISH
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Webster Division, McGraw Hill Book Company
LO New York, NY
DP 1969
PG 28
IL b&w, photos and drawings
BI no
IS 07-017573-x
LC QL444.M33 b E381 1969
AV out of print
AL 4,5,6
RL 4,5,6
DS animals
; animal behavior
; animal care
; biology
; crayfish
; crustaceans
; elementary science methods
; environment
; habitat
; life cycle
; pond life
; water
AN In CRAYFISH, children conduct classroom investigations of the behavior of these freshwater crustaceans. They offer different types of food and note the animals' preference, and by making modifications to the animals' environment, discover not only which habitat the crayfish prefer, but also how environment influences social structure. Opportunities for further observation and experimentation are encouraged, and background information on gender differences, reproduction, and general care are provided. The guide also suggests sources and techniques for collecting or buying crayfish, and for preserving any classroom specimens that fail to survive. (MDB)
TN 5-7 weeks, 3-5 sessions per week, 30 minutes each
MT locally available, or through commercial suppliers
RE Brine Shrimp, Eggs and Tadpoles, Pondwater
OR in library

NO 96
DE January 12, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969, 1985.
MOBILES (A GUIDE FOR TEACHERS). Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI MOBILES (A GUIDE FOR TEACHERS)
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1969, 1985
PG 23
IL b&w, photos and drawings
BI no
IS 07-17512-8
LC QC107 b .E378 1969
AV out of print, new edition from Delta Education
PR guide: $4.10, kit: $28.55, activity cards $1.80 from Delta Education January, 1988
AL k,1,2,3,4
RL k,1,2,3,4
DS balance
; elementary science methods
; mobile
; physical science
; symmetry
AN In MOBILES, children investigate principles of balance, experimenting with the effects of symmetry and weight on a balanced system. Using oaktag or cardboard, they design and construct the shapes for their mobiles. The children then explore the various ways of hanging and balancing their shapes with yarn and reeds or sticks. (BW)
TN 4-6 sessions, 30-45 minutes each
MT locally available, or kit from Delta Education
RE Primary Balancing
OR in library

NO 97
DE 12 January, 1988
SU Chemistry
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1966, 1986. MYSTERY POWDERS. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI MYSTERY POWDERS
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1966, 1986
PG 23
IL b&w,photos and drawings
BI no
AV out of print, new edition from Delta Education
PR guide: $3.55
; kit: $55.10
; activity cards (16): $3.20
; readers (6): $8.50 ea.
AL 3,4
RL 3,4
DS chemistry
; chemical reaction
; elementary science methods
; physical properties
; solutions
; water
AN MYSTERY POWDERS introduces children to the detailed examination of chemical and physical properties of familiar substances, and to the use of indicators as a means of identifying these substances. At the start, students receive four unnamed white powders: sugar, salt, baking soda, and starch. They try to identify these by tasting smelling, feeling, and comparing their powders with identified substances. Next, the children use magnifying lenses to observe size and shape of individual particles. They mix the powders with water and perform tests with heat, iodine, and vinegar in order to gain additional information about the powders' properties. Each powder reacts in a specific way. By using what they've learned, children apply their tests to determine presence of individual powders in new mystery mixtures. Careful observation and discussion of results are encouraged, as is use of charts for organizing data. (BW)
TN 10 sessions, 45 minutes each
MT locally available, or kit from Delta Education, also activity cards from Delta
OR in library

NO 98
DE 12 January, 1988
SU Earth Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1969, 1986.
ROCKS AND CHARTS TEACHER'S GUIDE. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI ROCKS AND CHARTS TEACHER'S GUIDE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1969, 1986
PG 26
IL b&w, photos and charts
BI yes
IS 0-07-018527-1
LC QE366 b .E38 1974
AV out of print, new edition from Delta Education
PR guide: $5.05
; Kit : $26.50
; readers (6): $8.50 ea.
; activity cards (23): $3.65
AL 3,4,5,6
RL 3,4,5,6
DS charts
; classification
; earth science
; elementary science methods
; geology
; minerals
; rocks
AN ROCKS AND CHARTS invites children to look closely at the characteristics of rocks in order to establish ways of comparing and differentiating them. Excellent introductory chartmaking activities are used to help classify and identify rocks. Children use their own criteria for sorting, then learn more standard tests for streak, hardness, magnetism, and mineral content. The guide contains many activities and games, as well as facts about how rocks are named, and how they are used. (MDB)
TN 15-20 sessions, 45 minutes each
MT kit from Delta Education, or specimens from commercial suppliers
RE Attribute Games and Problems, Mystery Powders
OR in library

NO 99
DE 12 January, 1988
SU Physical Science
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1971, 1986. SINK OR FLOAT TEACHER'S GUIDE. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI SINK OR FLOAT TEACHER'S GUIDE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1971, 1986
PG 32
IL b&w, photos and drawings
BI no
IS 07-017724-4
LC QA907 b .E38 1971
AV out of print, new edition from Delta Education
PR guide: $5.70
; kit: $85.70
; activity cards (48): $7.90
AL 2,3,4,5,6,7
DS buoyancy
; density
; float
; fluid
; liquid
; physical science
; sinking
; water
AN In SINK OR FLOAT, children explore the concept of density of materials by experimenting with displacement and buoyancy. The objects used are cylinders, cubes, and spheres in various sizes and densities (wood, acrylic, aluminum, and polyethylene). As they work with these items, the children find objects that sink in oil but float in water; some that float high and others that barely float. Children sort the objects by weight and buoyancy, measuring and comparing amounts of water displaced by various objects. They find ways to change a "sinker" into a "floater", or vice versa, and discover that by adding salt to water, they may be able to affect buoyancy. (BW and MDB)
TN 12 sessions, 45 minutes each
MT locally available, or kit from Delta Education
RE Balloons and Gases, Blay Boats, Colored Solution, Water Flow
OR in library

NO 100
DE 12 January, 1988
SU Skill Development
TY Teacher's Guide
CI Elementary Science Study (Education Development Center), 1968, 1984. ATTRIBUTE GAMES AND PROBLEMS: TEACHER'S GUIDE. Nashua, NH: Delta Education, Inc.
SE Elementary Science Study (ESS)
TI ATTRIBUTE GAMES AND PROBLEMS: TEACHER'S GUIDE
AU Elementary Science Study (Education Development Center)
AF National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1968, 1984
PG 87
IL b&w photos, color drawings
BI no
AV Delta Education, Inc.
PR guide: $17.65, kit: $20.95, 70 activity cards: $25.00, readers @ 6/$8.50
AL k,1,2,3,4,5,6,7,8,9
RL k,1,2,3,4,5,6,7,8,9
DS attributes
; classification
; observation
; problem-solving
; sets
; skill development
; elementary science methods
AN In ATTRIBUTE GAMES AND PROBLEMS, children apply processes of observation and classification as they manipulate wooden or plastic objects of various shapes, sizes, and colors. Using their own or suggested criteria, children order the objects by attribute and value, defining sets and subsets such as yellow squares, large red circles, blue adult females, and so on. Problem cards encourage children to develop strategies for identifying or constructing patterns that meet specific criteria, for example, determining how many unique two-color combinations and presentations can be made using six different colors of cubes, or how many ways there are of putting four cubes of different color in a row. Activities can be used to foster cooperative learning in small groups, as children work together to establish classification criteria and to collect and share data for problem-solving, either during scheduled class time, or during free time at classroom learning centers. The guide's inventory of activity materials is not detailed enough to facilitate local purchase or production of supplies. (MDB)
MT kit from Delta
RE Mystery Powders, Rocks and Charts
OR in library

NO 653
DE March 25, 1988
SU Biology
; Insects
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1986. INCREDIBLE INSECTS. Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI INCREDIBLE INSECTS
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1986
PG 65
IL 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS adaptation
; animal behavior
; beetles
; biology
; butterflies
; caterpillars
; elementary science methods
; entomology
; grasshoppers
; insects
; integrated curriculum
; larva
; metamorphosis
; moths
; predators
AN INCREDIBLE INSECTS provides an introduction to the biology and behavior of these diverse and multitudinous organisms. Activities range in appeal from kindergarten to intermediate grades, integrating science with language arts, mathematics, social studies, physical education and art. Through simulations, games, classroom experiments, and playground activities, children investigate the characteristics of insects and learn about their interactions with humans. The guide contains extensive background information for teachers, with student activity sheets and thirty-four well-organized lesson plans. An appendix provides additional information on evaluation, resources, and construction of useful equipment.
TN Informal; 34 activities at 15-60 minutes
MT locally available
OR in library

NO 654
DE March 25, 1988
SU Life Sciences
; Paleontology
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1984. DIGGING INTO DINOSAURS. Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI DIGGING INTO DINOSAURS
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1984
PG 65
IL 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS adaptation
; dinosaurs
; elementary science methods
; evolution
; extinction
; fossils
; integrated curriculum
; paleontology
; prehistoric life
AN DIGGING INTO DINOSAURS introduces students and teachers to these extinct animals and the world in which they lived. Fossil evidence forms the basis for information and activities provided by the guide. In classroom and playground lessons that integrate science with mathematics, language arts, social studies, art, and physical education, students from kindergarten to intermediate grades learn the comparative sizes of the creatures, how they were named, and what their lives might have been like. Background information is extensive, and the twenty-four detailed lesson plans are accompanied by student activity sheets. An appendix provides additional information on resources, evaluation, and current theories.
TN Informal; 24 activities at 15-60 minutes
MT locally available
OR in library

NO 655
DE March 25, 1988
SU Earth Science
; Weather
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1985. WILD ABOUT WEATHER. Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI WILD ABOUT WEATHER
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1985
PG 65
IL 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS air
; air pressure
; barometric pressure
; climate
; clouds
; elementary science methods
; integrated curriculum
; lightning
; meteorologists
; meteorology
; rain
; snow
; temperature
; thunder
; weather
; wind
AN WILD ABOUT WEATHER is an interdisciplinary guide to the causes, kinds, and impacts of weather. Students from kindergarten to intermediate grades engage in classroom or playground experiments, games, and simulations, as they investigate how weather happens and how it affects the earth and its inhabitants. Thirty well-organized lesson plans are supplemented by student activity sheets and detailed background information. An appendix contains suggestions for evaluation, and many useful resources.
TN Informal; 30 sessions at 15-60 minutes
MT locally available
OR in library

NO 656
DE March 25, 1988
SU Life Sciences
; Biology
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1986. BIRDS, BIRDS, BIRDS! Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI BIRDS, BIRDS, BIRDS!
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1986
PG 65
IL 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS adaptation
; animals
; animal behavior
; biology
; birds
; eggs
; elementary science methods
; feathers
; flight
; integrated curriculum
; nests
; ornithology
AN BIRDS, BIRDS, BIRDS! provides an interdisciplinary introduction to the study of ornithology. Students participate in classroom and playground activities that investigate the biological and behavioral characteristics of birds through observation, games and simulations, writing and art. Ranging in appeal from kindergarten to intermediate grades, the guide contains twenty-five detailed lesson plans with background information and supplemental student activity sheets. There is an extensive appendix of resources and evaluation questions.
TN Informal; 25 sessions at 15-60 minutes
MT locally available
OR in library

NO 657
DE March 25, 1988
SU Life Sciences
; Ecology
T\ Teacher's Guide
CI Ranger Rick's NatureScope, 1986. DISCOVERING DESERTS Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI DISCOVERING DESERTS
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1986
PG 65
IL b&w photos and 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS adaptation
; animals
; arid lands
; biology
; botany
; climate
; conservation
; deserts
; ecology
; elementary science methods
; environment
; habitat
; integrated curriculum
; plants
; weather
AN DISCOVERING DESERTS introduces the ecology of arid lands. Students engage in interdisciplinary classroom and playground activities that explore the concepts of desert formation, conservation, and animal and human adaptation for arid climates. There are twenty-three carefully planned lessons ranging in appeal from kindergarten through intermediate grades, with complete background information and supplemental student activity sheets. An appendix suggests questions for evaluation as well as additional resources.
TN Informal; 23 sessions at 15-60 minutes each
MT locally available
OR in library

NO 658
DE March 25, 1988
SU Life Sciences
; Biology
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1985. *TREES ARE TERRIFIC!* Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI *TREES ARE TERRIFIC!*
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1985
PG 77
IL b&w photos and 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS biology
; botany
; ecology
; elementary science methods
; forests
; forest ecology
; growth
; integrated curriculum
; plants
; plant propagation
; reproduction
; trees
AN TREES ARE TERRIFIC! is an interdisciplinary guide to the biology of trees and forest ecology. Through observations, experiments, games, and simulations, students from kindergarten through intermediate grades investigate the characteristics of trees, their growth and reproduction, and their influence on human life. Twenty-six carefully detailed lessons are accompanied by extensive background information and student activity sheets, as well as evaluation questions and suggested resources.
TN Informal; 26 sessions at 15-60 minutes
MT locally available
OR in library

NO 659
DE March 25, 1988
SU Earth Sciences
; Astronomy
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1986. ASTRONOMY ADVENTURES Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI ASTRONOMY ADVENTURES
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1986
PG 77
IL b&w photos and 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS astrology
; astronomy
; elementary science methods
; galaxy
; gases
; integrated curriculum
; models
; moon
; motion
; mythology
; outer space
; planets
; solar system
; space
; stars
; sun
; universe
AN ASTRONOMY ADVENTURES presents an interdisciplinary study of stars, planets, and astronomical phenomena through use of experiments, games, simulations, and demonstrations. Students investigate the behavior of gases and the principles of motion, construct models, and engage in creative writing and arts activities that relate to the universe, and humans' place in it. Twenty-nine lessons, ranging in appeal from kindergarten through intermediate grades, are enhanced by extensive background information, student activity sheets, and an exhaustive list of resources.
TN Informal; 29 sessions at 15-60 minutes
MT locally available
OR in library

NO 660
DE March 25, 1988
SU Life Sciences
; Biology
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1986. AMAZING MAMMALS, PART I. Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI AMAZING MAMMANLS, PART I
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1986
PG 77
IL b&w photos and 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS adaptation
; animals
; animal behavior
; biology
; classification
; ecology
; elementary science methods
; habitat
; integrated curriculum
; mammals
; reproduction
; taxonomy
AN AMAZING MAMMALS, PART I introduces the general characteristics of mammals, their biology and behavior, and how they interact with humans. Through observations, experiments, games and simulations, creative writing, crafts, and large-motor activities, children learn to distinguish mammals from other vertebrate classes, and investigate their importance to humans. The guide contains twenty-two lessons suitable for classroom or playground, with detailed background information, student activity sheets, and an excellent list of resources.
TN Informal; 22 sessions at 15-60 minutes
MT locally available
OR in library

NO 661
DE March 25, 1988
SU Life Sciences
; Biology
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1986. AMAZING MAMMALS, PART II. Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI AMAZING MAMMALS, PART II
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1986
PG 77
IL b&w photos and 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS adaptation
; animals
; animal behavior
; biology
; carnivores
; classification
; elementary science methods
; habitat
; herbivores
; insectivores
; integrated curriculum
; mammals
; marine mammals
; primates
; rodents
; taxonomy
AN AMAZING MAMMALS, PART II is an interdisciplinary investigation of the specific characteristics of mammalian groups. Students participate in games and experiments that demonstrate the unique adaptations of primates, rodents, marine mammals, hooved mammals, carnivorous, and insectivorous mammals. There are twenty-four lessons with detailed background information, student activity sheets, questions for further study, and a guide to supplemental resoources.
TN Informal; 24 sessions at 15-60 minutes
MT locally available
OR in library

NO 662
DE March 25, 1988
SU Life Sciences
; Ecology
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1986. WADING INTO WETLANDS. Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI WADING INTO WETLANDS
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1986
PG 65
IL b&w photos and 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS adaptation
; animals
; biology
; botany
; conservation
; ecology
; elementary science methods
; environment
; habitat
; integrated curriculum
; marsh
; plants
; saltmarsh
; swamp
; wetland ecology
AN WADING INTO WETLANDS provides an interdisciplinary introduction to the ecology of these tremendously productive habitats. Students participate in classroom and field experiences, observing flora and fauna, and conducting experiments, games, writing, art, and math activities that demonstrate the unique characteristics of wetlands and their importance to humans. Twenty well-organized lessons are accompanied by useful background information, student activity sheets, and a detailed list of resources.
TN Informal; 20 sessions at 15-60 minutes
MT locally available
OR in library

NO 663
DE March 25, 1988
SU Life Sciences
; Ecology
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1987. GEOLOGY: THE ACTIVE EARTH. Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI GEOLOGY: THE ACTIVE EARTH
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1987
PG 69
IL b&w photos and 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS earthquakes
; elementary science methods
; erosion
; fossils
; geology
; integrated curriculum
; minerals
; models
; mountains
; plate tectonics
; rocks
; volcanoes
AN GEOLOGY: THE ACTIVE EARTH is an interdisciplinary investigation of the nature of the earth. Students engage in classroom and playground experiments and simulations that demonstrate what the earth is made of, how old it is, and how it was - and continues to be - formed. Activities focus on rocks and minerals, landforms, fossil records, the structure of earth, and earth movements such as quakes and volcanoes. There are eighteen detailed lessons accompanied by student activity sheets, a resource guide, and extensive background information on facts and theories.
TN Informal; 18 sessions at 15-60 minutes
MT locally available
OR in library

NO 664
DE March 25, 1988
SU Life Sciences
; Biology
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1987. ENDANGERED SPECIES: WILD & RARE. Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI ENDANGERED SPECIES: WILD & RARE
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1987
PG 69
IL b&w photos and 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS adaptation
; animals
; biodiversity
; biogeography
; biology
; conservation
; ecology
; elementary science methods
; endangered species
; environment
; habitat
; habitat destruction
; hunting
; integrated curriculum
; niche
; plants
; poaching
; species diversity
AN ENDANGERED SPECIES: WILD AND RARE focuses on the process of extinction, and the role of humans in destruction or conservation of plants, animals and their habitats. As they learn about the many kinds of threats facing plant and animal species, students participate in classroom and playgound activities integrating science with social studies, mathematics, and language arts, drama, music, and art. There are nineteen detailed lesson plans, student activity sheets, and excellent background information, as well as a useful resource guide.
TN Informal; 19 sessions at 15-60 minutes
MT locally available
OR in library

NO 665
DE March 25, 1988
SU Life Sciences
; Biology
TY Teacher's Guide
CI Ranger Rick's NatureScope, 1987. LET'S HEAR IT FOR HERPS! Washington, DC: National Wildlife Federation.
SE Ranger Rick's Naturescope
TI LET'S HEAR IT FOR HERPS!
AU Ranger Rick's NatureScope
AF National Wildlife Federation
PU National Wildlife Federation
LO 1412 16th St., N.W., Washington, DC 20036-2266
DP 1987
PG 69
IL b&w photos and 2-color line drawings
BI yes
PR $6.00
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS adaptation
; animals
; animal behavior
; amphibians
; biology
; conservation
; ecology
; elementary science methods
; frogs
; habitat
; habitat destruction
; herps
; integrated curriculum
; life cycles
; lizards
; reptiles
; snakes
; toads
; turtles
AN LET'S HEAR IT FOR HERPS! is an interdisciplinary approach to the study of reptiles and amphibians, their characteristics, life cycles, and interactions with humans. Students engage in classroom and playground experiments, games, and simulations that introduce the variety of herps and their adaptations for survival. They investigate the history of these animals, and explore scenarios for the future, including problems of predation, over-hunting, and habitat destruction. There are twenty lessons accompanied by excellent background information, student activity sheets, and a detailed resource guide.
TN Informal; 20 sessions at 15-60 minutes
MT locally available
OR in library

NO 666
DE March 28, 1988
SU Nature
TY
CI Amos, William H., 1969. LIMNOLOGY: An Introduction to the Fresh Water Environment. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI LIMNOLOGY: An Introduction to the Fresh Water Environment
AU Amos, William H.
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1969
PG 40
IL b&w photos and illustrations
BI yes
IS
DS
OR in library
NO 686
DE March 29, 1988
SU Anatomy
TY
CI Balestrino, Philip, 1971. THE SKELETON INSIDE YOU. New York: A Harper Trophy Book, Harper & Row, Publishers.
SE
TI THE SKELETON INSIDE YOU
AU Balestrino, Philip
AF
PU A Harper Trophy Book, Harper & Row, Publishers
LO New York
DP 1971
PG 34
IL color illustrations
BI no
IS 0-06-445039-2
DS
OR in library

NO 667
DE March 28, 1988
SU Nature
TY
CI British Museum (Natural History), 1982. NATURE AT WORK. London: The British Museum, and the Press Syndics of the University of Cambridge.
SE
TI NATURE AT WORK
AU British Museum (Natural History)
AF
PU The British Museum, and the Press Syndics of the University of Cambridge
LO London
DP 1982
PG 84
IL color photos and illustrations
BI no
IS 0-521-22390-3
DS
OR in library
NO 668
DE March 28, 1988
SU Nature
TY
CI Claridge, Marit and Shackell, John, 1985. LIVING THINGS: A Simple Introduction. London: Usborne Publishing Ltd.
SE
TI LIVING THINGS: A Simple Introduction
AU Claridge, Marit and Shackell, John
AF
PU Usborne Publishing Ltd.
LO London
DP 1985
PG 39
IL color illustrations
BI no
IS 0-86020-986-5
DS
OR in library

NO 668
DE March 28, 1988
SU Nature
TY
CI Claridge, Marit and Shackell, John, 1985. LIVING THINGS: A Simple Introduction. London: Usborne Publishing Ltd.
SE
TI LIVING THINGS: A Simple Introduction
AU Claridge, Marit and Shackell, John
AF
PU Usborne Publishing Ltd.
LO London
DP 1985
PG 39
IL color illustrations
BI no
IS 0-86020-986-5
DS
OR in library
NO 669
DE March 28, 1988
SU Nature
TY
CI Cox, Rosamund Kidman, Cork, Barbara and Thomson, Ruth, 1980. FIRST BOOK OF NATURE: Birds, Trees, Flowers, Butterflies and Moths. London: Usborne Publishing Ltd.
SE
TI FIRST BOOK OF NATURE: Birds, Trees, Flowers, Butterflies and Moths
AU Cox, Rosamund Kidman, Cork, Barbara and Thomson, Ruth
AF
PU Usborne Publishing Ltd.
LO London
DP 1980
PG 94
IL color illustrations
BI no
IS 0-86020-483-9
DS
OR in library

NO 669
DE March 28, 1988
SU Nature
TY
CI Cox, Rosamund Kidman, Cork, Barbara and Thomson, Ruth, 1980. FIRST BOOK OF NATURE: Birds, Trees, Flowers, Butterflies and Moths. London: Usborne Publishing Ltd.
SE
TI FIRST BOOK OF NATURE: Birds, Trees, Flowers, Butterflies and Moths
AU Cox, Rosamund Kidman, Cork, Barbara and Thomson, Ruth
AF
PU Usborne Publishing Ltd.
LO London
DP 1980
PG 94
IL color illustrations
BI no
IS 0-86020-483-9
DS
OR in library

670
March 28, 1988
SU Nature
TY
CI Foth, Dr. Henry D., 1970. A STUDY OF SOIL SCIENCE: Expanded Second Edition. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI A STUDY OF SOIL SCIENCE: Expanded Second Edition
AU Foth, Dr. Henry D.
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1970
PG 44
IL b&w photos and illustrations
BI yes
IS
DS
OR in library
NO 689
DE March 29, 1988
SU Anatomy
TY
CI Goldin, Augusta, 1966. STRAIGHT HAIR, CURLY HAIR. New York: A Harper Trophy Book, Harper & Row, Publishers.
SE A Let's Read and Find Out Book
TI STRAIGHT HAIR, CURLY HAIR
AU Goldin, Augusta
AF
PU A Harper Trophy Book, Harper & Row, Publishers
LO New York
DP 1966
PG 34
IL color illustrations
BI no
IS 0-06-445037-6
DS
OR in library

NO 671
DE March 28, 1988
SU Nature
TY
CI LaMotte Chemical Products Company, 1970. LaMotte SOIL HANDBOOK. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI THE LaMotte SOIL HANDBOOK
AU LaMotte Chemical Products Company
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1985
PG 59
IL b&w photos and illustrations
BI no
IS
DS
OR in library
NO 678
DE March 28, 1988
SU Nature
TY
CI Margulis, Lynn, 1985. SHARING WITH CHILDREN: NEW IDEAS ON THE EVOLUTION OF LIFE. New York: The Workshop Center.
SE
TI SHARING WITH CHILDREN: NEW IDEAS ON THE EVOLUTION OF LIFE
AU Margulis, Lynn
AF
PU The Workshop Center
LO New York
DP 1985
PG 26
IL b&w photos
BI no
IS 0-918374-21-9
DS
OR in library

NO 672
DE March 28, 1988
SU Nature
TY
CI Mitchell, Andrew, 1982. THE YOUNG NATURALIST: An Introduction to Nature Studies. London: Usborne Publishing Ltd..
SE
TI THE YOUNG NATURALIST: An Introduction to Nature Studies.
AU Mitchell, Andrew
AF
PU Usborne Publishing Ltd.
LO London
DP 1982
PG 32
IL color illustrations
BI no
IS 0-86020-653-x
DS
OR in library
NO 690
DE March 29, 1988
SU Anatomy
TY
CI National Geographic Society, 1986. THE INCREDIBLE MACHINE. Washington, DC: The National Geograpic Society.
SE
TI THE INCREDIBLE MACHINE
AU National Geographic Society
AF
PU The National Geographic Society
LO Washington, DC
DP 1986
PG 384
IL b&w photos and illustrations
BI yes
IS
DS
OR in library

NO 673
DE March 28, 1988
SU Nature
TY
CI Renn, Dr. Charles E., 1970. INVESTIGATING WATER PROBLEMS. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI INVESTIGATING WATER PROBLEMS
AU Renn, Dr. Charles E.
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1970
PG 72
IL b&w illustrations
BI no
IS
DS
OR in library

NO 676
DE March 28, 1988
SU Nature
TY
CI Rieke, Dr. Paul E. and Warncke, Dr. Darryl D., 1975. GREENHOUSE SOILS. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI GREENHOUSE SOILS
AU Rieke, Dr. Paul E. and Warncke, Dr. Darryl D.
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1975
PG 36
IL b&w photos and illustrations
BI no
IS
DS
OR in library

NO 674
DE March 28, 1988
SU Nature
TY
CI Renn, Dr. Charles E., 1970. OUR ENVIRONMENT BATTLES WATER POLLUTION. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI OUR ENVIRONMENT BATTLES WATER POLLUTION
AU Renn, Dr. Charles E.
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1969
PG 32
IL b&w photos and illustrations
BI no
IS
DS
OR in library

NO 675
DE March 28, 1988
SU Nature
TY
CI Renn, Dr. Charles E., 1968. A STUDY OF WATER QUALITY. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI A STUDY OF WATER QUALITY
AU Renn, Dr. Charles E.
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1968
PG 46
IL b&w photos and illustrations
BI no
IS
DS
OR in library
NO 674
DE March 28, 1988
SU Nature
TY
CI Renn, Dr. Charles E., 1970. OUR ENVIRONMENT BATTLES WATER POLLUTION. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI OUR ENVIRONMENT BATTLES WATER POLLUTION
AU Renn, Dr. Charles E.
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1969
PG 32
IL b&w photos and illustrations
BI no
IS
DS
OR in library

NO 676
DE March 28, 1988
SU Nature
TY
CI Rieke, Dr. Paul E. and Warncke, Dr. Darryl D., 1975. GREENHOUSE SOILS. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI GREENHOUSE SOILS
AU Rieke, Dr. Paul E. and Warncke, Dr. Darryl D.
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1975
PG 36
IL b&w photos and illustrations
BI no
IS
DS
OR in library

NO 677
DE March 28, 1988
SU Nature
TY
CI Stegner, Robert W., 1971. PLANT NUTRITION STUDIES. Chestertown, Maryland: LaMotte Chemical Products Company.
SE
TI PLANT NUTRITION STUDIES
AU Stegner, Robert W.
AF
PU LaMotte Chemical Products Company
LO Chestertown, Maryland
DP 1971
PG 76
IL b&w photos and illustrations
BI yes
IS
DS
OR in library
NO 683
DE March 29, 1988
SU Nature
; Evolution
TY
CI Stein, Sara, 1986. THE EVOLUTION BOOK. Workman Publishing: New York.
SE
TI THE EVOLUTION BOOK
AU Stein, Sara
AF
PU Workman Publishing
LO New York
DP 1986
PG 390
IL b&w photos and illustrations
BI no
IS 0-89480-927-x
DS
OR in library

NO 678
DE March 28, 1988
SU Nature
TY
CI Margulis, Lynn, 1985. SHARING WITH CHILDREN: NEW IDEAS ON THE *EVOLUTION OF* LIFE. New York: The Workshop Center.
SE
TI SHARING WITH CHILDREN: NEW IDEAS ON THE *EVOLUTION OF LIFE*
AU Margulis, Lynn
AF
PU The Workshop Center
LO New York
DP 1985
PG 26
IL b&w photos
BI no
IS 0-918374-21-9
DS
OR in library

NO 679
DE March 28, 1988
SU Nature
TY
CI Committee on Science and Creationism, National Academy of Sciences, 1984 SCIENCE AND CREATIONISM: A View from the National Academy of Sciences. Washington, DC: National Academy Press.
SE
TI SCIENCE AND CREATIONISM: A View from the National Academy of Sciences
AU Committee on Science and Creationism, National Academy of Sciences
AF
PU National Academy Press
LO Washington, DC
DP 1984
PG 28
IL color and b&w photos and illustrations
BI no
IS
DS
OR in library

NO 669
DE March 28, 1988
SU Nature
TY
CI Cox, Rosamund Kidman, Cork, Barbara and Thomson, Ruth, 1980. FIRST BOOK OF NATURE: Birds, Trees, Flowers, Butterflies and Moths. London: Usborne Publishing Ltd.
SE
TI FIRST BOOK OF NATURE: Birds, Trees, Flowers, Butterflies and Moths
AU Cox, Rosamund Kidman, Cork, Barbara and Thomson, Ruth
AF
PU Usborne Publishing Ltd.
LO London
DP 1980
PG 94
IL color illustrations
BI no
IS 0-86020-483-9
DS
OR in library

NO 681
DE March 28, 1988
SU Nature
TY
CI Needham, James G. and Needham, Paul R., 1962. A GUIDE TO THE STUDY OF FRESH WATER BIOLOGY. San Francisco, CA: Holden-Day, Inc.
SE
TI A GUIDE TO THE STUDY OF FRESH-WATER BIOLOGY
AU Needham, James G. and Needham, Paul R.
AF
PU Holden-Day, Inc.
LO San Francisco, CA
DP 1962
PG 108
IL b&w illustrations
BI yes
IS 62-20742
DS
OR in library

NO 682
DE March 28, 1988
SU Nature
TY A Minnemast Handbook for Teachers of Early Elementary Grades
CI Subarsky, Zachariah, Reed, Elizabeth W., Landin, Edward R. and Klaits, Barrie G., 1967. LIVING THINGS IN FIELD AND CLASSROOM. Minneapolis, Minnesota: University of Minnesota.
SE
TI LIVING THINGS IN FIELD AND CLASSROOM
AU Subarsky, Zachariah, Reed, Elizabeth W., Landin, Edward R. and Klaits, Barrie G.
AF
PU University of Minnesota
LO Minneapolis, Minnesota
DP 1967
PG 134
IL b&w illustrations
BI no
IS
DS
OR in library
NO 685
DE March 29, 1988
SU Nature
; Sea
TY
CI Yonge, C.M., 1963. THE SEA SHORE. New York: Atheneum.
SE
TI THE SEA SHORE
AU Yonge, C.M.
AF
PU Atheneum
LO New York
DP 1963
PG 326
IL b&w illustrations
BI no
IS 63-13688
DS
OR in library

NO 683
DE March 29, 1988
SU Nature
; Evolution
TY
CI Stein, Sara, 1986. THE EVOLUTION BOOK. Workman Publishing: New York.
SE
TI THE EVOLUTION BOOK
AU Stein, Sara
AF
PU Workman Publishing
LO New York
DP 1986
PG 390
IL b&w photos and illustrations
BI no
IS 0-89480-927-x
DS
OR in library

NO 684
DE March 29, 1988
SU Nature
; Oceanography
TY
CI Sipiera, Paul P., 1987. I CAN BE AN OCEANOGRAPHER. Chicago: Childrens Press.
SE
TI I CAN BE AN OCEANOGRAPHER
AU Sipiera, Paul P.
AF
PU Childrens Press
LO Chicago
DP 1987
PG 32
IL color photos
BI no
IS 0-516-01905-8
DS
OR in library
NO 683
DE March 29, 1988
SU Nature
; Evolution
TY
CI Stein, Sara, 1986. THE EVOLUTION BOOK. Workman Publishing: New York.
SE
TI THE EVOLUTION BOOK
AU Stein, Sara
AF
PU Workman Publishing
LO New York
DP 1986
PG 390
IL b&w photos and illustrations
BI no
IS 0-89480-927-x
DS
OR in library

NO 680
DE March 28, 1988
SU Nature
TY
CI National Wildlife Federation. YOUR BIG BACKYARD: SEE & DO NATURE SERIES. Washington, DC: National Wildlife Federation.
SE
TI YOUR BIG BACKYARD: SEE & DO NATURE SERIES
AU National Wildlife Federation
AF
PU National Wildlife Federation
LO Washington, DC
DP
PG
IL color illustrations
BI no
IS
DS
OR in library
NO 681
DE March 28, 1988
SU Nature
TY
CI Needham, James G. and Needham, Paul R., 1962. A GUIDE TO THE STUDY OF FRESH WATER BIOLOGY. San Francisco, CA: Holden-Day, Inc.
SE
TI A GUIDE TO THE STUDY OF FRESH-WATER BIOLOGY
AU Needham, James G. and Needham, Paul R.
AF
PU Holden-Day, Inc.
LO San Francisco, CA
DP 1962
PG 108
IL b&w illustrations
BI yes
IS 62-20742
DS
OR in library

ID 697
SU Science Process Skills
TY Curriculum Module
CI Commission on Science Education of the American Association for the Advancement of Science (AAAS), 1967. SCIENCE - A PROCESS APPROACH. Part D. New York: Xerox Education Division.
SE Science - A Process Approach (SAPA)
TI SCIENCE - A PROCESS APPROACH. Part D
AU Commission on Science Education of the American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science (AAAS)
PU Xerox Education Division
LO New York
DP 1967
IL b&w photos, line drawings, charts
BI yes
AV out of print: SAPA II from Delta
AL 3
RL 3,4,5
DS science process skills
; time
; measurement
; classification
; change
; inference
; prediction
; variables
; plants
; magnets
; forces and motions
; maps
; mapping
AN SCIENCE - A PROCESS APPROACH, PART D introduces third grade students to the use of variables. Children learn to describe relative position and motion, evaporation, mapping, forces, plant growth, and other phenomena, all in terms of variables. Inference and prediction continue in this unit, as well. There are twenty-two activities with detailed instructions for teacher behavior and evaluation. Science background information is sparse.
TN 22 exercises, 30 minutes to several weeks of observation
MT kit from Delta

NO 685
DE March 29, 1988
SU Nature
; Sea
TY
CI Yonge, C.M., 1963. THE SEA SHORE. New York: Atheneum.
SE
TI THE SEA SHORE
AU Yonge, C.M.
AF
PU Atheneum
LO New York
DP 1963
PG 326
IL b&w illustrations
BI no
IS 63-13688
DS
OR in library

686
E March 29, 1988
SU Anatomy
TY
CI Balestrino, Philip, 1971. THE SKELETON INSIDE YOU. New York: A Harper Trophy Book, Harper & Row, Publishers.
SE
TI THE SKELETON INSIDE YOU
AU Balestrino, Philip
AF
PU A Harper Trophy Book, Harper & Row, Publishers
LO New York
DP 1971
PG 34
IL color illustrations
BI no
IS 0-06-445039-2
DS
OR in library
NO 687
DE March 28, 1988
SU Anatomy
TY
CI Cobb, Vicky, 1986. INSPECTOR BODYGUARD, Patrols the Land of U. New York: Julian Messner, Published by Simon & Schuster, Inc.
SE
TI INSPECTOR BODYGUARD, Patrols the Land of U
AU Cobb, Vicky
AF
PU Julian Messner, Published by Simon & Schuster, Inc.
LO New York
DP 1986
PG 125
IL color illustrations
BI no
IS 0-671-63260-4
DS
OR in library

NO 688
DE March 29, 1988
SU Anatomy
; Evolution
TY
CI Cole, Joanna, 1987. THE HUMAN BODY: How We Evolved. New York:
William Morrow & Company, Inc.
SE
TI THE HUMAN BODY: How We Evolved
AU Cole, Joanna
AF
PU William Morrow & Company, Inc.
LO New York
DP 1987
PG 63
IL b&w illustrations
BI no
IS 0-688-06719-0
DS
OR in library

NO 689
DE March 29, 1988
SU Anatomy
TY
CI Goldin, Augusta, 1966. STRAIGHT HAIR, CURLY HAIR. New York: A Harper Trophy Book, Harper & Row, Publishers.
SE A Let's Read and Find Out Book
TI STRAIGHT HAIR, CURLY HAIR
AU Goldin, Augusta
AF
PU A Harper Trophy Book, Harper & Row, Publishers
LO New York
DP 1966
PG 34
IL color illustrations
BI no
IS 0-06-445037-6
DS
OR in library

NO 690
DE March 29, 1988
SU Anatomy
TY
CI National Geographic Society, 1986. THE INCREDIBLE MACHINE.
Washington, DC: The National Geograpic Society.
SE
TI THE INCREDIBLE MACHINE
AU National Geographic Society
AF
PU The National Geographic Society
LO Washington, DC
DP 1986
PG 384
IL b&w photos and illustrations
BI yes
IS
DS
OR in library

NO 691
DE March 29, 1988
SU Anatomy
TY
CI Showers, Paul, 1980. NO MEASLES, NO MUMPS FOR ME. New York: Thomas Y. Crowell.
SE A Let's Read and Find Out Book
TI NO MEASLES, NO MUMPS FOR ME
AU Showers, Paul
AF
PU Thomas Y. Crowell
LO New York
DP 1980
PG 34
IL b&w and color illustrations
BI no
IS 0-690-04205-1
DS
OR in library
NO 684
DE March 29, 1988
SU Nature
; Oceanography
TY
CI Sipiera, Paul P., 1987. I CAN BE AN OCEANOGRAPHER. Chicago: Childrens Press.
SE
TI I CAN BE AN OCEANOGRAPHER
AU Sipiera, Paul P.
AF
PU Childrens Press
LO Chicago
DP 1987
PG 32
IL color photos
BI no
IS 0-516-01905-8
DS
OR in library

NO 692
DE March 29, 1988
SU Anatomy
TY
CI Showers, Paul, 1967. A DROP OF BLOOD. New York: A Harper Trophy Book, Harper & Row, Publishers.
SE A Let's Read and Find Out Book
TI A DROP OF BLOOD
AU Showers, Paul
AF
PU A Harper Trophy Book, Harper & Row, Publishers
LO New York
DP 1967
PG 34
IL b&w and color illustrations
BI no
IS 0-06-445030-9
DS
OR in library
NO 693
DE March 29, 1988
SU Anatomy
TY
CI Showers, Paul, 1967. WHAT HAPPENS TO A HAMBURGER. New York: A Harper Trophy Book, Harper & Row, Publishers.
SE A Let's Read and Find Out Book
TI WHAT HAPPENS TO A HAMBURGER
AU Showers, Paul
AF
PU A Harper Trophy Book, Harper & Row, Publishers
LO New York
DP 1970
PG 32
IL color illustrations
BI no
IS 0-06-445013-9
DS
OR in library

NO 698
SU Science Process Skills
TY Curriculum Module
CI Commission on Science Education of the American Association for the Advancement of Science (AAAS), 1967. SCIENCE - A PROCESS APPROACH. Part E. New York: Xerox Education Division.
SE Science - A Process Approach (SAPA)
TI SCIENCE - A PROCESS APPROACH. Part E
AU Commission on Science Education of the American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science (AAAS)
PU Xerox Education Division
LO New York
DP 1967
IL b&w photos, line drawings, charts
BI yes
AV out of print: SAPA II from Delta
AL 4
RL 4,5,6
DS science process skills
; hypothesis
; inference
; guinea pigs
; electricity
; mold
; plants
; sensory perception
; chemistry
; reactions
; variables
; forces and motions
; cells
AN In SCIENCE - A PROCESS APPROACH, PART E, fourth grade students learn to formulate and test hypotheses, to interpret data, and to define operationally. Using observation and inference skills and building on prior experience working with variables, children investigate forces and motions, electrical circuits, cells, sensory perception, chemical reactions, the behavior of guinea pigs, and mold growth and moisture loss in plants. There are twenty three lessons, each of which contains explicit information as to what the teacher should do and say to facilitate classroom activities. Evaluation questions are included.
TN 22 exercises, 30 minutes to several weeks of observation
MT kit from Delta

NO 699
SU Science Process Skills
TY Curriculum Module
CI Commission on Science Education of the American Association for the Advancement of Science (AAAS), 1967. SCIENCE - A PROCESS APPROACH. Part F. New York: Xerox Education Division.
SE Science - A Process Approach (SAPA)
TI SCIENCE - A PROCESS APPROACH. Part F
AU Commission on Science Education of the American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science (AAAS)
PU Xerox Education Division
LO New York
DP 1967
IL b&w photos, line drawings, charts
BI yes
AV out of print: SAPA II from Delta
AL 5
RL 5,6,7
DS science process skills
; ratios
; magnets
; gravity
; topography
; maps
; mapping
; contour maps
; life cycles
; animal behavior
; sensory perception
; plants
; measurement
; chemistry
; reactions
AN In SCIENCE - A PROCESS APPROACH, PART F, fifth grade students hone the science process skills that have been introduced through earlier SAPA experiences. They apply their skills to study of the earth, its physical features, and magnetic properties; to investigation of life cycles and behavior; and to experimentation with chemical reactions, ratios and mathematical probabilities. There are twenty four exercises accompanied by detailed instructions for the teacher. Evaluation questions are included.
TN 22 exercises, 30 minutes to several weeks of observation
MT kit from Delta

NO 700
SU Science Process Skills
TY Curriculum Module
CI Commission on Science Education of the American Association for the Advancement of Science (AAAS), 1967. SCIENCE - A PROCESS APPROACH. Part G. New York: Xerox Education Division.
SE Science - A Process Approach (SAPA)
TI SCIENCE - A PROCESS APPROACH. Part G
AU Commission on Science Education of the American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science (AAAS)
PU Xerox Education Division
LO New York
DP 1967
IL b&w photos, line drawings, charts
BI yes
AV out of print: SAPA II from Delta
AL 6
RL 6,7,8
DS science process skills
; sensory perception
; hypothesis
; inference
; plants
; chemistry
; reactions
; forces and motions
; mass
; density
; optical illusions
; light
; fermentation
; chromatography
; moon
; astronomy
AN SCIENCE - A PROCESS APPROACH, PART G focuses on experimentation, incorporating all the science process skills taught in earlier units. Sixth grade students formulate hypotheses, carry out experiments, and intrepret data resulting from investigations of sensory perception, plant growth, chemical reactions, forces and motions, mass, and density. There are instructions for twenty-two lessons, accompanied by suggestions for evaluation.
TN 22 exercises, 30 minutes to several weeks of observation
MT kit from Delta

NO 701
DE March 9, 1988
SU Pedagogy
TY Essays
CI Aicken, Frederick, 1984. THE NATURE OF SCIENCE. Portsmouth, NH: Heinemann Educational Books.
TI THE NATURE OF SCIENCE
AU Aicken, Frederick
PU Heinemann
LO Portsmouth, NH
DP 1984
PG 136
IL b&w drawings and diagrams
BI yes
IS 0-435-54020-3
AV in print
PR $15.00 March, 1988
AL teacher resource
DS experiments
; models
; instructional strategies
; scientific reasoning
; science and society
; scientific literacy
; social influences
; teaching strategies
; integration
AN THE NATURE OF SCIENCE offers a personal look at science and how it affects the way we think and behave. The author discusses how the readers' views of science may be expanded to include art, history and the world around us. Educators can use this book as a methods text, to employ the suggested strategies in classrooms. The goal is to "demystify" science, put it into the context of the everyday world, and present a more balanced approach to the study of this broad subject. A section on suggestions for further reading is valuable for references and ideas.
IN THE NATURE OF SCIENCE

NO 702
DE March 9, 1988
SU Pedagogy
TY science methods text
CI Osborne, Roger and Peter Freyberg, 1985. LEARNING IN SCIENCE: THE IMPLICATIONS OF CHILDREN'S SCIENCE. Portsmouth, NH: Heinemann Educational Books.
TI LEARNING IN SCIENCE: THE IMPLICATIONS OF CHILDREN'S SCIENCE
AU Osborne, Roger
; Freyberg, Peter
AF Learning in Science Project, University of Waikato
PU Heinemann
LO Portsmouth, NH
DP 1985
PG 198
IL b&w drawings, charts and diagrams
BI yes
IS 0-86863-275-9
LC Q181.083 1985 372.3'5 84-27915
AV in print March, 1988
PR $15.00
AL teacher resource
DS elementary science methods
; preconceptions
; middle school science methods
; metagognition
; secondary science methods
; integrated curriculum
; language of science
AN LEARNING IN SCIENCE describes the ways in which children learn science. The authors discuss the ideas that children bring with them to the science experience, how these ideas are communicated and received, and how these conceptions can be used as building blocks for new learning. The role assigned by the authors to the science teacher is broad yet comfortable and an entire section of the book delineates the teacher as a guide, motivator, diagnostician, innovator, experimenter, and researcher. The appendices provide additional information about children, educators, and science. A list of related resources is included.
IN LEARNING IN SCIENCE

NO 703
DE March 9, 1988
SU Pedagogy
; children's learning
TY elementary science methods text
CI Ed. Harlen, Wynne, 1985. PRIMARY SCIENCE...TAKING THE PLUNGE. Portsmouth, NH: Heinemann Educational Books.
TI PRIMARY SCIENCE ... TAKING THE PLUNGE
AU Elstgeest, Jos
; Harlen, Wynne
; Jelly, Sheila
; Osborne, Roger
; Symington, David
PU Heinemann
LO Portsmouth, NH
DP 1985
PG 116
IL b&w charts, graphs and diagrams
BI yes
IS 0-435-57350-0
AV in print March, 1988
PR $15.00
AL teacher resource
DS elementary science methods
; preconceptions
; affective domain
; attitudes
; cognitive domain
; questioning techniques
; instructional strategies
; language of science
AN PRIMARY SCIENCE...TAKING THE PLUNGE is a collection of articles that may be read in sequence or as the subject of each relates to the reader's own priorities and concerns. The authors recognize that science is an important vehicle through which children can develop mental and manipulative skills concurrently with attitudes about the world around them. Particular emphasis is placed on the teacher's role in this learning process, for how an activity is carried out is often more important than its content. This book presents well-researched ideas that will benefit any educator interested in encouraging children to build on their own experiences as they learn science.
IN PRIMARY SCIENCE...TAKING THE PLUNGE

NO 704
DE March 17, 1988
SU Pedagogy
TY science methods text
CI Samples, Bob, Bill Hammond, and Bernice McCarthy, 1985. 4MAT AND SCIENCE -TOWARDS WHOLENESS IN SCIENCE EDUCATION. Barrington, IL: Excel, Inc.
TI 4MAT AND SCIENCE - TOWARDS WHOLENESS IN SCIENCE EDUCATION
AU Samples, Bob
; Hammond, Bill
; McCarthy, Bernice
PU Excel
LO Barrington, IL
DP 1985
PG 160
IL b&w photos, charts, and drawings
BI yes
IS 0-9608992-2-7
AV in print March, 1988
PR $12.95
AL teacher resource
DS elementary science methods
; 4Mat
; learning styles
; right brain/left brain
; geology
; clouds
; plants
; mapping
; life science
; earth science
; science process skills
; instructional strategies
; space
; biology
; astronomy
; weather
; teaching strategies
; curriculum development
AN Many learning styles are effective in the acquisition of skills and knowledge. In this book, the authors examine four different learning styles and methods that educators may use to teach to the variety of children encountered in an elementary classroom. Included are concrete examples of how to apply these teaching skills. Specific science lessons about rocks, plants, galaxies, and mapping are excellent models for writing appropriate science units. The original text, THE 4MAT SYSTEM,(Samples, Bob, Bill Hammond, and Bernice McCarthy, 1985. 4MAT AND SCIENCE - TOWARDS WHOLENESS IN SCIENCE EDUCATION. Barrington, IL: Excel, Inc.) offers more philosophical detail and additional sample lessons in science and other curriculum areas.
RE THE 4MAT SYSTEM by Bernice McCarthy
IN 4MAT AND SCIENCE - TOWARDS WHOLENESS IN SCIENCE EDUCATION

NO 705
DE March 17, 1988
SU pedagogy
TY elementary science methods text
CI Carin, Arthur A., and Robert B. Sund, 1985. TEACHING MODERN SCIENCE. Columbus, OH: Charles E. Merrill Publishing Co.
TI TEACHING MODERN SCIENCE
AU Carin, Arthur A.
; Sund, Robert B.
PU Charles E. Merrill Publishing Co.
LO A Bell & Howell Company, Colombus, OH 43216
DP 1985
PG 324
IL b&w illustrations, charts, and photographs
BI yes
IS 0-675-20221-3
LC 84-42911
AV in print
PR $21.95 March, 1988
AL teacher resource
DS elementary science methods
; Piaget
; evaluation
; questioning techniques
; activity-based science
; creativity
; critical thinking
; integration
; computer technology
; guided discovery
; individualized instruction
AN TEACHING MODERN SCIENCE suggests that the learning of science is ideally suited for the student's active participation in the education process. This book will help a teacher to explore many topics in science, decide which to teach and why, and suggest practical methods for the planning and implementation of the guided discovery approach to teaching science. The ideas presented in this book are applicable at all grade levels and for children of varying abilities. This methods text has extensive and useful appendices. The following information is included: historical summary of science education, elementary science curriculum projects, community sources for supplies and equipment, commercial suppliers, planning a learning center, professional books, science education periodicals, professional societies, noncommercial sources for organisms, how to care for various animals, free and inexpensive materials, research studies of the relationship between science and language/reading development, etc.

NO 705
DE March 17, 1988
SU Pedagogy
TY science methods text
CI Carin, Arthur A., and Robert B. Sund, 1985. TEACHING MODERN SCIENCE. Columbus, OH: Charles E. Merrill Publishing Co.
TI TEACHING MODERN SCIENCE
AU Carin, Arthur A.
; Sund, Robert B.
PU Merrill
LO Columbus, OH
DP 1985
PG 324
IL b&w illustrations, charts, and photographs
BI yes
IS 0-675-20221-3
LC 84-42911
AV in print March, 1988
PR $21.95
AL teacher resource
DS elementary science methods
; Piaget
; evaluation
; questioning techniques
; critical thinking
; activity-based instruction
; integrated curriculum
; computers
; individualized instruction
AN TEACHING MODERN SCIENCE suggests that the learning of science is ideally suited for the student's active participation in the education process. This book will help a teacher to explore many topics in science, decide which to teach and why, and devise practical methods for planning and implementing a guided discovery approach to teaching science. The ideas presented in this book are applicable to all grade levels and to children of varying abilities. There are extensive and useful appendices containing the following information: historical summary of science education, elementary science curriculum projects, community sources for supplies and equipment, commercial suppliers, ways to plan a learning center, professional books, science education periodicals, professional societies, noncommercial sources for organisms, ways to care for various animals, free and inexpensive materials, research studies of the relationship between science and language/reading development, and more.
IN TEACHING SCIENCE METHODS

NO 706
DE March 17, 1988
SU pedagogy
TY elementary science methods text
CI Carin, Arthur A., and Robert B. Sund, 1985. TEACHING SCIENCE THROUGH DISCOVERY. Columbus, OH: Charles E. Merrill Publishing Co.
TI TEACHING SCIENCE THROUGH DISCOVERY
AU Carin, Arthur A.
; Sund, Robert B.
PU Charles E. Merrill Publishing Co.
LO A Bell & Howell Company, Columbus, OH 43216
DP 1985
PG 502
IL b&w charts, illustrations, and photographs
BI yes
IS 0-675-20387-2
LC 84-42912
AV in print
PR $29.95 March, 1988
AL teacher resource
DS elementary science methods
; Piaget
; evaluation
; guided discovery
; questioning techniques
; activity-based science
; creativity
; critical thinking
; individualized instruction
; integration
; computer technology
AN This elementary science methods text will enrich science instruction for the teacher and the children. Guided discovery teaching/learning is the approach offered by the authors. It capitalizes on the students's natural curiosity about the world around them and solicits their active involvement in the learning process. The beginning chapters discuss the what and why of science - what topics to teach and the rationale to accompany these decisions. Following chapters explain how to make the classroom an exciting place by using fun methods of investigation through scientific processes. The ideas suggested in this text are applicable to children of all grade levels and abilities. Actual activities for living sciences, environmental sciences and physical sciences are included. The authors seem to have a true understanding of the role of elementary school teachers and the challenges that they face each day. Excellent information in the appendices.

Pedagogy
database
4/27

NO 706
DE March 17, 1988
SU Pedagogy
TY science methods text
CI Carin, Arthur A., and Robert B. Sund, 1985. TEACHING SCIENCE THROUGH DISCOVERY. Columbus, OH: Charles E. Merrill Publishing Co.
TI TEACHING SCIENCE THROUGH DISCOVERY
AU Carin, Arthur A.
; Sund, Robert B.
PU Merrill
LO Columbus, OH
DP 1985
PG 502
IL b&w charts, illustrations, and photographs
BI yes
IS 0-675-20387-2
LC 84-42912
AV in print March, 1988
PR $29.95
AL teacher resource
DS elementary science methods
; Piaget
; evaluation
; guided discovery
; questioning techniques
; activity-based science
; science process skills
; critical thinking
; individualized instruction
; integrated curriculum
; computers
AN This elementary science methods text will enrich science instruction for the teacher and the children, through guided discovery. It capitalizes on students' natural curiosity about the world around them and solicits their active involvement in the learning process. The beginning chapters discuss the what and why of science - - what topics ought to be taught and the author's rationale. Subsequent chapters explain how to make the classroom an exciting place by using fun methods of scientific investigation. The ideas suggested in this text are applicable to children of all grade levels and abilities. Activities for life science and physical science are included. The authors seem to display a real understanding of the role of elementary school teachers and the challenges that they face each day. Excellent information in the appendices.
IN TEACHING SCIENCE THROUGH DISCOVERY

NO 707
DE March 17, 1988
SU pedagogy
TY elementary science methods text
CI Cain, Sandra E., and Jack M. Evans, 1984. SCIENCING. Columbus OH: Charles E. Merrill Publishing Co.
TI SCIENCING
AU Cain, Sandra E.
; Evans, Jack M.
PU Charles E. Merrill Publishing Co.
LO A Bell & Howell Company, Columbus, OH 43216
DP 1984
PG 398
IL b&w photographs, diagrams and charts
BI yes
IS 0-675-20055-5
LC 83-61940
AV in print
PR $21.95 March, 1988
AL teacher resource
DS elementary science methods
; involvement approach
; process skills
; inquiry
; ESS
; SCIS
; SAPA II
; textbooks
; trade books
; objectives
; instuctional strategies
; evaluation
; questioning techniques
; safety
; computer technology
; integration with math
; individualized instruction
AN To provide the teacher with insight into the teaching and learning of science, the authors devote the first part of the text to identifying the nature of science, the nature of learning, and the nature of the child. The second section of the book describes the science curricula available to the elementary school teacher, including kits, textbooks, a text-kit combination, use of tradebooks, and specific elementary science projects. The remainder of the text presents ideas for implementing an effective science program, where children are actively involved and the best of microcomputers and math curricula are integrated. Each chapter within the sections has a summary and a bibliography. This book represents a broad look at the options available when choosing a science program for your classroom.

Pedagogy
database
entry

NO 707
DE March 17, 1988
SU Pedagogy
TY science methods text
CI Cain, Sandra E., and Jack M. Evans, 1984. SCIENCING. Columbus OH: Charles E. Merrill Publishing Co.
TI SCIENCING
AU Cain, Sandra E.
; Evans, Jack M.
PU Merrill
LO Columbus, OH
DP 1984
PG 398
IL b&w photos, diagrams and charts
BI yes
IS 0-675-20055-5
LC 83-61940
AV in print March, 1988
PR $21.95
AL teacher resource
DS elementary science methods
; process skills
; textbooks
; trade books
; instructional strategies
; evaluation
; questioning techniques
; safety
; curriculum implementation
; teaching strategies
; computers
; integrated curriculum
; mathematics
; individualized instruction
AN To provide the teacher with insight into the teaching and learning of science, the authors devote the first part of the text to identifying the nature of science, the nature of learning, and the nature of the child. The second section of the book describes the science curricula available to the elementary school teacher, including kits, textbooks, a text-kit combination, use of tradebooks, and specific elementary science projects. The remainder of this volume presents ideas for implementing an effective science program, where children are actively involved and the best of microcomputers and math curricula are integrated. Each chapter within the sections has a summary and a bibliography. This book represents a broad look at the options available when choosing a science program for your classroom.
IN SCIENCING

NO 708
DE March 18, 1988
SU pedagogy
TY elementary science methods text
CI Blough, Glenn O., and Julius Schwartz
TI ELEMENTARY SCHOOL SCIENCE AND HOW TO TEACH IT
AU Blough, Glenn O.
; Schwartz, Julius
PU Holt, Rinehart and Winston, Inc.
LO New York, NY
DP 1984
PG 670
IL b&w photographs, diagrams and charts
BI yes
IS 0-03-062866-0
LC 83-22537
AV in print
PR $30.95 March, 1988
AL teacher resource
DS elementary science methods
; objectives
; materials
; activities
; earth science
; astronomy
; weather
; nature studies
; seasons
; animals
; human body
; plants
; conservation
; physical science
; atoms
; molecules
; fire
; heat
; energy
; machines
; atomic energy
; magnetism
; electricity
; sound
; light
; flight
; space travel
; instructional strategies

Pedagogy Database 4/17

NO 708
DE March 18, 1988
pedagogy
science methods text
-- Blough, Glenn O., and Julius Schwartz, 1984. ELEMENTARY SCHOOL SCIENCE AND HOW TO TEACH IT. New York, NY: Holt, Rinehart, and Winston, Inc.
TI ELEMENTARY SCHOOL SCIENCE AND HOW TO TEACH IT
AU Blough, Glenn O.
; Schwartz, Julius
PU Holt, Rinehart and Winston
LO New York, NY
DP 1984
PG 670
IL b&w photos, diagrams and charts
BI yes
IS 0-03-062866-0
LC 83-22537
AV in print March, 1988
PR $30.95
AL teacher resource
DS elementary science methods
; behavioral objectives
; science process skills
; field trips
; computers
; instructional strategies
; textbooks
metrics
individualized instruction
; gifted and talented students
; questioning techniques
; mainstreaming
; earth science
; geology
; rocks
; minerals
; oceans
; mountains
; earthquakes
; volcanoes
; erosion
; sun
; planets
; solar system
; gravity
; moon
; eclipses
; temperature
; day and night
; seasons
; stars
; constellations
; air
weather
climate

NO 760
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979. OBIS SAMPLER. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI OBIS SAMPLER
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979
PG [20]
IL b&w photographs and line drawings
BI no
AV in print
PR $11.00 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS elementary science methods
; integrated curriculum
; nature
; animals
; seeds
; fruits
; adaptation
; habitats
; aquatic animals
; food chains
; wind
AN The OBIS SAMPLER module includes four activities, entitled Food Chain Game, Seed Dispersal, Sticklers, and Water Breathers. Children are involved in role playing animals in a food chain, dispersing seeds, investigating where organisms live, and discovering the currents created by aquatic animals when they move and breathe. Each folio provides background information, a list of materials needed, preparation hints, step by step directions for the activities, and possible extensions. The folio is easy to read and includes useful illustrations and diagrams.
TN informal, 4-5 sessions, 45-60 minutes each
MT locally available
OR in library

NO 761
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980. ADAPTATIONS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI ADAPTATIONS
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979,1980
PG [42] + 20pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS elementary science methods
; integrated curriculum
; seeds
; animals
; plants
; deserts
; fruits
; water
; aquatic animals
; food gathering
; adaptations
; prey
; water current
; habitats
; environments
AN The ADAPTATIONS module consists of seven activity folios, entitled Animal Movement in Water, Desert Water Keepers, Food Grab, Hold It, Invent An Animal, Invent A Plant, and Seed Dispersal. Children discover how aquatic animals move through water and how different desert plants conserve water; investigate the food gathering adaptations of animals and the water holding power of organisms; design and construct animals and plants; and modify seeds and fruits for dispersal. Each folio contains background information, preparation hints, a list of materials needed, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS *POND GUIDE* supplements this module.
TN informal, 8-10 sessions, 45-60 minutes each
MT locally available
OR in library

NO 761a
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980. ADAPTATIONS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI ADAPTATIONS
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980
PG [42] +20pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS elementary science methods
; integrated curriculum
; seeds
; animals
; plants
; deserts
; fruits
; water
; aquatic animals
; food gathering
; adaptations
; prey
; water current
; habitats
; environments
AN The ADAPTATIONS module consists of seven activity folios, entitled Animal Movement in Water, Desert Water Keepers, Food Grab, Hold It, Invent An Animal, Invent A Plant, and Seed Dispersal. Children discover how aquatic animals move through water and how different desert plants conserve water; investigate the food gathering adaptations of animals and the water holding power of organisms; design and construct animals and plants; and modify seeds and fruits for dispersal. Each folio contains background information, preparation hints, a list of materials needed, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this module.
TN informal, 8-10 sessions, 45-60 minutes each
MT locally available
OR in library

NO 762
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1981. ANIMAL BEHAVIOR. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI ANIMAL BEHAVIOR
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1981
PG [42] + 26pp lawn guide
IL b&w photographs and line drawings
BI no
AV in print
PR $17.15 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS elementary science methods
; integrated curriculum
; ants
; birds
; animal behavior
; jays
; isopods
; spiders
; insects
; lizards
; structure
; webs
; light
AN The ANIMAL BEHAVIOR module includes eight activities, entitled Ants, For the Birds, Isopods, Jay Play, Leapin' Lizards, Scram or Freeze, The Old White Sheet Trick, and Web It. Children are involved in investigating the behavior, structure, and interaction of ants, pigeons, ducks, jays, isopods, lizards, animals that live under logs and rocks, flying insects, and spiders. Through conducting light related experiments, spraying webs with mist, playing a "freeze" and "scram" game, constructing a "lizard rig," salting the jays preferred color food, and observing a variety of animals, children discuss and make predictions about animal behavior. Each activity folio contains background information, preparation hints, a list of materials needed, directions for the activites, and possible extensions. The folio is well organized and has useful illustrations. The OBIS LAWN GUIDE supplements this module.
TN informal, 8-10 sessions, 45-60 minutes each
MT locally available
OR in library

NO 763
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1981. AQUATIC ANIMAL BEHAVIOR. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI AQUATIC ANIMAL BEHAVIOR.
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1981
PG [40] + 20pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS elementary science methods
; integrated curriculum
; animals
; aquatic animals
; damselflies
; dragonflies
; grasshoppers
; frogs
; beach hoppers
; marine animals
; water striders
; animal behaviors
; adaptations
AN The module AQUATIC ANIMAL BEHAVIOR consists of seven activities, entitled Animal Movement in Water, Attract a Fish, Damsels and Dragons, Hopper Circus, Salt Water Revival, Water Breathers, and Water Striders. Children are engaged in discovering how aquatic animals move through water; fishing with different baits and lures; uncovering clues to how dragonflies and damselflies react to flying decoys; using Action Cards to learn about hopping animals; creating artificial high tides; investigating the currents made by animals when they breathe and move; and exploring the movement and feeding behaviors of water striders. Each folio contains background information, preparation hints, a list of materials needed, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this module.
TN informal, 8-10 sessions, 45-60 minutes each
MT locally available
OR in library

NO 764
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980. BACKYARD. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI BACKYARD
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980
PG [42] +20pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $18.65 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS elementary science methods
; integrated curriculum
; birds
; flowers
; animals
; isopods
; pollination
; prey
; environments
; adaptation
; habitats
; organisms
; food gathering
; ponds
; water holes
; soils
AN The BACKYARD module includes seven activities, entitled Birdfeeder, Flower Powder, Food Grab, Invent An Animal, Isopods, Sticklers, Super Soil, and Water Holes to Mini-Ponds. Children build a bird feeder and observe bird behaviors; simulate flower pollination; design devices that can capture prey; create an animal compatible with the local environment; investigate isopods; compare soils; monitor water holes; and play a simulation game about habitat and distribution and relate these concepts to real organisms. Each activity folio contains background information, preparation hints, a list of materials needed, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this module.
TN informal, 8-12 sessions, 45-60 minutes each
MT locally available
OR in library

NO 765
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979,1980. BIO-CRAFTS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI BIO-CRAFTS
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979,1980
PG [50]
IL b&w photographs and line drawings
BI no
AV in print
PR $18.65 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS art
; crafts
; birds
; bugs
; worms
; sun prints
; organisms
; animals
; plants
; spiders
; habitats
; adaptations
; elementary science methods
; integrated curriculum
AN Attention!; Birds Nests; Bugs, Worms and Others; Environmental Sun Prints; Food Grab; Invent An Animal; Invent A Plant; Seed Dispersal; and Web Weavers are the nine activities included in the BIO-CRAFTS module of the OBIS series. Children are involved in creating eye-catching designs, birds nests, make-believe organisms, photogram records of living and non-living objects, devices to catch prey, animals, plants, and spider webs. After design and construction are completed, the children observe the effect of these projects and parallel materials in nature and further study the behaviors of the animals and plants that inhabit each environment. The format of each activity folio is well organized and has useful illustrations and diagrams. Background information, preparation hints, a list of materials needed, directions for the activities, and possible extensions are include in each folio.
TN informal, 7-10 sessions, 45-60 minutes each
MT locally available
OR in library

NO 766
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1982. BREAKWATERS AND BAYS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI BREAKWATERS AND BAYS
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1982
PG [41] +20 pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS organisms
; rocky intertidal zones
; clams
; population census
; crawdads
; birds
; food gathering
; oil spill
; simulations
; rocks
; environments
; adaptations
; aquatic animals
; elementary science methods
; integrated curriculum
AN The BREAKWATERS AND BAYS module consists of seven activities, entitled Beach Zonation, Clam Hooping, Crawdad Grab, Flocking To Food, OBIS Oil Spill, Rock Pioneers, and Water Breathers. Children investigate the distribution of organisms in a rocky intertidal zone, the clams' natural history, and the currents created by aquatic animals when they move and breathe. Opportunities to build crawdad traps, and artificial "beaks" are the focus of two of the activities. Additional experiences include using popcorn to simulate an oil spill and assess its impact on the environment and conducting a population census of squirting clams. Each folio provides background information, a list of materials needed, preparation hints, directions for the activities, and possible extensions. The folio is easy to read and includes useful illustrations and diagrams. The OBIS POND GUIDE supplements this module.
TN informal, 6-8 sessions, 45-60 minutes each
MT locally available
OR in library

NO 767
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1981. CAMPSITE. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI CAMPSITE
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1981
PG [30]
IL b&w photographs and line drawings
BI no
AV in print
PR $14.10 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS flies
; fly trap
; ants
; jays
; stalking
; light
; insects
; animals
; predators
; prey
; adaptations
; animal behavior
; elementary science methods
; integrated curriculum
AN A Better Fly Trap, Ants, Jay Play, Silent Stalking, The Old White Sheet Trick, and Who Goes There? are the six activities that are included in the CAMPSITE module. Children are engaged in investigating the behavior of flies, ants, jays, night-flying insects, and other animals. Activities specifically suited to night time experimentation are using a flashlight and flourescent bait to find evidence of animal activity; conducting light-related investigations to discover the effects of light on insects; and playing a silent stalking game to explore the importance of this skill to predators and of sound detection to prey. Each activity folio provides background information, preparation hints, a list of materials needed, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams.
TN informal, 7-9 sessions, 45-60 minutes each
MT locally available
OR in library

NO 768
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980. CHILD'S PLAY. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI CHILD'S PLAY
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980
PG [38] +20 pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS spiders
; spider webs
; aquatic plants
; aquatic animals
; sounds
; animals
; scavenger hunt
; environments
; prey
; plants
; food gathering
; organisms
; senses
; visual communication
; elementary science methods
; integrated curriculum
AN The CHILD'S PLAY module consists of seven activities, entitled Attention!, Envirolopes, Food Grab, Gaming In The Outdoors, Sound Off!, What Lives Here?, and Web Weavers. Children explore visual communication; hunt for a variety of textures, colors, odors, and evidence of organisms at a specific study site; create devices to capture prey or gather plants; go on a scavenger hunt; simulate animal sounds; observe and identify plants and animals at an aquatic site; and using string, reproduce the intricacies of different spider webs. Each guide contains background information, preparation hints, a list of materials needed, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this module.
TN informal, 8-12 sessions, 45-60 minutes each
MT locally available
OR in library

NO 769
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980. DESERT. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI DESERT
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980
PG [45] + 20 pp guide
IL b&w photographs and line drawings
BI no
AV in print
PR $17.15 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS deserts
; water holes
; ponds
environments
plants
; animals
; lizards
; adaptations
; animal behavior
; interactions
; lichens
; habitats
; colors
; shapes
; scavenger hunts
; temperature
; elementary science methods
; integrated curriculum
AN The DESERT module consists of eight activities, entitled Cactus Wheel, Cool It, Desert Hunt, Desert Water Keepers, Leapin' Lizards, Lichen Looking, Terrestrial Hi-Lo Hunt, and Water Holes to Mini-Ponds. These OBIS activities focus upon habitats and the adaptations of the animals and plants within the desert, water hole, pond, and other environments. Children determine the population densities of desert plants; use the temperature variations at a specific site to try to keep a "lizard" from getting too hot or cold; design OBIS scavenger hunts; determine how different desert plants conserve water; investigate lizard feeding behavior and interactions; search for lichens; locate the warmest and coolest, wettest and driest, windiest and calmest, and brightest and darkest sections of the environment and note the animals and plants within each area; and monitor fertilized and unfertilized water holes. Each activity folio contains background information, preparation hints, a list of needed materials, directions for the activities, and possible extensions. The folio is well org&inized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this module.
TN informal, 8-12 sessions, 45-60 minutes each

NO 770
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1980, 1981, 1982. FOREST. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI FOREST
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1980, 1981, 1982
PG [41]
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS environments
; adaptations
; jays
; leaves
; lichens
; critters
; rotting logs
; trees
; food gathering
; animal behavior
; habitats
; tree rings
; growth patterns
; elementary science methods
; integrated curriculum
AN The FOREST module contains seven activity folios, entitled Jay Play, Leaf Living, Lichen Looking, Litter Critters, Logs To Soil, Sawing Away, and Tree Tally. Children learn about animals that live in a pile of leaves, in the ground, and on or in rotten logs. They look for the most common trees in an area and observe fallen logs to count tree rings and study patterns of growth. Additional activities include observing the habitats, shapes, and colors of lichens and discovering the food-color preference of jays and altering the taste of favored food to see if food-gathering behavior changes. Each activity folio contains backgroun information, a list of needed materials, preparation hints, directions for the activities, and possible extensions. The folio,is well orgainzed and has useful illustrations and diagrams.
TN informal, 8-11 sessions, 45-60 minutes each
MT locally available
OR in library

NO 771
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1981. FOR 8-TO-11-YEAR-OLDS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI FOR 8-TO-11-YEAR-OLDS
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1981
PG [39] +26 pp lawn guide
IL b&w photographs and line drawings
BI no
AV in print
PR $18.65 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS ants
; minnows
; fish
; worms
; bugs
; insects
; animals
; isopods
; environments
; rotting logs
; rocks
; plants
; currents
; streams
; elementary science methods
; integrated curriculum
AN The FOR 8-TO-11-YEAR-OLDS module consists of nine activities, entitled Ants; Attract A Fish; Bugs, Worms and Others; Great Steamboat Race; Invent An Animal; Isopods; Junk-In-The-Box, Plant Hunt, and Scram Or Freeze. Children are engaged in exploring the behavior of ants, minnows, insects, isopods, animals that use people-made litter for food or shelter, and animals that live under logs and rocks. Simulations are created, games are played, collections are amassed, value judgements are discussed, cork-steamboat races are conducted, and animals are invented as the children experience these activities. Each activity folio contains background information, a list of materials needed, preparation hints, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS LAWN GUIDE supplements this module.
TN informal, 8-12 sessions, 45-60 minutes each
MT locally available
OR in library

NO 772
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1981. FOR LARGE GROUPS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI FOR LARGE GROUPS
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1981
PG [25]
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS acorns
; squirrels
; food chains
; large group activities
; animals
; stalking
; predators
; prey
; animal sounds
; simulations
; games
; survival
; adaptations
; environments
; food gathering
; elementary science methods
; integrated curriculum
AN The FOR LARGE GROUPS module consists of six activities, entitled Acorns, Food Chain Game, Invent An Animal, Population Game, Silent Stalking, and Sound Off! All of these activities use a game or simulation format for instruction. Children play a survival game and study the winter food storage strategies of squirrels; investigate food chains by assuming the roles of animals within a food chain; participate in a feeding game to find out how many deer can survive in a herd's environment; explore the importance of silent stalking skills to predators and of sound detection to prey; and communicate secretly to partners, using animal sounds. Each activity folio contains background information, a list of needed materials, preparation hints, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams.
TN informal, 4-6 sessions, 45-60 minutes each
MT locally available
OR in library

NO 773
DE April 7, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1981. FOR SMALL GROUPS & FAMILIES. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI FOR SMALL GROUPS & FAMILIES
AU Outdoor Biology Instructional Strategies (OBIS)
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1981
PG [40] +26 pp lawn guide
IL b&w photographs and line drawings
BI no
AV in print
PR $17.15 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS small group instruction
; flies
; ants
; fish
; birds
; damselflies
; dragonflies
; environments
; animal behavior
; birdfeeders
; food gathering
; adaptations
; minnows
; lizards
; currents
; streams
; animals
; elementary science methods
; integrated curriculum
AN The SMALL GROUPS & FAMILIES module consists of eight activity folios, entitled A Better Fly Trap, Ants, Attract A Fish, Birdfeeder, Damsels and Dragons, Great Steamboat Race, Leaf Living, and Leapin' Lizards. Small groups engage in using a "lizard rig" to investigate the feeding behavior and interactions of lizards; hiding and navigating in a pile of leaves to experience the environment of certain animals; conducting cork boats in a race to discover the rate and direction of currents in a stream; presenting flying decoys to damsel flies and dragon flies to study perching behavior; constructing a birdfeeder to observe bird behavior; fishing with a variety of baits and lures to explore the behavior of minnows; and building fly traps to investigate the behavior of flies. Each folio contains background information, a list of needed materials, hints for lesson preparation, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS LAWN GUIDE supplements this module.
TN informal, 8-10 sessions, 45-60 minutes each

NO 774
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980. GAMES AND SIMULATIONS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI GAMES AND SIMULATIONS
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1979, 1980
PG [32]
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS elementary science methods
; integrated curriculum
; games
; simulations
; adaptations
; temperature
; flowers
; pollination
; senses
; animals
; food chains
; survival
; habitats
; distribution
; organisms
; variations
AN The GAMES AND SIMULATIONS module consists of seven activities, entitled Cool It, Flower Powder, Follow The Scent, Food Chain Game, Population Game, Sticklers, and Variation Game. By playing simple games or enacting simulations, children try to keep a "thermometer lizard" from overheating or getting too cold; use artificial bees and flower models to investigate pollination; discover one way animals use their sense of smell; assume the roles of animals in a food chain; find out how many deer can survive in a herd's home range; learn about habitat and distribution of organisms; and identify differences among individuals. Each activity folio provides background information, a list of materials needed, preparation hints, directions for the investigations, and possible extensions. The folio is easy to read and includes useful illustrations and diagrams.
TN informal, 6-8 sessions, 45-60 minutes each
MT locally available
OR in library

NO 775
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1980, 1981, 1982. HUMAN IMPACT. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI HUMAN IMPACT
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1980, 1981, 1982
PG [38] + 26pp lawn guide
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS environments
; impact
; adaptation
; animals
; organisms
; oil spills
; plants
; biological control
; mosquitoes
; predators
; humans
; elementary science methods
; integrated curriculum
AN The HUMAN IMPACT module consists of seven activities, entitled Can Fishing, Junk-In-The-box, OBIS Oil Spill, Out of Control, Plants Around A Building, Too Many Mosquitoes, and Trail Impact Study. Children investigate how people and events impact upon the environment. Students discover the kinds of animals that live in and on submerged cans and people-made litter; use popcorn to simulate an oil spill; observe the changes in a lawn released from human control; investigate how the environment around a building affects the growth of plants; learn about biological control by identifying predators that eat mosquito larvae; and lay out the course of a foot path that has the least impact on the study site. Each activity folio provides background information, preparation hints, a list of needed materials, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS LAWN GUIDE supplements this module.
TN informal, 8-10 sessions, 45-60 minutes each
MT locally available
OR in library

NO 776
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1980, 1981, 1982. LAWNS AND FIELDS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI LAWNS AND FIELDS
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1980, 1981, 1982
PG [50]
IL b&w photographs and line drawings
BI no
AV in print
PR $18.65 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS animals
; environments
; adaptations
; plants
; spiders
; stalking
; predators
; prey
; spider webs
; animal behavior
; plant eaters
; elementary science methods
; integrated curriculum
AN Animal Diversity, Animals In A Grassland, Hopper Herding, Mystery Marauders, Plant Hunt, Roots and Shoots, Silent Stalking, Web It, and Web Weavers are the nine activities that make up the LAWNS AND FIELDS module. Children investigate the variety of animals that live in a managed lawn and a weedy area, count and identify the different kinds of insects discovered, and determine which of these are plant eaters; simulate stalking skills, observe the behavior of spiders, and replicate the intricacies of their webs.. Further study includes determining the species of plants that grow in a particular study site, and identifying "mystery plants." Each activity folio provides background information, a list of needed materials, preparation hints, directions for the activity, and possible extensions. The folio is well orgainized and has useful illustrations and diagrams. The OBIS LAWN GUIDE supplements this module.
TN informal, 8-12 sessions, 45-60 minutes each
MT locally available
OR in library

NO 777
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1980, 1982. NEIGHBORHOOD WOODS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI NEIGHBORHOOD WOODS
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1980, 1982
PG [42]
IL b&w photographs and line drawings
BI no
AV in print
PR $17.15 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS environments
; nests
; birds
; vines
; lichen
; plant eaters
; senses
; habitats
; variables
; wind
; temperature
; light
; moisture
; insects
; animals
; plants
; shrubs
; trees
; elementary science methods
; integrated curriculum
AN The NEIGHBORHOOD WOODS module consists of eight activities, entitled Bird Nests, Creepers And Climbers, Lichen Looking, Mystery Marauders, Sensory Hi-Lo Hunt, Shake It!, Snug As A Bug, and Swell Homes. Children design bird nests, place them at a site, and try to locate and identify each others' nests. Further investigations include looking at the structure and climbing patterns of vines; learning about the habitat, shapes, and colors of lichens; identifying plant eaters; finding extremes of environmental variables; and constructing homes for imaginary insects, retreiving animals from different trees, plants and shrubs, and comparing the environments of both. Each activity folio provides background information, preparation hints, a list of needed materials, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams.
TN informal, 8-10 sessions, 45-60 minutes each
MT locally available

MT locally available
OR in library

NO 778
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1980, 1981. NIGHTTIME. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI NIGHTTIME
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1980, 1981
PG [35] +20 pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS eyes
; nighttime
; environments
; aquatic animals
; light
; stalking
; predators
; prey
; sounds
; night-flying insects
; insects
; animal behavior
; spiders
; spider webs
; elementary science methods
; integrated curriculum
AN The NIGHTTIME module consists of seven activities, entitled Night Eyes, Night Shine, Silent Stalking, Sound Off, The Old White Sheet Trick, Web It, and Who Goes There? Children use the nighttime environment to explore mysterious eyes, aquatic animals, the stalking skills of predators, animal sounds, night-flying insects, and animals active at night. Students participate in many activities centered on how light affects the behavior of organisms. Each activity folio provides background information, a list of needed materials, preparation hints, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this unit.
TN informal, 7-9 sessions, 45-60 minutes each
MT locally available
OR in library

NO 779
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1980, 1981, 1982. OUTDOOR STUDY TECHNIQUES. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI OUTDOOR STUDY TECHNIQUES
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1980, 1981, 1982
PG [56] + 20 pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $20.20 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS bugs
; leaves
; organisms
; pigments
; plants
; mapping
; moisture
; plants
; animals
; insects
; colors
; chromotography
; habitats
; environments
; outdoor study techniques
; ponds
; elementary science methods
; integrated curriculum
AN Bean Bugs, Fly A Leaf, How Many Organisms Live Here?, Mapping A Study Site, Moisture Makers, Pigment Puzzles, Plant Patterns, Shake It!, Water Snails, and Who Goes There? are the ten activities included in the OUTDOOR STUDY TECHNIQUES module. Children are involved in investigations that include taking a census of a population of organisms too numerous to count; flying and racing leaves to determine which catch more wind; estimating the number of organisms living in a small pond sample; mapping a study site; testing different leaves for moisture content; exploring leaf and flower colors using chromotography; investigating the insect population of trees, plants and shrubs; discovering the snails' preferred habitats; and finding evidence of animals active at night. Each activity folio provides background information, a list of needed materials, preparation hints, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this unit.
TN informal, 10-14 sessions, 45-60 minutes each

OR in library

NO 780
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1980. PAVEMENT AND PARKS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI PAVEMENT AND PARKS
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1980
PG [34] +26 pp lawn guide
IL b&w photographs and line drawings
BI no
AV in print
PR $17.15 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS ants
; environments
; birds
; insects
; plants
; animal sounds
; habitats
; adaptations
; animal behavior
; photograms
; sun prints
; elementary science methods
; integrated curriculum
AN The PAVEMENT AND PARKS module consists of eight activities, entitled Ants, Envirolopes, Environmental Sun Prints, For The Birds, Junk-In-The- Box, Plant Hunt, Plants Around A Building, and Sound Off! In this series of activities, children explore the environment to locate a variety of organisms, examine their behaviors and habitats, and record information in usable and creative ways. Students are involved in observing birds, ants, animals that live in people-made litter, and plants in a variety of settings. Each activity folio provides background information, a list of needed materials, preparation hints, directions for activities, and possible extensions. The folio is easy to understand and has useful illustrations and diagrams. The OBIS LAWN GUIDE supplements this module.
TN informal, 6-8 sessions, 45-60 minutes each
MT locally available
OR in library

NO 781
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1981. PONDS AND LAKES. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI PONDS AND LAKES
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1981
PG [48] + 20pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS ponds
; pond life
; organisms
; minnows
; fish
; habitats
; environments
; animal behavior
; adaptations
; animals
; plants
; currents
; biological control
; aquatic animals
; elementary science methods
; integrated curriculum
AN The PONDS AND LAKES module consists of eight activities, entitled Animal Movement In Water, Attract A Fish, Can Fishing, Habitats Of The Pond, Too Many Mosquitoes, Water Breathers, Water Holes To Mini-Ponds, and What Lives Here? While using these activities, children observe and identify plants and animals that live in ponds, lakes, and water holes. They study animal behavior and how changes in the environment affect the lives of these organisms. Specific investigations include using a variety of baits and lures to attract minnows, monitoring life at a water hole or pond over a period of eight to ten weeks, and finding predators that eat mosquito larvae. Each activity folio provides background information, preparation hints, a list of needed materials, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this unit.
TN informal, 8-12 sessions, 45-60 minutes each
MT locally available
OR in library

NO 782
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979. SCHOOLYARD. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI SCHOOLYARD
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1979
PG [39]
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS flies
; fly traps
; food chains
; plants
; metrics
; measurement
; seeds
; habitats
; distribution
; seed dispersal
; environments
; variables
; animals
; elementary science methods
; integrated curriculum
AN A Better Fly Trap, Food Chain Game, Invent A Plant, Metric Capers, Seed Dispersal, Sticklers, and Terrestrial Hi-Lo Hunt are the seven activities included in the SCHOOLYARD module. Children are involved in constructing a fly trap to observe the behavior of flies; role playing animals in a food chain; creating new plants; measuring environmental objects; discovering how seeds are adapted for dispersal; playing a simulation game that introduces the concepts of habitat and distribution; and considering a variety of environmental variables, identifying specific sections of a study site. Each activity folio provides background information, a list of needed materials, preparation hints, directions for activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams.
TN informal, 8-10 sessions, 45-60 minutes each
MT locally available
OR in library

NO 783
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1981. SEASHORE. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI SEASHORE
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1981
PG [39] +20pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $14.10 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS seashore
; environments
; animals
; aquatic life
; aquatic animals
; organisms
; currents
; plants
; beaches
; beach hoppers
; grasshoppers
; frogs
; tides
; elementary science methods
; integrated curriculum
AN The SEASHORE module is made up of six activities, entitled Animal Movement In Water, Beachcombing, Hopper Circus, Salt Water Revival, Seas In Motion, and Water Breathers. While participating in these activities, children investigate aquatic environments and observe the organisms found at each study site. Specific investigations include discovering how aquatic animals move through water and how this movement and breathing affect currents; searching for evidence of plant and animal life on a sandy beach, and discussing the possible origins of their funds; watching beach hopper, grasshoppers, and frogs; creating an artificial high tide and noting its effect on marine life; and using simple devices to simulate the movements and currents of the sea. Each activity folio provides background information, a list of materials needed, preparation hints, directions for activites, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this module.
TN informal, 8-10 sessions, 45-60 minutes each
MT locally available
OR in library

NO 784
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1980, 1981, 1982. STREAMS AND RIVERS. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI STREAMS AND RIVERS
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1980, 1981, 1982
PG [50] +20pp pond guide
IL b&w photographs and line drawings
BI no
AV in print
PR $17.15 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS animals
; aquatic animals
; crawdads
; oil spills
; damselflies
; dragonflies
; snails
; water striders
; environments
; animal behaviors
; plants
; integrated curriculum
; elementary science methods
AN Crawdad Grab, Damsels and Dragons, Great Steamboat Race, Hold It, OBIS Oil Spill, Water Snails, Water Striders, and What Lives Here? are the eight activities that make up the STREAMS AND RIVERS module. In these activities, children observe and identify crawdads, damselflies, dragonflies, snails, water striders, and other aquatic plant and animal life. Investigations include conducting cork boat races, creating popcorn oil spills, and designing cork or sponge creatures. Each activity folio provides background information, a list of needed materials, preparation hints, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams. The OBIS POND GUIDE supplements this module.
TN informal, 9-13 sessions, 45-60 minutes each
MT locally available
OR in library

NO 785
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1980, 1982. TRAIL. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI TRAIL
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1980, 1982
PG [32]
IL b&w photographs and line drawings
BI no
AV in print
PR $14.10 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS trails
; heart rate
; environment
; foot paths
; scavenger hunts
; erosion
; slope
; animals
; trees
; shrubs
; elementary science methods
; integrated curriculum
AN The TRAIL module consists of six activities, entitled Cardiac Hill, Gaming In The Outdoors, Hold A Hill, Shake It!, Trail Construction, and Trail Impact Study. Children participate in activities that increase their awareness of the environment and how people and events may alter it. Specific investigations include using heart rate to determine the maximum steepness for a footpath; scavenging in order to become more familiar with the environment; determining the relationship between erosion and slope; matching a "mystery community" with animals that are shaken from different trees and shrubs; selecting the best trail-construction technique for a specific study site; and laying out a foot path that will have the least impact on the environment. Each activity folio provides background information, a list of needed materials, preparation hints, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams.
TN informal, 6-8 sessions, 45-60 minutes each
MT locally available
OR in library

NO 786
DE April 13, 1988
SU Biology
TY Teacher's Guide
CI Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science, 1979, 1980, 1981, 1982. WINTERTIME. Nashua, NH: Delta Education.
SE Outdoor Biology Instructional Strategies (OBIS)
TI WINTERTIME
AU Outdoor Biology Instructional Strategies (OBIS), Lawrence Hall of Science
PU Delta Education
LO Nashua, NH
DP 1979, 1980, 1981, 1982
PG [33]
IL b&w photographs and line drawings
BI no
AV in print
PR $15.60 April, 1988
AL 5,6,7,8,9,10
RL 4,5,6,7,8
DS acorns
; animals
; adaptations
; temperature
; birds
; birdfeeders
; scents
; prey
; predators
; hibernation
; animal behavior
; environments
; elementary science methods
; integrated curriculum
AN The WINTERTIME module consists of six activities, entitled Acorns, Animal Anti-Freeze, Birdfeeder, Population Game, Scent Tracking, and Wintergreen. Children are involved in role playing squirrels and deer and learning how to survive; searching for a hibernation site for a make-believe animal; contructing a birdfeeder and investigating the behavior of birds; simulating prey scents and play a game where predators track the prey by following its scent; and locating green plants under the snow and determining the light and temperature conditions of the environment. Each activitiy folio provides background information, a list of materials needed, preparation hints, directions for the activities, and possible extensions. The folio is well organized and has useful illustrations and diagrams.
TN informal, 6-8 sessions, 45-60 minutes each
MT locally available
OR in library

ID 800
DE March 29, 1988
SU Science Process Skills
TY Curriculum Module
CI American Association for the Advancement of Science (AAAS), (1974). SCIENCE - A PROCESS APPROACH II, LEVEL K. Nashua, NH: Delta Education.
SE
TI SCIENCE - A PROCESS APPROACH II, LEVEL K
AU American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science
PU Delta Education
LO Nashua, NH
DP (1974)
PG
IL b&w photos, line drawings
BI no
PR Guides: $21.95 Kit: $264.20 March, 1988
AL K
RL K,1,2
DS color
; science process skills
; color
; shape
; texture
; size
; direction
; motion
; measurement
; whales
; geometry
; animals
; counting
; temperature
; classification
; sound
AN SCIENCE - A PROCESS APPROACH II, LEVEL K, introduces rudimentary science process skills at the kindergarten level, through a series of fifteen modules adapted from the twenty-two original SAPA exercises. Instructions for the teacher's behavior and language are still explicitly stated, and evaluation activities are included, as in the original.
TN 15 sessions, at least 30 minutes
MT kit from Delta
OR in library

NO 801
DE March 29, 1988
SU Science Process Skills
TY Curriculum Module
CI American Association for the Advancement of Science (AAAS), (1974). SCIENCE - A PROCESS APPROACH II, LEVEL 1. Nashua, NH: Delta Education.
SE
TI SCIENCE - A PROCESS APPROACH II, LEVEL 1
AU American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science
PU Delta Education
LO Nashua, NH
DP (1974)
PG
IL b&w photos, line drawings
BI no
PR Guides: $21.95 Kit: $462.05 March, 1988
AL 1
RL K,1,2,3
DS science process skills
; sensory perception
; change
; weather
; clasification
; graphs
; balances
; forces and motions
; shadows
; soil
; volume
; measurement
; mold
; plants
AN SCIENCE - A PROCESS APPROACH II, LEVEL 1 extends the kindergarten experiences of observing and classifying to first grade. Using activities adapted from the original SAPA materials as well as new lessons, children investigate living and nonliving things, begin to make simple measurements, and to report their findings. There are fifteen modules at this level, as compared with the original twenty-six. Teacher instructions and evaluation questions continue to be explicitly stated.
TN 15 sessions, at least 30 minutes
MT kit from Delta
OR in library

NO 802
DE March 29, 1988
SU Science Process Skills
TY Curriculum Module
CI American Association for the Advancement of Science (AAAS), (1974). SCIENCE - A PROCESS APPROACH II, LEVEL 2. Nashua, NH: Delta Education.
SE
TI SCIENCE - A PROCESS APPROACH II, LEVEL 2
AU American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science
PU Delta Education
LO Nashua, NH
DP (1974)
PG
IL b&w photos, line drawings
BI no
PR Guides: $21.95 Kit: $462.05 March, 1988
AL 2
RL 1,2,3
DS science process skills
; animals
; animal behavior
; life cycles
; geometry
; symmetry
; graphs
; matter
; estimation
; temperature
; thermometers
; plants
; forces and motions
; prediction
; inference
; terrariums
AN SCIENCE - A PROCESS APPROACH II, LEVEL 2 introduces the process of inference to skills already learned. Second grade students begin to make inferences and predictions based on their observations of plants, animals, and physical phenomena, and engage in simple collection of data and estimation activities derived from the original SAPA exercises. Detailed instructions for teaching and evaluating the fifteen modules are supported by little scientific information.
TN 15 sessions, at least 30 minutes
MT kit from Delta
OR in library

NO 803
DE March 29, 1988
SU Science Process Skills
TY Curriculum Module
CI American Association for the Advancement of Science (AAAS), (1974). SCIENCE - A PROCESS APPROACH II, LEVEL 3. Nashua, NH: Delta Education.
SE
TI SCIENCE - A PROCESS APPROACH II, LEVEL 3
AU American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science
PU Delta Education
LO Nashua, NH
DP (1974)
PG
IL b&w photos, line drawings
BI no
PR Guides: $21.95 Kit: $462.05 March, 1988
AL 3
RL 2,3,4
DS science process skills
; measurement
; classification
; change
; inference
; prediction
; variables
; forces and motions
; plants
; geometry
AN In SCIENCE - A PROCESS APPROACH II, LEVEL 3, third grade students continue investigations that incorporate observation, classification, measurement, inference, and prediction, learning how to control variables in their activities. The fifteen modules are derived from twenty-two original SAPA exercises involving plants and animals, physical forces, and geometry. Teacher instructions are explicit, but there is little science background information to support or extend the SAPA II experiences.
TN 15 sessions, at least 30 minutes
MT kit from Delta
OR in library

NO 804
DE March 29, 1988
SU Science Process Skills
TY Curriculum Module
CI American Association for the Advancement of Science (AAAS), (1974). SCIENCE - A PROCESS APPROACH II, LEVEL 4. Nashua, NH: Delta Education.
SE
TI SCIENCE - A PROCESS APPROACH II, LEVEL 4
AU American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science
PU Delta Education
LO Nashua, NH
DP (1974)
PG
IL b&w photos, line drawings
BI no
PR Guides: $21.95 Kit: $577.30 March, 1988
AL 4
RL 3,4,5
DS science process skills
; electricity
; animals
; animal behavior
; plants
; sensory perception
; vision
; rocks
; minerals
; magnification
; lenses
; seeds
; heart rate
; ecology
; liquids
; graphs
; conductivity
AN SCIENCE - A PROCESS APPROACH II, LEVEL 4 introduces fourth grade students to operational definition, hypothesis, and data analysis. Adapted from twenty-three original exercises, the fifteen modules in this sequence engage students in life, earth, and physical science investigations. There is more biology and health study than in the original, and less math. Teacher instructions and evaluation questions are explicit, but scientific background information absent.
TN 15 sessions, at least 30 minutes
MT kit from Delta
OR in library

NO 805
DE March 29, 1988
SU Science Process Skills
TY Curriculum Module
CI American Association for the Advancement of Science (AAAS), (1974). SCIENCE - A PROCESS APPROACH II, LEVEL 5. Nashua, NH: Delta Education.
SE
TI SCIENCE - A PROCESS APPROACH II, LEVEL 5
AU American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science
PU Delta Education
LO Nashua, NH
DP (1974)
PG
IL b&w photos, line drawings
BI no
PR Guides: $21.95 Kit: $617.00 March, 1988
AL 5
RL 4,5,6
DS science process skills
; environment
; population
; chemistry
; reactions
; levers
; forces and motions
; animals
; animal behavior
; probability
; geometry
; maps
; mapping
; contour maps
; plants
; magnetism
; erosion
; streams
; gravity
; water flow
AN SCIENCE - A PROCESS APPROACH II, LEVEL 5 reinforces the skills taught at level 4, investigating phenomena in the life, earth, and physical sciences in somewhat more detail. Fifteen lessons are derived from the original twenty-four at this level, though they are slightly more oriented toward environmental topics than the original. Each module contains detailed instructions and questions for evaluation, but science background information is inadequate to support further investigations.
TN 15 sessions, at least 30 minutes
MT kit from Delta
OR in library

NO 806
DE March 29, 1988
SU Science Process Skills
TY Curriculum Module
CI American Association for the Advancement of Science (AAAS), (1974). SCIENCE - A PROCESS APPROACH II, LEVEL 6. Nashua, NH: Delta Education.
SE
TI SCIENCE - A PROCESS APPROACH II, LEVEL 6
AU American Association for the Advancement of Science (AAAS)
AF American Association for the Advancement of Science
PU Delta Education
LO Nashua, NH
DP (1974)
PG
IL b&w photos, line drawings
BI no
PR Guides: $21.95 Kit: $577.30 March, 1988
AL 6
RL 5,6,7
DS science process skills
; flowers
; plants
; astronomy
; animals
; sensory perception
; vision
; optical illusions
; eyes
; density
; viscosity
; fermentation
; moon
; hypothesis
; inference
; prediction
; chemistry
; reactions
; pressure
; volume
AN SCIENCE - A PROCESS APPROACH II, LEVEL 6 uses all the science process skills that have been taught in spiral sequence as a basis for extensive experimenting at sitxh grade level. In fifteen modules derived from the original twenty-two SAPA exercises, students conduct investigations in the three major topic areas of life, earth, and physical sciences. Instructions for teaching and evaluating the modules are explicit. Science background information to support the experiments is lacking.
TN 15 sessions, at least 30 minutes
MT kit from Delta
OR in library

NO 807
DE March 30, 1988
SU Physical
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), Joan Coffman Randle et al., 1970. MATERIAL OBJECTS. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI MATERIAL OBJECTS
AU Science Curriculum Improvement Study (SCIS)
; Randle, Joan Coffman
; Thier, Herbert D.
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally and Company
LO Chicago, IL 60680
DP 1970
PG 80
IL b&w line drawings and photographs
BI no
IS 528-90102-8
LC none
AL 1
RL 1
DS scientific method
; scientific process
; objects
; properties
; materials
; serial ordering
; changes
; evidence
; grouping
; sorting
; comparisons
; elementary science methods
AN MATERIAL OBJECTS offers students the opportunity to observe, manipulate, compare and change the form of common objects. Students study their color, shape, texture, hardness, and weight. Pupils will learn that an object is a piece of matter and properties are characteristics of those pieces of matter. Property comparison leads to "serial ordering", or reclassifying, to show even finer differences. The unit culminates with experimentation involving objects as students compare sugar cubes and rock candy, and objects that sink or float. A kit is available from Delta to provide all materials needed in an organized, convenient fashion.
TN There are 21 lessons 20-25 minutes each
MT Kit from Delta, locally available
OR in library

NO 807
DE March 30, 1988
SU Physical Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), Joan Coffman Randle et al., 1970. MATERIAL OBJECTS. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI MATERIAL OBJECTS
AU Science Curriculum Improvement Study (SCIS)
; Randle, Joan Coffman
; Thier, Herbert D.
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally (available from Delta)
LO Chicago, IL
DP 1970
PG 80
IL b&w line drawings and photos
BI no
IS 528-90102-8
LC
AL 1
RL 1
DS scientific method
; science process skills
; attributes
; sequencing
; classification
; comparing
; physical properties
; physical science
; properties
; serial ordering
; change
; grouping
; sorting
; comparison
; elementary science methods
AN MATERIAL OBJECTS offers students the opportunity to observe, manipulate, compare, and change the form of common objects. Students learn that an object is a form of matter and that its color, shape, texture, hardness, and weight are called "properties". Comparing properties leads to "serial ordering", or reclassifying, to show finer differences. Students compare sugar cubes and rock candy, and contrast objects that sink or float.
TN 21 lessons 20-25 minutes each
MT locally available, or kit from Delta
OR in library
IN MATERIAL OBJECTS

NO 809
DE March 30, 1988
SU Physical
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier, et al., 1985. MATERIAL OBJECTS. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI MATERIAL OBJECTS
AU Science Curriculum Improvement Study (SCIIS/85)
; Their, Herbert D.
; Karplus, Robert
; Lawson, Chester A.
; Knott, Robert
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1985
PG 122
IL b&w line drawings and photographs
BI no
IS 0-87504-401-8
LC none
AL 1
RL 1
DS scientific method
; scientific process
; objects
; properties
; materials
; serial ordering
; changes
; evidence
; grouping
; sorting
; comparisons
; elementary science methods
AN The teacher's guide for MATERIAL OBJECTS has been revised and a supplement section added. The supplement organizes the lessons in a format that would ease the task for a teacher new to the SCIIS/85 program and offers optional activities as the teacher becomes more comfortable with the program. One new lesson looks at the properties of plastics and students are introduced to the differences between natural and synthetic objects. A second new lesson has students comparing balloons inflated with air and helium.
TN There are 20 lessons 20-30 minutes each
MT Kit from Delta, locally available
OR in library

NO 809
DE March 30, 1988
SU Physical Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier, et al., 1985. MATERIAL OBJECTS. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI MATERIAL OBJECTS
AU Science Curriculum Improvement Study (SCIIS/85)
; Thier, Herbert D.
; Karplus, Robert
; Lawson, Chester A.
; Knott, Robert
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta
LO Nashua, NH
DP 1985
PG 122
IL b&w line drawings and photos
BI no
IS 0-87504-401-8
AL 1
RL 1
DS scientific method
; science process skills
; properties
; serial ordering
; change
; grouping
; sorting
; comparison
; elementary science methods
AN The teacher's guide for MATERIAL OBJECTS has been revised and a supplement section added. The supplement organizes the lessons in a format that eases the teacher's task and offers optional activities. One new lesson looks at the properties of plastics and students are introduced to the differences between natural and synthetic objects. The second new lesson has students comparing balloons inflated with air and helium.
TN 20 lessons 20-30 minutes each
MT locally available or kit from Delta
OR in library
IN MATERIAL OBJECTS

NO 810
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS II), Lester G. Paldy, et al., 1986. ENVIRONMENTS. Nashua, NH: Delta Education, Inc.
SE Science Curriculum Improvement Study (SCIS II)
TI ENVIRONMENTS
AU Science Curriculum Improvement Study (SCIIS/85)
; Paldy, Lester G.
; Amburgey, Leonard L.
; Collea, Francis
; Cooper, Richard
; Maxwell, Donald E.
; Riley, Joseph W.
AF Lawrence Hall of Science, University of California, Berkeley
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1986
PG 121
IL b&w line drawings, charts, graphs
BI yes
IS
LC EN201
AL 4
RL 4
DS scientific method
; scientific process
; terraria
; environment
; environmental factors
; temperature
; optimum range
; animals
; plants
; elementary science methods
AN The teacher's guide for ENVIRONMENTS, SCIS II, is basically the same as SCIS except several of the kinds of living organisms used in the unit have been changed.
TN There are 29 lessons, 35-40 minutes each
MT Kit from Delta
OR in library

NO 810
DE March 30, 1988
SU Life Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS II), Lester G. Paldy, et al., 1986. ENVIRONMENTS. Nashua, NH: Delta Education, Inc.
SE Science Curriculum Improvement Study (SCIS II)
TI ENVIRONMENTS
AU Science Curriculum Improvement Study (SCIIS/85)
; Paldy, Lester G.
; Amburgey, Leonard L.
; Collea, Francis
; Cooper, Richard
; Maxwell, Donald E.
; Riley, Joseph W.
AF Lawrence Hall of Science, University of California, Berkeley
PU Delta
LO Nashua, NH
DP 1986
PG 121
IL b&w line drawings, charts, graphs
BI yes
AL 4
RL 4
DS scientific method
; science process skills
; terrariums
; environments
; environmental factors
; temperature
; life science
; habitats
; animals
; plants
; elementary science methods
AN The teacher's guide for ENVIRONMENTS, SCIS II, remains the same as the original version, with addition of lessons and changes in the types of organisms used.
TN 29 lessons, 35-40 minutes each
MT Kit from Delta
OR in library
IN ENVIRONMENTS

NO 811
DE March 30, 1988
SU Life Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), David Conrad et al., 1970. ENVIRONMENTS. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI ENVIRONMENTS
AU Science Curriculum Improvement Study (SCIS)
; Conrad, David
; Knott, Robert C.
; Lawson, Chester A.
; Sheehan, Charlyn
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally (available from Delta)
LO Chicago, IL 60680
DP 1970
PG 97
IL b&w abd color photos, line drawings, graphs, charts
BI no
IS 528-90137-0
AL 4
RL 4
DS scientific method
; science process skills
; terrariums
; environments
; environmental factors
; temperature
; life science
; habitats
; animals
; plants
; elementary science methods
AN To study ENVIRONMENTS, the students begin by designing and building their own terrariums. They then conduct experiments to determine the responses of the animals and plants to changes in such environmental factors as amount of light, heat, and moisture. The students learn about optimum range, as they record and interpret results and then use the information to plan a new and more favorable environment. An accompanying kit includes materials and class charts.
TN 15 lessons, 35-40 minutes each
MT Kit from Delta
OR in library
IN ENVIRONMENTS

NO 812
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier, et al., 1985. ENVIRONMENTS. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI ENVIRONMENTS
AU Science Curriculum Improvement Study (SCIIS/85)
; Thier, Herbert D.
; Karplus, Robert
; Lawson, Chester A.
; Knott, Robert
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1985
PG
IL b&w line drawings, photographs, charts, and graphs
BI no
IS 0-87504-408-5
LC GUI408
AL 4
RL 4
DS scientific method
; scientific process
; environment
; environmental factors
; biotic factors
; abiotic factors
; temperature
; optimum range
; terrariums
; animals
; plants
; elementary science methods
AN The teacher's guide for ENVIRONMENTS, SCIIS/85, has been revised to help teachers reduce preparation time. A supplement, prepared by teachers has been added that offers a clear format. A new lesson on "The Human Environment" has been added. A kit is available from Delta.
TN There are 17 lessons, 35-40 minutes each
MT Kit from Delta
OR in library

NO 812
DE March 30, 1988
SU Life Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier, et al., 1985. ENVIRONMENTS. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI ENVIRONMENTS
AU Science Curriculum Improvement Study (SCIIS/85)
; Thier, Herbert D.
; Karplus, Robert
; Lawson, Chester A.
; Knott, Robert
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta
LO Nashua, NH 03061
DP 1985
PG 118
IL b&w line drawings, photographs, charts, and graphs
BI no
IS 0-87504-408-5
AL 4
RL 4
DS scientific method
; science process skills
; environments
; environmental factors
; temperature
; life science
; habitats
; terrariums
; animals
; plants
; elementary science methods
AN The teacher's guide for ENVIRONMENTS, SCIIS/85, has been revised to include a supplement prepared by teachers, reducing preparation time and providing a simplified lesson format. A lesson on "The Human Environment" has been added.
TN 17 lessons, 35-40 minutes each
MT Kit from Delta
OR in library
IN ENVIRONMENTS

NO 813
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), Sandra Fletcher, et al., 1970. ORGANISMS. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI ORGANISMS
AU Science Curriculum Improvement Study (SCIS)
; Fletcher, Sandra
; Lawson, Chester A.
; Rawitscher-Kunkel, Erika
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally and Company
LO Chicago, IL 60680
DP 1970
PG 65
IL b&w photographs, color photographs, line drawings
BI no
IS 528-90107-9
LC none
AL 1
RL 1
DS scientific method
; scientific process
; seeds
; plants
; aquaria
; organisms
; habitat
; algae
; food webs
; detritus
; germination
; life cycles
; elementary science methods
AN The topic of this unit is types of organisms. Students are involved in describing different seeds, germinating the seeds, and growing plants. They set up an aquarium with guppies, snails, and water plants, in order to observe and discuss birth, growth, and death of organisms. Students use the school yard or nearby parks to learn, first hand, about habitats. Detritus, the decaying matter in the aquaria, offers another learning opportunity as it is used in an experiment as plant fertilizer. A complete kit is available from Delta.
TN There are 16 lessons, 20-25 minutes each
MT Kit from Delta
OR in library

NO 811
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), David Conrad et al., 1970. ENVIRONMENTS. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI ENVIRONMENTS
AU Science Curriculum Improvement Study (SCIS)
; Conrad, David
; Knott, Robert C.
; Lawson, Chester A.
; Sheehan, Charlyn
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally and Company
LO Chicago, IL 60680
DP 1970
PG
IL color photographs, b&w photographs, line drawings, graphs, charts
BI no
IS 528-90137-0
LC none
AL 4
RL 4
DS scientific method
; scientific process
; terraria
; environment
; environmental factors
; temperature
; optimum range
; animals
; plants
; elementary science methods
AN The topic of this unit is environments. The students begin by designing and building their own terraria. They then become involved in experiments to determine the responses of the animals and plants to controlled environmental factors such as amount of light, heat, and moisture. The students learn about optimum range as they record and interpret results and then use the information to plan a new and favorable environment. A kit is available throught Delta with all materials including class charts.
TN There are 15 lessons, 35-40 minutes each
MT Kit from Delta
OR in library

book
data...

NO 814
DE March 30, 1988
SU Life Science
TY Teacher's Guide
CI Science Curriculum Improvement Study II (SCIS II), Lester G. Paldy, et al., 1985. ORGANISMS. Cambridge, MA: American Science and Engineering (AS&E).
SE Science Curriculum Improvement Study II (SCIS II)
TI ORGANISMS
AU Science Curriculum Improvement Study II (SCIS II)
; Paldy, Lester G.
; Amburgey, Leonard L.
; Collea, Francis
; Cooper, Richard
; Maxwell, Donald E.
; Riley, Joseph W.
AF Lawrence Hall of Science, University of California, Berkeley
PU American Science and Engineering (AS&E) (available from Delta)
LO Cambridge, MA
DP 1978
PG 97
IL b&w line drawings
BI yes
IS 0-8339-1102-3
AL 1
RL 1
DS scientific method
; science process skills
; seeds
; plants
; aquariums
; organisms
; habitat
; algae
; food webs
; life science
; guppies
; snails
; germination
; life cycles
; elementary science methods
AN The SCIS II version of ORGANISMS differs from the original by addition of 13 lessons. See: ORGANISMS. Science Curriculum Improvement Study (SCIS). Chicago, IL: Rand McNally, 1970.
TN 29 lessons, 20-25 minutes each
MT Kit from Delta
OR in library
IN ORGANISMS

NO 815
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS), Herbert D. Thier, et al., 1985. ORGANISMS. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI ORGANISMS
AU Science Curriculum Improvement Study (SCIIS)
; Lawson, Chester A.
; Knott, Robert
; Karplus, Robert
; Their, Herbert D.
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1985
PG 106
IL b&w line drawings, photographs and charts
BI no
IS 0-87504-402-6
LC GUI402
AL 1
RL 1
DS scientific method
; scientific process
; seeds
; plants
; aquaria
; organisms
; habitat
; algae
; food webs
; detritus
; germination
; life cycles
; elementary science methods
AN The SCIIS/85 Teacher's Guide offers a revised format that simplifies the use of the ORGANISMS unit. The addition of several appendices offers teachers five evaluation activities and a discussion of attitudes in science that should prove helpful.
TN There are 16 lessons, 20-25 minutes each
MT Kit from Delta
OR in library

database

NO 815
DE March 30, 1988
SU Life Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS), Herbert D. Thier, et al., 1985. ORGANISMS. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI ORGANISMS
AU Science Curriculum Improvement Study (SCIIS)
; Lawson, Chester A.
; Knott, Robert
; Karplus, Robert
; Their, Herbert D.
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta
LO Nashua, NH
DP 1985
PG 106
IL b&w line drawings, photographs and charts
BI no
IS 0-87504-402-6
AL 1
RL 1
DS scientific method
; science process skills
; seeds
; plants
; aquariums
; organisms
; habitat
; algae
; food webs
; life science
; guppies
; snails
; germination
; life cycles
; elementary science methods
AN The SCIIS Teacher's Guide offers a revised format that simplifies the use of the ORGANISMS unit. The addition of several appendices offers teachers five evaluation activities and a helpful discussion of attitudes in science that should prove helpful.
TN There are 16 lessons, 20-25 minutes each
MT Kit from Delta
OR in library
IN ORGANISMS

NO 816
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), David Conrad et al., 1972. POPULATIONS. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI POPULATIONS
AU Science Curriculum Improvement Study (SCIS)
; Conrad, David
; Knott, Robert C.
; Lanier, Mary Ann
; Lawson, Chester A.
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally and Company
LO Chicago, IL 60680
DP 1972
PG
IL b&w photographs, line drawings, graphs, charts and color photographs
BI no
IS 528-90127-3
LC none
AL 3
RL 3
DS scientific method
; scientific process
; population
; food chain
; plant eater
; animal eater
; food web
; community
; predator - prey
; animals
; plants
; life cycles
; elementary science methods
AN While studying the POPULATIONS unit students become acquainted with increases or decreases in population by charting the numbers of daphnia and aphids over a two week period of time. Several populations of plants and animals are grouped together in aquaria and terraria that the children build. The pupils study and experiment with these populations to learn about food chains, relationships between predators and prey, plant eaters, and animal eaters. The unit ends with a look at how interdependent populations in a given area make up what is known as a community. A kit with all materials is available from Delta
TN There are 16 lessons, 30-35 minutes each
MT Kit from Delta
OR in library

NO 816
DE March 30, 1988
SU Life Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), David Conrad et al., 1972. POPULATIONS. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI POPULATIONS
AU Science Curriculum Improvement Study (SCIS)
; Conrad, David
; Knott, Robert C.
; Lanier, Mary Ann
; Lawson, Chester A.
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally (available from Delta)
LO Chicago, IL
DP 1972
PG 89
IL b&w and color photos, line drawings, graphs, charts
BI no
IS 528-90127-3
AL 3
RL 3
DS scientific method
; science process skills
; populations
; food chains
; food webs
; communities
; predator
; carnivores
; herbivores
; prey
; life science
; aquariums
; terrariums
; animals
; plants
; life cycles
; elementary science methods
AN While studying the POPULATIONS unit students construct aquariums and terrariums and chart increases or decreases in population by charting the numbers of daphnia and aphids over a two week period of time. The pupils study and experiment with these populations to learn about food chains, relationships between predators and prey, plant eaters, and animal eaters. This investigation of interdependent populations leads students to a definition of 'community'.
TN 16 lessons, 30-35 minutes each
MT Kit from Delta
OR in library
IN POPULATIONS

NO 817
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study II (SCIS II), Lester G. Paldy, et al., 1978. POPULATIONS. Cambridge, MA: American Science and Engineering (AS&E).
SE Science Curriculum Improvement Study II (SCIS II)
TI POPULATIONS
AU Science Curriculum Improvement Study II (SCIS II)
; Paldy, Lester G.
; Amburgey, Leonard L.
; Collea, Francis
; Cooper, Richard
; Maxwell, Donald E.
; Riley, Joseph W.
AF Lawrence Hall of Science, University of California, Berkeley
PU American Science and Engineering (AS&E)
LO Cambridge, MA 02139
DP 1978
PG 123
IL b&w line drawings, charts and graphs
BI yes
IS 0-8339-1302-6
LC none
AL 3
RL 3
DS scientific method
; scientific process
; populations
; food chains
; plant eaters
; animal eaters
; food webs
; communities
; animals
; plants
; elementary science methods
; dispersal
AN While studying the POPULATIONS unit students become acquainted with increases or decreases in population by charting the numbers of daphnia and aphids over a two week period of time. Several populations of plants and animals are grouped together in aquaria and terraria that the children build. The pupils study and experiment with these populations to learn about food chains, relationships between predators and prey, plant eaters, and animal eaters. The unit ends with a look at how interdependent populations in a given area make up what is known as a community. A kit with all materials is available from Delta
TN There are 25 lessons, 30-35 minutes each
MT Kit from Delta
OR in library

Look
available

NO 813
DE March 30, 1988
SU Life Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), Sandra Fletcher, et al., 1970. ORGANISMS. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI ORGANISMS
AU Science Curriculum Improvement Study (SCIS)
; Fletcher, Sandra
; Lawson, Chester A.
; Rawitscher-Kunkel, Erika
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally (available from Delta)
LO Chicago, IL
DP 1970
PG 65
IL b&w and color photos, line drawings
BI no
IS 528-90107-9
AL 1
RL 1
DS scientific method
; science process skills
; seeds
; plants
; aquariums
; organisms
; habitats
; algae
; food webs
; life science
; guppies
; snails
; germination
; life cycles
; elementary science methods
AN In ORGANISMS, students describe different seeds, germinate the seeds, and grow plants. They set up an aquarium with guppies, snails, and water plants, in order to observe and discuss birth, growth, and death of organisms. Detritus, the decaying matter in the aquarium, offers another learning opportunity as it is used to fertilize plants in another experiment. Students then explore the schoolyard or nearby parks to learn firsthand about natural habitats.
TN lessons, 20-25 minutes each
MT Kit from Delta
OR in library
IN ORGANISMS

NO 814
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study II (SCIS II), Lester G. Paldy, et al., 1985. ORGANISMS. Cambridge, MA: American Science and Engineering (AS&E).
SE Science Curriculum Improvement Study II (SCIS II)
TI ORGANISMS
AU Science Curriculum Improvement Study II (SCIS II)
; Paldy, Lester G.
; Amburgey, Leonard L.
; Collea, Francis
; Cooper, Richard
; Maxwell, Donald E.
; Riley, Joseph W.
AF Lawrence Hall of Science, University of California, Berkeley
PU American Science and Engineering (AS&E)
LO Cambridge, MA 02139
DP 1978
PG 97
IL b&w line drawings
BI yes
IS 0-8339-1102-3
LC none
AL 1
RL 1
DS scientific method
; scientific process
; seeds
; plants
; aquaria
; organisms
; habitat
; algae
; food webs
; detritus
; germination
; life cycles
; elementary science methods
AN The topic of this unit is types of organisms. Students are involved in describing different seeds, germinating the seeds, and growing plants. They set up an aquarium with guppies, snails, and water plants, in order to observe and discuss birth, growth, and death of organisms. Students use the school yard or nearby parks to learn, first hand, about habitats. Detritus, the decaying matter in the aquaria, offers another learning opportunity as it is used in an experiment as plant fertilizer. A complete kit is available from Delta.
TN There are 29 lessons, 20-25 minutes each
MT Kit from Delta
OR in library

NO 817
DE March 30, 1988
SU Life Science
TY Teacher's Guide
CI Science Curriculum Improvement Study II (SCIS II), Lester G. Paldy, et al., 1978. POPULATIONS. Cambridge, MA: American Science and Engineering (AS&E).
SE Science Curriculum Improvement Study II (SCIS II)
TI POPULATIONS
AU Science Curriculum Improvement Study II (SCIS II)
; Paldy, Lester G.
; Amburgey, Leonard L.
; Collea, Francis
; Cooper, Richard
; Maxwell, Donald E.
; Riley, Joseph W.
AF Lawrence Hall of Science, University of California, Berkeley
PU American Science and Engineering (AS&E) (available from Delta)
LO Cambridge, MA
DP 1978
PG 123
IL b&w line drawings, charts and graphs
BI yes
IS 0-8339-1302-6
AL 3
RL 3
DS scientific method
; science process skills
; populations
; food chains
; food webs
; communities
; animals
; plants
; elementary science methods
; +predator
; prey
; carnivores
; herbivores
; prey
; life science
; aquariums
; terrariums
AN The SCIS II version of POPULATIONS differs from the original by addition of nine lessons. See: POPULATIONS. Science Curriculum Improvement Study (SCIS). Chicago, IL: Rand McNally, 1972.
TN 25 lessons, 30-35 minutes each
MT Kit from Delta
OR in library
IN POPULATIONS

NO 818
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier, et al., 1978. POPULATIONS. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI POPULATIONS
AU Science Curriculum Improvement Study (SCIIS)
; Their, Herbert D.
; Karplus, Robert
; Lawson, Chester A.
; Knott, Robert
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1978
PG 113
IL b&w line drawings and photographs
BI no
IS 0-87504-406-9
LC none
AL 3
RL 3
DS scientific method
; scientific process
; populations
; plant eaters
; animal eaters
; food webs
; animals
; plants
; elementary science methods
; predator - prey
; plant - animal eater
; biotic potential
AN The teacher's guide for SCIIS/85 is very similar to SCIS and SCIS II with a few additions. Several appendices offer evaluation activities and a discussion on attitudes in science that may be helpful to a teacher. A supplement has been added offering a simplified format that will reduce preparation time, but, since it lacks background information it cannot be used alone.
TN There are 18 lessons, 30-35 minutes each
MT Kit from Delta
OR in library

NO 818
DE March 30, 1988
SU Life Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier, et al., 1978. POPULATIONS. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI POPULATIONS
AU Science Curriculum Improvement Study (SCIIS)
; Their, Herbert D.
; Karplus, Robert
; Lawson, Chester A.
; Knott, Robert
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta
LO Nashua, NH
DP 1978
PG 113
IL b&w photos and line drawings
BI no
IS 0-87504-406-9
AL 3
RL 3
DS scientific method
; science process skills
; populations
; food webs
; food chains
; animals
; plants
; elementary science methods
; predator
; prey
; omnivore
; carnivores
; herbivores
; life science
; aquariums
; terrariums
AN The teacher's guide for SCIIS/85 POPULATIONS is very similar to SCIS and SCIS II with a few additions. Several appendices offer evaluation activities and a helpful discussion of attitudes in science. A supplement provides a simplified format that reduces preparation time, but since it lacks background information it cannot be used alone.
TN There are 18 lessons, 30-35 minutes each
MT Kit from Delta
OR in library
IN POPULATIONS

NO 819
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), Robert C. Knott, et al., 1971. COMMUNITIES. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI COMMUNITIES
AU Science Curriculum Improvement Study (SCIS)
; Knott, Robert C.
; Lanier, Mary Ann
; Lawson, Chester A.
; Sheehan, Charlyn
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally and Company
LO Chicago, IL 60680
DP 1971
PG 113
IL b&w photographs, line drawings, graphs, charts and color photographs
BI no
IS 528-90147-8
LC none
AL 5
RL 5
DS scientific method
; scientific process
; germination
; molds
; bacteria
; yeast
, competitors
; photosynthesis
; food transfer
; raw materials
; community
; producers
; consumers
; decomposers
; plants
; animals
; elementary science methods
AN The COMMUNITIES unit emphasizes the interdependent populations in any given area. Students are involved in dissecting and identifing parts of a seed, planting seeds in a terrarium, and learning about food chains. The children gradually add animals to their terrarium to discover plant eaters, animal eaters, and decomposers. They learn that plants are producers and animals are consumers within a given community. Finally they look at a community where people are present and control the environment. A kit with all materials provided and organized is available.
TN There are 17 lessons, 40-45 minutes each
MT Kit from Delta
OR in library

NO 820
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study II (SCIS II), Lester G. Paldy, et al., 1986. COMMUNITIES. Nashua, NH: Delta Education Inc.
SE Science Curriculum Improvement Study II (SCIS II)
TI COMMUNITIES
AU Science Curriculum Improvement Study II (SCIS II)
; Paldy, Lester G.
; Amburgey, Leonard L.
; Collea, Francis
; Cooper, Richard
; Maxwell, Donald E.
; Riley, Joseph W.
AF Lawrence Hall of Science, University of California, Berkeley
PU Delta Education Inc.
LO Nashua, NH 03061
DP 1986
PG
IL b&w line drawings, charts, graphs and diagrams
BI yes
IS
LC CM201
AL 5
RL 5
DS scientific method
; scientific process
; seed coats
; bean embryo
; cotyledons
; germination
; photosynthesis
; producers
; dicot
; monocot
; communities
; consumers
; decomposers
; plants
; animals
; elementary science methods
AN The COMMUNITIES unit emphasizes the interdependent populations in any given area. Students are involved in dissecting and identifing parts of a seed, planting seeds in a terrarium, and learning about food chains. The children gradually add animals to their terrarium to discover plant eaters, animal eaters, and decomposers. They learn that plants are producers and animals are consumers within a given community. finally they look at a community where people are present and control the environment. A kit with all materials provided and organized is available.
TN There are 33 lessons, 40-45 minutes each
MT Kit from Delta
OR in library

NO 821
DE March 30, 1988
SU Life
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier, et al., 1985. COMMUNITIES. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI COMMUNITIES
AU Science Curriculum Improvement Study (SCIIS)
; Their, Herbert D.
; Karplus, Robert
; Lawson, Chester A.
; Knott, Robert
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1985
PG 139
IL b&w line drawings , charts, diagrams graphs and photographs
BI no
IS 0-87504-410-7
LC none
AL 5
RL 5
DS scientific method
; scientific process
; pyramid of numbers
; raw materials
; reproduction
; community
; producers
; consumers
; decomposers
; photosynthesis
; food transfer
; competitors
; plants
; animals
; elementary science methods
AN This version of the COMMUNITIES unit is basically the same as the SCIS and SCIS II guides, but it does contain several additions. An appendix contains five well constructed evaluation tools that focus on process. A supplement is added that offers a simplified format for the lessons. A kit is available from Delta.
TN There are 19 lessons, 40-45 minutes each
MT Kit from Delta
OR in library

TN There are 65 lessons 15-20 minutes each
MT Kit from Delta
OR in library

826
DE March 30, 1988
SU Life
; Physical
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier, et al., 1986. BEGINNINGS. Nashua, NH: Delta Education, Inc.
SE Rand McNally SCIIS
TI BEGINNINGS
AU Science Curriculum Improvement Study (SCIIS/85)
; Their, Herbert D.
; Karplus, Robert
; Lawson, Chester A.
; Knott, Robert
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH
DP 1986
PG 111
IL b&w line drawings and photographs
BI no
IS 0-87504-400-X
LC GUI400
AL K
RL K
DS scientific method
; scientific process
; colors
; shapes
; textures
; odors
; sounds
; sorting
; outlining
; comparing
; rhythms
; sizing
; quantity
; position
; organisms
; weighing
; counting
; measuring
; seeds
; seedlings
; plants
; spatial relationships
; elementary science methods
AN The Rand McNally SCIIS (SCIIS/85) BEGINNINGS guide is the same as the SCIS guide with one exception. The SCIIS/85 kit contains an aquarium and an order form to send away for living organisms. Students will be able to observe freshwater crabs, goldfish, newts, snails and water plants
TN There are 66 lessons 15-20 minutes each

NO 827
DE March 31, 1988
SU Life Science
; Senses
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Roy Richards, Et al, 1981. OURSELVES. London, England: Macdonald and Company.
SE Learning Through Science
TI OURSELVES
AU Macdonald Educational
; Richards, Roy
; Kincaid, Doug
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1981
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075494
LC none
AL K,1,2,3,4
RL K,1,2,3,4
DS attributes
; senses
; classification
; comparison
; development
; measurement
; variation
; eyes
; ears
; nose
; mouth
; fingers
; science process skills
; elementary science methods
AN In OURSELVES children develop skill in applying the methods of scientific inquiry as they investigate the variations and attributes associated with the human senses. The gathering and recording of information is emphasized as children measure then compare the results of investigations that test the capabilities of the sensing organs. Pinpointing sounds, determining leg strength, experiencing the relationship between taste and smell, and learning about the skeletal and digestive systems lead children to understand more about themselves. The teacher's guide is sketchy and the activity cards are designed so that they may be used independently by children or as a guide for a total classroom lesson.
TN There are 24-30 lessons, 20-25 minutes each
MT locally available, commercial suppliers
OR in library

NO 828
DE March 31, 1988
SU General Science
; Color
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Doug Kincaid, Et al, 1981. COLOUR. London, England: Macdonald and Company.
SE Learning Through Science
TI *COLOUR*
AU Macdonald Educational
; Kincaid, Doug
; Richards, Roy
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1981
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075508
LC none
AL K,1,2,3,4
RL K,1,2,3,4
DS senses
; classification
; color
; light
; dark
; change
; solubility
; perception
; dyes
; fading
; science process skills
; elementary science methods
AN In COLOUR, observation skills are heightened as children make an in depth study into the world of color. Each activity raises questions then proposes inquiries which will lead children to a better understanding of the relationships between colors and their local environment. Children collect items of various colors, experiment with the mixing of colors, question the usefulness of colored items, investigate color perception, and learn about the importance of color to the sucess of plants and animals. The activity cards can be used independently by children or as a guide for a total class lesson. The teacher's guide is of limited use.
TN There are 24-30 lessons, 20-25 minutes each
MT locally available, commercial suppliers
OR in library

NO 831
DE March 31, 1988
SU Ecology
; Local environment
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Margaret Collis, et al, 1982. ALL AROUND. London, England: Macdonald and Company.
SE Learning Through Science
TI ALL AROUND
AU Macdonald Educational
; Collis, Margaret
; Kincaid, Doug
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1982
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075532
LC none
AL K,1,2,3,4
RL 2,3,4,5
DS environment
; invertebrates
; plants
; weather
; classification
; life cycles
; adaptations
; animal behavior
; food chains
; science process skills
; elementary science methods
AN In ALL AROUND, the local environment becomes the focus as a training ground for the development of young naturalists. The skills of observation, using all the senses, are reinforced as children experience explorations and investigations into the plant and animal life around their homes. By examining animal and plant habitats, children gain an awareness of the life needs, variability, and adaptibility that exists in the living world. The teacher's guide is sketchy and activity cards can be used independently but are more appropriate for teacher-directed lessons.
TN There are 24-30 lessons, 30-45 minutes each
MT locally available, commercial suppliers
OR in library

NO 832
DE March 31, 1988
SU Ecology
; Local environment
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Margaret Collis, et al, 1982. OUT OF DOORS. London, England: Macdonald and Company.
SE Learning Through Science
TI OUT OF DOORS
AU Macdonald Educational
; Collis, Margaret
; Kincaid, Doug
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1982
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075540
LC none
AL K,1,2,3,4
RL 3,4,5,6
DS environment
; weather
; earth
; soil
; atmosphere
; shapes
; measuring
; outdoor education
; science process skills
; elementary science methods
AN In OUT OF DOORS, children examine the composition of soil, make measurements concerning some everyday weather phenomena, and hone their observation skills by looking for shapes, patterns, and by making approximations about objects in the local environment. Information gathering skills are emphasized as activities lead children to understand the variations in soil types and records are refined due to changes in wind, rain, and temperature. The ability to discriminate and define common terms such as thick or thin, short or long, big or small, many or few is tested as children observe outside the classroom. The activity cards can be used independently but are more appropriate for teacher-directed lessons. The teacher's guide offers little support for the classroom teacher.
TN There are 24-30 lessons, 30-45 minutes each
MT locally available, commercial suppliers
OR in library

NO 833
DE March 31, 1988
SU Movement, Animal
; Movement, Air/Flight
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Doug Kincaid, et al, 1983. ON THE MOVE. London, England: Macdonald and Company.
SE Learning Through Science
TI ON THE MOVE
AU Macdonald Educational
; Kincaid, Doug
; Richards, Roy
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1983
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075559
LC none
AL K,1,2,3,4
RL K,1,2,3
DS environment
; movement
; air/flight
; toys
; energy;
; adaptation
; force
; transportation
; gravity
; measuring
; feet
; animal movement
; invertebrates
; vertebrates
; boats
; science process skills
; elementary science methods
AN In ON THE MOVE, both observations about and investigations into the nature of movement engage children in meaningful activities. Children compare the movement of mammals, birds, fish, and various invertebrates to get a sense of the variety of propulsion seen in the animal kingdom. The principles of flight are illustrated through the examination of paper airplanes, boomerangs, parachutes, and autogyros. Movement on water and land is explored as children build clay boats, tops, wheeled vehicles, and cotton reel tanks. The teacher's guide is sketchy and the activity cards can be easily used independently or in a teacher-directed lesson.
TN There are 24-30 lessons, 30-45 minutes each
MT locally available, commercial suppliers
OR in library

NO 834
DE March 31, 1988
SU General Science
; Energy
; Simple Machine
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Doug Kincaid, et al, 1983. MOVING AROUND. London, England: Macdonald and Company.
SE Learning Through Science
TI MOVING AROUND
AU Macdonald Educational
; Kincaid, Doug
; Richards, Roy
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1983
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075567
LC none
AL K,1,2,3,4
RL 2,3,4
DS movement
; transport
; toys
; change
; machines
; energy
; magnets
; electricity
; design
; technology
; force
; friction
; gravity
; science process skills
; elementary science methods
AN In MOVING AROUND, investigations are intended as an introduction to the concepts and characteristics of energy. The movement of vehicles on ramps is used to illustrate the relationship between speed and distance. Activities are included which provide children with experience manipulating simple machines such as levers, wheels, gears, screws, and pulleys. Additionally, children become familiar with the basic behavior of simple magnets. Many opportunities are available for the introduction of terms such as friction, force, gravity, and energy. Teacher directed lessons are more appropriate rather than independent use of the activity cards. The teacher's guide offers little help for planning and implementing lessons.
TN There are 24-30 lessons, 30-45 minutes each
MT locally available, commercial suppliers
OR in library

NO 835
DE March 31, 1988
SU Geology
; Earth Science
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Doug Kincaid, et al, 1983. EARTH. London, England: Macdonald and Company.
SE Learning Through Science
TI EARTH
AU Macdonald Educational
; Kincaid, Doug
; Richards, Roy
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1983
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075575
LC none
AL K,1,2,3,4
RL 3,4,5,6
DS environment
; earth
; rocks
; minerals
; classification
; geology
; soil
; building
; crystals
; oil
; coal
; metals
; fossils
; earthquake
; volcanoes
; science process skills
; elementary science methods
AN In EARTH, the fundamental aspects of the science of geology are introduced to children through various experiences with rocks, soils, crystals, and the examination of earth processes. Children compare buildings and samples formed in their local environment, do several tests on a variety of rock samples, then explore the characteristics of soil to get a feeling for the geologic world. Information and activities about crystals, types of rocks, oil, gas, metals, and coal extend the depth of the investigation. Teacher direction is a must as much of the information shared in the activity cards may be new to many children. The teacher's guide is inadequate in terms of planning and implementing lessons.
TN There are 24-30 lessons, 30-45 minutes each
MT locally available, commercial suppliers

NO 836
DE March 31, 1988
SU Electricity
; Magnetism
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Doug Kincaid, et al, 1983. ELECTRICITY. London, England: Macdonald and Company.
SE Learning Through Science
TI ELECTRICITY
AU Macdonald Educational
; Kincaid, Doug
; Richards, Roy
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1983
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075583
LC none
AL K,1,2,3,4
RL 4,5,6
DS electricity
; magnetism
; circuits
; batteries
; energy
; science process skills
; elementary science methods
AN In ELECTRICITY, basic experiences with circuitry and electromagnetism prepare children to tackle more difficult electrical projects. Hands-on manipulation of wires, bulbs, and batteries lead children to develop rules which help them to predict when a circuit is open or closed. Various activities introduce switches, dimmers, and the relationship between electricity and magnetism. The unit culminates with a series of projects based upon the concepts learned in previous activities. Activity cards can be used independently but should be teacher directed if children have limited experience with batteries and bulbs. The teacher's guide is limited in its use.
TN There are 24-30 lessons, 30-45 minutes each
MT locally available, commercial suppliers
OR in library

NO 837
DE March 31, 1988
SU Natural Science
; Ecology
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Gwen Allen, et al, 1984. WHICH AND WHAT?. London, England: Macdonald and Company.
SE Learning Through Science
TI WHICH AND WHAT?
AU Macdonald Educational
; Allen, Gwen
; Richards, Roy
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1984
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075591
LC none
AL K,1,2,3,4,5,6,7
RL 3,4,5,6
DS flowers
; plants
; birds
; trees
; invertebrates
; classification
; environment
; habitats
; science process skills
; elementary science methods
AN In WHICH AND WHAT?, twelve activity cards provide an excellent field guide and identification scheme to help children become familiar with the flowers, trees, birds, and land and water invertebrates of Great Britain. Detailed color illustrations highlight the visual characteristics of the flowers and animals. Two color drawings of the leaf, fruit, and reproductive parts are presented for twenty-four of the most common English trees. The teacher's guide is sketchy and the activity cards can be easily used independently by children in the field.
TN
MT locally available, commercial suppliers
OR in library

NO 838
DE March 31, 1988
SU General Science
; Growth and Development
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Margaret Collis, et al, 1984. TIME, GROWTH AND CHANGE. London, England: Macdonald and Company.
SE Learning Through Science
TI TIME, GROWTH AND CHANGE
AU Macdonald Educational
; Collis, Margaret
; Kincaid, Doug
; Richards, Roy
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1984
PG 24 activity cards
IL color drawings
BI no
IS 0-356-075605
LC none
AL K,1,2,3,4,5,6,7
RL 3,4,5,6
DS change
; time
; growth
; development
; measurement
; reproduction
; life cycle
; science process skills
; elementary science methods
AN In TIME, GROWTH AND CHANGE, initial activities provide opportunities for children to build and work with primitive timers using water, sand, candles, and springs. Ways of measuring time are detailed with an emphasis on swinging, ticking and electronic methods. Investigations with seeds, trout, tadpoles, and chicks serve to illustrate the processes of growth and change. Experiments with kitchen powders, bread, sugar, and dairy products are provided to demonstrate changes in form over time. Much teacher direction is needed to ensure success in these investigations. The teacher's guide offers little help with planning and implementing daily lessons.
TN There are 24-30 sessions, 30-45 minutes each
MT locally available, commercial suppliers
OR in library

NO 839
DE March 31, 1988
SU Objectives in Science
TY Activity Cards
; Teacher's Guide
CI Macdonald Educational, Roy Richards, et al, 1985. GUIDE AND INDEX. London, England: Macdonald and Company.
SE Learning Through Science
TI GUIDE AND INDEX
AU Macdonald Educational
; Richards, Roy
; Collis, Margaret
; Kincaid, Doug
AF Schools Council
; Scottish Education Department
PU Macdonald and Company
LO London, England
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1985
PG 24 activity cards
IL color drawings
BI no
IS 0-356-112586
LC none
AL Teachers
RL Teachers
DS objectives
; organization
; topics
; inquiry skills
; concepts
; evaluation
; science process skills
; elementary science methods
AN In LEARNING THROUGH SCIENCE, GUIDE AND INDEX, the educational premises upon which the series is based are detailed and organized. Charts provide an excellent reference to identify th scope and sequence of learning objectives. Elementary science concepts and processes are elucidated and explained. A valuable section on evaluation identifies criteria through which the teacher may determine when children have attained proficiencey in certain science education objectives.
TN
MT
OR in library

NO 840
DE March 31, 1988
TY Teacher's Guide
CI Macdonald Educational, Len Ennever, et al, 1972. WITH OBJECTIVES IN MIND. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI WITH OBJECTIVES IN MIND
AU Macdonald Educational
; Ennever, Len
; Harlan, Wynne
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1972
PG 65
IL b&w photographs and diagrams
BI no
IS 0-356-040097
LC none
AL Teacher resource
RL Teacher resource
DS development
; objectives
; science education
; science process skills
; elementary science methods
; elementary science education
; stages of development
; child development
; Piaget
; instructional strategies
AN In WITH OBJECTIVES IN MIND, the author of the Macdonald Educational Science 5/13 series describe the philosophical basis of their program. They relate their beliefs about the value of science education for primary education and discuss the relationship of Piagetian stages jof development to science instruction. They detail the learning objectives for the Science 5/13 program and show how these objectives were derived. An appendix includes an annotation for each unit in the program as well as a comprehensive chart which relates each learning objective to a more general educational aim.
OR in library

NO 841
DE March 31, 1988
SU Elementary Science
; Senses
TY Teacher's Guide
CI Macdonald Educational, Roy Richards, 1972. EARLY EXPERIENCES. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI EARLY EXPERIENCES
AU Macdonald Educational
; Richards, Roy
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1972
PG 106
IL b&w and color photographs and drawings
BI no
IS 0-356-040054
LC 77-82994
AL K,1,2,
RL K,1,2
DS listening
; comparison
; growing
; plants
; soil
; sound
; kindergarten
; pattern
; movement
; cooking
; light
; balancing
; science process skills
; elementary science methods
AN In EARLY EXPERIENCES, children are encouraged to indulge their senses to find out the true meaning of science. Activities involve looking at things close at hand or in the sky, listening to sounds then trying to create sound, growing things then talking about change. Communication and hands-on involvement become the cornerstones for introductory science understanding. The guide provides many helpful suggestions for how to use everyday classroom and household items to stimulate scientific thought. A healthy sprinkling of children's drawings and charts provide ideas on appropriate record keeping for the early science explorer.
TN non-sequential, 20-30 sessions, 30-45 minutes
MT locally available, commercial suppliers
OR in library

NO 842
DE March 31, 1988
SU Time
TY Teacher's Guide
CI Macdonald Educational, Roy Richards, 1972. TIME: STAGES 1 AND 2 AND BACKGROUND. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI TIME: STAGES 1 AND 2 AND BACKGROUND
AU Macdonald Educational
; Richards, Roy
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1972
PG 70
IL b&w photographs and 2 color drawings
BI yes
IS 0-356-040089
LC
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6
DS time
; sequence
; timers
; clocks
; calendar
; moon
; science process skills
; elementary science methods
AN In TIME, children are presented with numerous activities to better enable them to understand the concept of time. Initial activities involve sequencing and the passage of time. The majority of the experiences allow children to build and operate timers and clocks of all sorts. Using the sun, water, sand, candles, and pendulums, many opportunities are presented which can illustrate the passage of time. Detailed information about mankind's understanding of time throught the ages is included in a valuable appendix.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 843
DE March 31, 1988
SU Structures
; Building
; Architecture
TY Teacher's Guide
CI Macdonald Educational, Albert James, 1972. STRUCTURES AND FORCES: STAGES 1 AND 2. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI STRUCTURES AND FORCES: STAGES 1 AND 2
AU Macdonald Educational
; James, Albert
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1972
PG 100
IL b&w photographs and 2 color drawings
BI yes
IS 0-356-040070
LC 77-82991
AL K,1,2,3,4,5,6,7
RL 3,4,5,6
DS structures
; architecture
; building
; bridges
; towers
; tunnels
; dams
; forces
; animal structure
; patterns
; symmetry
; science process skills
; elementary science methods
AN In STRUCTURE AND FORCES, ideas and activities are presented which build upon the natural interest that children have in buildings, bridges, tunnels and dams. Beginning with observation and discussion about structures in their own environment, children then use a variety of materials to build structures. They test their creations for strength and flexibility then look for relationships between people made structures and the structures of animals and plants. Diagrams and photographs are included that will aid the teacher as new building challenges are introduced.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 844
DE March 31, 1988
SU Energy
; Physics
TY Teacher's Guide
CI Macdonald Educational, Albert James, 1973. STRUCTURES AND FORCES: STAGE 3. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI STRUCTURES AND FORCES: STAGE 3
AU Macdonald Educational
; James, Albert
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 90
IL b&w photographs and 2 color drawings
BI no
IS 0-356-041077
LC
AL 5,6,7
RL 6,7,8
DS power
; energy;
; inertia
; acceleration
; gravity
; motion
; movement
; shape
; strength
; tension
; surfaces
; forces
; structure
; science process skills
; elementary science methods
AN In STRUCTURE AND FORCES: STAGE 3, the concepts of power, force, acceleration, inertia, and tensile strength are explored using concrete models and materials. Activities that demonstrate energy changes are illustrated using rotating objects, rolling objects, and thrown objects. Methods are provided for measuring various changes and children are asked to hypothesize about the effects of gravity and velocity on these changes. Additional experiences are included which involve children in the testing of liquids, springs, paper, and metals with regard to their strength and elasticity. An appropriate guide for teachers with some physics background and children with strong science experiences.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 845
DE March 31, 1988
SU Wood
TY Teacher's Guide
CI Macdonald Educational, Sheila Parker, 1972. WORKING WITH WOOD: Background Information. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI WORKING WITH WOOD: Background Information
AU Macdonald Educational
; Parker, Sheila
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1972
PG 50
IL b&w photographs and 2 color drawings
BI yes
IS 0-356-040100
AL Teacher resource
RL Teacher resource
DS wood
; trees
; timber
; logging
; science process skills
; elementary science methods
AN In WORKING WITH WOOD: BACKGROUND INFORMATION, factual information about the nature of wood is presented for teachers to complement the classroom activities suggested in WORKING WITH WOOD, STAGES 1 AND 2. Information is included about the structure of wood cells, how a tree makes wood, the differences between hardwood and softweed, and the mechanical, thermal, and electrical properties of weed. The durability of timber is discussed with regard to natural defects, and defects caused by living organisms and improper seasoning. This guide is a valuable resource for the teacher who plans extensive use of weed products in the classroom.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 846
DE March 31, 1988
SU Wood
TY Teacher's Guide
CI Macdonald Educat: al, Sheila Parker, 1972. WORKING WITH WOOD: Stages 2 and 3. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI WORKING WITH WOOD: Stages 1 and 2
AU Macdonald Educational
; Parker, Sheila
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1972
PG 82
IL b&w photographs and 2 color drawings
BI no
IS 0-356-040119
AL K,1,2,3,4,5,6,7
RL 3,4,5,6
DS wood
; trees
; tools
; comparison
; models
; strength
; driftwood
; decay
; science process skills
; elementary science methods
AN In WORKING WITH WOOD: STAGES 1 AND 2, children work with a familiar material to help them gain scientific understanding and general personal growth. Instructions are provided for the safe use of tools and the proper selection of materials to help children make a variety of items out of wood. Investigations with rotting wood, driftwood, wood and water, and wood strength present many opportunities for scientific insight through experimentation. The activities encourage children to research certain aspects of the use of wood, its sources, and its relationship to trees. The guide includes many suggestions for student-designed projects using wood.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 847
DE March 31, 1988
SU Toys
; Elementary Science
TY Teacher's Guide
CI Macdonald Educational, Don Radford, 1972. SCIENCE FROM TOYS: Stages 1 and 2 and Background. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI SCIENCE FROM TOYS: Stages 1 and 2 and Background
AU Macdonald Educational
; Radford, Don
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1972
PG 92
IL b&w photographs and 2 color drawings
BI yes
IS 0-356-040062
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS toys
; tops
; springs
; pumps
; dolls
; electricity
; boats
; propulsion
; floating
; bouncing
; trains
; cars
; science process skills
; elementary science methods
AN In SCIENCE FROM TOYS: STAGES 1 AND 2 AND BACKGROUND, simple experiences with a variety of homemade and commercial toys are used to demonstrate basic scientific concepts. Using springs, tops, music makers, pumps, and cars, teachers can introduce the ideas of pressure, gravity, vibration, inertia as well as ideas on time, distance, and speed. From dolls and boats to bouncing balls and trains, numerous activities are provided which pique scientific interest, demand critical thinking, and create an atmosphere where learning and playing are one in the same. The guide continually emphasizes the not-so-subtle link between toys and science which educators so often overlook.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 849
DE March 31, 1988
SU Elementary Science
TY Teacher's Guide
CI Macdonald Educational, Roy Richards, 1973. HOLES, GAPS AND CAVITIES: STAGES 1 AND 2 . London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI HOLES, GAPS, AND CAVITIES: STAGES 1 AND 2
AU Macdonald Educational
; Richards, Roy
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 90
IL b&w photographs and 2 color drawings
BI no
IS 0-356-041085
LC
AL K,1,2,3,4,5,6,7
RL 2,3,4,5,5
DS holes
; air
; sound
; water
; eye
; light
; filtering
; breathing
; science process skills
; elementary science methods
AN In HOLES, GAPS AND CAVITIES: STAGES 1 AND 2, activities focus on the inquisitive nature of children as the unusual topic of holes is investigated. Collecting, observing, measuring, creating and communicating about holes sets the stage for more in depth explorations. By filling holes with air, liquids, and light, children gain a new appreciation for the uniquesness of holes based on their size and shape. The eye and other cranial openings are examined as unique holes that have very specialized and important functions. A particularly well organized and thorough guide.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 850
DE March 31, 1988
SU Metals
TY Teacher's Guide
CI Macdonald Educational, Don Radford, 1973. METALS: BACKGROUND INFORMATION. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI METALS: BACKGROUND INFORMATION
AU Macdonald Educational
; Radford, Don
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 76
IL b&w photographs and 2 color drawings
BI yes
IS 0-356-041042
AL Teacher resource
RL Teacher resource
DS metals
; hardness
; conduction
; strength
; rust
; elements
; alloys
; science process skills
; elementary science methods
AN In METALS: BACKGROUND INFORMATION, information on the composition, extraction, physical and chemical properties, and shaping of metals is provided to aid the teacher when using METALS, STAGES 1 AND 2. All aspects of the study of metals is covered in this in depth examination of some of the most important elements. Detailed sections on the most common metals aluminium, copper, lead, magnesium, nickel, tin, and zinc will support the teacher when questions are asked during classroom activities. The guide is illustrated with helpful charts and diagrams.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 852
DE March 31, 1988
SU Elementary Science
; Color
TY Teacher's Guide
CI Macdonald Educational, Sheila Parker, 1973. COLOURED THINGS: STAGES 1 AND 2. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI COLOURED THINGS: STAGES 1 AND 2
AU Macdonald Educational
; Parker, Sheila
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 74
IL color photographs and 2 color drawings
BI no
IS 0-356-043487
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5
DS colors
; senses
; comparison
; camouflage
; animal color
; plant color
; observation
; science process skills
; elementary science methods
AN In COLOURED THINGS: STAGES 1 AND 2, observation skills are emphasized as children look at the world around them to scrutinize the spectrum and diversity of color. Activities encourage collecting, listing, comparing, and then communicating about what was seen and learned. Plants and animals are eyed for their unique colors and the environment is dissected to find the essence of color in everyday, familiar objects. The guide provides lead-in questions that will stimulate thought and direct discussion.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 853
DE March 31, 1988
SU Elementary Science
TY Teacher's Guide
CI Macdonald Educational, Albert James, 1973. LIKE AND UNLIKE: STAGES 1, 2 AND 3. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI LIKE AND UNLIKE: STAGES 1, 2 AND 3
AU Macdonald Educational
; James, Albert
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 76
IL b&w photographs and 2 color drawings
BI no
IS 0-356-043509
LC
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS sorting
; contrasting
; measuring
; senses
; properties
; sequences
; classification
; science process skills
; elementary science methods
AN In LIKE AND UNLIKE: STAGES 1, 2 AND 3, children are involved in numerous activities which teach and reinforce the basic processes of science. After looking for similarities and differences among objects, children use their senses, measure, and sort to arrive at easily defined classification schemes. Objects with patterns, based upon sequences, are presented as well as activities which give children hands-on experience with the separation of materials into their component parts. This guide culminates with a summary chapter about the variety of uses and overall importance of sorting to the development of the scientific thinker.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 854
DE March 31, 1988
SU Elementary Science
; Physics
TY Teacher's Guide
CI Macdonald Educational, Don Radford, 1973. CHANGE: STAGES 1 AND 2 AND BACKGROUND. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI CHANGE: STAGES 1 AND 2 AND BACKGROUND
AU Macdonald Educational
; Radford, Don
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 86
IL b&w photographs and 2 color drawings
BI yes
IS 0-356-041050
LC
AL K,1,2,3,4,5,6,7
RL 3,4,5,6,7
DS change
; flow charts
; weathering
; ecological change
; weather
; kitchen physics
; science process skills
; elementary science methods
AN In CHANGE: STAGES 1 AND 2 AND BACKGROUND, a variety of natural phenomena and physical happenings are examined and used as illustrations of the concept of change. Children look out of doors at weather, plants, and toys, then become involved in monitoring changes in their environment. Activities in the kitchen are presented which have children wash objects, cool and heat things, then mix and measure materials to understand simple changes that occur daily. The guide supports the teacher's understanding of change with background information and examples of detailing the work of other teachers with the concept of change.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 855
DE March 31, 1988
SU Physics
; Chemistry
TY Teacher's Guide
CI Macdonald Educational, Don Radford, 1973. CHANGE: STAGE 3. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI CHANGE: STAGE 3
AU Macdonald Educational
; Radford, Don
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 112
IL b&w photographs and 2 color drawings
BI yes
IS 0-356-043460
AL 7,8,9,10,11,12
RL 7,8,9,10,11,12
DS energy
; change
; engines
; reactions
; secondary science methods
; dissolving
; fuels
; metals
; science process skills
; elementary science methods
AN In CHANGE: STAGE 3, activities are presented which give children not only experience with a variety of chemical, electrical, and physical changes but also provides in depth specific knowledge about these processes. Initial lessons lend children to see the importance of energy changes and how these changes are ultimately related to the sun's energy. Numerous experiments illustrate the properties of chemical and electrical change and how energy produced from these changes can be used. The guide is conprehensive but the teacher will need a solid understanding of these topics to successfully engage the children.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 856
DE March 31, 1988
SU Elementary Science
; Botany
TY Teacher's Guide
CI Macdonald Educational, Sheila Parker, 1973. TREES: STAGES 1 AND 2. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI TREES: STAGES 1 AND 2
AU Macdonald Educational
; Parker, Sheila
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 78
IL b&w photographs and 2 color drawings
BI no
IS 0-356-043479
LC 77-83008
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS trees
; growth
; leaves
; seeds
; fruits
; plants
; change
; seasons
; science process skills
; elementary science methods
AN In TREES: STAGES 1 AND 2, the observation and investigation of this most abundant and important resource provides limitless opportunities to engage children in the basic processes of science. Examination begins with activities using leaves, fruits, and seeds. Children choose a tree and come to know it through the seasons by exploring its structure, noticing changes, and finding out about the animal community that lives in, on, and around it. Information abounds which continually encourages children to see the special place that trees occupy in the environmental scheme.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 857
DE March 31, 1988
SU Elementary Science
TY Teacher's Guide
CI Macdonald Educational, Mary Horn, 1974. *CHILDREN AND PLASTICS: STAGES 1 AND 2 AND BACKGROUND*. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI CHILDREN AND PLASTICS: STAGES 1 AND 2 AND BACKGROUND
AU Macdonald Educational
; Horn, Mary
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1974
PG 108
IL b&w photographs and 2 color drawings
BI no
IS 0-356-043525
LC 77-83008
AL K,1,2,3,4,5,6,7
RL 4,5,6,7
DS trees
; growth
; leaves
; seeds
; fruits
; plants
; change
; seasons
; science process skills
; elementary science methods
AN In *CHILDREN AND PLASTICS: STAGES 1 AND 2 AND BACKGROUND*, a common, everyday material is used as the stimulus to get children involved in a variety of scientific processes. The teacher raises questions about the properties of plastic then children propose inquiries, design experiments, communicate, measure, and solve problems as they investigate the strength, bendability and stretchability of plastic bags, bottles, and threads. The uses of plastic are explored and children set up tests to compare how different plastic clothes repel water, stay warm, or get clean. The background information included in the guide will provide the teacher with enough support so that the learning experiences can be successfully directed.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 858
DE March 31, 1988
SU Elementary Science
; Self-concept
TY Teacher's Guide
CI Macdonald Educational, Roy Richards, 1974. OURSELVES: STAGES 1 AND 2. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI OURSELVES: STAGES 1 AND 2
AU Macdonald Educational
; Richards, Roy
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 64
IL b&w photographs and 2 color drawings
BI no
IS 0-356-043495
LC 77-83008
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4
DS measuring
; human variation
; self-concept
; record keeping
; science process skills
; elementary science methods
AN In OURSELVES: STAGES 1 AND 2, children are involved in the first hand investigation of the many facets that make up their uniqueness as an individual. Working together with their classmates, children measure and record lots of information about their body parts. They compare their findings and discuss the variation that is seen in all human beings. Many opportunities are provided for children to write about their findings. The guide suggests numerous activities, all of which will involve children in scientific investigations but more importantly give them a better understanding of their unique place in the human race.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 859
DE March 31, 1988
SU Invertebrate
; Elementary Science
TY Teacher's Guide
CI Macdonald Educational, Sheila Parker, 1973. MINIBEASTS: STAGES 1 AND 2. London, England: Macdonald and Company.
SE Macdonald Educational 5/13
TI MINIBEASTS: STAGES 1 AND 2
AU Macdonald Educational
; Parker, Sheila
AF Schools Council
; Nuffield Foundation
; Scottish Education Department
PU Macdonald Educational
LO London, England
; New York, NY
; Teacher's Laboratory, 214 Main Street, Brattleboro, VT 05301
DP 1973
PG 102
IL b&w photographs and 2 color drawings
BI yes
IS 0-356-041069
LC
AL K,1,2,3,4,5,6,7
RL K,1,2,3,4,5,6,7
DS invertebrates
; insects
; collecting
; observing
; animal behavior
; development
; growth
; life cycles
; science process skills
; elementary science methods
AN In MINIBEASTS: STAGES 1 AND 2, a conprehensive plan is presented for the location, capture, care, and study of land and water invertebrates. Children observe with a keen eye, then record and discuss the characteristics of the creatures that are collected. Investigations are designed to learn about how minibeasts move, eat, reproduce, and why they behave in certain idiosyncratic ways. Strategies are presented to help keep the creatures alive so that observations can be made at all stages of their development. The guide includes a valuable appendix with an identification chart as well as suggestions for constructing appropriate minibeast habitats.
TN informal, 20-30 sessions, 30-45 minutes, non-sequential
MT locally available, commercial suppliers
OR in library

NO 867
DE April 4, 1988
CA
SU Science Process Skills
TY Teacher's Guide
CI Conceptually Oriented Program in Elementary Science (COPES), 1972. TEACHER'S GUIDE FOR GRADE THREE. New York: New York University, Center for Field Research and School Services.
SE Conceptually oriented Program in Elementary Science
TI TEACHER'S GUIDE FOR GRADE THREE
AU Conceptually Oriented Program in Elementary Science (COPES)
AF New York University Center for Educational Research and Field Services
; U.S. Office of Education Bureau of Research
PU New York University, Center for Educational Research and Field Services
LO New York
DP 1972
PG 403
IL b&w line drawings
BI no
AV out of print, available on CO-ROM "Science Helper K-8", University of Florida and PC-SIG, Sunnyvale CA
PR CD-ROM: $195.00
AL 3
RL 3,4
DS science process skills
; interaction
; change
; electricity
; heat
; water
; energy
; energy transfer
; forces and motions
; gravity
; weight
; soil
; classification
; chemistry
; solutions
; variability
; population
; estimation
; averaging
; graphs
; batteries
; bulbs
; wires
; conductivity
; variables
; starch
AN The COPES TEACHER'S GUIDE FOR GRADE THREE builds on prior learning in science, and introduces skills needed for later grades. Students work with mixtures and solutions, identifying characterisics of constituent components and how they interact. They experiment with

balanced forces, investigate the variability of populations and calculate averages. Then, in explorations of interaction and change, they build electrical circuits and conduct heat transfer experiments with water. There are twenty-six sequential lessons with assessments and suggested equipment lists. Running commentary provides science background information, classroom management techniques, and ideas for extension.
TN 26 lessons, 30-60 minutes
MT locally available
OR in library

NO 868
DE April 4, 1988
CA
SU Science Process Skills
TY Teacher's Guide
CI Conceptually Oriented Program in Elementary Science (COPES), 1972. TEACHER'S GUIDE FOR GRADE FOUR. New York: New York University, Center for Field Research and School Services.
SE Conceptually oriented Program in Elementary Science
TI TEACHER'S GUIDE FOR GRADE FOUR
AU Conceptually Oriented Program in Elementary Science (COPES)
AF New York University Center for Educational Research and Field Services
; U.S. Office of Education Bureau of Research
PU New York University, Center for Educational Research and Field Services
LO New York
DP 1972
PG 507
IL b&w line drawings
BI no
AV out of print, available on CO-ROM "Science Helper K-8", University of Florida and PC-SIG, Sunnyvale CA
PR CD-ROM: $195.00
AL 4
RL 4,5,6
DS science process skills
; heat
; water
; ice
; heat transfer
; molecules
; variables
; variability
; statistics
; population
; estimation
; averages
; graphs
; graphing
; weight
; energy
; energy transfer
; filtration
; seeds
; histograms
AN The COPES TEACHER'S GUIDE FOR GRADE FOUR focuses on conservation of matter and energy. Children investigate the effects of change or interaction on states of matter in closed or open systems, observing weight of solid and melted ice cubes, the dry weight of peeled and unpeeled appples, and mold growth on bread in a plastic bag. They conduct experiments with heat transfer in water, and investigate transport of molecules through membranes, using red cabbage pigment, starch, vinegar, food coloring, and ammonia. The students continue to study and graph variability and frequency of distribution, as they calculate averages for peas in a pod, ages of students, and try to

predict spins of a game wheel. There are thirty-three lessons with suggested assessments and lists of supplies. A running commentary supplements the instructions, with advice on classroom management, science background information, and extension ideas.
TN 33 lessons, 30-60 minutes
MT locally available
OR in library

NO 869
DE April 4, 1988
TA
SU Science Process Skills
TY Teacher's Guide
CI Conceptually Oriented Program in Elementary Science (COPES), 1973. TEACHER'S GUIDE FOR GRADE FIVE. New York: New York University, Center for Field Research and School Services.
SE Conceptually oriented Program in Elementary Science
TI TEACHER'S GUIDE FOR GRADE FIVE
AU Conceptually Oriented Program in Elementary Science (COPES)
AF New York University Center for Educational Research and Field Services
; U.S. Office of Education Bureau of Research
PU New York University, Center for Educational Research and Field Services
LO New York
DP 1973
PG 453
IL b&w line drawings
BI no
AV out of print, available on CO-ROM "Science Helper K-8", University of Florida and PC-SIG, Sunnyvale CA
PR CD-ROM: $195.00
AL 5
RL 5,6,7
DS science process skills
; statistics
; probability
; statistical method
; energy
; heat
; light
; heat energy
; light energy
; energy transformation
; forces and motions
; acceleration
; solutions
; chemistry
; crystals
; cells
; microscopes
; plants
; animals
AN The COPES TEACHER'S GUIDE FOR GRADE FIVE applies previously learned science process skills to new activities with microscopes, mechanical energy, energy transformation, and statistical sampling. Students examine the structure of plant and animal cells; investigate potential and kinetic energy as they experiment with weights and forces; explore the role of temperature variation in solution and precipitation of salts in water; convert light energy to heat energy; and apply statistical methods to experiments with marbles, dice, and seeds. Twenty-one lessons are accompanied by assessment tools and supply lists. A running commentary supports the instructions with tips on classroom management, explanations of science content, and suggestions

NO 870
DE April 4, 1988
CA
SU Science Process Skills
TY Teacher's Guide
CI Conceptually Oriented Program in Elementary Science (COPES), 1973. TEACHER'S GUIDE FOR GRADE SIX. New York: New York University, Center for Field Research and School Services.
SE Conceptually oriented Program in Elementary Science
TI TEACHER'S GUIDE FOR GRADE SIX
AU Conceptually Oriented Program in Elementary Science (COPES)
AF New York University Center for Educational Research and Field Services
; U.S. Office of Education Bureau of Research
PU New York University, Center for Educational Research and Field Services
LO New York
DP 1973
PG 503
IL b&w line drawings
BI no
AV out of print, available on CO-ROM "Science Helper K-8", University of Florida and PC-SIG, Sunnyvale CA
PR CD-ROM: $195.00
AL 6
RL 6,7,8
DS science process skills
; environment
; ecology
; soil
; water
; evaporation
; growth
; population
; statistics
; probability
; chemical bonding
; chemistry
; heat
; heat transfer
; pendulums
; conservation of energy
; energy
; crystals
; minerals
; diffusion
; liquids
AN The COPES TEACHER'S GUIDE FOR GRADE SIX presents activities culminating the conceptual schemes of the entire series. Students investigate the interactions between plants and their soil or water environment; observe the role of heat in chemical bonding of salts; examine the crystalline structure of copper; test the transfer of heat energy in liquids and solids; apply statistical methods to random diffusion of molecules in water or gelatin, or to children's movements in the classroom; and use pendulums to explore the possibility of 'perpetual' conservation of mechanical energy. There are thirty-two

lessons accompanied by assessment tools, supply lists, advice on classroom management, and science background information.
TN 32 lessons, 30-60 minutes
MT locally available
OR in library

NO 871
DE April 4, 1988
SU Science Process Skills
; Physical Science
TY Teacher's Guide
CI Conceptully Oriented Program in Elementary Science (COPES), 1972 (1967). THE TEACHER'S GUIDE FOR A CONSERVATION OF ENERGY SEQUENCE, Fourth Edition. New York University, School of Education Center for Field Research and School Services.
SE Conceptully Oriented Program in Elementary Science (COPES)
TI THE TEACHER'S GUIDE FOR A CONSERVATION OF ENERGY SEQUENCE, Fourth Edition
AU Conceptully Oriented Program in Elementary Science (COPES)
AF New York University Center for Educational Research and Field Services
PU New York University, School of Education Center for Field Research and School Services
LO New York
DP 1972
PG
IL b&w line drawings
BI no
AV out of print, available on CD-ROM "Science Helper K-8", University of Florida and PC-SIG, Sunnyvale, CA
PR CD-ROM: $195.00
AL K,1,2,3,4,5,6
RL K,1,2,3,4,5,6,7,8
DS science process skills
; measurement
; classification
; change
; reactions
; interactions
; heat
; thermometer
; temperature
; variables
; population
; conservation of matter
; variability
; terrarium
; aquarium
; solids
; liquids
; gases
; size
; shape
; texture
; quantity
; odor
; color
; seeds
; plants
; gravity
; forces and motions
; magnets

; magnetism
; melting
; graphs
; graphing
; sensory perception
; sound
; vibration
; taste
; chromatography
; seeds
; maps
; mapping
; interaction
; electricity
; energy
; energy transfer
; water
; population
; estimation
; averaging
; batteries
; bulbs
; wires
; condutivity
; variables
; starch
; soil
; weight
; solutions
; ice
; filtration
; histograms
; statistics
; heat transfer
; energy transformation
; probability
; statistical method
; microscopes
; crystals
; cells
; chemistry
; acceleration
; light energy
; forces and motions
; environment
; ecology
; chemical bonding
; pendulums
; conservation of energy
; minerals
; diffusion
; liquids
; pendulums
; growth

AN The *COPES TEACHER'S GUIDE FOR AN CONSERVATION OF ENERGY SEQUENCE* is based on the same five major concepts that serve as the foundation for

NO 872
DE April 4, 1988
SU
TY Series Handbook
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1974. THE USMES GUIDE. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI THE USMES GUIDE
AU Unified Science and Mathematics for Elementary Schools (USMES) ; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1974
PG 132
IL b&w diagrams
BI no
IS
LC
AL Teacher Resource
RL Teacher Resource
DS
AN The USMES GUIDE is a compilation of materials which may be used for long-range planning of a curriculum including the USMES program. In addition to the basic information about the project and the units, it contains charts assessing the strengths of the various units in terms of their possible math, science, social science, and language content.
TN
MT
RE
OR in library

NO 873
DE April 4, 1988
SU
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1974. USMES DESIGN LAB MANUAL. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI USMES DESIGN LAB MANUAL
AU Unified Science and Mathematics for Elementary Schools (USMES) ; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1974
PG 121
IL b&w line drawings
BI yes
IS
LC
AL Teacher Resource
RL
DS
AN The DESIGN LAB MANUAL is a major focus of the USMES philosophy, combining a range of physical resources and expertise in solving problems. The Design Lab provides a central location for tools and materials, and a work space where apparatus may be constructed and tested without disrupting ongoing classroom activities. The USMES DESIGN LAB MANUAL includes chapters on the aspects of space, cost, scheduling and use, safety, staffing, staff training, and teacher orientation as well as an inventory of Design Lab tools and supplies.
TN
MT
RE
OR in library

other Copes teaching guides: the structural units of the universe, interaction and change, the conservation of energy, the degradation of energy, and the statistical view of nature. Students are encouraged to develop skills in observation, classification, description, measurement, hypothesis, experimentation, and analysis as they investigate the characteristics and interactions of matter and energy. There are 122 lessons ranging from kindergarten to sixth grade, and accompanied by worksheets and materials lists. Rather than printing concise instructions in column form alongside more detailed running commentary as in other COPES editions, this volume integrates the two, creating more attractive, but somewhat less manageable reading for teachers.

TN

MT locally available

OR in library

NO 877
DE April 4, 1988
SU Plants
; General Math
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1975. GROWING PLANTS. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI GROWING PLANTS
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1975
PG 122
IL b&w photos and line drawings
BI yes
IS
LC
AL 2,3,4,5,6
RL 2,3,4,5,6
DS animals
; ecology
; fractions
; graphing
; growth
; integrated curriculum
; mapping
; matter
; measurement
; nutrition
; percents
; plants
; propagation
; ratios
; scaling
; sets
; science process skills
; whole number operations
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The GROWING PLANTS challenge: Grow plants for ------, (Children determine the specific purpose, such as for gifts, for transplanting into a garden, for selling, etc.). The children's interest in growing plants lead to experimentation with plants under special conditions, or transplanting plants grown during work on the unit into gardens or parks. The teacher's guide includes a range of possible activities, however, no specific lesson plans are provided. A list of questions to stimulate further investigation or more analysis is included.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE CLASSROOM DESIGN
OR in library

NO 878
DE April 4, 1988
SU General Math
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1975. CLASSROOM MANAGEMENT. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI CLASSROOM MANAGEMENT
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1975
PG 140
IL b&w charts and graphs
BI yes
IS
LC
AL 1,2,3,4,5,6
RL 1,2,3,4,5,6
DS estimation
; graphing
; integrated curriculum
; matter
; measurement
; sets
; science process skills
; sound
; statistics
; whole number operations
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The CLASSROOM MANAGEMENT challenge: Find ways of developing and maintaining a well-run classroom. This challenge can be introduced easily at the beginning of the school year before class routines have been established. It can also be used effectively to solve problems of management that occur during the course of the year. The teacher's guide includes a range of possible activities, however, no specific lesson plans are provided. A list of questions to stimulate further investigation or more analysis is included.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE CLASSROOM DESIGN
OR in library

NO 879
DE April 4, 1988
SU General Math
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1975. WAYS TO LEARN/TEACH. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI WAYS TO LEARN/TEACH
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1975
PG 114
IL b&w graphs
BI yes
IS
LC
AL 2,3,4,5,6,7,8
RL 2,3,4,5,6,7,8
DS fractions
; graphing
; integrated curriculum
; percents
; ratios
; science process skills
; statistics
; whole number operations
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The WAYS TO LEARN/TEACH challenge: Find the best way to learn or teach someone else certain things. This challenge may be introduced as the class prepares to study some new topic. Children are involved in class discussions and list possible ways to learn the same thing. As they investigate the various alternatives, they are involved in collecting and interpreting data to support the overall effectiveness of each method. The teacher's guide includes a range of possible activities, however, no specific lesson plans are provided. A list of questions to stimulate further investigation or more analysis is included.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE CLASSROOM MANAGEMENT
; CLASSROOM DESIGN
OR in library

NO 887
DE April 4, 1988
SU Physical Science
; General Math
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1973. PLAY AREA DESIGN AND USE. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI PLAY AREA DESIGN AND USE
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1973
PG 164
IL b&w line drawings
BI yes
IS
LC
AL 1,2,3,4,5,6,7,8
RL 1,2,3,4,5,6,7,8
DS cost analysis
; estimation
; geometry
; graphing
; integrated curriculum
; mapping
; measurement
; orders of magnitude
; scale models
; science process skills
; sets
; statistics
; whole number operations
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The PLAY AREA DESIGN AND USE challenge: Recommend and try to have changes made which would improve the design or use of your school's play area. Children establish priorities of areas needing improvement. They assess the suitability of the proposed improvements and also consider costs and availability of materials. They make models, graph survey results, and gain an improved play area. The teacher's guide contains no specific lesson plans but does include teachers' logs describing the use of this challenge.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE DESIGNING FOR HUMAN PROPORTIONS
OR in library

NO 894
DE April 4, 1988
SU Physical Science
; General Math
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1973. BURGLAR ALARM DEVICE. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI BURGLAR ALARM DEVICE
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1973
PG 108
IL b&w line drawings
BI to be written
IS
LC
AL 3,4,5,6,7,8
RL 3,4,5,6,7,8
DS physical science
; electricity
; circuitry
; schematics
; logic
; scaling
; integrated curriculum
; science process skills
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The BURGLAR ALARM DESIGN challenge: Build a burglar alarm which will give adequate warning. Children proceed from simple alarms with warning lights and buzzers to the more complex with mechanical improvements. The teacher's guide contains no specific lesson plans but does include teachers' logs describing the use of this challenge.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE CONSUMER RESEARCH-PRODUCT TESTING
; ELECTROMAGNET DEVICE DESIGN
OR in library

NO 895
DE April 5, 1988
SU Science Process Skills
TY Teacher's Guide
CI Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH), 1982. MEASUREMENT. Berkeley, CA: University of California, Lawrence Hall of Science Center for Multisensory Learning.
SE Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH)
TI MEASUREMENT
AU Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH)
AF Lawrence Hall of Science Center for Multisensory Learning, University of California
; U.S. Office of Education, Department of Health, Education, and Welfare
PU University of California, Lawrence Hall of Science Center for Multisensory Learning
LO Berkeley, CA
DP 1982
PG [36]
IL b&w line drawings
BI no
PR Kit: $174.00/157.00 Folioguide: $5.00 April, 1988
RL 4,5,6,7
DS science process skills
; measurement
; metric system
; volume
; elementary science methods
; weight
; temperature
; thermometers
; visual impairment
; physical handicaps
; learning disability
AN The MEASUREMENT module introduces the metric system through four activities, entitled The First Straw, Take Me to Your Liter, Weight Watching, and The Third Degree. Students learn the importance of standard units of measure, as they investigate length, volume, weight, and temperature of familiar items, using tools that are adapted to the needs of children with visual impairments or other physical handicaps. The instructions provide science background information, and contain many helpful suggestions for facilitating successful learning experiences among all types of learners. A kit accompanies the module, with student worksheets in either print or braille.
TN 5 lessons, 30-90 minutes each
MT Kit from Lawrence Hall of Science
OR in library

NO 888
April 4, 1988
SU General Science
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1973. LUNCH LINES. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI LUNCH LINES
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1973
PG 148
IL b&w graphs
BI to be written
IS
LC
AL 1,2,3,4,5,6,7,8
RL 1,2,3,4,5,6,7,8
DS budgets
; statistics
; fractions
; percents
; geometry
; graphs
; integrated curriculum
; mapping
; measurement
; science process skills
; whole number operations
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The LUNCH LINES challenge: Recommend and try to have changes made which would improve the service in your lunchroom. Children are involved in observing the present cafeteria situation, collecting relevant data, drawing conclusions and recommending improvements. The teacher's guide contains no specific lesson plans but does include teachers' logs describing the use of this challenge.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE PLAY AREA DESIGN AND USE
; CLASSROOM DESIGN
OR in library

NO 889
E April 4, 1988
SU Safety
; General Math
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1973. TRAFFIC FLOW. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI TRAFFIC FLOW
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1973
PG 156
IL b&w line drawings
BI to be written
IS
LC
AL 1,2,3,4,5,6,7,8
RL 1,2,3,4,5,6,7,8
DS geometry
; graphs
; integrated curriculum
; safety
; budgets
; statistics
; estimation
; fractions
; percents
; measurement
; science process skills
; whole number operations
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The TRAFFIC FLOW challenge: Recommend and try to have a new road design or a system for rerouting traffic accepted so that cars and trucks can move safely at a reasonable speed through a busy intersection near your school. The children assess community traffic patterns and make first-hand observations to obtain data. They predict the feasibility of new designs in terms of safety, cost, and minimum use of land. The teacher's guide contains no specific lesson plans but does include teachers' logs describing the use of this challenge.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE PLAY AREA DESIGN AND USE
; BICYCLE TRANSPORTATION
; PEDESTRIAN CROSSINGS
OR in library

NO 890
E April 4, 1988
SU Attributes
; General Math
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1973. DESCRIBING PEOPLE Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI DESCRIBING PEOPLE
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1973
PG 144
IL b&w line drawings
BI to be written
IS
LC
AL 1,2,3,4,5,6,7,8
RL 1,2,3,4,5,6,7,8
DS attributes
; graphs
; integrated curriculum
; statistics
; venn diagrams
; sets
; measurement
; science process skills
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The DESCRIBING PEOPLE challenge: Find out what is the best information to put in a description so that a person can be quickly and easily identified. Children look for a systematic way to identify a person in real situations by specifying certain physical characteristics. They test their hypotheses by a Sit-Down game or Venn diagrams. They also investigate different identification problems. The teacher's guide contains no specific lesson plans but does include teachers' logs describing the use of this challenge.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE DESIGNING FOR HUMAN PROPORTIONS
OR in library

NO 891
DE April 4, 1988
SU General Math
; General Science
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1974. DESIGNING FOR HUMAN PROPORTIONS. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI DESIGNING FOR HUMAN PROPORTIONS
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1974
PG 140
IL b&w line drawings and graphs
BI to be written
IS
LC
AL 3,4,5,6,7,8
RL 3,4,5,6,7,8
DS graphing
; integrated curriculum
; fractions
; scaling
; biology
; statistics
; measurement
; science process skills
; ratios
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The DESIGNING FOR HUMAN PROPORTIONS challenge: Find a way to design or make changes in things that you use or wear so that they will be a good fit. After discussing and accessing what needs changing, children are involved in determining the sizes of items needed for a varied population. Measurement plays a key role. The teacher's guide contains no specific lesson plans but does include teachers' logs describing the use of this challenge.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE MANUFACTURING
; ADVERTISING
; DESCRIBING PEOPLE
; CONSUMER RESEARCH-PRODUCT TESTING
OR in library

NO 892
DE April 4, 1988
SU General Math
; Earth Science
; Science Process Skills
TY Teacher's Guide
CI Unified Science and Mathematics for Elementary Schools (USMES), Education Development Center (EDC). 1973. WEATHER PREDICTIONS. Newton, MA: Education Development Center, Inc.
SE Unified Science and Mathematics for Elementary Schools (USMES)
TI WEATHER PREDICTIONS
AU Unified Science and Mathematics for Elementary Schools (USMES)
; Education Development Center (EDC)
AF National Science Foundation
PU Education Development Center, Inc.
LO 55 Chapel Street, Newton, MA
DP 1973
PG 124
IL b&w line drawings
BI yes
IS
LC
AL 2,3,4,5,6,7,8
RL 2,3,4,5,6,7,8
DS geography
; graphing
; integrated curriculum
; approximation
; earth science
; air pressure
; temperature
; humidity
; clouds
; precipitation
; wind speed
; wind direction
; weather
; measurement
; science process skills
AN Each USMES unit is based on a challenge that presents a school or community related problem to be solved by the children. The WEATHER PREDICTIONS challenge: What do you think the weather will be this afternoon...tomorrow? Find out what information helps you most in accurately preicting the weather. Children make their own weather instruments as they try to discover the factors that influence weather. Predictions are correlated with observations. The teacher's guide contains no specific lesson plans but does include teachers' logs describing the use of this challenge.
TN 2-3 sessions per week, 30-45 minutes per session
MT locally available
RE DICE DESIGN
OR in library

NO 900
DE April 5, 1988
SU Physical Science
; Chemistry
TY Teacher's Guide
CI Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH), 1981. MIXTURES AND SOLUTIONS. Berkeley, CA: Lawrence Hall of Science Center for Multisensory Learning, University of California.
SE Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH)
TI MIXTURES AND SOLUTIONS
AU Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH)
AF Lawrence Hall of Science Center for Multisensory Learning, University of California
; U.S. Office of Education, Department of Health, Education, and Welfare
PU University of California, Lawrence Hall of Science Center for Multisensory Learning
LO Berkeley, CA
DP 1981
PG [35]
IL b&w line drawings
BI no
PR Kit: $114.00/70.00 Folio guide: $5.00 April, 1988
RL 4,5,6,7
DS elementary science methods
; visual impairment
; physical handicaps
; learning disabilities
; chemistry
; chemical reactions
; solutions
; saturated solutions
; mixtures
; evaporation
; chemical concentration
AN In MIXTURES AND SOLUTIONS, children are introduced to basic chemistry through four sequential activities, entitled Separating Mixtures, Concentration, Reaching Saturation, and The Fizz Quiz. After making mixtures of water and various solids, students attempt to separate them with screens, filters, or evaporation. The weights of salt solutions of different concentrations are compared, and students attempt to determine the amount of solid required to saturate a solution. In the final activity, students observe that a combination of two solutions creates a reaction quite different than what might have been expected from observation of either solution alone. The module contains instructions for conducting fun, successful lessons for students of varying physical capabilities, and science background information is also included. A kit accompanies the unit.
TN 5 lessons, 30-90 minutes each
MT Kit from Lawrence Hall of Science
OR in library

NO 901
DE April 5, 1988
SU Life Science
; Ecology
TY Teacher's Guide
CI Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH), 1983. ENVIRONMENTS. Berkeley, CA: Lawrence Hall of Science Center for Multisensory Learning, University of California.
SE Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH)
TI ENVIRONMENTS
AU Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH)
AF Lawrence Hall of Science Center for Multisensory Learning, University of California
; U.S. Office of Education, Department of Health, Education, and Welfare
PU University of California, Lawrence Hall of Science Center for Multisensory Learning
LO Berkeley, CA
DP 1983
PG [34]
IL b&w line drawings
BI no
PR Kit: $64.00/42.00 Folio guide: $5.00 April, 1988
RL 4,5,6,7
DS elementary science methods
; environment
; habitat
; isopods
; crustaceans
; pill bugs
; plants
; weeds
; seeds
; visual impairment
; physical handicaps
; learning disabilities
AN The ENVIRONMENTS module consists of four activities, entitled Environmental Plantings, Sea What Grows, Isopods, and The Wanted Weed. Students investigate the concept of environment, and learn what factors in an organism's environment make it an appropriate place in which to live. Controlled experiments test for water requirements and salt tolerance in plants, and for environmental preferences among isopods. A culminating activity takes children to the schoolyard for close observation of local weeds, their structure and habitat. The instructions contain science background, as well as helpful suggestions for creating successful learning experience for students of varied physical abilities. A kit accompanies the module.
TN 5 lessons, 30-90 minutes each
MT Kit from Lawrence Hall of Science
OR in library

NO 903
DE April 5, 1988
SU Physical Science
TY Teacher's Guide
CI Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH), 1983. ENVIRONMENTAL ENERGY. Berkeley, CA: Lawrence Hall of Science Center for Multisensory Learning, University of California.
SE Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH)
TI ENVIRONMENTAL ENERGY
AU Science Activities for the Visually Impaired/Science Enrichment for Learners with Physical Handicaps (SAVI/SELPH)
AF Lawrence Hall of Science Center for Multisensory Learning, University of California
; U.S. Office of Education, Department of Health, Education, and Welfare
PU University of California, Lawrence Hall of Science Center for Multisensory Learning
LO Berkeley, CA
DP 1983
PG [36]
IL b&w line drawings
BI no
PR Folio guide: $5.00 Kit: $107.00/61.00 April, 1988
RL 4,5,6,7
DS visual impairment
; physical handicaps
; learning disabilities
; elementary science methods
; energy
; solar energy
; sun
; wind power
; wind
; pinwheels
; water
; temperature
; thermometers
; energy transfer
AN The ENVIRONMENTAL ENERGY module contains four activities focusing on energy sources: Solar Water Heater, Sun Power, Blowin' in the Wind, and Wind Power. Students investigate the concepts of active and stored energy and experiment with energy transfer, as they set up simple solar water heaters in the schoolyard, then test the effects of varying size, color, or covering on water temperature. Pinwheels are used to compare the availability of wind power in various locations, and the amount of work that can be done by pinwheels of various sizes. The instructions are well-organized and supported by science information as well as techniques for offering successful experiences to learners of varied physical capabilities. A kit accompanies the module.
TN 5 lessons, 30-90 minutes each
MT Kit from Lawrence Hall of Science
OR in library

NO 904
DE April 6, 1988
SU Physical
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), Carl F. Berger, et al., 1971. ENERGY SOURCES. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI ENERGY SOURCES
AU Science Curriculum Improvement Study (SCIS)
; Berger, Carl F.
; Karplus, Robert
; Randle, Joan Coffman
; Thier, Herbert D.
; Webb, Sylvester
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally and Company
LO Chicago, IL 60680
DP 1971
PG 128
IL b&w line drawings, photographs, charts and diagrams
BI no
IS 528-90142-7
LC 34802
AL 5
RL 5
DS scientific method
; scientific process
; elementary science methods
; energy source
; energy receiver
; energy transfer
; energy chain
AN The title and topic of this guide is ENERGY SOURCES. The students are involved in activities to help them understand the major concepts of variables, energy transfer, energy sources, and energy receivers. The pupils use rolling and colliding spheres, paper airplanes, thermometers, warm and cold water, ice, and rubber stopper shooters to help them discover that motion and changes in temperature are evidence of energy transfer. The final section of this guide offers projects for individuals or groups. A kit ia available from Delta.
TN There are 21 lessons 40-45 minutes each
MT Kit from Delta
OR in library

NO 905
DE April 6, 1988
SU Physical
TY Teacher's Guide
CI Science Curriculum Improvement Study II (SCIS II), Lester G. Paldy et al., 1978. ENERGY SOURCES. Nashua, NH: Delta Education, Inc.
SE Science Curriculum Improvement Study II (SCIS II)
TI ENERGY SOURCES
AU Science Curriculum Improvement Study II (SCIS II)
; Paldy, Lester G.
; Amburgry, Leonard L.
; Collea, Francis
; Cooper, Richard
; Maxwell, Donald E.
; Riley, Joseph W.
AF Lawrence Hall of Science, University of California, Berkeley
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1978
PG 143
IL b&w line drawings, charts, graphs, diagrams
BI yes
IS 0-8339-2502-4
LC none
AL 5
RL 5
DS scientific method
; scientific process
; elementary science methods
; energy source
; energy receiver
; energy transfer
; energy chain
AN The title and topic of this guide is ENERGY SOURCES. The students are involved in activities to help them understand the major concepts of variables, energy transfer, energy sources, and energy receivers. The pupils use rolling and colliding spheres, paper airplanes, thermometers, warm and cold water, ice, and rubber stopper shooters to help them discover that motion and changes in temperature are evidence of energy transfer. The final section of this guide offers projects for individuals or groups. A kit ia available from Delta.
TN There are 51 lessons 20-30 minutes each
MT Kit from Delta
OR in library

NO 906
DE April 6, 1988
SU Physical
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier et al., 1985. ENERGY SOURCES. Nashua, NH: Delta Education, Inc.
SE Science Curriculum Improvement Study (SCIIS/85)
TI ENERGY SOURCES
AU Science Curriculum Improvement Study (SCIIS/85)
; Thier, Herbert D.
; Karplus, Robert
; Knott, Robert
; Lawson, Chester A.
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1985
PG
IL b&w line drawings, photographs, charts, graphs, diagrams
BI no
IS 0-87504-409-3
LC GUI409
AL 5
RL 5
DS scientific method
; scientific process
; elementary science methods
; energy source
; energy receiver
; energy transfer
; energy chain
; solar energy
AN The ENERGY SOURCES (SCIIS/85) guide has a new section of activities for the students involving solar energy transfer. The pupils use black and white trays filled with water, thermometers, and a variety of insulating materials to experiment with solar energy transfer. Five evaluation activities are added in an appendix, and a supplement has been added to the guide that simplifies the lesson overview. A kit is available from Delta.
TN There are 19 lessons 40-45 minutes each
MT Kit from Delta
OR in library

NO 912
April 6, 1988
Physical Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Herbert D. Thier et al., 1985. SUBSYSTEMS AND VARIABLES. Nashua, NH: Delta Education, Inc.
SE Science Curriculum Improvement Study (SCIIS/85)
TI SUBSYSTEMS AND VARIABLES
AU Science Curriculum Improvement Study (SCIIS/85)
; Thier, Herbert D.
; Karplus, Robert
; Knott, Robert
; Lawson, Chester A.
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1985
PG 142
IL b&w line drawings, photographs, charts, graphs, diagrams
BI no
IS 0-87504-405-0
LC GUI405
AL 3
RL 3
DS scientific method
; scientific process
; elementary science methods
; subsystems
; solutions
; evaporation
; histograms
; variables
AN The lessons and organization of SUBSYSTEMS AND VARIABLES in SCIIS/85 is similar to SCIS and SCIS II. In this version a section about evaluation has been added. A supplement that simplifies each lesson plan is provided.
TN There are 19 lessons 30-35 minutes each
MT Kit from Delta
OR in library

NO 913
April 6, 1988
Physical Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), Carl F. Berger, et al., 1971. MODELS: ELECTRIC AND MAGNETIC INTERACTIONS. Chicago, IL: Rand McNally and Company.
SE Science Curriculum Improvement Study (SCIS)
TI MODELS: ELECTRIC AND MAGNETIC INTERACTIONS
AU Science Curriculum Improvement Study (SCIS)
; Berger, Carl F.
; Bunshoft, Sylvia
; Karplus, Robert
; Randle, Joan Coffman
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Rand McNally and Company
LO Chicago, IL 60680
DP 1971
PG 112
IL b&w line drawings, photographs, graphs, charts and diagrams
BI no
IS 90-2850T
LC
AL 6
RL 6
DS scientific method
; scientific process
; elementary science methods
; scientific models
; magnetic field concept
; electricity
; magnetism
; electrical circuits
AN The topic and name of this unit is MODELS: ELECTRIC AND MAGNETIC INTERACTIONS. Electricity and magnetism are used for investigation. Students begin by reviewing circuit concepts with the use of light bulbs, batteries, magnets, and compasses. The children use circuit puzzles and mystery boxes in testing to determine a type of model. The phenomenon of magnetic fields is explored by using compasses and iron filings. The students learn to interpret and draw electric circuits. A final section of projects for individuals or teams is used to help them design their own experiments. A kit is available from Delta.
TN There are 19 lessons 45-50 minutes each
MT Kit from Delta
OR in library

NO 914
DE April 6, 1988
SU Physical Science
TY Teacher's Guide
CI Science Curriculum Improvement Study II (SCIS II), Lester G. Paldy et al., 1974. MODELING SYSTEMS. Nashua, NH: Delta Education, Inc.
SE Science Curriculum Improvement Study II (SCIS II)
TI MODELING SYSTEMS
AU Science Curriculum Improvement Study II (SCIS II)
; Paldy, Lester G.
; Amburgry, Leonard L.
; Collea, Francis
; Cooper, Richard
; Maxwell, Donald E.
; Riley, Joseph W.
AF Lawrence Hall of Science, University of California, Berkeley
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1974
PG 153
IL b&w line drawings, graphs, charts, diagrams
BI
IS 0-8339-2602-0
LC
AL 6
RL 6
DS scientific method
; scientific process
; elementary science methods
; magnetism
; electricity
; energy interaction
; electrical circuits
; barometer
; weather
; evaporation
; condensation
AN In MODELING SYSTEMS (SCIS II), there are two changes from the previous teacher's guide. First, the section on projects has been dropped and secondly a unit on modeling the atmosphere system has been added. Students are involved in determining properties of air, experimenting with evaporation and condensation, and modeling the weather system. The teacher's notes are very helpful in understanding the difficult concepts of electricity, magnetism, and atmosphere. A kit is available from Delta.
TN There are 51 lessons 25-30 minutes each
MT Kit from Delta
OR in library

NO 915
DE April 6, 1988
SU Physical Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Robert Karplus, et al., 1985. SCIENTIFIC THEORIES. Nashua, NH: Delta Education, Inc.
SE Science Curriculum Improvement Study (SCIIS/85)
TI SCIENTIFIC THEORIES
AU Science Curriculum Improvement Study (SCIIS/85)
; Karplus, Robert
; Thier, Herbert D.
; Knott, Robert
; Lawson, Chester A.
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1985
PG 158
IL b&w line drawings, photographs, charts, diagrams
BI no
IS 0-87504-411-5
LC GUI411
AL 6
RL 6
DS scientific method
; scientific process
; elementary science methods
; scientific theories
; color
; magnetic fields
; magnetism
; electricity
; energy
; circuits
; light rays
AN Two sections have been added to the SCIIS/85 guide and the topic/title has been changed from MODELING SYSTEMS to SCIENTIFIC THEORIES. One new section studies colored light by having the students work with prisms, colored plastic, and light sources. Another new section has the children using light sources, mirrors, and lenses in order to explore images. A supplemetn is added that simplifies each lesson plan. A kit is available from Delta.
TN There are 21 lessons 45-50 minutes each
MT Kit from Delta
OR in library

NO 918
DE April 6, 1988
SU Physical Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIIS/85), Robert Karplus, et al., 1985. RELATIVE POSITION AND MOTION. Nashua, NH: Delta Education, Inc.
SE Science Curriculum Improvement Study (SCIIS/85)
TI RELATIVE POSITION AND MOTION
AU Science Curriculum Improvement Study (SCIIS/85)
; Karplus, Robert
; Thier, Herbert D.
; Lawson, Chester A.
; Knott, Robert
; Montgomery, Marshall
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1985
PG 154
IL b&w line drawings, photographs, graphs, grids, charts, diagrams
BI no
IS 0-87504-407-7
LC GUI407
AL 4
RL 4
DS scientific method
; scientific process
; elementary science methods
; scientific theories
; relative position
; reference objects
; relative motion
; polar coordinates
; mapping
; shadows
; rectangular coordinates
; astronomy
AN The teacher's guide, RELATIVE POSITION AND MOTION, SCIIS/85, is very similar to the previous SCIS and SCIS II guides with a few noted exceptions. An initial lesson uses paper airplanes to review the terms object, property, interaction, system, and variable. the appendices "process evaluation" and "attitude in science" offer the opportunity to add new dimensions to the science program. Lastly, a supplement is provided that simplifies the lesson plans. It does not contain background information and should be used along with the basic materials.
TN There are 21 lessons 35-40 minutes each
MT Kit from Delta
OR in library

NO 919
DE April 6, 1988
SU Physical Science
TY Teacher's Guide
CI Science Curriculum Improvement Study (SCIS), Robert Karplus, et al., 1970. INTERACTION AND SYSTEMS. Nashua, NH: Delta Education, Inc.
SE Science Curriculum Improvement Study (SCIS)
TI INTERACTION AND SYSTEMS
AU Science Curriculum Improvement Study (SCIS)
; Karplus, Robert
; Randle, Joan Coffman
AF Lawrence Hall of Science, University of California, Berkeley
; National Science Foundation
PU Delta Education, Inc.
LO Nashua, NH 03061
DP 1970
PG 112
IL b&w line drawings, photographs, charts
BI no
IS 528-90112-5
LC
AL 2
RL 2
DS scientific method
; scientific process
; elementary science methods
; object interaction
; evidence of interaction
; chemical systems
; interaction
; pulleys
; magnetism
; electricity
; gears
AN In the unit INTERACTION AND SYSTEMS, children observe and interpret evidence of interaction through the use of magnets, batteries, wires, various chemicals, photographic paper, pulleys, ammonia, bells, and their own senses. Student's begin to develop record keeping skills by drawing picture records of what they observe. Several teacher demonstrations are used to help students observe and describe change. A kit is available from Delta.
TN There are 20 lessons 25-30 minutes each
MT Kit from Delta
OR in library

NO 923
DE April 6, 1988
SU Graphing
; Counting
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Robin Adair, et al., 1985. GLIDE INTO WINTER WITH MATH AND SCIENCE. Fresno, CA: Fresno Pacific College-Project AIMS.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI GLIDE INTO WINTER WITH MATH AND SCIENCE
AU Activities to Intergrate Mathematics and Science (AIMS)
; Adair, Robin
; Ewing, Jill
; Faircloth, Shirley
; Nikoghosian, Janice
; Peterson, Cynthia
; Smith, Darlene
; Wiebe, Sheila
AF Fresno Pacific College
; National Science Foundation
PU Fresno Pacific College-Project AIMS
LO 1717 S. Chestnut Avenue, Fresno, CA 93702
DP 1985
PG 73
IL b&w line drawings
BI no
IS
LC
AL K,1
RL K,1
DS science process skills
; integrated curriculum
; graphing
; counting
; weather
; holidays
; measurement
; human body
; static electricity
; crystals
; nutrition
AN GLIDE INTO WINTER WITH MATH AND SCIENCE contains 16 investigations using graphing skills as children observe, interpret and record data provided by the happenings of the winter season. Topics include: weather, static electricity, growing crystals, nutrition and the human body. Each investigation has a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages can be found after each lesson plan.
TN 16 investigations, 15-30 minutes each
MT locally available
RE SPRING INTO MATH AND SCIENCE
; FALL INTO MATH AND SCIENCE
OR in library

NO 924
DE April 6, 1988
SU Graphing
; Measurement
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Robin Adair, et al., 1984. SPRING INTO MATH AND SCIENCE. Fresno, CA: Fresno Pacific College-Project AIMS.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI SPRING INTO MATH AND SCIENCE
AU Activities to Intergrate Mathematics and Science (AIMS)
; Adair, Robin
; Ewing, Jill
; Faircloth, Shirley
; Nikoghosian, Janice
; Peterson, Cynthia
; Smith, Darlene
; Wiebe, Sheila
AF Fresno Pacific College
; National Science Foundation
PU Fresno Pacific College-Project AIMS
LO 1717 S. Chestnut Avenue, Fresno, CA 93702
DP 1984
PG 64
IL b&w line drawings
BI no
IS
LC
AL K,1
RL K,1
DS science process skills
; integrated curriculum
; graphing
; counting
; water
; holidays
; measurement
; solar energy
; rainbows
; cooking
; chemistry
AN SPRING INTO MATH AND SCIENCE contains 15 investigations using the events of the spring season to provide practice in observing, measuring, and recording data. Each investigation has a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages can be found after each lesson plan. The children make graphs related to topics such as: water, solar energy, rainbows, holiday cooking, and chemical reactions.
TN 15 investigations, 15-30 minutes each
MT locally available
RE GLIDE INTO WINTER WITH MATH AND SCIENCE
; FALL INTO MATH AND SCIENCE
OR in library

NO 925
DE April 6, 1988
SU Graphing
; Estimating
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Cherie Ginocchio, et al., 1984. SEASONING MATH AND SCIENCE FALL AND WINTER. Fresno, CA: Fresno Pacific College-Project AIMS.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI SEASONING MATH AND SCIENCE FALL AND WINTER
AU Activities to Intergrate Mathematics and Science (AIMS)
; Ginocchio, Cherie
; Haggard, Ruth
; Jenkins, Sherry
; Newton, Nancy
; Olson, Betsy
; Roberts-Worley, Wendy
AF Fresno Pacific College
; National Science Foundation
PU Fresno Pacific College-Project AIMS
LO 1717 S. Chestnut Avenue, Fresno, CA 93702
DP 1984
PG 70
IL b&w line drawings
BI no
AL 2
RL 2
DS science process skills
; integrated curriculum
; graphing
; counting
; estimation
; measurement
; weather
; holidays
; seeds
; foods
; leaves
; trees
; color
; light
; shapes
; surface tension
; ecology
AN SEASONING MATH AND SCIENCE FALL AND WINTER is most appropriate for the first half of the school year. Book 1 includes such topics as holidays, plants, weather, color and light. The teacher's guide contains 22 investigations each with specific lesson plans that include: materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages accompany each investigation. After gathering and recording data the children are involved in a variety of graphing activities.
TN 22 investigations, 15-30 minutes each
MT locally available

RE AIMS units at appropriate grade levels
OR in library

NO 926
DE April 6, 1988
SU Graphing
; Measurement
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Cherie Ginocchio, et al., 1986. SEASONING MATH AND SCIENCE SPRING AND SUMMER. Fresno, CA: AIMS Education Foundation.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI SEASONING MATH AND SCIENCE SPRING AND SUMMER
AU Activities to Intergrate Mathematics and Science (AIMS)
; Ginocchio, Cherie
; Haggard, Ruth
; Jenkins, Sherry
; Newton, Nancy
; Olson, Betsy
; Roberts-Worley, Wendy
AF Fresno Pacific College
; National Science Foundation
PU AIMS Education Foundation
LO PO Box 7766, Fresno, CA 93747
DP 1986
PG 86
IL b&w line drawings
BI no
IS
LC
AL 2
RL 2
DS science process skills
; integrated curriculum
; graphing
; counting
; estimation
; measurement
; seeds
; biology
; earth science
; physical science
; plants
; insects
; dinosaurs
; shadows
AN SEASONING MATH AND SCIENCE SPRING AND SUMMER is most appropriate for the second half of the school year. Book 2 includes three main units: Life Sciences, Earth-Space Sciences, and Physical Sciences. The investigations all relate to February through April holidays. The teacher's guide contains 22 investigations each with specific lesson plans that include: materials and time needed, background information, procedures, discussion questions and extensions. Several reporducible student pages accompany each investigation. The children use estimation, graphing and problem solving in real life situations.
TN 22 investigations, 30 minutes each
MT locally available
RE AIMS units at appropriate grade levels

NO 927
DE April 6, 1988
SU Whole Number Operations
; Graphing
; Estimating
; Science Process Skills
; Human Body
; Foods
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Barry Courtney, et al., 1984. JAW BREAKERS AND HEART THUMPERS. Fresno, CA: Fresno Pacific College-Project AIMS.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI JAW BREAKERS AND HEART THUMPERS
AU Activities to Intergrate Mathematics and Science (AIMS)
; Courtney, Barry
; Crossley, Helen
; Dixon, Susan
; Hill, Loretta
; House, Kathleen
; Rudig, Anne
; Wiebe, Ann
; Wiens, Gina
; Williams, Nancy
AF Fresno Pacific College
; National Science Foundation
PU Fresno Pacific College-Project AIMS
LO 1717 S. Chestnut Avenue, Fresno, CA 93702
DP 1984
PG 63
IL b&w line drawings
BI no
IS
LC
AL 3,4
RL 3,4
DS science process skills
; integrated curriculum
; graphing
; measurement
; whole number operations
; human body
; foods
; averaging
; nutrition
AN In JAW BREAKERS AND HEART THUMPERS there are eighteen investigations relating to the human body and foods. Each investigation contains a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages accompany each investigation making it convenient for students to gather and record data for graphing. . The children are involved in activities such as measuring heart rates, observing patterns in fingerprints, and calculating amounts of sugar in bubble gum.
TN 18 investigations, 30-45 minutes each
MT locally available

RE AIMS units at appropriate grade levels
OR in library

NO 928
DE April 6, 1988
SU Estimating
; Geometry
; Measurement
; Structures
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Barry Courtney, et al., 1986. HARD HATTING IN A GEO-WORLD. Fresno, CA: AIMS Education Foundation.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI HARD HATTING IN A GEO-WORLD
AU Activities to Intergrate Mathematics and Science (AIMS)
; Courtney, Barry
; Haracz, Geraldine
; Crossley, Helen
; Hill, Loretta
; Dixon, Susan
; Wiebe, Ann
; Williams, Nancy
AF Fresno Pacific College
; National Science Foundation
PU AIMS Education Foundation
LO PO Box 7766, Fresno, CA 93747
DP 1986
PG 79
IL b&w line drawings
BI no
IS
LC
AL 3,4
RL 3,4
DS science process skills
; integrated curriculum
; graphing
; measurement
; whole number operations
; estimation
; structures
; geometry
; astronomy
; architecture
; patterns
AN HARD HATTING IN A GEO-WORLD includes twenty-five investigations relating to geometry, structures, and measurement. Each investigation contains a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages accompany each investigation. The students are involved in many activities involving measurement as they build and test structures and joints, observe and classify geometric shapes and discover the mysteries surrounding skyscrapers and bridges.
TN 25 investigations, 30-45 minutes each
MT locally available
RE AIMS units at appropriate grade levels

OR in library

NO 929
DE April 6, 1988
SU Physical Science
; Measurement
; Estimating
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Sean Greene, et al., 1985. POPPING WITH POWER. Fresno, CA: Fresno Pacific College-Project AIMS.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI POPPING WITH POWER
AU Activities to Intergrate Mathematics and Science (AIMS)
; Greene, Sean
; Crossley, Helen
; Dixon, Susan
; Hill, Loretta
; Rayfield, Helen
; Rudig, Anne
; Bland, Carol
; Wiens, Gina
; Williams, Nancy
AF Fresno Pacific College
; National Science Foundation
PU Fresno Pacific College-Project AIMS
LO 1717 S. Chestnut Avenue, Fresno, CA 93702
DP 1985
PG 66
IL b&w line drawings
BI no
IS
LC
AL 3,4
RL 3,4
DS science process skills
; integrated curriculum
; measurement
; estimation
; physical science
; simple machines
; compound machines
; magnets
; pendulums
; energy
; insulation
; temperature
; energy conservation
; kinetic energy
AN POPPING WITH POWER includes twenty-one investigations relating to physical science. Each investigation contains a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages are provided with each investigation. The students are involved in such activities as operating machines to simplify work, swinging and timing pendulums and bouncing balls, and observing color effects on temperature.

TN 21 investigations, 30-45 minutes each
MT locally available
RE AIMS units at appropriate grade levels
OR in library

NO 930
DE April 6, 1988
SU Earth Science
; Graphing
; Measurement
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Barry Courtney, et al., 1986. OVERHEAD AND UNDERFOOT. Fresno, CA: AIMS Education Foundation.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI OVERHEAD AND UNDERFOOT
AU Activities to Intergrate Mathematics and Science (AIMS)
; Courtney, Barry
; Wiebe, Ann
; Dixon, Susan
; Hill, Loretta
; Rayfield, Helen
; Rudig, Anne
; Bland, Carol
; Wiens, Gina
; Williams, Nancy
; House, Kathleen
AF Fresno Pacific College
; National Science Foundation
PU AIMS Education Foundation
LO PO Box 7766, Fresno, CA 93747
DP 1986
PG 56
IL b&w line drawings
BI no
IS
LC
AL 3,4
RL 3,4
DS science process skills
; integrated curriculum
; measurement
; estimation
; graphing
; whole number operations
; weather
; plants
; animals
; pollution
; soil
; rocks
; conservation
; geology
AN OVERHEAD AND UNDERFOOT includes fifteen investigations related to the natural environment. Topics covered are: weather, plants, soil, geology and conservation. Each investigation contains a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages are provided with each investigation. The students are involved in activities such as: making peanut butter and

MT locally available
RE AIMS units at appropriate grade levels
OR in library

NO 934
DE April 6, 1988
SU Percents
; Foods
; Estimating
; Computation
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Alberta M. Alfving, et al., 1987. FUN WITH FOODS. Fresno, CA: AIMS Education Foundation.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI FUN WITH FOODS
AU Activities to Intergrate Mathematics and Science (AIMS)
; Alfving, Alberta M.
; Eitzen, C. Lloyd
; Hyman, Joanne
; Patron, Rose Lee
; Holve, Helen
; Nelson, Philip
AF Fresno Pacific College
; National Science Foundation
PU AIMS Education Foundation
LO PO Box 7766, Fresno, CA 93747
DP 1987
PG 74
IL b&w line drawings
BI no
IS
LC
AL 5,6,7,8
RL 5,6,7,8
DS science process skills
; integrated curriculum
; measurement
; estimation
; foods
; variables
; nutrition
; seeds
; emulsions
; acids
; bases
; change
; percent
AN FUN WITH FOODS contains twenty-five investigations that use food and equipment found in kitchens, supermarkets, or school classrooms to teach and reinforce skills and processes in math and science. Each investigation contains a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages are provided with each investigation. The students are involved in activities such as: determining the edible part of an orange by volume, analyzing cafeteria lunches, discovering mayonnaise is an emulsion, and finding fractions in fondue.
TN 25 investigations, 45-60 minutes each

NO 935
DE April 6, 1988
SU Physical Science
; Division
; Measurement
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Mike McKibban, et al., 1982. FLOATERS AND SINKERS SOLUTIONS FOR MATH AND SCIENCE. Fresno, CA: Fresno Pacific College-Project AIMS.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI FLOATERS AND SINKERS SOLUTIONS FOR MATH AND SCIENCE
AU Activities to Intergrate Mathematics and Science (AIMS)
; McKibban, Mike
; Laidlaw, Walt
; Landon, Kathleen
; Lile, David
AF Fresno Pacific College
; National Science Foundation
PU Fresno Pacific College-Project AIMS
LO 1717 S. Chestnut Avenue, Fresno, CA 93702
DP 1982
PG 58
IL b&w line drawings
BI no
IS
LC
AL 5,6,7,8
RL 5,6,7,8
DS science process skills
; integrated curriculum
; physical science
; density
; volume
; floaters
; sinkers
; clay boats
; water
; surface area
; division
AN FLOATERS AND SINKERS SOLUTIONS FOR MATH AND SCIENCE contains twenty-six investigations that demonstrate the concept of density. Volume is calculated and division is the basic math skill used. Each investigation contains a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages are provided with each investigation. Students learn different methods of calculating the volume of spheres. They will explore the density of water, salt water and rectangular shaped wooden prisms. They also compare the volume of cylinders and gereralize about surface area and cargo capacity.
TN 26 investigations, 45-60 minutes each
MT locally available
RE AIMS units at appropriate grade levels
OR in library

NO 936
DE April 6, 1988
SU Graphing
; Earth Science
; Measurement
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Sheldon Erickson, et al., 1986. DOWN TO EARTH, SOLUTIONS FOR MATH AND SCIENCE. Fresno, CA: AIMS Education Foundation.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI DOWN TO EARTH, SOLUTIONS FOR MATH AND SCIENCE
AU Activities to Intergrate Mathematics and Science (AIMS)
; Erickson, Sheldon
; Gregg, David
; Helling, Frank
; King, Morris W.
; Starkweather, Jeri
AF Fresno Pacific College
; National Science Foundation
PU AIMS Education Foundation
LO PO Box 7766, Fresno, CA 93747
DP 1986
PG 68
IL b&w line drawings
BI no
IS
LC
AL 5,6,7,8
RL 5,6,7,8
DS science process skills
; integrated curriculum
; earth science
; temperature
; mapping
; geology
; oceanography
; meteorology
; weather
; rocks
AN DOWN TO EARTH, SOLUTIONS FOR MATH AND SCIENCE contains fifteen investigations about earth science topics such as geology, oceanography and meteorology. Each investigation contains a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages are provided with each investigation. The students interpret information and generalize as they study evaporation rates, daily weather changes, mining techniques, and underwater terrain.
TN 15 investigations, 45-60 minutes each
MT locally available
RE AIMS units at appropriate grade levels
OR in library

NO 937
DE April 6, 1988
; Environmental Studies
; Whole Number Computation
; Graphing
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Norris Beakes, et al., 1986. OUR WONDERFUL WORLD, SOLUTIONS FOR MATH AND SCIENCE. Fresno, CA: AIMS Education Foundation.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI OUR WONDERFUL WORLD, SOLUTIONS FOR MATH AND SCIENCE
AU Activities to Intergrate Mathematics and Science (AIMS)
; Beakes, Norris
; Beck, Janet
; Deruiter, Henry Richard
; Dewey, John
; Freeman, Thomas L.
AF Fresno Pacific College
; National Science Foundation
PU AIMS Education Foundation
LO PO Box 7766, Fresno, CA 93747
DP 1986
PG 66
IL b&w line drawings
BI no
IS
LC
AL 5,6,7,8
RL 5,6,7,8
DS science process skills
; integrated curriculum
; measurement
; whole number operations
; graphing
; fractions
; averaging
; environmental studies
; air
; water
; plants
; soil
; animals
; insects
AN OUR WONDERFUL WORLD, SOLUTIONS FOR MATH AND SCIENCE contains nineteen sequenced investigations in environmental studies covering the following topics: air, water, transportation, soil, plants, animals, insects. Each investigation contains a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages are provided with each investigation. The students are involved in activities such as analyzing volume of snow, comparing habitats, exploring natural selection and camouflage, and testing clothes as insulators.
TN 19 investigations, 45-60 minutes each
MT locally available

RE AIMS units at appropriate grade levels
OR in library

NO 938
April 6, 1988
Geometry
; Percent
; Measurement
; Science Process Skills
TY Teacher's Guide
CI Activities to Intergrate Mathematics and Science (AIMS), Judith A. Hillen,et al., 1986. PIECES AND PATTERNS, A PATCHWORK IN MATH AND SCIENCE. Fresno, CA: AIMS Education Foundation.
SE Activities to Intergrate Mathematics and Science (AIMS)
TI PIECES AND PATTERNS, A PATCHWORK IN MATH AND SCIENCE
AU Activities to Intergrate Mathematics and Science (AIMS)
; Hillen, Judith A.
AF Fresno Pacific College
; National Science Foundation
PU AIMS Education Foundation
LO PO Box 7766, Fresno, CA 93747
DP 1986
PG 91
IL b&w line drawings
BI no
IS
LC
AL 5,6,7,8,9
RL 5,6,7,8,9
DS science process skills
; integrated curriculum
; measurement
; whole number operations
; graphing
; fractions
; geometry
; physical science
; earth science
; trutle graphics
; computers
; kinetic energy
; simple machines
; friction
AN PIECES AND PATTERNS, A PATCHWORK IN MATH AND SCIENCE contains nineteen sequenced investigations on a variety of topics such as: probability and statistics, and turtle, graphics and geometry. Each investigation contains a specific lesson plan including materials and time needed, background information, procedures, discussion questions and extensions. Several reproducible student pages are provided with each investigation. The students are involved in range of activities from classifying jelly beans and recording data to using Hot Wheels to generalize about kinetic energy, inclined planes and friction.
TN 19 investigations, 45-60 minutes each
MT locally available
RE AIMS units at appropriate grade levels
OR in library

NO 1150
DE March 17, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. ACTION/REACTION. Northbrook, IL: Hubbard.
SE Health Activities Project (HAP)
TI ACTION/REACTION
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [21]
IL b&w photos and drawings
BI no
PR kit: $94.50 March, 1988
AL 4,5,6,7,8
DS biology
; daily living skills
; eye/hand coordination
; fitness
; health
; health activities
; health education
; human biology
; human body
; hygiene
; neurology
; psychomotor skills
; reaction time
; reflexes
AN The ACTION/REACTION module contains three activity folios, entitled Reaction Time, Improving Reaction Time, and Let's Manipulate. In the first activity, students chart the speed of their responses to light, sound, and touch stimuli. They compare their responses to the different stimuli, and attempt to identify factors contributing to these results. In the second activity, students repeat the stimulus-response experiments for five consecutive days, seeking evidence of improved reaction time. They graph their results and compute percent improvements. In the final activity, students practice eye-hand coordination activities, collecting and comparing data to determine the effects of practice on performance. The module contains student data sheets, useful background information for the teacher, as well as suggestions for classroom management and follow-up activities. A materials kit accompanies the module.
TN 15 sessions: 1 @ 45-60 minutes; 2 @ 30-35 minutes; 12 @ 15-20 minutes
MT kit from Hubbard

LR in library
C

NO 1151
DE March 17, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. BALANCE IN MOVEMENT. Northbrook, IL: Hubbard.
SE Health Activities Project (HAP)
TI BALANCE IN MOVEMENT
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [35]
IL b&w photos and drawings
PR kit: $72.50 March, 1988
AL 4,5,6,7,8
DS balance
; center of mass
; daily living skills
; fatigue
; fitness
; health
; health activities
; health education
; human biology
; human body
; hygiene
; stability
; vision
AN BALANCE IN MOVEMENT contains six sequential activity folios, entitled Balance and Vision, Rope Walk, Stability in Movement, Exploring Balance Boards, Balance Experiments, and Balance and Fatigue. Students conduct experiments to determine how vision affects their balance while standing still and while moving. They explore the stability of different body positions, and then, standing on 'balance boards', test their ability to balance under various circumstances: with eyes fixed or moving, feet apart or together, arms free or folded, before or after exertion. Emphasis is on collection and analysis of data, and application to familiar situations. The module contains helpful information and hints for classroom management, as well as student data sheets. A kit accompanies the module.
TN 6 sessions: 5 @ 40-60 minutes, 1 @ 50-70 minutes
MT kit from Hubbard
OR in library

NO 1152
DE March 17, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. BREATHING FITNESS. Noerthbrook, IL: Hubbard.
SE Lawrence Hall of Science
TI BREATHING FITNESS
AU Health Activities Project
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [38]
IL b&w photos and drawings
PR kit: $69.95
AL 4,5,6,7,8
DS biology
; breathing
; carbon dioxide
; daily living skills
; exercise
; exhale
; fitness
; health
; health activities
; health education
; human biology
; human body
; hygiene
; inhale
; lungs
; oxygen
; respiration
AN The BREATHING FITNESS module consist of six activity folios, entitled Exploring Breath Rates, Breath Recovery, Breath Control, Measuring Lung Volume, Measuring Breath Volume, and Gas Exchange. Students learn how to measure their breathing rates, investigate the relationship between lung volume and height, and conduct experiments on the effects of breathing styles, breath holding, exercise, and rest. They also measure relative amounts of carbon dioxide in air exhaled while at rest and after exercise. Emphasis is on collection and analysis of data, and application to familiar situations. There is extensive background information for teachers, with student data sheets and suggestions for classroom management.
TN 14 sessions: 3 @ 10-15 minutes, 3 @ 20-30 minutes, 8 @ 40-60 minutes.
MT kit from Hubbard

NO 1153
DE March 17, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. CONSUMER HEALTH DECISIONS. Northbrook, IL: Hubbard.
SE Lawrence Hall of Science (HAP)
TI CONSUMER HEALTH DECISIONS
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [33]
IL b&w photos and drawings
AL 4,5,6,7,8
DS advertising
; biology
; consumer education
; decision making
; daily living skills
; fitness
; health
; health activities
; health education
; health services
; human biology
; human body
; hygiene
; judgement
; safety
AN The CONSUMER HEALTH DECISIONS module contains four activity folios, entitled Consumers' Choice, Madison Avenue, Puzzling it Out, and Yellow Pages. Students conduct taste tests and analyze advertisements to investigate the effects of information, advertising, and expectation on consumer decisions. A team game provides practice in making safety-oriented decisions, and a scavenger hunt through the telephone book familiarizes children with the health and safety resources of their local community. The activities focus on situations relevant to students' lives. There is extensive background information for teachers, with classroom management hints and student activity sheets.
TN 8 sessions: 2 @ 15-30 miunutes, 3 @ 30-45 minutes, 3 @ 45-60 minutes
MT kit from Hubbard
OR in library

NO 1154
DE March 17, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. ENVIRONMENTAL HEALTH AND SAFETY. Northbrook, IL: Hubbard.
SE Health Activities Project (HAP)
TI ENVIRONMENTAL HEALTH AND SAFETY
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [33]
IL b&w photos and drawings
AL 4,5,6,7,8
DS accident prevention
; air
; air pollution
; air quality
; biology
; breathing
; contagious disease
; daily living skills
; depth perception
; disease
; disease control
; epidemic
; fitness
; health
; health activities
; health education
; human biology
; human body
; hygiene
; immunization
; injuries
; lungs
; perception
; peripheral vision
; pollution
; respiration
; safety
; school safety
; traffic safety
; vision
AN The ENVIRONMENTAL HEALTH AND SAFETY module contains five activity folios, entitled Fallout, Epidemic, Turn Around, Turning Response and

Age, and Testing Depth Perception. Students investigate the presence of pollutants in the air and conduct simulations to trace the spread of 'disease' (non-toxic flourescent paste) by direct and indirect contact. Tests of depth perception and experiments with turning responses offer applications to activities such as riding a bicycle or driving a car. Data collection and analysis are emphasized, and hypotheses encouraged. The module includes student data sheets and background information for teachers, as well as specific suggestions for classroom management. A kit accompanies the module.
TN 11 sessions: 1 @ 10-15 minutes, 5 @ 20-30 minutes, 5 @ 40-60 minutes
MT kit from Hubbard
OR in library

NO 1155
DE March 17, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. FLEXIBILITY AND STRENGTH. Northbrook, IL: Hubbard.
SE Health Activities Project (HAP)
TI FLEXIBILITY AND STRENGTH
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [31]
IL b&w photos and drawings
PR kit: $89.50
AL 4,5,6,7,8
DS biology
; daily living skills
; exercise
; fitness
; flexibility
; health
; health activities
; health education
; human biology
; human body
; hygiene
; mobility
; strength
AN FLEXIBILITY AND STRENGTH consists of five activity folios entitled Limber Up, Grip Strength, Up and Away, Splint Relay, and Stiff Joints. Students conduct experiments that test their range of movement and grip strength, and they assess the improvement effects of practice. They investigate the relationship between their heights and the distances they can jump vertically and horizontally. Wearing splints on various joints, they learn the effects of limited mobility. Students are encouraged to collect, analyze, and compare data, and to apply their findings to familiar situations. Student data sheets are included, as are complete classroom management instructions and background information. A kit accompanies the module.
TN 11 sessions: 5 @ 10 minutes, 3 @ 40-50 minutes, 3 @ 50-60 minutes
MT kit from Hubbard
OR in library

NO 1156
DE March 17, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), David Buller, et al., 1980. GROWTH TRENDS. Northbrook, IL: Hubbard.
SE Health Activities Project (HAP)
TI GROWTH TRENDS
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [30]
IL b&w photos and drawings
PR kit: $74.95
AL 4,5,6,7,8
DS biology
; change
; child development
; development
; fitness
; growth
; health
; health activities
; health education
; human biology
; human body
; human development
; hygiene
; maturity
; measurement
AN GROWTH TRENDS contains four activity folios, entitled Equals, Size and Age, The Way We Grow, and Maturity Perceptions. Students investigate body proportions by taking measurements, then analyze their data to discover growth trends among their classmates. They compare their data to measurements of typical newborn infants, to determine how proportions change with maturation. Discrepancies between physical capability and permission to perform certain tasks (such as driving a car) are examined and discussed. Data collection and analysis are encouraged, with emphasis on teamwork and applicability to students' lives. Background information for teachers and suggestions for classroom management are included. A kit accompanies the module.
TN 7 sessions: 1 @ 30 minutes, 4 @ 40-50 minutes, 2 @ 50-60 minutes
MT kit from Hubbard
OR in library

NO 1157
DE March 17, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. HEART FITNESS. Northbrook, IL: Hubbard.
SE Health Activities Project (Lawrence Hall of Science)
TI HEART FITNESS
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [36]
IL b&w photos and drawings
PR kit: $38.50
AL 4,5,6,7,8
DS biology
; daily living skills
; exercise
; fitness
; health
; health activities
; health education
; heart
; heartbeat
; heart rate
; human biology
; human body
; hygiene
; physical conditioning
; pulse
; pulse rate
; weight control
AN HEART FITNESS consists of five activity folios, entitled Exploring Heartbeats, Exploring Pulse, Pulse Recovery, Shape Up, and Extra Weight. The students locate their hearts and their pulse points, listening to each and comparing data collected in various positions and states of activity. They investigate the relationship between heartbeats and pulse, test their pulse recovery rate after exercise, then develop a simple training program to improve recovery rate. Activities conducted with and without weighted backpacks illustrate the effect of extra weight on pulse rate. The collection and comparison of data engage students in careful examination of their exercise habits. The module contains student data sheets, extensive background information for teachers, and classroom management suggestions. A kit accompanies the module.
TN 16 sessions: 6 @ 10-15 minutes, 2 @ 20-30 minutes, 2 @ 30-40 minutes, 5 @ 40-50 minutes, 1 @ 50-60 minutes

NO 1158
DE March 21, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. NUTRITION/DENTAL HEALTH. Northbrook, IL: Hubbard.
SE Health Activities Project (HAP)
TI NUTRITION/DENTAL HEALTH
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [46]
IL b&w photos and drawings
AL 4,5,6,7,8
DS biology
; cavities
; daily living skills
; dental health
; diet
; exercise
; fitness
; health
; health activities
; health education
; health risks
; human biology
; human body
; hygiene
; nutrition
; oral hygiene
; plaque
; snacks
; teeth
; tooth decay
; weight control
AN NUTRITION/DENTAL HEALTH consists of six activity folios entitled Jaws, Trouble Spots, Cavities, Slim Chance, Lunch Time, and Eating Awareness. Students make casts of their teeth and use them to investigate size, shape, and function. With the aid of a non-toxic dye, they locate tooth surfaces in their own mouths where plaque deposits can cause cavities, then test strategies for reducing plaque. Students investigate the nutritive value of foods, planning and scoring menus, and examining their snacking habits. A simulation game illustrates the ongoing conflict between tooth decay and oral hygiene, and a board game relates diet and exercise to healthy weight. The module emphasizes collection and analysis of data, and encourages extension of classroom activities to the home environment. There is

extensive background information for teachers, with student data sheets, and detailed suggestions for classroom management. A kit accompanies the module.
TN 12 sessions: 2 @ 20 minutes, 6 @ 30-45 minutes, 3 @ 45-60 minutes, 1 @ 60-90 minutes
MT kit from Hubbard
OR in library

NO 1159
DE March 21, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. PERSONAL HEALTH DECISIONS. Northbrook, IL: Hubbard.
SE Health Activities Project (HAP)
TI PERSONAL HEALTH DECISIONS
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [42]
IL b&w photos and drawings
PR kit: $63.50
AL 4,5,6,7,8
DS behavior modification
; biology
; daily living skills
; decision making
; habits
; health
; health activities
; health education
; health risks
; human biology
; human body
; hygiene
; peer pressure
; relaxation exercises
; safety
; smoking
; stress management
AN The PERSONAL HEALTH DECISIONS module contains five activity folios, entitled Change a Habit, Habits Anonymous, On the Spot, Risky Business, and Stress Management. Students investigate the impact of individual and social behaviors on health. They identify habits they would like to break, or beneficial habits they would like to develop, keeping records of each and engaging in behavior modification techniques to reinforce change. Group games demonstrate how peer pressure affects individual actions, and how risk-taking can affect personal health. Students learn the impact of stress, and develop strategies for conscious relaxation in stressful situations. Student sheets are included in the module to facilitate collection and analysis of data. There are also complete instructions for classroom management, and background information for teachers. A kit accompanies the module.
TN 17 sessions: 8 @ 5-10 minutes, 1 @ 15-20 minutes, 2 @ 30-40 minutes, 1 @ 40-50 minutes, 5 @ 50-60 minutes

NO 1160
DE March 21, 1988
SU biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), and Dave Buller, et al., 1980. SIGHT AND SOUND. Northbrook, IL: Hubbard.
SE Health Activities Project (HAP)
TI SIGHT AND SOUND
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [34]
IL b&w photos and drawings
PR kit: $44.95
AL 4,5,6,7,8
DS adaptation
; biology
; depth perception
; ears
; eyes
; field of vision
; health
; health activities
; health education
; hearing
; human biology
; human body
; lenses
; light
; perception
; peripheral vision
; pinhole viewer
; sight
; sound
; vision
AN SIGHT AND SOUND consists of six activity folios, entitled Mask Relay; Field of Vision; Animal Masks; Pinhole Viewer; Look, Listen, and Find; and Where Are You? Students conduct experiments and play games that define the field of vision and demonstrate its importance to daily life. Wearing masks of various types, students learn the effects of changed or reduced field of vision, and discover how, in the case of animals, it necessitates certain behavior. The students assemble pinhole viewers and use lenses to investigate how the amount of light and type of refraction affect images that reach the eye. Additional activities explore the use of visual cues for communication, and the advantage of having two ears. Student data sheets and challenge cards are included in the module, as are background information for teachers

and instructions for classroom management. A kit accompanies the module.
TN 12 sessions: 2 @ 20-30 minutes, 5 @ 30-40, 5 @ 40-60
MT kit from Hubbard
OR in library

NO 1161
DE March 21, 1988
SU Biology
; Health
TY Activity Packet
CI Health Activities Project (Lawrence Hall of Science), Dave Buller, et al., 1980. SKIN TEMPERATURE. Northbrook, IL: Hubbard.
SE Health Activities Project (HAP)
TI SKIN TEMPERATURE
AU Health Activities Project (Lawrence Hall of Science)
; Buller, David
; Carter, Lynne
; Gipsman, Sandra
; Jacobson, Mark
; Lee, Rhona
; Schneider, Livingston
AF Lawrence Hall of Science, University of California, Berkeley
PU Hubbard
LO PO Box 104, Northbrook, IL
DP 1980
PG [28]
IL b&w photos and drawings
PR kit: $25.00
AL 4,5,6,7,8
DS biology
; fitness
; health
; health activities
; health education
; heat
; heat loss
; human biology
; human body
; hygiene
; insulation
; measurement
; perspiration
; skin
; temperature
; thermometer
; thermoregulation
AN The SKIN TEMPERATURE module consists of four activity folios, entitled Map Your Temperature, Out in the Cold, The Great Heat Escape, and Heat Traps. Students make predictions about the skin temperature at various points on their bodies, then test their predictions by using strip thermometers to measure temperature at these sites. They conduct experiments to discover how long it takes skin temperature to recover from exposure to cold, and devise strategies for speeding recovery time. They also investigate heat loss by measuring temperature of the air around them, measure the effects of exercise on skin temperature, and test the insulation properties of different types of clothing fabric. The background information is very helpful for teachers, as are the classroom management suggestions and student data sheets. A kit accompanies the module.
TN 6 sessions: 1 @ 10-20, 1 @ 20-30, 2 @ 30-40, 2 @ 50-60
MT kit from Hubbard