This third grade environmental education guide is one of a series of guides, K-12, that were developed by teachers to help introduce environmental education into the total curriculum. The guides are supplementary in design; it is the teacher's decision when the concepts, objectives, activities, and resources may best be integrated into the existing classroom curriculum. This guide contains a series of episodes (mini-lessons), each having a number of suggested in- and out-of-class learning activities. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Although the same concepts are used throughout the K-12 program, emphasis is placed on different aspects of each concept at different grade levels. The third grade guide focuses on aspects such as food/clothing/shelter, family and roles, water quality, desert regions, and sound. Each of the 12 concepts is covered in one of the episodes contained in the guide. Further, each episode offers subject area integration, subject area activities, interdisciplinary activities, cognitive and affective behavioral objectives, and suggested references and resource materials useful to teachers and students. An appendix containing related games is included. (Author/TK)
GRADE THREE

GUIDE TO ENVIRONMENTAL EDUCATION

PROJECT I-C-E

BEST COPY AVAILABLE
PROJECT STAFF

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Kenneth Poppay
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Serving All Schools In Cooperative Educational Service Agencies 3-8-9

Wisconsin Area "B", Regional Project

Project No. 99-70-0135-4
The Wisconsin Department of Public Instruction
To a Grant Under Title III, E.S.A.
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Coordination, C.E.S.A. #8
Coordination, C.E.S.A. #3
Coordination, C.E.S.A. #9
In 1969, the First Environmental Quality Education Act was proposed in the United States Congress. At the time of the introduction of that legislation, I stated: "There is a dire need to improve the understanding by Americans of the ominous deterioration of the Nation's environment and the increasing threat of irreversible ecological catastrophe. We must all become stewards for the preservation of life on our resource-deficient planet."

In the three years since the Environmental Education Act was passed by the Congress, much has happened in the United States to reinforce the great need for effective environmental education for the Nation's young people. The intensive concern over adequate energy resources, the continuing degradation of our air and water, and the discussion over the economic costs of the war against pollution have all brought the question of the environmental quality of this nation to a concern not merely of aesthetics but of the survival of the human race.

The intense interest by the public in the quality of our lives...
PRIMARY TEACHERS!

Here's what you've been looking for!!

Lessons & Activities in all capacities to INTEGRATE With ALL subjects.

NO extra planning.
NO extra lessons.
Use daily, whenever, wherever, the opportunity arises.

Slant this year's teaching toward ECOLOGY!

Help your class become AWARE of their WORLD.

We will need their HELP in PRESERVING it!

Best copy available.

PREFACE
ACKNOWLEDGEMENT

The interest and dedicated effort of the following teachers from Wisconsin Area "B" has led to the development of the Project I-C-E Environmental Education K-12 series:

D. C. Aderhold, Bonduel
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James Anderson, Peshtigo
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Walter Anderson, Wausaukee
Angela Anthony, Gibraltar
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William Baggs, Shiocton
Anthony Balistreri, Howard-Suamico
Lowell Baltz, Weyauwega
David Bartz, Sturgeon Bay
Bonnie Beamer, Coleman
Robert Becker, Fox Valley Luth., Appleton
William Behring, Lourdes, Oshkosh
David Bell, Neenah
Marie Below, Clintonville
Lousene Benter, Gillett
Lillian Berges, Seymour
Laura Berken, Oconto Falls
Lillian Benter, Seymour
Ilene Beyer, Pulaski
David Biltz, Winneconne
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Carmella Bledsoe, Green Bay
Barbara Blond, Shawano
William Bodkin, Green Bay
Marilyn Blood, Shawano
Wally Bone, Kimberly
Willard Bone, Green Bay
Doris Bone, DePere
Lois Bohn, St. Norbert, De Pere
Robert Bormel, Sturgeon Bay
Joel Brown, Sturgeon Bay
Martin Brown, St. James Luth, Algoma
Merle Caw, St. Bernard, Green Bay
Evelyn Caw, Algoma
Bill Ciura, St. Joseph Luth., Green Bay
Don Ciura, Green Bay
Helen Collin, Pulaski
Jack Collins, Wausaukee
William Collins, Green Bay
Bill Collins, Green Bay
Nancy Collins, Green Bay
Merle Colburn, Algoma
Bill Colburn, Algoma
Bill Colburn, Algoma
Bob Church, Little Chute
Kathryn Cislo, Algoma
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Karen_Condon, Sturgeon Bay
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This guide contains a series of episodes (mini-lesson plans), each containing a number of suggested in and out of class learning activities. The episodes are built around 12 major environmental concepts that form a framework for each grade or subject area, as well as for the entire K-12 program. Further, each episode offers subject area integration, interdisciplinary activities, where applicable, both cognitive and affective behavioral objectives and suggested reference and resource materials useful to the teacher and students.

You decide when any concepts, objectives, activities, and resources can be adopted, and out of class learning activities.

You decide when any concepts, objectives, activities, and resources can be adopted, and out of class learning activities.

1. This guide is supplementary in design--it is not a complete course of study, nor is its arrangement sequential. You can teach environmentally within the context of your course of study or units by integrating the many ideas and activities suggested.

2. The suggested learning activities are departures from regular text or curriculum programs, while providing for skill development.

3. The episodes are built around a framework of major environmental concepts that form each grade or subject area, as well as for the entire K-12 program. Further, each episode offers subject area integration, interdisciplinary activities, where applicable, both cognitive and affective behavioral objectives and suggested reference and resource materials useful to the teacher and students.

4. All episodes can be adapted, modified, or expanded thereby providing great flexibility for any teaching situation. Further, each episode offers subject area integration, interdisciplinary activities, where applicable, both cognitive and affective behavioral objectives and suggested reference and resource materials useful to the teacher and students.

5. Inter-grade coordination or units by integrating the many ideas and activities suggested. Each classroom teacher from Northeastern Wisconsin has been at some topic or subject area has been at some topic or subject area articulation to avoid duplication and overlap is highly recommended for any school district seeking effective teaching and learning.

6. The total K-12 environmental education series is the product of 235 classroom teachers from Northeastern Wisconsin. They created, used, revised, and edited these guides over a period of four years. To this first step in the 1,000 mile journey of human survival, we invite you to take the second step--by using this guide and by adopting your own innovations along the way.
1. The sun is the basic source of energy on earth. Transformation of sun energy to other energy forms (often begun by plant photosynthesis) provides food, fuel and power for life systems and machines.

2. All living organisms interact among themselves and their environment, forming an intricate unit called an ecosystem. Each ecosystem, thus, each ecosphere, has a carrying capacity. Limits on the numbers of organisms living within their influence dictate what is essential for life. An adequate supply of clean water is essential to life. An adequate supply of clean air is essential for life.

3. Environmental factors are limiting on the numbers of organisms living within their influence. Each ecosystem has a carrying capacity. Further, each ecosphere, thus, each ecosystem, has a limiting influence on the numbers of organisms living within their influence. Each ecosystem, thus, each ecosphere, has a carrying capacity.

4. Each person must exercise stewardship of the earth for the benefit of mankind.

5. Short-term economic gains may produce long-term environmental losses. Therefore, man's values and attitudes toward his environment are cultural, economic, social, political and economic factors that determine man's values and attitudes toward his environment.

6. The distribution of natural resources and the interaction of physical environmental factors greatly affect the quality of life.

7. Man has the ability to manage, manipulate and change his environment.

8. All living organisms interact through food, fuel and power. For life systems and machines, energy is the basic source of energy on earth. Transit systems, often short-term forms of energy, such as electricity, provide energy for the operation of machinery and other energy forms.

9. Man has the ability to manage, manipulate and change his environment.

10. Environmental factors greatly affect the quality of life.

11. Individual acts, duplicated or compounded, produce significant environmental alterations over time.

12. Each person must exercise stewardship of the earth for the benefit of mankind.
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<td>83</td>
<td>Landforms - Landscape, Natural Regions</td>
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Environmental:

CONCEPT NO.
ORIENTATION
Sun Energy

Integrated with:
SUBJECT
Social Studies, Language Arts

TOPIC/UNIT
Food, Clothing, Shelter - Story Writing

BEHAVIORAL OBJECTIVES
STUDENT-CENTERED LEARNING ACTIVITIES
Cognitive:
Explain the importance of the sun to our plant world in areas of food, shelter, clothing, and energy from plants.
Explain what the earth would be like if there were no sun. Could the earth function without the sun?

AFFECTIVE:
Defend the need for the sun in our lives in a verbal discussion.
Support the statement "Without the sun's rays, there would be no life on earth." with illustrations using selected pictures.

Skills Used:
2. Skill of observing accurately.
3. Skill of participating in group work.
4. Discussing
5. Writing

In-Class:
I. Social Studies
A. Class develops a bulletin with pictures of food, clothing, shelter, and energy from plants.
B. Invite a farmer, lumberman, or other person related to the environment to speak with the children.

II. Language Arts
A. Have students bring in magazines from home.
B. Have students bring in pictures from magazines.

Outside or Community:
I. Social Studies
A. Class develops a bulletin with pictures of food, clothing, shelter, and energy from plants.

Support the statement "Without the sun's rays, there would be no life on earth." with illustrations using selected pictures.

Defend the need for the sun in our lives in a verbal discussion.

E.S.E. A. Title III - PROJECT I-C-E 59-70-0155-4
CONTINUED OR ADDED LEARNING ACTIVITIES

Publication:

Books:
- World Book Encyclopedia, Volume S
- Science in Your Life, Bk. 4, Schneider, pp. 428-443, 447.

AudioVisual:

Filmstrips:
- The World of Living Things, Set 5A
- The World of Living Things, Set 4A
- The World of Living Things, Set 3A
- The World of Living Things, Set 2A
- The World of Living Things, Set 1A
- The World of Living Things, Set 0A
- The World of Living Things, Set -A

Community:

Visit the nature center.

Audio-Visual: (Continued)

Publications (Continued)

Clothes from Head to Toe, Pursel, 1966.

Trends: Family gains an appreciation of the tree's ecological role. The reader soon finds what trees are for! The book's
- Our Tree, Herbert H. Wong, Addison-Wesley.
- Our Food, Our Life, Our Environment, Set 1.
- Sunlight & The Earth's Temperature, Set 1.
- The Seasons of the Year, Set 1.
- Our Food, Our Life, Our Environment, Set 1.
- The Food We Eat and What's In It.

Science in Your Life, Bk. 4, Schneider, pp. 428-443, 447.

### Environmental Concept III

#### Orientation
- Energy Use
- Integrated with: Science, Math, Music

#### Subject
- Science, Math, Music

#### Topic/Unit
- Plants

#### Behavioral Objectives

**Cognitive:**
- List three things necessary for plants to make their own food.
- Conduct an experiment that will allow the determination of the number of days that a plant can live without sunlight.

**Affective:**
- Willingly conduct an experiment that will support the plant's need for soil, water, and sunlight for making their own food, when challenged.

**Skills Used:**
- Observation
- Recording
- Identifying things necessary for plant growth
- Investigating
- Experimentation
- Measuring-inches to meters

### In-Class

1. **A.** Visit a greenhouse and see how many plants can live in a greenhouse.

2. **B.** Water and place one plant with paper and cover the soil. Water both plants for two weeks. Then compare them to see which plant looks as if it can make food.

3. **C.** Use floating plants to show how water and sunlight affect the growth of a plant.

### Outside or Community

1. **A.** Children will visit a vacant lot, park, or school forest to observe plants growing there. They will report and discuss conditions under which plant growth differs because of the amount of sunlight.

2. **B.** Visit a greenhouse to see how many plants can be served per square foot of sunlight. Then compare different greenhouse experiments under which conditions affect plant growth. Report a drainage system away from trees. Leave the greenhouse open for two weeks. Then observe plants growing in a vacant lot, park, or school forest to see if they will grow.

3. **C.** In small groups at the greenhouse, students will try to determine which plants need the most sunlight and how much sunlight is necessary. After three weeks, it will become evident which plants need the most sunlight and place the greenhouse back in the dark room. Cover one with paper and place the greenhouse in a glass of water. Observe into which part of a growing plant the water and minerals go first.

### Measurable Outcomes

- 1. Observation
- 2. Recording
- 3. Identifying things necessary for plant growth
- 4. Investigating
- 5. Experimentation
- 6. Measuring-inches to meters

- Children will visit a vacant lot, park, or school forest to observe plants growing there. They will report and discuss conditions under which plant growth differs because of the amount of sunlight.

- Invite florist to speak to class on effect of sunlight on plants in a greenhouse. He will tell class how many plants can be served per square foot of sunlight.

- Visit a greenhouse to see how many plants can live in a given area of sunlight. And sun for making their leaf plant's need for soil, water, sunlight, and sunlight when challenged.
SUGGESTED RESOURCES (continued)

Continued or added learning activities

Publications:
- Environmental Units: 120 NW
- Plants in the Classroom
- Plants Outside the Classroom
- Plant Puzzles
Available at ICE RMC or can be purchased at:

Audubon Aids: ICE RMC, 170 Broadway, New York, A11 by Herbert E. Busiek, Inc.
- A Park Pond
- A Park Yard

Audiovisual:
- Film: Living & Non-Living Things, Coronet
- Filmstrips: Plants That Provide Food
- Film: Sun: Friend or Foe?, BAVI
- Audio-Visual packets

Classroom (continued)

Math
- A. The class will find the answer to the following question: A plant without sunlight.

II. Math
- Math puzzle

Community:
- Greenhouse
- Florist
- Garden

Skills (continued)
- 7. Rhythms
- 8. Non-verbal expression
- 9. Sequential action

Continued or added learning activities

Environmental units: 120 NW.

Publications (continued)

Resources
- People and Their Environment, Teacher's Curriculum Guide ICE RMC, 1/0 BR
- To Conservation Education, ICE RMC, 1/0 BR
- People and Their Environment, Teacher's Curriculum Guide ICE RMC
- Living Things in Field and Classroom, 110 Sa, ICE RMC
- Study in Plant Succession, Char and Ernest McDaniel

PUBLICATIONS (continued)
- Once There Was a Tree... Plant Puzzles, D.C. 2006.
- Plants for Pots, D. X. Fenton
- The Tomato & Other Fruit Vegetables, Millicent E. Selsam
- Wildlife, Recreation, 14-27 - 12th St., National Wildlife Federation
- Purchased at ICE RMC or can be available at ICE RMC.

Continued or added learning activities

Skills (continued)
- 7. Physics

Suggested resources

Audiovisual packets
- Addition-Als: ICE RMC, 1/0 BR
- Planter Identification folder
- Plant Puzzles: The Classroom
- Plants Outside the Classroom
- Plants in the Classroom
<table>
<thead>
<tr>
<th>OUTSIDE ACTIVITIES (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. They will find out how the greenhouse supplies sunlight on cloudy days. How many hours per year?</td>
</tr>
<tr>
<td>E. Florist will demonstrate the effect of too little sunlight on plants.</td>
</tr>
<tr>
<td>III. Music</td>
</tr>
<tr>
<td>A. The teacher will play a selection for the students in rhythmic response to the selection.</td>
</tr>
<tr>
<td>B. After hearing the selection, the teacher will direct a discussion concerning movements inherent in plant growth.</td>
</tr>
<tr>
<td>C. How do flowers follow the sun? Which way do plants grow? (toward the sun)</td>
</tr>
<tr>
<td>D. Why do flowers follow the sun? Does plant growth change? How many hours of sunlight are required?</td>
</tr>
<tr>
<td>III. Music</td>
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<td>A. The teacher will play a selection for the children.</td>
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<tr>
<td>B. After hearing the selection, the children will dramatize the growth of plants.</td>
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<tr>
<td>C. They will find out how the greenhouse supplies sunlight on cloudy days. How many hours per year?</td>
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<tr>
<td>A. Perform for P.T.A.</td>
</tr>
<tr>
<td>B. Perform for service club.</td>
</tr>
<tr>
<td>C. Community: 1. Lion's Club 2. Women's Club</td>
</tr>
<tr>
<td>III. Audio Visual</td>
</tr>
<tr>
<td>A. Video tape and play back for students.</td>
</tr>
</tbody>
</table>

**SUGGESTED RESOURCES**

**CONTINUED OR ADDED LEARNING ACTIVITIES**

**CLASSROOM (continued)**

- Children will discover through experimentation with specific plants that some plants need more sunlight than others. Charting and comparing will follow. Children will read the back of seed packs to determine conditions for growth.

**III. Music**

- Little sunflowers on plants.

**OUTSIDE ACTIVITIES (continued)**

- They will find out how the greenhouse supplies sunlight on cloudy days. How many hours per year?
- Florist will demonstrate the effect of too little sunlight on plants.
- The teacher will play a selection for the students in rhythmic response to the selection.
- After hearing the selection, the teacher will direct a discussion concerning movements inherent in plant growth.
- How do flowers follow the sun? Which way do plants grow? (toward the sun)
- Why do flowers follow the sun? Does plant growth change? How many hours of sunlight are required? You will find out how the greenhouse supplies sunlight on cloudy days. How many hours per year? Florist will demonstrate the effect of too little sunlight on plants.
- Perform for P.T.A.
- Perform for service club.
- Community: 1. Lion's Club 2. Women's Club
CONCEPT NO. ORIENTATION

Sun Energy

I - Energy

TOPIC/UNIT

Drawing

STUDENT CENTERED LEARNING ACTIVITIES

Cognitive:

Illustrate the principle, "The whole is equal to the sum of its parts", using cutout sections of the sun.

Affective:

Accept the principle, "The whole is equal to the sum of its parts", by not challenging the statement when presented.

Skills Used:

1. Proportional enlargement (through use of a grid).
2. Drawing
   - Crayons
   - Oil pastels (water colors can be substituted).
3. Fitting pieces together in a puzzle.

In-Class:

A. Mural
1. Find or make a stylized detailed picture of the sun. An opaque enlargement may be needed.
2. Divide into numbered sections so each student will have a piece of the picture. Each portion of the picture is in direct proportion.
3. Each enlargement is cut and distributed.
4. Each student must enlarge his portion of the picture on a sheet of paper that is in direct proportion to his picture segment.
5. Each enlargement can be superimposed.

Outside or Community:

D. Oil pastels (water colors can be substituted).
2. Drawing (through use of a grid).
1. Proportional enlargement

A puzzle. Each piece can be superimposed.

The statement when presented.

I illustrate the principle, "The whole is equal to the sum of its parts", using cutout sections of the sun. The whole is equal to the sum of the parts, using the whole picture of the sun. Each student makes a copy of the picture of the sun, which is equal to the sum of the parts, using each student's enlarged piece.
Limit colors to warm colors--red, orange, pink and yellow. Result: large mosaic murals of the sun. A puzzle to resemble the first picture.

Publications:

Contemporary Classroom (continued)
Environmental:

CONCEPT NO. ORIENTATION

1 - Energy

Sun Energy

BEHAVIORAL OBJECTIVES

Cognitive:
Illustrate the effect of light on a subject by tracing shadows.

Affective:
Demonstrate awareness of the effect of lighting on a subject by moving an object to increase or decrease the intensity of light on the object.

Skills Used:
1. Working with large sheets of paper and charcoal.
2. Tracing.
3. Positive and negative space.
5. Awareness.

Integrated with:

SUBJECT TOPIC/UNIT

Art
Drawing

STUDENT-CENTERED LEARNING ACTIVITIES

In-Class:
A. Sun Shadows

Outside or Community:
1. Go outside and collect sun shadows by tracing the shadows of bike wheels, trees, students, etc. on large sheets of newsprint.

2. After shadows have been traced, students can use the space divisions for a design which will utilize the object's form and spaces between the object's shadows.

3. Use Sketch, crayons, markers, colored inks, etc. to limit colors to sun colors.

Outside or Community:

Sun Energy

I - Energy

Concept No.

Environmental:

E. S. E. A. Title III - PROJECT 1-C-E 69-70-0136-4
<table>
<thead>
<tr>
<th>Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Unit, &quot;Shadows&quot; published by National Wildlife Federation, ICE RMC, 120 NW AudioVisual Community.</td>
</tr>
<tr>
<td>Audio-Visual:</td>
</tr>
<tr>
<td>Publications:</td>
</tr>
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</table>
(continued)

For the art project:
Teacher will collect and share materials.
C. Sun Machine - Box

Outside or Community:
A. Discussion held about the sun. What words would you
use to describe the sun? (sample guesses: growth, weather, light, day

B. Teacher will jot down on the chalkboard key points of the discussion
1. What feelings do the sun give you?
2. What does the sun do for you?
3. What does the sun do for others?
4. What characteristics of the sun are important to you?
2. If time is limited, this may be done as a two-dimensional project.

CLASSROOM (Continued)

Publications:

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Audio-Visual:

- "Our Mr. Sun", Bell Telephone

Community:

- "Paper to Amaze", M. Seehafer, Instructor, 81:73 April '72.
- "Creative Use of Scrap Materials", B. Stuffins, School Arts, 70:11, March '71.
- "Instructer, 81:73 April '72.

Invent a Machine", M.A. Burke, "Arts & Activities", P. 29,'
Environmental Concept No. Orientation

Ecosystem

Integrated with:
SUBJECT
Social Studies

TOPIC/UNIT
Interdependence of Nature - Food Chains

BEHAVIORAL OBJECTIVES

STUDENT-CENTRED LEARNING ACTIVITIES

1. Chart making.
2. Research skill.
3. Organizing and interpreting.
4. Observing accurately.
5. Participating in group work.
6. Drawing.

Cognitive:

A. After having studied several communities in social studies, the children will choose one of the following - clothes, shelter and needs there. For each community, they will draw charts showing clothes, shelter and needs there. In the column next to this, they will choose one or more items from what was seen. They will write their experience about what they saw.

A. Visit a local supermarket.

 Subjects

Social Studies

Integrated with:

2. Ecosystem

Skills Used:

A. Dependent upon each other for food, shelter and needs.

A. Dependent on other people and nature.

A. Dependent on nature.

A. Dependent on other people and nature.

BEHAVIORAL OBJECTIVES

Cognitive:

A. Explain why we depend on other people and nature.

A. Describe a food chain using a diagram beginning with the sunlight and ending with the consumer.

A. Dependent on each other for food.

A. Dependent on other people and nature.

A. Dependent on nature.

A. Dependent on other people and nature.

A. Dependent on nature.

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Publications:
- The Forest and Sea, Bates, 1960
- Seeds Are Wonderful, Melmont, 1960
- How A Seed Grows, Crowell
- True Book of Plants We Know, Niner
- Pets From the Pond, Buck
- TJF-TEFough the Lake, Selson
- Poem, Backyard Zoo

AudioVisual:
- Finding How Things Change, Society for Visual Education
- Animals That Help Us, Filmstrip
- The World of Living Things, Society for Visual Education
- Finding How Things Change, Filmstrip

Community:
- Field trip to school forest.
- Visit a pond or lake. Ask children to see how many plants and animals they can find living in or around the water.

Classroom (continued):
B. Teacher uses Audubon food chains and other graphics to introduce food chain idea.
C. After studying the food habits of animals who live in the sea or some other habitats, students will be able to make a diagram of the food chain which exists among plants and animals who live in the sea, forest or desert.

Audio-Visual:
- Poem, Backyard Zoo
- See Through the Lake, Japan
- Press from the Pond, Buck
- The Book of Plants We Know, 1960
- How A Seed Grows, Crowell
- Seeds Are Wonderful, Melmont
- The Forest and Sea, Bates, 1960
<table>
<thead>
<tr>
<th>Behavioral Objectives</th>
<th>Student-Centered Learning Activities</th>
</tr>
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<tbody>
<tr>
<td><strong>Cognitive:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Demonstrate a family living in harmony/out of harmony through the use of role-play.</td>
<td></td>
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<tr>
<td>2. What things help a family live together well?</td>
<td></td>
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<tr>
<td>3. What causes disagreement in families?</td>
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<tr>
<td><strong>Affective:</strong></td>
<td></td>
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<td>1. Discuss the responsibilities of family members, e.g., father, mother, sister, brother, grandmother, etc.</td>
<td></td>
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<tr>
<td>2. Play a SRA record or family story.</td>
<td></td>
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<tr>
<td><strong>Skills Used:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Create an idea.</td>
<td></td>
</tr>
<tr>
<td>2. Work in a group.</td>
<td></td>
</tr>
<tr>
<td>3. Participate in the playlet.</td>
<td></td>
</tr>
</tbody>
</table>

**In-Class:**

- Bring in a mother or father willing to discuss the responsibilities of each family member.
- Divide class into groups. Each group will write a playlet showing:
  1. How the family members work together happily.
  2. What happens when family members work together.

**Outside or Community:**

- Bring in a mother or father willing to discuss the responsibilities of each family member.
- Play SRA record or family story.
- List and draw members of the family living together - mother, father, brother, sister, grandmother, etc.
- Discussion of family living:
  1. What causes disagreement in families?
  2. What things help a family live together well?
- Divide class into groups. Each group will write a playlet showing:
  1. How the family members work together happily.
  2. What happens when disagreements arise.

**Roles & Subjects Integrated with:**

- Environmental Science
- Language Arts
- Social Studies
- Family & Roles
SUGGESTED RESOURCES

CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:

Tony's Hardwork Day
There's Nothing To Do So Let Me Help You
The Motherless Bug, Nancy Rose
There's Nothing To Do So Let Me Help You

Audio-Visual:

Filmstrips pertaining to family
Happy Helpers, BAVI

SRA - Social Studies
Sharing and Living
CONCEPT NO. 2 - Ecosystem ORIENTATION Life Cycles

Integrated with:

SUBJECT Mathematics

TOPIC/UNIT Multiplication & Pond Life

BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

Cognitive:
- Calculate the increase or decrease of population within an ecosystem, given appropriate data.

Affective:
- Propose a way to preserve an ecosystem.

Skills Used:
1. Digit multiplication.
2. Addition.
3. Subtraction.
4. Interpretation.

In-Class:
- The student is given an ecosystem to work with.
  - Give a detailed list and numbers of items in the ecosystem. In a pond:
    - Cattails: 10
    - Crayfish: 32
    - Bullheads: 24
    - Frogs: 16
    - Algae: 1,750,652
    - Water bugs: 127
- Create problems which indicate either multiplication of the plant and animal population or decrease of the population.
  - On a warm day the algae multiplied and 2,220,443 new algae were made. How many algae are there now? What will this do to the pond?
  - Twelve frogs laid eggs. Of all the eggs laid, seven of all the eggs hatched and four frogs died. How many frogs do you have now? What will this do to the pond?
  - Fertilizers in the pond make the algae grow. Algae grow at a rate of 7,220.443 new algae per day. On a warm day the algae population increased. How many algae are there now? What will this do to the pond?

Outside or Community:
- Have a DNR representative speak on the establishment of a pond.
- Visit a pond in the area. Do actual counting of members in the pond.

Note - Numbers used in this lesson can be changed to fit the math skills of your students.
SUGGESTED RESOURCES
CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:
- Ecology - Fresh Waters and Man, ICE RMC, SCIS, Organisms, ICE RMC, 100 Ca
- Environments, ICE RMC, 110 La
- Life Cycles, ICE RMC, 110 Bu
- Audubon Aids, Life in a Pond and Symbiosis, ICE RMC, 170 Na No. 7

AudioVisual:
- Films:
  - Nature's Half Acre, ICE RMC, Film #21
  - Life In a Pond, BAVI
  - Life In an Aquarium, BAVI
  - Eco-Lab, ICE RMC, KT 21

Community:
- DNR representative

CLASSROOM (Continued)

3. Discuss interdependence of an ecosystem.
   a. One member drops out; what happens?
   b. Continue passing until the web develops.

4. Contain the status until the web develops.
   a. One member, the fish eats frog; etc. Then start the yarn at
   b. Continue passing each animal identification card.
   c. Pass paper. You will need yarn.
   d. Put the names of members of the ecosystem onto
   e. Play web game

B. Play web game
   a. Does this go to the pond?
   b. Does this go to the pond?
   c. The farmer sprayed his field with DDT. 96% of
   d. The farmer sprayed his field with DDT. 96% of
   e. The farmer sprayed his field with DDT. 96% of
   f. The farmer sprayed his field with DDT. 96% of

CONTINUED OR ADDED LEARNING ACTIVITIES

Audio-Visual:
- Films:
  - Nature's Half Acre, ICE RMC, Film #21
  - Life In a Pond, BAVI
  - Life In an Aquarium, BAVI
  - Eco-Lab, ICE RMC, KT 21

Community:
- DNR representative

Nature's Half Acre, ICE RMC,

Audio-Visual:
- Films:
  - Nature's Half Acre, ICE RMC, Film #21
  - Life In a Pond, BAVI
  - Life In an Aquarium, BAVI
  - Eco-Lab, ICE RMC, KT 21

Community:
- DNR representative

Nature's Half Acre, ICE RMC,
### Behavioral Objectives

**Cognitive:**
- Identify pictures of five wild animals common to our area, and their primary food and native habitat.
- Describe two main differences between the wild and domestic.
- Describe why wild animals, such as the animal’s habits and characteristics, have different habitats than the domestic.

**Affective:**
- Indicate awareness of individual differences in animals’ habits and habitats by making statements such as: “The animal’s habits are different than that animal’s.”

**Skills Used:**
- Write a report of a favorite animal.
- Collect pictures of animals in their natural habitats.
- Record number of animals & birds seen.
- Locomotor skills in bending and squatting positions.

### In-Class

#### Language Arts
- **I. Language Arts - Motivation**
  - A. Visit a museum or zoo
  - B. Collect a study of a few insects, spiders, etc. Keep special materials, such as the Tall Grass Zoo!

#### Science
- **A. Language Arts - Motivation**
  - A. Visit a museum or zoo
  - B. Collect a study of a few insects, spiders, etc. Keep special materials, such as the Tall Grass Zoo!

### Outside of Community

#### Language Arts
- **I. Language Arts - Motivation**
  - A. Visit a museum or zoo
  - B. Collect a study of a few insects, spiders, etc. Keep special materials, such as the Tall Grass Zoo!

#### Science
- **A. Language Arts - Motivation**
  - A. Visit a museum or zoo
  - B. Collect a study of a few insects, spiders, etc. Keep special materials, such as the Tall Grass Zoo!

### Integrated with:
- Language Arts, Science, Physical Ed.

### Integrated with:
- Language Arts, Science, Physical Ed.
Continued:

SUGGESTED RESOURCES

CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:

- Audubon Aids, Animals & How They Live and Audubon Mammal Study, 170 Na, ICE RMC
- Curriculum for Elementary Physical Education, Mel Nicks
- Childcraft, encyclopedia, World Book Co. (Vol. 4)
- Familiar Animals of America, Will Barker, 1956

AudioVisual:

- Filmstrips:
  - Vanishing Prairie, Walt Disney
  - The Living Desert, EBF
  - Mammals of the Tropical Forests, EBF
  - Marine-Animals of the Northland, EBF
- Films:
  - We Get Food From Plants And Animals, McGraw-Hill
  - Common Animals of the Woods, EBF

Community:

- Museum
- Zoo
- Wildlife sanctuary
- Farm

PUBLICATIONS (Continued)

- Concepts in Science, Book 3, Harcourt, Brace & World
- The Last Free Bird, A. Harris Stone
- Let Them Live, Dorothy P. Lathrop
- Wildlife in Danger, Roy Pinney
- Children of the Ark: The Rescue of the World's Vanishing Wildlife, Robert Gray
- "Spiders and Silk", Audubon Aids, ICE RMC, 170 Na

CLASSROOM (Continued)

- Another poem, "Hurt No Living Thing", on p. 196
- Look up and write reports on birds from a special environment, e.g., the desert, the sea, the woods, the jungle. Give reports or make a large wall chart.
- A poem, "Hurt No Living Thing", on p. 196
- Another poem, "Small kidneys..."

(Continued)
### Classroom (continued)

1. **a cricket:**
   - Walk forward and backward, chirping like a cricket.
   - The outside of your ankles with your hands.
   - Put your arms between your knees and grasp.
   - Keep your arms between your knees.
   - Sag and spread your knees.

2. **a crab:**
   - Touch your hands forward.
   - Slowly bring your feet, up as close as you can to your hands.
   - Rest on your hands and feet, in front of you.
   - Bend over until your hands touch the floor.

3. **An insect:**
   - Direct them to try and move like:
     1. An inchworm:
        - Bend over until your hands touch the floor.
        - Rest on your hands and feet.
        - Slowly bring your feet, up as close as you can to your hands.
        - Keep your arms between your knees and grasp.

   2. **a crab:**
      - Squat down and reach back, putting both hands on the floor without sitting down.

   3. **a cricket:**
      - Walk forward and backward, chirping like a cricket.

### Physical Education (in gym or outside)

1. **I. An insect:**
   - Direct them to try and move like:
     1. An inchworm:
        - Bend over until your hands touch the floor.
        - Rest on your hands and feet.
        - Slowly bring your feet, up as close as you can to your hands.
        - Keep your arms between your knees and grasp.

   2. **a crab:**
      - Squat down and reach back, putting both hands on the floor without sitting down.

   3. **a cricket:**
      - Walk forward and backward, chirping like a cricket.

### Publications

- Make a bulletin board of these food chains and discuss with children.
- Sun -- Grass -- Cows -- Cheese -- Child
- Sun -- Plants -- Butterflies -- Chicken -- Fox
- Sun -- Grass -- Cows -- Children eating hamburgers
- Sun -- Water plants -- Ducks
- Sun -- Grass -- Rodents -- Eagles

### Audio-Visual

- Ranger Rick magazines are excellent for articles about such animals.

### Community

- Record books made by class for one week.
- Report on live animals seen on TV.
A frog:
- Squat down with your hands placed on the floor slightly in front of your feet.
- Jump forward a few feet lighting on your hands and feet at the same time.

C. Relay races using the above animal movements can be used.
CONCEPT NO.  ORIENTATION: Colors of Nature

Integrated with:

SUBJECT: Art

TOPIC/UNIT: Aesthetics - Color Theory

BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

Cognitive:

1. Compare an ecosystem to a painting in terms of the materials needed to have a completed idea.

A. Discussion of art media.

- Good chisel works.
- Stable, dependable, and underpracticed instruction.
- Student a more effective oil and tempera medium, there's a good medium.
- Effective oil and tempera mixing with other media, not well combined.

This lesson should be used.

Outside or Community:

A. Visit a paint factory and see how house paint or hardware store to demonstrate the concept of an ecosystem.

Skills Used:

1. Mixing of paint.
2. Proper care of brush (cleaning, storage, and use).
3. Blending colors to achieve new ones.

Affective:

1. Agree with the statement "All members of an ecosystem depend upon one another" with statements that support it.

2. Disagree with the statement "All members of an ecosystem depend upon one another" with statements that support this view.

Skills Used:

1. Mixing of paint.
2. Proper care of brush (cleaning, storage, and use).
3. Blending colors to achieve new ones.

In-Class:

This lesson should be used after the students understand how an ecosystem or food chain works.

A. Discussion of art media.

- Good chisel works.
- Stable, dependable, and underpracticed instruction.
- Student a more effective oil and tempera medium, there's a good medium.
- Effective oil and tempera mixing with other media, not well combined.

This lesson should be used.

Skills Used:

1. Mixing of paint.
2. Proper care of brush (cleaning, storage, and use).
3. Blending colors to achieve new ones.
4. Creative vocabulary skills.

A. Visit a paint factory and see how house paint or hardware store to demonstrate the concept of an ecosystem.

Examples:

- Tempera is useless without adding water to it.
- A paint without a surface is useless.
- Water is useless as a paint without a paint.

Ecosystem means by the term means of an ecosystem depends upon one another, with members of an ecosystem depend upon one another. Therefore, effective oil and tempera mixing with other media, not well combined.

This lesson should be used.

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Examples:

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3. Blending colors to achieve new ones.
4. Creative vocabulary skills.

A. Visit a paint factory and see how house paint or hardware store to demonstrate the concept of an ecosystem.
SUGGESTED RESOURCES

CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:
- "Drawing With Mixed Media", M.B. Bowman, School Arts, 71:14-15 N 71
- "Color Combinations Made Exciting", X-X. Kite, Arts & Activities, p. 24-26, FT=
- "Mixed Media Collage", J. Comins, School Arts, 71:10-11 N '71

Audio-Visual:

CLASSROOM (Continued)

<table>
<thead>
<tr>
<th>CLASSROOM (Continued)</th>
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<td>CONTINUOUS OR ADDED LEARNING ACTIVITIES</td>
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<td>SU GGESTED RESOURCES</td>
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</table>

- C. Children can create their own colors and names for colors.
- B. Collect many paint charts from local hardware or paint stores. Observe colors blended to make new colors.
- A. Color combinations can be represented by variation of color, thickness of paint, type of applicator, etc.
- Rabbit nose pink.
- Peanut butter brown.
- Grape jelly purple.
- Swiss cheese yellow.

Audio-Visual:

Community:
Environmental: CONCEPT NO. ORIENTATION

Animal Growth

Carrying Capacity

Integrated with: Science, Physical Education

BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

Cognitive:

Identify the food supply when given a list of five animals.

List the three environmental factors necessary for an animal's survival.

List three environmental factors that limit or regulate the carrying capacity of a specified environment.

Affective:

Defends his position as a conservation-minded person; as an exterminator.

Indicates an awareness of factors favorable or detrimental to plant and animal life by freely responding to the question, "What things in your neighborhood are being done that will harm or help life?"

Skills Used:

1. Evaluate why some animals become extinct because of environmental factors or man-made factors.


3. Environmental factors or elements necessary for the carrying capacity of a forest that limit or regulate last three environmental factors.

4. Identifies the food supply when given a list of five animals.
3. Modify game by creating an imbalance in
   group of animals. Each chaser calls name of another
   player who is then eliminated. THIS
   becomes another animal. The new
   chaser is the animal that the original chaser
   tries to tag them. Any player cannot
eat
   opposite end of gym or playground. Chaser
   calls name of any animal he chooses.
   Chaser calls name of any animal he chooses.
   Names: fox, bear, tiger, moose.
   I. Each child chooses an animal, dramatize how
   you make home, get food, and means of survival.

   CLASSROOM (continued)

   D. Each child chooses an animal, dramatize how
   the probable effect of limiting one of the
   environmental factors on an environment.
   (continued)

   COGNITIVE (continued)

   1972 Diversey Parkway, Chicago, III. 60614
   National Wildlife Federation, Chicago, Ill., 1972, ICE MKC, KI 9
   General Science Film Series, 1974, ICE RMC, 170 Na
   Adaptations in Animals, Society for Visual Education, Inc.
   Adaptations in Animals, General Science Film Series
   National Wildlife Federation, ICE RMC, 170 Na
   ENVIRONMENTAL QUALITY INDEX - AMERICA IS IN TROUBLE,
<table>
<thead>
<tr>
<th>Cognitive:</th>
<th>Behavioral Objectives</th>
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</thead>
<tbody>
<tr>
<td>A. Motivation. Show pic.</td>
<td>A. Visit a pond area to see if a pond area has life.</td>
</tr>
<tr>
<td>B. Visit a museum to observe various habitats.</td>
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</tr>
<tr>
<td>C. Use ICE field activity guide &quot;Who Was Here.&quot;</td>
<td>C. Use ICE field activity guide &quot;Who Was Here.&quot;</td>
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</tbody>
</table>

**Habitats**

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<th>Topic/Unit</th>
<th>Resources &amp; Communities</th>
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<tbody>
<tr>
<td>Living Things, Animal &amp; Plant</td>
<td>Resources &amp; Communities</td>
</tr>
</tbody>
</table>

**Skills Used:**
- 1. Research skill.
- 2. Communication and reference skills.
- 3. Skill of participating in group work.
- 4. Critical thinking.

**Subject:**

- Social Studies

**Integrated with:**

- Environmental

**Concept No:**

- 3. Concept No.

**Orientation:**

- 3. Orientation

**Skills:**

- 1. Research skills
- 2. Communication and reference skills
- 3. Skill of participating in group work
- 4. Critical thinking
SUGGESTED RESOURCES
CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:
- Audubon Aids, "Ecology" and "Life in the Pond", ICE RMC, 170
- Poem, "Night", William Blake
- Strange Companions in Nature, Olive L.
- Follow the Brook, Lathrop
- Swamp Spring, Carrick
- Minnesota Math and Science Teaching Project, 1967, ICE RMC, 110
- Animal Tracks, booklet with pictures, DNR, Madison

AudioVisual:
- Kit: Recycling Resources, ICE RMC, PS 66
- Filmstrips:
  - Communities of Living Things, McGraw-Hill, ICE RMC, FS St6
  - Animal World Series, McGraw-Hill, ICE RMC, FS St5

Community:
- Florist
- Farmer
- DNR resource person

CLASSROOM (Continued)

B. Children will choose a plant or animal and will research their habits and habitats. Groups of two or three can be formed to do this research. Each group will research that plant or animal. Children will gather and record specific information and will report their findings to the class. Research the following information and record on the following worksheet:

Worksheet
Find this information:

1. How does the member get its food?
2. What kind of food does it eat?
3. Where does the plant stay in one community or move to?
4. How does the member feed its food?
5. Why and when does it move?
6. How much does the animal weigh? Length? Height?
7. Color?
8. How many does the animal produce any enemies?
9. Does this member have any enemies?
10. For what?
11. Where does the animal find shelter?
12. Tell some interesting things about this animal.

DNR Resource Person
Farmer
Florist

Annie Tracks, booklet with picture.

Teaching Project, 1969, ICE RMC.

C. Man (hunting, pollution, fires).

4. In what ways do members of a forest community depend upon one another?

A. Children will choose a plant or animal and will research their habits and habitats. Groups of two or three can be formed to do this research. Each group will research that plant or animal. Children will gather and record specific information and will report their findings to the class. Research the following information and record on the following worksheet:

Worksheet
Find this information:

1. How does the member get its food?
2. What kind of food does it eat?
3. Does the animal stay in one community or move to others?
4. Why and when does it move?
5. Does this member have any enemies?
6. How much does the animal weigh? Length? Height?
7. Color?
8. How many does the animal produce any enemies?
9. Does this member have any enemies?
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11. Where does the animal find shelter?
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Environmental Concept No.: Carrying Capacity
Overpopulation

Integrated with:

Subject: Art

Behavioral Objectives:
Cognitive:
1. Illustrate the definition of a crowd by spattering paint and circling dots on paper.
2. Use construction paper figures to overlap over-population, such as "too many" other terms such as "too crowded," rather than population by using the term "over-population by using the term." Demonstrate awareness of over-population.
3. Go one step further and create a specific crowd.
4. Awareness of Overlapping
5. Cognitive:
   - Composition of a crowd
   - Understanding dynamics of a crowd
   - Color, color, etc.
   - Understanding dynamics of a crowd

Affective:
1. Splash paint on a sheet of paper.
2. Draw a person's head for each dot of paint. If splatters or dots are relatively close together, a crowd is created.
3. Go one step further and create a specific crowd—circus, parade, ballgame, etc.
4. Use construction paper figures to overlap over the crowd to create a composition.
5. Illustrate a specific crowd which you would be a member of.

Skills Used:
1. Splash painting
2. Drawing
3. Perspective: Overlapping
4. Awareness

In-Class:
A. Splash Paint
   1. Splash some paint on a sheet of paper.
   2. Draw a person's head for each dot of paint. If splatters or dots are relatively close together, a crowd is created.
   3. Go one step further and create a specific crowd—circus, parade, ballgame, race track, etc.
   4. Use construction paper figures to overlap over the crowd to create a composition.
   5. Illustrate a specific crowd which you would be a member of.

Outside or Community:
A. Children could view a number of group activities on the playground, in an assembly, in a store, church, etc., to visually understand the dynamics of a crowd.
B. Collect pictures of crowds for reference.

STUDENT-CENTERED LEARNING ACTIVITIES:
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A. Splash Paint
   1. Splash some paint on a sheet of paper.
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ENVIRONMENTAL ORIENTATION:
3 - Carrying Capacity
Concept No.:
<table>
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<tr>
<th>Community</th>
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<tbody>
<tr>
<td>ICE RMC, R &amp; 38</td>
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<tr>
<td>M.D. Explosion, posters, series, the Problems of Over-population, the Effects of Over-population, poster series, the Effects of Over-population.</td>
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<tr>
<td>Film # 220</td>
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<tr>
<td>A World Is Born, ICE RMC</td>
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<td>Publications, 63:16-18, July</td>
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<tr>
<td>B. Wasserman, &quot;Art and Technology, Non-Brush, when Paint Is Free&quot;</td>
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<tr>
<td>McGraw-Hill Study prints, &quot;Films Is My Crowd,&quot; S. B. Art, April 72, p. 37</td>
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<td>to overcome deficiencies, school</td>
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<th>Audio-Visual</th>
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<td>Activities, 65:23-3, April 69</td>
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<tr>
<td>&quot;Painting Techniques, B. When Paint Is Free! Non-Brush&quot;</td>
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<th>Continued or Added Learning Activities</th>
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<tr>
<td>&quot;Aesthetic Education for What?&quot;</td>
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<table>
<thead>
<tr>
<th>Suggested Resources</th>
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</thead>
<tbody>
<tr>
<td>&quot;What Is My Crowd?&quot;</td>
</tr>
</tbody>
</table>

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CONCEPT

Adequate Water Supply

Integrated with:

TOPIC/UNIT

Language Arts, Physical Education

Describing Word (Adjective) Water

BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

Cognitive:

1. Language Arts

A. Language Arts

B. Language Arts, Art, Drama

2. Language Arts

A. Language Arts

B. Language Arts, Art, Drama

A. Sentence writing

B. Choose and write descriptive words

1. Sentence writing

2. Spell

A. Teacher will put the word "water" on the board.

1. Students will list any words which describe water.

2. These words will then be divided into two groups.

3. Sentences can be written using any of the words from the above list.

4. Children will choose five or more words to learn to spell.

5. Thinking of these words, children will discuss the need for all of us to have quality water.

6. Repeat in play

2. Runners and tagging

3. Choose descriptive words

4. Spell

5. Sentence writing

Skills Used:

1. Sentence writing

2. Spelling

3. Choosing descriptive words

4. Running and tagging

5. Fairness in play

6. Dodging

Skills Used:

1. Possible correlation of water with classroom teacher's schedule

2. Possible correlation of water with classroom teacher's schedule

3. Visit to a polluted stream

4. Visit to a polluted stream

5. Visit to a polluted stream

6. Visit to a polluted stream

A. Take water samples.

B. Let water settle and examine sediment with hand lens and microscope.

C. Children should then list four things that pollute a stream of water.

D. Visit sanitation department to learn about water treatment.

E. Visit sanitation department to learn about water treatment.

F. Visit sanitation department to learn about water treatment.

G. Visit sanitation department to learn about water treatment.

H. Visit sanitation department to learn about water treatment.

I. Visit sanitation department to learn about water treatment.

J. Visit sanitation department to learn about water treatment.

K. Visit sanitation department to learn about water treatment.

L. Visit sanitation department to learn about water treatment.

M. Visit sanitation department to learn about water treatment.

N. Visit sanitation department to learn about water treatment.

O. Visit sanitation department to learn about water treatment.

P. Visit sanitation department to learn about water treatment.

Q. Visit sanitation department to learn about water treatment.

R. Visit sanitation department to learn about water treatment.

S. Visit sanitation department to learn about water treatment.

T. Visit sanitation department to learn about water treatment.

U. Visit sanitation department to learn about water treatment.

V. Visit sanitation department to learn about water treatment.

W. Visit sanitation department to learn about water treatment.

X. Visit sanitation department to learn about water treatment.

Y. Visit sanitation department to learn about water treatment.

Z. Visit sanitation department to learn about water treatment.

Environmental: 4 - Water
Publications:
- Audubon Aids, "Conservation"
- ICE RMC, 170 N
- Environmental Kit, Wisconsin Department of Natural Resources, ICE RMC, 100 Wi
- The Clean Brook, Margaret
- Clean Streets, Clean Water, Clean Air, Cynthia Chapin
- "TEWAdventures of Walter Waterdrnp", U.S. Environmental Protection Agency, Region VII, Kansas City, MO 64106 (free)

Audiovisual:
- (Continued)
- Films:
  - Your Friend the Water - Clean and Dirty Water, BAVI
  - Water, Water Everywhere, BAVI

Classroom (Continued)

I. Divide the play area by two goals. Divide the group.
A. Uncle Sam Game

II. Physical Education Game

III. Classroom Game

Audio-Visual:
- Kansas City, MO 64106, (free)
- Protecion Agency, Region VII
- "The Adventures of Walter Waterman"

The purpose of this game is to build vocabulary.

Water treatment personnel man the river or stream area.

Community:
2. Suggested list of polluters: paper, cans, cars, trucks, planes, factories, homes.

new "It" is chosen, all those caught return to game.
<table>
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<tbody>
<tr>
<td>Water Supply and Consumption</td>
<td>4 - Water</td>
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</tbody>
</table>

**Behavioral Objectives**

**Subject:** Science, Math

### Fluids

#### Cognitive

- Define the water cycle.
- Identify a diagram or illustration of the water cycle and its major parts.
- List three ways which can be used to conserve water in the home.

#### Affective

- Freely agree with the statement, "Water needs to be conserved for the future."
- Propose a way the individual student could conserve water for the future.

**Skills Used:**
1. List things that use water.
2. Develop a definition of water pollution.
3. Compare kinds of water and list things that contaminate it.
5. Discussion
6. Charting

### In-Class

**Science**

- Conduct an experiment showing what happens when you wash a greasy or dirty cloth with soap and water, with soap and detergent, with detergent and water, and with water only.
- Collect pictures of things and various ways we use water in the home.
- Make a bulletin board of the water cycle (clouds, earth, lake, cap water, deep well) and compare samples of water we use (drinking and non-drinking) and why it is necessary to conserve water.

**Math**

- The student will count and record the number of times he uses water in a threeday period by estimating it in gallons.

### Outside or Community

- Visit water department and sewage plant, check age requirements.
- Have an engineer from a local industry, e.g., paper mill, tell how his company uses and reuses water.
- Have a local industry, e.g., paper mill, talk and demonstrate conservation department.
- Have representatives of TVA, city council, conservation department, etc.

**Environmental:**

1. Last things that use water.
2. Develop a definition of water pollution.
3. Compare kinds of water and consumption.

**Orientation:**

4 - Water
4. Why is water important to us?

3. What do you think would cause shortages of the
   amount of drinkable water in our country?

2. If this would happen, what would you do to
   conserve water each day? (Teacher will record
   the child’s response on the chalkboard each new idea.)

1. What were some of the feelings you had because
   of the small amount of water you were able to
   use?

Sample questions for discussion:

- Expectations and values of the two-day experiment;
- Reactions and feelings of the class;
- After discussion how water could be saved, have
  students make a chart showing where water comes from,
  and discuss the amount of water used
  at home, water used in washing dishes and cleaning
  utensils, etc.

Summary of proposed activities for the classroom:

- Conservation of water.
- Students will bring a one-quart container to class.
- This quart will be used for all activities.
- Conservation of water.
- Each student will keep a journal of the amount of water used
  daily and weekly by an individual, and compare the amount of water used
  with the amount used before the activity.

- After discussing how water could be saved, have
  students make a chart showing where water comes from,
  and discuss the amount of water used
  at home, water used in washing dishes and cleaning
  utensils, etc.

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Sample questions for discussion:

1. What were some of the feelings you had because
   of the small amount of water you were able to
   use?

2. If this would happen, what could you do to
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   the child’s response on the chalkboard each new idea.)

3. What do you think would cause shortages of the
   amount of drinkable water in our country?

4. Why is water important to us?

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- Conservation of water.
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   the child’s response on the chalkboard each new idea.)

3. What do you think would cause shortages of the
   amount of drinkable water in our country?

4. Why is water important to us?
Cleaning Air

**Cognitive:**
1. Describe air by using statements of its characteristics of weight, color, smell, need to support life, etc.
2. Include the characteristics of air in a poem or prose.
3. Include the characteristics of polluted air in the rhythmic pattern of a known melody.

**Affective:**
1. Demonstrate their desire for clean air by suggesting ways to clean up the air without the teacher asking for suggestions.

**Skills Used:**
- Vocabulary development.
- Poem or prose writing.
- Lyric writing.

**In-Class:**
1. Language Arts
   - Have children give words which describe air as the teacher lists them on board.
   - Muggy, clean, foggy, smelly, polluted
   - Class write a composite poem or prose about air.
2. Advanced students may wish to compose poems or prose on their own.

3. Music
   - Review a familiar song.
   - Blue Tail Fly
   - My Bonnie Lies Over the Ocean
   - Where, Oh Where Has My Little Dog Gone
   - Twinkle, Twinkle, Little Star
   - London Bridge Is Falling Down

**Outside or Community:**
1. Prepare poems and songs for PTA.
2. Sing for other classes.
5. Record on tape.

**Behavioral Objectives**

**Subject:** Language Arts, Music

**Topic/Unit:** Clean Air

**Air Quality Orientation:**

**Integrated with:**
CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:

Audubon Aids, "Our Threatened Air", ICE RMC, 170 Na
Clean Air and Water: The Fightagainst Pollution, Dorothy E. Shuttlesworth, 1968
Clean Streets? Clean Air, Clean Water, Cynthia Chapin
Sources of pollution information:
Write to: Citizens for Clean Air
502 Park Avenue
New York, NY 10022

Audio-Visual:

Film:
The Runaround, available free from local TB and Respiratory Disease Association

Filmstrip:
Environmental Pollution - Our World in Crisis, Ward's Natural Science Estab., Inc., 1969,
ICE RMC, FS Stl

Kit:
Environmental Action - No Time to Waste, Continental Can Co., 1971, ICE RMC, KT 10

Community:

B. Discussion related to air pollution listing responses on the board.
1. What do you like about clean air?
2. What do you like about the blue sky?
3. What does polluted air look like?
C. Write new words to the familiar melody along the line of air pollution.

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<tr>
<td>In-Class:</td>
<td>Outside or Community:</td>
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<tr>
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</tr>
<tr>
<td>A. Create a group poster with some letters or words.</td>
<td>A. Collect magazine pictures to be used in clean air posters and collages.</td>
</tr>
<tr>
<td>B. If there is an open field available near your school, have students fly their kites.</td>
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</tr>
<tr>
<td>C. Invite a rescue squad member to demonstrate mouth-to-mouth life saving techniques.</td>
<td>C. Demonstrate sensitivity to air pollution by illustrations from air pollution posters or drawings, posters, etc.</td>
</tr>
</tbody>
</table>

**BEHAVIORAL OBJECTIVES**

<table>
<thead>
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<th>Cognitive:</th>
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<tbody>
<tr>
<td>1. Produce an illustration in which the elements of air pollution are depicted.</td>
</tr>
<tr>
<td>2. Compare the odor of clean air and impure air.</td>
</tr>
</tbody>
</table>

**STUDENT-CENTERED LEARNING ACTIVITIES**

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**ORIENTATION**

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**Environmental:**

- Awareness
- Discussion
- Drawing
- Collecting pictures
- Collaboration
- Communicating
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<tr>
<td>&quot;In Quest of Cleaner Air and Water&quot;, Peter D. Richter, <em>Audubon Aids</em>, p. 40</td>
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<tr>
<td>&quot;Psychedelic Posters&quot;, M.P. &quot;Our Inerted Audubon Aids&quot;, <em>Our Inerted Audubon Aids</em>, ICE RMC, SG 1</td>
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<td>&quot;Two Sticker Kites&quot;, D. Richter</td>
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<tr>
<td>&quot;The Alphabet in Art&quot;, RAY</td>
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<tr>
<td><strong>Audio-Visual:</strong></td>
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<tr>
<td>&quot;Lettering Today&quot;, John Brinkley, ICE RMC, SG 1</td>
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<td>Lettering Today”, J. Brinkley, <em>Lettering Today</em>, ICE RMC, SG 1</td>
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<td><strong>Community:</strong></td>
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<tr>
<td>&quot;Making It In 3-D&quot;, E. Stein, <em>School Arts</em>, 71:10-13, 01-71</td>
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<td>&quot;Wrecked In Art&quot;, E. Stein, <em>School Arts</em>, 71:10-13, 01-71</td>
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**Publications (continued)**

**Suggested Resources**
Environmental: Concept No. 5 - Air Quality Orientation

Integrated with:

Social Studies, Art

Topic/Unit: Art

Subject: Social Studies, Art

Behavioral Objectives

Cognitive:
- Demonstrate through dramatization how the local government works to solve an air quality problem.
- Discuss in simple terms the basic type of government in the community, i.e. elected and non-elected officials; functions of government; how government gets its authority; how laws are made and problems in the area are solved.
- Invite a local government leader to talk to the class about government problems and how local government classes about government work together to solve problems and how local problems and how local government class about government work together to solve problems. Note: Some problems:
  - Traffic problems
  - A high rise, a local government get a community dramaticize children dramatize a community air quality problem. Some problems:
    - Burning leaves
    - Traffic problems
    - Rapid transit

Skills Used:
1. Communication
2. Dramatizing
3. Participating in group work
4. Interviewing & reporting
5. Construction
6. Cutting and pasting

In-Class:

Outside or Community:

I. Social Studies
A. Take a survey of neighbors to see what neighbors think should be done about air pollution in the neighborhood. Note:
B. Discuss in simple terms the basic type of government in the community, i.e. elected and non-elected officials; functions of government; how government gets its authority; how laws are made and problems in the area are solved.
C. Visit City Hall and see where things happen. Some of these things are:
D. Collect boxes and tubes of various sizes for pollution bugs. Students could send some outside the school to help solve the pollution bug problem.
E. Students could send some outside the school to help solve the pollution bug problem.

(Continued)

6. Cutting and pasting
5. Interviewing & reporting
4. Participating in group work
3. Dramatizing
2. Communication
1. Student-centered learning activities

Subject: Social Studies

Orientation

Air Quality

Concept No. 5 - Art

The student shows awareness of polluted air by urging parents to change air quality in their communities through the channels of local government through letter writing.

The student shows awareness problem.

Demonstrates through dramatization how the channels of local government works to solve air quality problems to change air quality in their communities through letter writing.

Best Copy Available
II. Art

A. Construct an air pollution bug from boxes:

And balance sculpture.

1. Notching and scoring will help reinforce
2. Kind of creature is destroying our clean air.
3. Art tape, tempera or paper mache, discussion and various materials covering it with

B. Dramatize a radio or TV interview between mayor or council member and a radio or TV news reporter. Have pupils take air quality problem

C. Dramatize a radio or TV interview between mayor or

CLASSROOM (continued)

PUBLICATIONS

Audubon Aids, "Our Threatened Air", ICE RMC, 170


The Caboose Who Got Loose, Peet

"Carton Creatures", H. Weller, Arts and Activities, p. 16-18

"Carve a Box! Exploration Into Space and Form", L. Olson, Arts and Activities, p. 24-27, Dec.

"From the Scrap Box", H. Perry, Instructor, 80:44, Feb. 71

"From the Scrap Box", H. Perry, Instructor, 71:11, March 71

"Paper Mache Bowls and Boxes", S. Greasewood, School Arts, 70:26, March 72

PUBLICATIONS (continued)

BEST COPY AVAILABLE

1971, ICE RMC, KT 10

To Waste, Controllable Can Do.

Audio-Visual:

Audio-Visual:

1. Clean streets, clean air, clean water, cut the chapin

2. Protection against, Washington, D.C.

Needed: Clean Air, available free from U.S. Environmental

Sheens, 71: School Arts, 70:9, Sept.

S. Greasewood, School Arts, 70:8, Sept.

S. Greasewood, School Arts, 70:7, July

S. Greasewood, School Arts, 70:6, June

S. Greasewood, School Arts, 70:5, May

S. Greasewood, School Arts, 70:4, April

S. Greasewood, School Arts, 70:3, March

S. Greasewood, School Arts, 70:2, February

S. Greasewood, School Arts, 70:1, January

S. Greasewood, School Arts, 70:1, January

S. Greasewood, School Arts, 70:1, January
Environmental:

CONCEPT NO. ORIENTATION

Resource Usage

6 - Resources

BEHAVIORAL OBJECTIVES

I. Cognitive:

McS a; Le)

Compare a desert with the local area by listing natural resources that the local area has that the desert does not.

Indicate the characteristic plant and animal life of the desert by making a desert diorama on bulletin board.

II. Affective:

Demonstrate an awareness that life in a desert region differs from other geographical regions because of the unequal distributions of natural resources by freely providing examples that indicate this.

Skills Used:

1. Map skills
   a. Analysis of maps
   b. Location
   c. Identifying & recognizing

2. Recognizing characteristics of desert life
3. Discussion of cause & effect

Integrated with:

SUBJECT

Social Studies

TOPIC/UNIT

Desert Regions

STUDENT-CENTERED LEARNING ACTIVITIES

In-Class:

A. Show pictures of deserts.
B. Talk about occupations of desert dwellers.
C. Discuss what irrigation is and how it changes deserts.
D. Let pupils infer why deserts are sparsely populated.
E. Make a desert diorama.
F. Make a bulletin board.

Outside or Community:

A. Trip to irrigated field (i.e. strawberry)
B. Discussion of necessity of irrigation.
C. Natural and man-made irrigation.
D. Trip to irrigated field (i.e. strawberry)
E. Discuss what irrigation means.
F. Talk about occupations of desert dwellers.

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<table>
<thead>
<tr>
<th>CONTINUED OR ADDED LEARNING ACTIVITIES</th>
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<tbody>
<tr>
<td><strong>Cognitive</strong> (Continued)</td>
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<tr>
<td>Given an outline map of the world.</td>
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<tr>
<td>Locate and label major desert areas of the world.</td>
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<th><strong>Publications</strong></th>
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<tbody>
<tr>
<td>National Geographic magazines</td>
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<tr>
<td>Regions and Social Needs, Laidlow, Grade 3 (Soc. St. text)</td>
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<tr>
<td>Childcraft, encyclopedia</td>
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<td>&quot;The Young Desert,&quot; Atwood, Ann</td>
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<tr>
<td>&quot;The Indians Knew,&quot; Tillie Pine</td>
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<td>Audubon Aids, &quot;Ecology&quot; and &quot;Knife in the Desert,&quot; ICE RMC, 170 Na</td>
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<tr>
<th><strong>Audio-Visual</strong></th>
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<tr>
<td>Study pictures, ICE RMC, KT 04</td>
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<tr>
<td>Audio and visual</td>
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<tr>
<td>What Makes a Desert, BAVI</td>
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<tr>
<td>Films - Filmstrips</td>
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<td>Kit: Animal and Plant Communities, KT 01</td>
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<tr>
<td>Travel bureaus, airlines</td>
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<td>(brochures, posters, folders)</td>
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<th><strong>Community</strong></th>
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<td>Travel bureaus, airlines</td>
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<td>Social Studies, Art</td>
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<td>Behavioral Objectives</td>
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**Cognitive:**
- Explain how Eskimos use natural resources of the area to overcome obstacles of a cold, barren environment in getting food, to provide housing and to travel.

**Affective:**
- Willingly find books and articles that describe how Eskimos use natural resources to get food, to provide housing and to travel and give a report on them.
- Demonstrate an awareness that life in various regions differs because of the unequal distribution of natural resources and to travel and give a report on them. 
- Visit the nearby museum to see these types of Eskimo exhibits. Note what Eskimo children did with the materials brought home. Then have the children describe why they did what they did. Where were they from? Where were they made?
- Make a satellite or model of the Eskimo children's home. Another student should make another satellite or model of the Eskimo children's home. Then have the children describe why they did what they did. Where were they from? Where were they made?
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### Suggested Resources

**Publications:**
- *Homes Around the World*, Kathryn Jackson, Silver Burdett, 1957
- *Eskimos: Without Igloos*, 1969
- *Eskimos Knew*, Tillie Pixie

**Audio-Visual:**
- *Eskimo Family*, Encyclopedia Britannica, 1963
- *Children of the North Pole*, Harcourt, Brace, 1965
- *Modern Eskimo*, Encyclopedia Britannica

**Filmstrips:**
- *Eskimo Family*, Encyclopedia Britannica

**Museum:**
- Resource people
BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

OUTSIDE OF OR COMMUNITY:

3. Collection of samples of
   forest, pond,
   and observe water.
   (Continued)

2. Measure a plot of ground.

1. Measure a plot of ground.
   (Continued)

Resource Conservation

3 - Resources

Integrated with:

Science, Reading

TOPIC/UNIT

Natural Resources

BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

Cognitive:

Name four natural resources & their origins in their neighborhood, school or home. List five ways in which he could help to conserve natural resources.

Affective:

Acknowledge that man-made objects have a natural origin by tracing examples to their origin.

Skills Used:

1. Measuring a plot of ground.
2. Examine and observe water.
3. Identify and list natural resources in your area--water, land, rocks, wildlife, fossils, plants and soil.

In-Class:

I. Science

A. Identify and list your natural resources.
B. Game - Using tag-board strips, teacher will record on individual cards the names of six specific natural resources in sets of three and put them in a box. Teacher will then present a problem in which one or more of the natural resources would have been consumed. Student would decide on which natural resources would be affected by this problem. The appropriate cards would be drawn out of the box by students.

Outside or Community:

I. Science

A. Identify and list natural resources in your area--water, land, rocks, wildlife, fossils, plants and soil.

B. Game - Using tag-board strips, teacher will record on individual cards the names of six specific natural resources in sets of three and put them in a box. Teacher will then present a problem in which one or more of the natural resources would have been consumed. Student would decide on which natural resources would be affected by this problem. The appropriate cards would be drawn out of the box by students.

A. Walk inside and outside your school with this checklist and a pencil. Do two things: (1) Check.

B. Game - Using tag-board strips, teacher will record on individual cards the names of six specific natural resources in sets of three and put them in a box. Teacher will then present a problem in which one or more of the natural resources would have been consumed. Student would decide on which natural resources would be affected by this problem. The appropriate cards would be drawn out of the box by students.

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Publications:
- A Place To Live, National Audubon Society, ICE RMC, 110 A
- America's Treasure, W. Maxwell Reed
- Great Heritage, Katherine Shippen
- Rivers and Watersheds in America's Future, Elizabeth Helfman
- Wilderness Bill of Rights, William Douglas
- Where the Brook Begins, Margaret Farrington Bartlett

AudioVisual:
- Filmstrips: Rocks and Minerals
- How Soil Is Formed
- The Story of Soil

Classroom:
1. An office building is going up in your town and it will need ten large glass windows. What natural resource would we have to draw out of the box?
2. We want to make 10,000 pounds of paper. What natural resource would we have to draw out of the box?

Outside Activities:
- Talk about the recreational uses and possibilities on the outside of the Fox River.
- Conservation for the First Time, McGraw-Hill
- Our Endangered Wildlife, McGraw-Hill
- Conservation Our Mineral Resources Today, Coronet
- Where Does It Come From?, Eye Gate House, ICE RMC, K700
- Conservation, Pictures, American Petroleum Institute,
- Where the Brook Begins, Margaret Reed
- Adventure House, ICE RMC, K700

Audio-Visual (Continued):
- Fields, Pictures, American Petroleum Institute,
- Where the Brook Begins, Margaret Reed
- Wildlife Bill of Rights, Herbert Millard
- America's Future, Elizabeth Humphrey
- Rivers and Watersheds in Support of Clean Air, Clean Water, Clean Streets, Clean Air, Outreach Chapter
- Life's Thimble, Jeanne Handt

Community:
- Service, Washington, D.C.
- The Living Desert, EBF
- The Ocean of Air We Live In, Popular Science Pub. Co.
Which one is closest to the ground?
- concrete
- brick
- fieldstone
- limestone
- wood
- other

Outside Activities (continued)

- Make a bulletin board drawing of the outside of the school and the school grounds. Indicate the location of different building materials, e.g., brick walls, glass windows, granite foundation, slate roof.
- Contact local Chamber of Commerce for brochures or slides of recreational areas near your community.
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<thead>
<tr>
<th>BEHAVIORAL OBJECTIVES</th>
<th>STUDENT-CENTERED LEARNING ACTIVITIES</th>
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<tbody>
<tr>
<td>Cognitive:</td>
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<tr>
<td>Indicate the increase in electrical appliance usage during the past 25 years through the use of a graph.</td>
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<tr>
<td>Compare the usage of electrical appliances by individuals and families within the class.</td>
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<tr>
<td>Explain the importance of conserving electricity using the graphs as a basis.</td>
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<td>Affective:</td>
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<tr>
<td>Demonstrate the effects of their efforts in conserving electricity in their own homes.</td>
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<td>Skills Used:</td>
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<tr>
<td>1. Observing</td>
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<td>2. Experimenting with electric current.</td>
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<td>3. Draw inferences from charts made &amp; information gathered as to how to use electricity wisely.</td>
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<td>4. Reading electric meter and make a informed estimation of energy use.</td>
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**In-Class:**
- A. Visit a nearby dam that produces electric energy. Each child will list what types of turbines are used to produce electric energy or write the name of the dam company, St. Paul, Minnesota to find out about their dam. |
- B. Visit the Wisconsin Public Service Plant, which is a dam-powered turbine. |
- C. Discuss paying house electric bill and current. |

**Outside or Community:**
- A. Visit a nearby dam that produces electric energy and write the name of the dam company, St. Paul, Minnesota to find out about their dam. |
- B. Visit the Wisconsin Public Service Plant, which is a dam-powered turbine. |
- C. Discuss paying house electric bill and current.
CLASSROOM (Continued)

CONTINUED OR ADDED LEARNING ACTIVITIES

I. Students can make an industrial inventory of
both types of appliances.

1. List electrical appliances shown with those
unique to electricity.
2. Class construct bulletin board on large chart of
writing lights, ball, consumer electric magnets.
3. Do experiments from various texts with dry cells,
relying these sources as stored and consumable.

J. Find articles on large city blackouts and
brownouts and discuss need for using electric
power wisely. Why does a brownout occur? Have
the children trace electrical energy back to its
original source. Suppose coal is used as a
source of energy for generating power in your
community. Where does coal get its energy? Is the
community where the coal is used as a
source of energy for generating power in your
community where the coal gets its energy?

K. How do we hear, filmstrip and record-
representative.

L. How to make a

M. Electric Circuits, McGraw-Hill

N. Electricity, EBF

O. Electricity and How It is Made, EBF

P. Electric Circuits: How To Make A

Q. Electric Circuits, McGraw-Hill

R. Electricity for Beginners, Coronet

S. Electricity, EBF

T. Electric Circuits, McGraw-Hill

U. Electric Circuit, Bel tone Hearing Service

V. Wisconsin Public Service

W. Audio-Visual

This family showed ways they could conserve
energy.

SUGGESTED RESOURCES

Publications:
- Science Is Exploring, Scott-
  Foresman, pp. 46-62, 1965
- Easy Science Experiments,
  Kleinman, Holt Pub. Co., 1959,
  pp. 89-96

Audio-Visual:
- Electric Circuits, McGraw-Hill
- Electric Circuits: How To Make A
- Filmstrip, EBF
- Filmstrip, EBF
- Wisconsin Public Service
- Coronet
- Coronet
- Electric Circuits, McGraw-Hill
- Electric Circuits, Bel tone Hearing Service
- Wisconsin Public Service
- Wisconsin Public Service

Community:
- Wisconsin Public Service

Films: 89-96
### Cognitive Objectives

1. Construct a picture utilizing the rubbing textures he has obtained.

### Affective Objectives

1. Demonstrate awareness of textures in nature by wanting to work in direct contact with them.

### Skills Used

1. Rubbing techniques.
2. Design principles.
3. Perspective.
4. Texture awareness
5. Pen and Ink
6. Paste
7. Observation

### In-Class Activities

**A. Motivating Activity**

- Write: Which is more smooth, a window pane or a handkerchief?
- Write: Which is more soft, a plush carpet or a suede chair?
- Write: Which is more rough, a brick wall or a quilt?
- Write: Which is more flexible, a rubber band or a leather wallet?
- Write: Which is more slippery, a stainless steel table or a bamboo table?

**B. Field Trip to a Local Fabric Store, Leather Company, etc.**

- To contrast man-made textures with natural textures.

**C. Use ICE field activity guide “Colors, Shapes (Patterns), and Textures in Nature.” See complete field guide attached.**

### Outside or Community Activities

**A. Take a Walk to Discover Textures in the Environment. Rubbings could be done at this time also.**

**B. Field Trip to a Local Fabric Store, Leather Company, etc.**

- To contrast man-made textures with natural textures.

**C. Use ICE field activity guide “Colors, Shapes (Patterns), and Textures in Nature.” See complete field guide attached.**

### Observation

6. Cut and Paste

5. Pen and Ink

4. Texture Awareness

3. Perspective

2. Design Principles

1. Rubbing Techniques

### Concept No.

Environmental
That's a Rub Arts and Act, Janitz

AudioVisual:

The Art of Seeing (Texture), Warren Scholoot Pro. Inc.

Film:

Discovering Texture, BAVI

Kit:

Environental Awareness, ICE RMC, K-L

COMMUNITY

CLASSROOM (Continued)

A leather coat or a burlap bag?
A turtle or an eel?
Your eyebrows or your lips?
Woolen mitts or cotton gloves?

3. Students draw and label five objects of their own— which have a smooth texture.

B. Texture Rubbings

• One which have a smooth texture.

3. Students draw and label five objects of their own— which have a smooth texture.

Your eyebrows or your lips?
A little or an ene?
A teacher coat or a burlap bag?

CLASSROOM (Continued)

SUDDIESTED OR ADDED LEARNING ACTIVITIES

E. Hull and Pink Desserts

and combinations.

D. Create textured patterns by using various combinations

C. Develop a design consisting of six or seven related

B. Texture Rubbings

• One which have a smooth texture.

3. Students draw and label five objects of their own— which have a smooth texture.

Your eyebrows or your lips?
A little or an ene?
A teacher coat or a burlap bag?

CLASSROOM (Continued)

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• One which have a smooth texture.

3. Students draw and label five objects of their own— which have a smooth texture.

Your eyebrows or your lips?
A little or an ene?
A teacher coat or a burlap bag?
COLORS, SHAPES (PATTERNS), AND TEXTURES IN NATURE
(art, language arts, science)

Purposes: To see how design, change, and variety in nature add beauty and enjoyment.

To develop observation skills.

To communicate these ideas visually/verbally

Directions: As you walk in the woods, take a good look around.

Take your time, walk slowly and stop as many times as you want. You'll see brand new colors, or colors you haven't seen for awhile. Most animals only see shades of black and white--like a black & white TV set. Animals miss out on the fun of color, but you're lucky. You can enjoy colors.

Your first task will help you see more colors.

1. Name or draw three objects you see during your walk that have new or different colors. Under each name or picture--write a few words to describe the color. This will help you when you mix the color back in class. Here's one example.

   Name ______ Leaf ______        Picture:
   Description ______ muddy yellow edges, ______ bright green centers ______

   a. Name ___________________ Picture:
   Description ___________________
b. Name ___________________________  Picture:
   Description _______________________  
   ____________________________________

c. Name ___________________________  Picture:
   Description _______________________  
   ____________________________________

2. Your second task is like making a paper fossil.

   Directions:
   a. During your walk, pick out two hard objects you like.
   b. Next, use blank paper and place a sheet over part of the object.
   c. Use a crayon or pencil to get a picture of the object's surface or textures. This is called a rubbing.
   d. Back in class, your teacher will hang the rubbings to dress up the room.

3. Look for patterns or shapes in nature and draw two of these shapes.
   a. ___________________________  b. ___________________________

4. If you have time, you may want to collect some interesting objects to make a collage back in class. Be careful not to damage or uproot anything.
<table>
<thead>
<tr>
<th>BEHAVIORAL OBJECTIVES</th>
<th>STUDENT-CENTERED LEARNING ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive:</td>
<td></td>
</tr>
<tr>
<td>refines population density.</td>
<td></td>
</tr>
<tr>
<td>Identifies areas on U.S. map where greatest population density exists.</td>
<td></td>
</tr>
<tr>
<td>Selects the factors that would have the greatest effect on population growth and defends his choice.</td>
<td></td>
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<tr>
<td>Affective:</td>
<td></td>
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<tr>
<td></td>
<td></td>
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<tr>
<td>Skills Used:</td>
<td></td>
</tr>
<tr>
<td>1. Math skills--add &amp; subtract, integrating with:</td>
<td></td>
</tr>
<tr>
<td>2. Comparing</td>
<td></td>
</tr>
<tr>
<td>3. Analyzing</td>
<td></td>
</tr>
<tr>
<td>4. Map reading</td>
<td></td>
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<tr>
<td>5. Bar graph</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E.S.E.A. Title III - PROJECT L-C-E 59-70-0129-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill Set--add 6 a subject, Environmental:</td>
</tr>
</tbody>
</table>
and reactions will follow. 

C. Children will work and play in a confined area advertised as a city. 

7. Name some reasons why a state's population could have increased. 

C. Little Boy Brown, Harris 

The Big Island, May 

Nobody's Cat, Miles 

Farewell to Shady Glade, Peet 

The Wump World, W. Peet 

The Big Pile of Dirt, Eleanor Clymer 

The Run, Jump & Bump Book, Brooks 

Sam Inglati _ons, ICE 

AudioVisual: 

R1C, Nw 

Films: 

Population Patterns in the United States, BAVI 

Population Problem U.S.A., Seeds of Change, BAVI 

Cities of the Future, McGraw-Hill 

People by the Billions, McGraw-Hill 

Cities of the Future, McGraw-Hill 

Population Patterns U.S.A. United States, BAVI 

Plots: 

Audio-Visual: RKC, ICE 

PAUSE BUTTON Populations, ICE 

The Run, Jump & Bump Book, 

Children will work and play in a confined area of the classroom for one day to concretely experience overcrowding. Discussion of feelings will follow. 

C. Have the school principal discuss the origin of the school as pertaining to population growth. 

II. Math of the school as pertaining to population growth. 

D. Have the school principal discuss the origin of the school as pertaining to population growth. 

CLASSROOM (continued) 

The House of Man, BBC 

Solving the Problem of Overpopulation 

The Effects of Overpopulation 

The Population Explosion 

Poster packs: (available from ICE RMC, 190 KI) 

AUDIO-VISUAL (continued) 

64
factors must be considered in predicting death. Among members of the class, what is the average family size? Compare with national average size of 4.3.

Outside Activities (continued)
<table>
<thead>
<tr>
<th></th>
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</thead>
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<tr>
<td>Wyoming</td>
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</table>
STUDENT-CENTRED LEARNING ACTIVITIES

Cognitive:

A. After school each child will sit somewhere near his home and count the different vehicles that pass. This will give each child a picture of the number of different vehicles that pass his home and other people's homes.

B. The students will make a chart and count the number of different vehicles that pass each other day. They can compare the different vehicles and see how they have changed over the years. The students will order them according to their speed. This will show how far transportation has been taken in the past.

Skills Used:

1. Interpreting
2. Illustrating
3. Comparing
4. Making a survey
5. Making a chart
6. Critical thinking
7. Singing
8. Research study
9. Reporting skills

In-Class:

I. Social Studies

A. Teacher will use pictures of different types of roads for comparison.

B. The students will compare farms, towns, and cities of today to the farms, towns, and cities of years ago. For example, cobblestone streets vs. cement streets, dirt roads vs. asphalt roads.

C. Discussion will follow telling why people move about now and how they moved about years ago and how they moved about people in the past.

Outside or Community:

A. After school each child will sit somewhere near his home and count the number of different vehicles that pass.

B. The next day the class can make a chart and put the numbers under the correct headings.

C. Use ICE field guide to help us move from place to place, e.g., to help move from place to place, e.g., dirt roads vs. free ways, these pictures can be made into maps. These pictures will be picked out by the teacher.

D. The students will order or arrange the pictures in chronological order.

E. Put pictures in chronological order.

F. Railroad Museum trip.

P. Bring pictures of trains available at ICE office.

W. Write for math skills on the lightboard, e.g., on a piece of paper draw a train and make a chart with the following:

<table>
<thead>
<tr>
<th>Cars</th>
<th>Trucks</th>
<th>Buses</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

A. Teacher will use FTA field guide

59
### MUSIC

#### A.
Children will make a class list of songs they know dealing with modes of transportation, e.g.
1. Row, Row, Row Your Boat
2. Marching Song
3. Little Red Caboose
4. Down By The Station
5. Space Travel
6. Canoe Song
7. My Pony

#### B.
Students will arrange these modes in chronological order.

#### C.
Teacher will guide a discussion regarding the impact on the environment of progress in the various modes of transportation as emphasized in ballads, folk tunes, etc., etc.

### LANGUAGE ARTS

#### II.

<table>
<thead>
<tr>
<th>Takes least parking space</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Takes less gas, makes less air pollution.</td>
</tr>
</tbody>
</table>

- Why would a car together be better than individual cars? |
- How many parking places would be needed if everyone drove a car? |
- How many parking places would be needed if everyone rode in the train? |
- What about the buses? |

#### E.
Teacher ask: "If each child were father in the town, cannot raise enough food to feed his cows such as a man with a small farm on the edge of town?"

#### D.
The teacher will give a hypothetical situation.

### COMMUNITY

- **Railroad museum:** 701 Minnesota Street, Troy, MI
- **Study prints:** (eye gate)
- **Land Transportation Around the World**
- **Film:** (from BAVI)
- **自動車ディーラー等、自動車、輸送、等を扱う**
- **Pictures from various magazines**
- **Audio-Visual:**
  - **Slides of various types of vehicles for transportation and transportation around the world**
  - **Auto dealers, etc.**
  - **Possibly available in other departments, etc.**

### CONTINUED OR ADDED LEARNING ACTIVITIES

<table>
<thead>
<tr>
<th>CLASSROOM (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Continued or added learning activities</strong></td>
</tr>
<tr>
<td><strong>Suggested resources</strong></td>
</tr>
</tbody>
</table>

- **Publications:**
  - Songs from school-owned music series
  - D. W. Pepper Catalog, J. W. Pepper, Detroit, 373 Minnesota Street, Troy, MI 48084
  - Pepper-Carlosed, J. W.

- **Audio-Visual:**
  - **Slides of various modes of transportation**
  - **producer:** J. W. Pepper, Detroit, MI
What brought about the change of travel?

a. Desire to explore new lands.
b. Desire to move supplies faster.
c. Inventions that brought about machines and vehicles to propel man faster and further.

4. As machines were developed did fuels need to be developed and as they were developed and used what effect did this have on our environment?

5. What effect on the economy resulted from the development of transportation?
### Environmental

<table>
<thead>
<tr>
<th>Concept No.</th>
<th>Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td></td>
</tr>
</tbody>
</table>

### Behavioral Objectives

**Cognitive:**
- Define in his own words what leisure time is.
- List five ways in which they use their leisure time.

**Affective:**
- Volunteer to demonstrate their hobbies to the class, as examples of leisure time.

### Subject: Language Arts

**Topic/Unit:** Hobby - Leisure Time

**Population:** 7 - Land Use

**Concept No.:**

### Student-Centered Learning Activities

<table>
<thead>
<tr>
<th>In-Class</th>
<th>Outside or Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Discuss leisure time. Ask the children how their parents use a 24-hour day. Ex.: Father sleeps eight hours, works eight hours, eats five hours, travels one hour to and from work, earns $x per hour. Ask the children how adults have a hobby and discuss how hobbies among children differ.</td>
<td>B. Bring in recreation leader or park director to discuss the use of our parks and recreation sites.</td>
</tr>
<tr>
<td>A. Bring in recreation leader or park director to discuss the use of our parks and recreation sites. Bring in senior citizens or go to them if necessary to discuss their hobbies and use of leisure time. Ask their parents how they use their leisure time.</td>
<td>C. Invite parents to the classroom to demonstrate their hobbies.</td>
</tr>
</tbody>
</table>

### Skills Used:
- Charting
- Interviewing
- Gathering Information

**Integrate with:**

- Subject: Language Arts
- Integrated with: [Content not visible]
Continued or Added Learning Activities

Suggested Resources

Publications:
- Childecraft Encyclopedia, Entropy, Make It Easy, Washington, D.C., Heritage, 100 pages

Audio-Visual:
- Film:
  - Nature Is For People, BAVI

Community:
- Recreation leaders

CLASSROOM (Continued)

2. What do your parents do in their free time?
3. What did you do in your free time 50 years ago?
4. Will you have more or less leisure time in the future? Why?
5. Will you have more or less leisure time in the future? Why?

Ask your parents and grandparents what they did when they were younger.

If our community continued to grow, what changes might occur?

How many parks did we have long ago (50 years) ago?
Has this growth affected our parks any?
What is it now?

What was the population of our community 50 years ago?
What is it now?

In terms of population growth, the need for recreation as our population increases must be stressed.

Do hobbies have to involve a lot of money?
Why are hobbies needed?

If our community continued to grow, what changes will be necessary?

Ask your parents and grandparents what they did for fun.

Is this the same as you do now?

Will you have more or less leisure time in the future? Why?

What will you do?

How will you use our natural resources so as not to waste?
Behavioral Objectives

**Cognitive:**
- Construct alternative solutions, individually and in groups, to given cause and effect problems of a city such as:
  1. Population change
  2. Highway change of route

**Affective:**
- Demonstrate his alertness to effects of various changes in the neighborhood by bringing examples to class.
- Voluntarily inform class members of the possible effects of various changes in the community.

**Skills Used:**
- Construction of various elements within a city.
- Architectural awareness.
- Observation.
- Problem solving.

**In-Class:**
- The class can create a miniature neighborhood on a tabletop using a variety of media; clay animals, toy cars, box houses, pipe cleaners, box houses, play dough, or in a sandbox using miniature model neighborhood.
- What if a proposed highway is planned through the neighborhood?
- What if there was a sudden influx of people into the neighborhood?

**Outside or Community:**
- Field trip to see what the city planner or architect have done in the neighborhood.
- Perhaps continued trips to help with problem solving and what if scenarios.

**Student-Centered Learning Activities:**

- Integrated with:
  - Land Use
  - Land Use
  - Land Use
  - Land Use
  - Land Use
  - Land Use

- Topic/Unit: Sculpture - City Planning
- Subject: Art
- Concept No.: 7
- Orientation
- Conceptual
- Environmental
Publications:

- "A Study in Environment" by Leano Nalle, School Arts, April '72, building mini-landscapes.
- Our Man-Made Environment, Book 7.

Audio-Visual:

- Film: Building Mini-Landscapes, ICE RMC, SG 68:32-B, '68.
- "If I Built a Village", Kazue Mizumura, Crowe.

Our Man-Made Environment, Book 7.

Community:

- "A Study in Environment" by Leano Nalle, School Arts, April '72, building mini-landscapes.
Lir

Environmental:

CONCEPT NO.

8 - Values and Attitudes

ORIENTATION

Noise Pollution

Integrated with:

SUBJECT

Science

TOPIC / UNIT

Sound

BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

Cognitive:

1. List five sounds that are disturbing and five sounds that are pleasing.
2. Write a short paragraph telling how we can reduce the effect of sounds which are disturbing.

Affective:

1. Listen for unnecessary noise and tell what he has done at home or at school to reduce this.

Skills Used:

1. Observation
2. Research
3. Experiment
4. Compare
5. Listening

In-Class:

A. With a tape recorder, children can record and analyze the sounds in the community. List the sounds according to categories: natural, animal-made or man-made, loud or soft, necessary or unnecessary, etc. How do the children react to the sounds? List the different sounds the children can record and analyze. Can anything be done to reduce sounds that are disturbing? A. With a tape recorder, children can record and analyze the sounds in the community. List the sounds according to categories: natural, animal-made or man-made, loud or soft, necessary or unnecessary, etc. How do the children react to the sounds? List the different sounds the children can record and analyze. Can anything be done to reduce sounds that are disturbing?

B. What is the advantage of using the tape recorder to tape sounds? What is the advantage of listening to taped sounds? B. Discuss sounds.

1. What sounds do you hear every day?
2. What sounds do you hear at school?
3. What sounds do you hear at home?
4. What sounds do you hear when you listen to music?
5. What sounds do you hear when you listen to the radio?

C. Discuss sounds.

1. What sounds do you hear every day?
2. What sounds do you hear at school?
3. What sounds do you hear at home?
4. What sounds do you hear when you listen to music?
5. What sounds do you hear when you listen to the radio?

6. What sounds are disturbing to humans? Can anything be done to reduce sounds that are disturbing?

Outside of Community:

A. If possible, tape the sound of an auto, a train-engine plane and jet plane. Then talk to the children about the physical effects of each on the environment. Then talk to the children about what they can do to reduce the effect of these sounds.

B. Discuss how men and animals use sound. List similarities.

1. Sound received by vibrations through a membrane.
2. Sound is a protective warning.

C. Discuss sounds.

1. What sounds do you hear every day?
2. What sounds do you hear at school?
3. What sounds do you hear at home?
4. What sounds do you hear when you listen to music?
5. What sounds do you hear when you listen to the radio?
6. What sounds are bad for us? Why?
7. How can we help to stop noise pollution?

A. With a tape recorder, children can record and analyze the sounds in the community. List the sounds according to categories: natural, animal-made or man-made, loud or soft, necessary or unnecessary, etc. How do the sounds affect animals and humans? Can anything be done to reduce sounds that are disturbing? A. With a tape recorder, children can record and analyze the sounds in the community. List the sounds according to categories: natural, animal-made or man-made, loud or soft, necessary or unnecessary, etc. How do the sounds affect animals and humans? Can anything be done to reduce sounds that are disturbing?

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2. What sounds do you hear at school?
3. What sounds do you hear at home?
4. What sounds do you hear when you listen to music?
5. What sounds do you hear when you listen to the radio?
Publications:
- The Listening Walk, Paul Showers, Crowell, clicking dog nails and squeaky baby wheels are just some of the sounds neatly described to promote actual, 'real-life' listening walk.

Audio-Visual:
- Films:
  - Sound, Films, Inc.
  - Sound and How It Travels, EBP
  - Sound for Beginners, Coronet
- Kit:
  - Sound About, RAVI
  - Sound for Beginners, Coronet
  - Sound About Inside the School, nearby or inside the school, asks what sounds are pleasant, unpleasant?

Community:
- Airport, City streets
- Brown County Library:
  - The Caboose Who Got Loose, Peer
  - Too Much Noise, Nancy North
  - The Loudest Noise in the World, Nancy North

Suggested Resources
- ERIC, NIE, ERIC Corporation, NIE
- Our Environment 2 - Sound & Noise, Press, 1978
- Sounds Are All Around, Pine & Levine, Whittlesey House
- The Magic of Sound, Kettelkamp, William Morrow & Co., 1956

Publications (Continued)
Environmental Sculpture

**BEHAVIORAL OBJECTIVES**

**STUDENT-CENTERED LEARNING ACTIVITIES**

**Cognitive:**

Select examples of what factors contribute to an attractive or unattractive environment and incorporate them into an art display or project.

**Affective:**

Willingly share with the class a description of the most beautiful thing he has seen in the last week. Express sadness or joy when viewing either a destructive or constructive thing of beauty.

**Skills Used:**

1. Basic sculpture techniques.
2. Observation.
3. Environmental awareness.

**In-Class:**

- Art
  - Go outside and collect materials you find in your environment such as wood scraps, cans, odd objects from a junk yard, rocks, leaves, etc. Create a sculpture from them.
  - Show one of your pieces of sculpture to the class.

**Outside or Community:**

- Art display or project. May be offered at the student’s choice.

**E.S.E.A. Title III - PROJECT I-C-E 59-70-0155-4**
CLASSROOM (continued)

CONTINUED OR ADDED LEARNING ACTIVITIES

SUGGESTED RESOURCES
CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:

"Creative Uses of scrap materials", R. G. Lewie, School Arts, 69:11 F '70
"Children's sculpture", J. W. Burgner, School Arts, 71:42-40 '71

Audiovisuals:

Film:
"Introduction to Sculpture", BAVI

Community:

I. How time changes your environment.
II. Reading
A. Read Alvin Tresselt's book, The Dead Tree.
B. Questions for discussion:
1. What is this a story about?
2. How did you feel about what was happening to the tree?
3. What happened to the little tree?
4. How did the great oak tree return to the earth?
5. What happens to things when they decay?
6. What would happen if the oak tree wouldn't decay?
7. What will happen in nature if it weren't for decay?
8. What other wildlife would have died (if it weren't for decay?)

C. Have children make a list of the animals who cover the earth.

D. Have children make a list of the plants who make their home in the oak at one time or another.


(Continued)
Make a list—
the oak tee provider—
for:
squirrels—acorns
woodpeckers—grubs and beetles
territories—nest
slugs
carpenter ants
fungus
termites
ants
termite
rotting wood

These are found under the bark in the winter:
small centipedes
carpenter ants
spiders
fungus
woodpeckers—grubs and beetles

Make an illustration of the Great oak in the
process of decaying. Include many of the plants
and animals in sheltered and fed.

Audio—Visual:

Classroom (continued)
**Cultural Community**

**Topic/Unit:** Africa

**Subject:** Social Studies, Music, Language Arts

**Integrated with:**

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<tr>
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<th>Student-Centered Learning Activities</th>
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<tr>
<td><strong>Cognitive:</strong></td>
<td></td>
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<td></td>
<td>Classify pictures into two groups, (1) That group of needs and (2) That group of luxuries for a family in our country.</td>
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<td></td>
<td>Compare the life of a person in our country with that of one in Africa including at least 5 ways in which they are similar and 5 ways in which they are different.</td>
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<td>Find reasons and examples that support the idea that resources should be used more wisely.</td>
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<td>Skills Used: 1. Use map symbols. 2. Locate land masses and bodies of water on globe. 3. Classifying, comparing. 4. Critical thinking. 5. Use of library references.</td>
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<td><strong>Affective:</strong></td>
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<td>Children bring to class a picture of their family, catalogs and magazines.</td>
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<td></td>
<td>The children will cut out pictures showing what the family needs and what the family wants.</td>
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<td></td>
<td>A discussion will follow on what happens to our natural resources &amp; pollution of our country when everyone has what he wants and what he needs.</td>
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<tr>
<td></td>
<td>Write a letter to a Peace Corps worker or other reliable source explaining your concern for our natural resources.</td>
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**Skills Used:**

1. Use map symbols.
2. Locate land masses and bodies of water on globe.
3. Classifying, comparing.
5. Use of library references.

**In-Class:**

A. Invite exchange student, teacher or traveler to speak to class about Africa’s hot equatorial communities, ex.

1. The country
2. Customs
3. Jobs and occupations
4. Art and handicrafts, etc.
5. The climate

**E. S. E. A. Title III – PROJECT I – C – E**

55-70-0185-4

**Outside or Community:**

A. Invite exchange student, teacher or traveler to speak to class about Africa’s hot equatorial communities, ex.

1. The country
2. Customs
3. Jobs and occupations
4. Art and handicrafts, etc.
5. The climate

**C. Visit Milwaukee Museum or other reliable source to observe African artifacts.**

**D. Peace Corps workers may send a list of resources and tell children what resource was used for articles from (B). Library references may have to be used.**

**E. Write to letter for pen pal correspondence with Ghanaian children at: Mission (Continued).**

**F. May have to be used.**

1. Write to letter for pen pal correspondence.
(continued)

from Ghana.

7. Sing songs of Africa: Play recordings of music.

6. Does our culture influence the way we dance?

5. Is our culture a combination of many cultures?

4. What does culture mean?

3. Do the people in Alaska live differently than people in Florida?

2. Do the people in Alaska live the same way?

1. Do all of us live and eat the same things and from this unit may be listed.

A. A discussion of how people all over the world live.

P. Make individual dictionaries in which new terms from Ghana, Upper Region Ghana, West Africa.

CLASSROOM (continued)

| Filmstrips: |
| African Farm Children, Eye Gate |
| Children of the African Desert, Eye Gate |

AUDIO-VISUAL (continued) |

dance a White, Burgess Publishing Co., 1965 
Smith, Kettler, Keating, and Walter; Albert Parnish, Sol Parnish, Joseph

(continued)
III. Social Studies (Continued)

A. Make a list of means by which we might travel to the communities of Africa and white phrases which would describe the relative location of a particular equatorial community (Ghana).

B. Make designs similar to those used on jewelry, leather work or weaving from an equatorial community.

C. Prepare food the families of an equatorial district may eat. (tuna, tapioca, cocoa)
Environmental

CONCEPT NO. 9 - Management

Litter

Integrated with:

SUBJECT Mathematics (Fractions)

TOPIC/UNIT Earth Week (Litter)

BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

In-Class:

A. The students will take a litter count in their classroom.

B. The teacher on their own will write a sight word.

C. Visit the school incinerator.

D. Collect litter from your yard and report to the teacher.

E. The students will take a litter count in their own community.

F. The teacher will give a quick "litter" quiz.

Prerequisite: The students have learned the school's littering problems.

F. Also, the teacher will have the students write a letter to the city. Cause by letter to the city's director:

1. Have the city's director become aware of the problem.
2. Collect litter from your yard.
3. Have a school custodian. desert the problems caused by litter.
4. Develop a school custodian's packet.

Cognitive:

1. Most Americans use about 3 bottles a week. How many can a family use? In 4 weeks? How many cans does this amount? In 8 weeks? How much does this amount? In 6 weeks?

2. Most Americans use about 3 bottles a week. How much can a can throw away a day? In 7 days? How many pounds of trash does a family of 6 throw away a day? In 7 days? How much can a family of 6 throw away a day? In 7 days? How many pounds of trash does a family of 6 throw away a day? In 7 days? How many pounds of trash does a family of 6 throw away a day? In 7 days?

3. Most Americans use about 4 cans a week. How many cans is this amount? In 4 weeks? In 8 weeks? How much does this amount? In 6 weeks? How much does this amount? In 6 weeks?

4. Most Americans use about 4 bottles a week. How many bottles does this amount? In 4 weeks? How many bottles does this amount? In 8 weeks? How much does this amount? In 6 weeks? How much does this amount? In 6 weeks?

(Continued)


6. Charting.

4. Observation & comparison.

3. Collecting data.

2. Tabulating with fractions.

1. Counting.

Skills Used:

1. Counting.
2. Tabulation with fractions.
3. Collecting data.
4. Observation & comparison.
5. Charting.

Outside or Community:

A. The students will take a litter count in their own yard and report to the teacher on their findings.

B. Visit the school incinerator.

C. Have a school custodian. desert the problems caused by litter.

D. Collect litter from your yard and report to the teacher.

E. The students will take a litter count in their own community.

F. The teacher will give a quick "litter" quiz.

To do this:

1. Work out these problems:

   1. Most Americans throw away about 5 pounds of trash a day. In 5 days? How many pounds?
   2. How many pounds of trash does a family of 6 throw away a day? In 5 days?
   3. Most Americans use about 4 cans a week. How many cans is this amount? In 4 weeks? In 8 weeks?
   4. Most Americans use about 3 bottles a week. How many bottles does this amount? In 4 weeks? In 8 weeks?
   5. Most Americans use about 2 bottles a week. How many bottles does this amount? In 4 weeks? In 8 weeks?

2. Visit the school incinerator.

3. Visit the school incinerator. Write a sight word.

4. Collect litter from your yard and report to the teacher.

5. The students will take a litter count in their classroom.

6. The students will take a litter count in their classroom.
Continued or Added Learning Activities

Publications:
- Man's Control of the Environment—to determine his survival...or to lay waste his planet, Congressional Quarterly, 1970, ICE RMC, 100 Ma
- Litter Prevention, Keep America Beautiful, Inc., guide of suggested litter prevention activities for use in elementary schools, ICE RMC, VF

AudioVisual:
- Films:
  - Biology: Population Ecology, EBF
  - Game: Land Betrayed, BAVI

Community:
- Have each child take home a survey sheet that inquires how many cans are used during a given three-day period. Parents and class members will work together recording daily use of cans and preparing them to be returned to school. Prior to this, the class is divided into two groups which are determined by the number of members in each family. To insure equal consumption, both groups will have approximately the same total number of family members. One group will retain cans flattened and the other group will return cans flattened and the curved edge. After the worksheet is completed, each family will compare space of flattened cans to unflattened ones.

7. In 1970 a family of 6 persons threw away about 40 bottles and cans a week. Keep track of the number of bottles and cans a family throws away each week. How many cans are used during a given three-day period? How many bottles and cans are used during a given three-day period? As much as 45 1970 cars? 1970 cars. How many 1965 cars pollute the air as much as five 1965 car pollutants the air as much as five 1970 cars? How many 1970 cars pollute the air as much as five 1970 cars?
WORKSHEET

Attention, family members: Please record (tally below, the number of cans you've used for the three-day period, starting tomorrow.)

Day One

Day Two

Day Three

Please help us in our investigation. Carefully clean all cans and return them to school with your child daily. Your child is in the following group to:

(  ) return cans flattened

(  ) return cans in their regular shape

Names of the members in your family: ________________________________
Environmental Concept No. 9 - Management

Urban Environment

Integrated with:
Art, Reading

BEHAVIORAL OBJECTIVES

Cognitive:

1. Describe the characteristics of the structure of the city.

A. Make a city (group project).
   1. Cut out pictures of people, buildings, etc.
   2. Paste a piece of cardboard on the back. Leave a tab on bottom.
   3. Draw blocks and manholes on a large piece of cardboard or the bottom of a large box.
   4. Assemble your large box a block of cardboard on the back, a large piece of cardboard around town in your city.

2. Collect magazines, newspapers.

A. Collect magazines.

Outside or Community:

A. Collect magazines.

Cognitive:

1. Art, Reading

Subject:
Art, Reading

TOPIC/UNIT:
Construction

In-class:

4. Layout
3. Paste
2. Cutting
1. Construction

Skills Used:

1. Cutting
2. Pasting
3. Cutting
4. Layout
During their free time, both the tape and book are available to students. When the model is constructed, the teacher can tape-record Wilson's World and make a reconstruction of the model. Sample questions:
1. After the model is constructed, the teacher can ask:
   a. How would you have given Wilson a home?
   b. What would happen if we doubled the population of the city? How do we provide for public services because of this increase? Students will offer suggestions as to how the city will meet doubled demands on:
   1) Water supply, 2) Traffic and public transport, 3) Housing, 4) Recreation, 5) Food supply, 6) Hospital, 7) Police and fire protection, and 8) Waste disposal.
2. Compare Wilson's World at the beginning of the story with his world at the end of the story. A boy at his easel creates his world.
3. What advice would you have given Wilson as he was creating his world?
4. What are some things that drastically changed?
5. After the model is constructed, the teacher can tape-record Wilson's World and make a reconstruction of his world.

Audio-Visual:
Read Wilson's World by Edith and Clement Hurd (Harper & Row). A boy at his easel creates his world. The excellent illustrations and story help students to think about the world they would like to create and live on.

Vacant Spots, Busch City Lots, Living Things In. Everything Changes, Howell A Place To Live, National Geographic Society, ICE RMC, 110 A.

Audio-Visual:
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Audio-Visual:
Read Wilson's World by Edith and Clement Hurd (Harper & Row). A boy at his easel creates his world.
(continued)

Cognitive:

1. Define change in environment.
2. Describe how the process of change occurs.
3. Describe the possible change in environment that will occur as a result of a given factor or incident.

Affective:

1. Will make and use a litter bag.
2. Aware of how they can change their home environment by reporting on recent changes at home. (Examples: redecorating, planting a garden or tree, planting a shrub, etc.)

Skills Used:
1. Running.
2. Throwing.
3. Rhythmic skill.

In-Class:

1. Pick the Pumpkin Patch Game. (See next page for directions.)
2. Pick the Pumpkin Patch Game. (See next page for directions.)
3. To the words of "Mulberry Bush," the classroom teacher will put into the song words to fit the classroom environment instead of home environment.

Outside or Community:

A. Physical Education

B. Discussion: Student-centered, teacher-directed.

C. Pick the Pumpkin Patch Game. (See next page for directions.)

D. Physical Education

E. Possible correlation with classroom teacher's social studies unit, students' relationship to room, house, neighborhood and city.
III. How does your mother and father change the land around your home?

III. What ways does man change our city?

III. How does your mother and father change the land around your home?

III. What ways does man change our city?
Environmental:

Concept No. 10 - Economic Planning

Orientation

Transportation

Subject

Art

Integrated with:

Social Studies

Behavioral Objectives

Cognitive:

Explain the effects the development of roads has had on our environment by means of prepared charts, stories, pictures and/or a report.

A. Construct a time line.

I. Art

A. Mobiles, bloodmobiles, x-ray units, etc.

B. Build to do special kinds of trucks.

C. How many different part ways by truck?

D. How many different kinds of trucks are there?

E. How many different kinds of trucks are carload at least one everyday that things do we hear the wire from?

II. Social Studies

A. Discuss: How many different how person can earn a living connected with automobiles.

B. Discuss: How many different things do we hear or use everyday that are carried at least part way by truck?

C. How many different kinds of trucks are built to do special jobs? Be sure to include: Mobile X-ray units, Bloodmobiles, etc.

Skills Used:

1. Reading Time Line
2. Communication
3. Observation
4. Participation
5. Cooperation

I. Art

A. Construct a time line.

1. 1492-1640 Foot-paths & Pack-horses Era

2. 1640-1860 Coach & Wagon Era

3. 1860-1900 Horse & Buggy Era

4. 1900-1940 Combustion Engine Era

II. Social Studies

A. Discuss:

1. How many different ways a person can earn a living connected with automobiles.

2. How many different things do we hear or use everyday that are carried at least part way by truck?

3. How many different kinds of trucks are built to do special jobs? Be sure to include: Mobile X-ray units, Bloodmobiles, etc.

Community:

A. Have a speaker from the Department of Natural Resources come to talk about car pools and bicycles.

B. Visit the National Railroad Museum to study trains through the ages. Child will write on the ecological disapproval and disadvantages to our society and economy that result from this transportation.

C. Have Highway Officials for your area come to discuss the uses of roads in the country and city and their neighborhood.

D. Class visit to a bloodmobile.

Outside Community:

A. Have a speaker from the Department of Natural Resources come to talk about car pools and bicycles.

B. Visit the National Railroad Museum to study trains through the ages. Child will write on the ecological disapproval and disadvantages to our society and economy that result from this transportation.

C. Have Highway Officials for your area come to discuss the uses of roads in the country and city and their neighborhood.

D. Class visit to a bloodmobile.
SUGGESTED RESOURCES

CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:
- ABC's of Cars and Trucks, Alexander
- Who Built the Highway, Bates
- I Want to be a Road Builder, Greene

AudioVisual:
Films:
- Beaver Valley Transportation Around the World, Daily
- Planning Our Cities (Current Affairs Films)

Clips & Scripts:
- Traveling Museums and Bookmobiles
- Dept. of Natural Resources
- Highway Commissioner
- National Railroad Museum - Green Bay

Community:
- Obtain charts and booklets and films from The American Trucking Association, The Ford Co., or General Motors.
- The American Trucking Association, The Ford Co., with their use?
- What are the aggravated problems which face us with their use?

CLASSROOM (continued)

Continued or added learning activities

Prepared by:
Alexander Bates

Publications:
### Behavioral Objectives

#### Cognitive:
- Evaluate the practice of sport killing in terms of environmental losses and hunter enjoyment and determine whether it is good or bad and provide reasons.

#### Affective:
- By volunteering observations in a class discussion, the student accepts the idea that man can be an aid and not a hindrance toward the preservation of wildlife.
- Given a poem about sport killing, the student will read it, panel discuss its environmental losses and dramatize situations dealing with same.

#### Skills Used:
- 1. Dramatizing.
- 2. Critical judgment.
- 4. Creative writing.
- 5. Oral skills

### In-Class

A. Read the poem, "Hunting" by Donald Finkel.
B. Students decide what is meant in each stanza and how the character feels.
C. Discussion of why the hunter wanted to kill the fox.
D. Discussion of猎人是否认为 this is a good or poor idea, including what could happen if too many fox are killed.
E. The children will form into small groups and give an extemporaneous dramatization in which the characters are animals and hunters. The children will give their viewpoints on hunter's justification of killing fox. (Possible panel discussion on same).
F. Children can carry through above ideas into other hunting areas (i.e. rabbits, geese, bear).

### Outside or Community:

A. Game warden could be invited in to discuss hunting regulations and the need for them.
B. Take early morning bird hike to somewhere and have a sack breakfast afterwards.
C. Make bird feeders and help the。With Dad's trust birdhouses.
D. Hunters and dramatize situations dealing with same. panel discuss the environmental losses and hunter enjoyment. Take early morning bird hike to somewhere and have a sack breakfast afterwards.
E. The children will give their viewpoints on hunter's justification of killing fox. (Possible panel discussion on same).
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<tr>
<th>Classroom (continued)</th>
<th>Community</th>
</tr>
</thead>
</table>

**Activities:**

For teacher's optional class activity, could be a contest to above.

**Continued or Added Learning Activities**

<table>
<thead>
<tr>
<th>Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Hunter I Might Have Been, Mendoza</td>
</tr>
<tr>
<td>The Last Free Bird, Stone</td>
</tr>
</tbody>
</table>

**Audiovisual:**

| Filmstrip: |
| Eye Gate |

**Community:**

| Game warden, Eye Gate |

We protect animals, eye gate.
Behavioral Objectives

Cognitive:
- Make a collage of wildlife pictures depending on soil.
- Give an example of soil erosion that he has seen recently and offer a solution to the problem.

Affective:
- List ways in which soil erodes.
- Write his views on the value of soil conservation on paper.

Skills Used:
1. Experimenting
2. Classifying
3. Observing
4. Making inferences
5. Listing
6. Discussion

In-Class:
A. Drip water over two soil samples, one planted, but not the second. Observe erosion. Repeat this several times.
B. Make soil with crushed rock, dead insects, leaves, peeling. Plant seeds. Directly or indirectly, from different depths:
   - Keep soil samples for future use.
   - Beat by color, smell, texture, clay, loam, and label as to care.
   - Collect soil samples.

outside or Community:
A. Dig water over two soil samples.
B. Make soil with crushed rock, dead insects, peeling, leaves, peeling, plan and label as to care.
C. Collect soil samples.
D. From soil, collect two soil samples, directly or indirectly:
   - Keep samples for future use.
   - Beat by color, smell, texture, clay, loam, and label as to care.

(Continued)
SUGGESTED RESOURCES
CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:
- People Use The Earth!  by V. Phillips Weaver
- Silver Burdett
- The Good Rain, by Goudy
- The Big Pile of Dirt, by Eleanor Clymer
- A Small Lot, by Keith Farewell to Shady Glade, by Peet
- The Wump World, by Peet
- Science Is Exploring, by Scott- Foresman, Gr. 3, 1965, p. 102-4
- A Place to Live, by National Audubon Society, ICE RMC, 110 A
- The Dirt Book, by Eva Knox Evans, Am. For
- "The Conservation Song", Science Singing Record Sampler

Films:
- Adventures of Junior Raindrop, by U.S. Dept. of Agriculture
- Conserving Our Soil Today, by Coronet
- Man Uses & Changes the Land, by Coronet
- Conserve Our Soil Today, by L.S. Dept. of Agriculture
- Adventures of Junior Raindrop, by Peer
- Audio-Visual
- "The Forester Message"
- The Dirt Book, by Eva Knox Evans
- Audubon Society, ICE RMC, 110 A Place to Live, by National Forest
- Peet
- Our Friend, The Water - Clean or Dirty, by EBF
- The Soil of Life, by BAVI

ARDO-VISUAL
//--------------------------------------------------------

AUDIO-VISUAL

(Continued)

Outdide Activities (Continued)

CONTINUED OR ADDED LEARNING ACTIVITIES (Continued)

Audio-Visual

(contd)

(Continued)

(cont)
I. Observe how quickly water soaks into plant-covered soil. Then, observe how it soaks into bare soil. With a soil borer, take a soil sample and show the students the levels of soil. George Howlett, ICE office, will come to the school.

J. Community: OUTSIDE ACTIVITIES (continued)
**Environmental: CONCEPT NO. ORIENTATION**

<table>
<thead>
<tr>
<th>Skill Used:</th>
<th>Posture balance.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Stoop and bend.</td>
<td></td>
</tr>
<tr>
<td>2. Stacking and bending.</td>
<td></td>
</tr>
<tr>
<td>3. Posture correctness.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BEHAVIORAL OBJECTIVES</th>
<th>STUDENT-CENTERED LEARNING ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive:</strong></td>
<td><strong>Outside or Community:</strong></td>
</tr>
<tr>
<td>Differentiate between the terms, short-term gains and long-term gains.</td>
<td>A. Bag of candies.</td>
</tr>
<tr>
<td>Affective:</td>
<td>A. Project illustration.</td>
</tr>
<tr>
<td>Show an awareness of consequences resulting from poor posture habits through a discussion.</td>
<td>A. Motivation.</td>
</tr>
</tbody>
</table>

**TOPIC/UNIT** Posture - Safety (Art)

**SUBJECT** Physical Education, Art

**Integrates with:**

<table>
<thead>
<tr>
<th>Environmental:</th>
<th>Concept No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - Economic Planning</td>
<td>Art, Physical Education</td>
</tr>
<tr>
<td>Publications:</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Audio-Visual:</td>
<td></td>
</tr>
<tr>
<td>Community:</td>
<td></td>
</tr>
</tbody>
</table>
| from magazines.
Good and poor posture pictures |
| New York | Activities, Inc., Freeport, |
| for ALL AGES, Vocational |
| Postural Improvement Activities |

<table>
<thead>
<tr>
<th>CONTINUED OR ADDED LEARNING ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLASSROOM (Continued)</strong></td>
</tr>
<tr>
<td>1. Camp fires and cigarettes. (forest fires)</td>
</tr>
<tr>
<td>2. Economic gains in wood industry (depletion of forests)</td>
</tr>
<tr>
<td>3. Lack of crop rotation (depleted soil)</td>
</tr>
<tr>
<td>4. Economic gains of industry (pollution of air and water)</td>
</tr>
<tr>
<td>D. Exercises (pushing together each other, stand up)</td>
</tr>
<tr>
<td>I. Sitting back to back with a partner, push</td>
</tr>
<tr>
<td>2. Standing against the wall with heels (called Chinese getup)</td>
</tr>
<tr>
<td>3. Shoulders should be back and down with the stomach pulled in with the limitations discussed in No. 2</td>
</tr>
<tr>
<td>4. Shoulders should be back and down with the wall, fingers of the hand should fit between buttocks, shoulders and head; only the neck</td>
</tr>
</tbody>
</table>

**SUGGESTED RESOURCES**

Audio-Visual:

Publications:

Community:

from magazines.
Good and poor posture pictures

New York Activities, Inc., Freeport, for ALL AGES, Vocational Postural Improvement Activities
**Environmental:**

**CONCEPT NO. 11**

**Individual Acts**

**ORIENTATION**

Fire Prevention

**Integrated with:**

- **SUBJECT:** Science
- **TOPIC/UNIT:** Resource Conservation

**BEHAVIORAL OBJECTIVES**

**Cognitive:**
- Describe examples of what other people have done to illustrate short term vs. long term actions for resource conservation.

**Affective:**
- Willingly discuss various acts of people that may affect the environment. (i.e. disposing of wastes, setting of fires, traffic jams)

**Skills Used:**
- Collecting pictures.
- Making inferences.
- Comparing & contrasting.
- Drawing conclusions.
- Planning a trip.
- Surveying/collecting data.
- Developing conclusions.
- Completing a group project.

**In-Class:**

**STUDENT-CENTERED LEARNING ACTIVITIES**

**A.** Discuss the need to protect forests

- The children will draw pictures of forests and discuss the importance of preserving them.

**B.** Collect pictures of forests where fires have occurred

- The children will write captions explaining what happened and how the forest was affected.

**C.** The children will draw pictures of forests that have been preserved for different reasons.

- They will discuss the significance of each forest.

**Activities:**

- Take a survey of all fathers, mothers or relatives who hunt, ex.-ducks or deer.
- Discuss the "sport" of hunting. Then read The Happy Hunter by D. A. Duvoisin and try to instill the idea of watching and not shooting animals. Plate With Me by Ets also helps the child understand that animals should always be left alone. They need the children to understand the idea of protecting wildlife without cause.

- Discuss the need for efficient use of water. Place a picture of a forest fire where the children can see the fire.

**Outside or Community:**

**A.** List ways people set fires: cigarettes, matches, campfires, arson, trash piles, burning leaves, etc.

- Make up an ABC forest fire prevention game. For example:
  - A is Always be careful with fire.
  - B is Burn trash only on calm days.
  - C is Campfires should always be put dead out.

**B.** Discuss times when children have gone places with their parents and have gotten caught in a traffic jam.

- If a bus holds 40 people, how many cars could have been replaced by one bus?

**C.** Collect pictures of lakes. Write captions as to how areas are used.

- The children will draw pictures of lakes and write captions about their use.

**Skills:**

- Observation
- Listing

(Continued)
SUGGESTED RESOURCES

CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:
The Happy Hunter, Duvoisin
Rrra-ah, Keith
THF-Traip World, Peet
Farewell to Shady Glade, Peet
The Last Free Bird, Stone
Trail of Apple Blossoms, Irene Hunt
Action at Paradise Marsh, Ester Wier
Ash Road, Ivan Southall

Audio-Visual:
ECOLOGICAL IMBALANCE: SIX SYSTEMS, ICE RMC, 390
SPOILED, Bye Gate
ADVENTURES IN ECOLOGY, ICE RMC, 373
CONServation For Beginners, ICE RMC, 170

CLASSROOM (Continued)

After the learning experiences, the child will plan an imaginary trip to a public park and defend their individual behavior (p. 106) (p. 107)

COMMUNITY:

Parents
Forest ranger
Game warden

PUBLICATIONS (Continued)

CONTINUED OR ADDED LEARNING ACTIVITIES
Environmental: Concept No. Orientation

Soil Management

1. Making comparisons.
2. Observing using senses.
3. listings.
5. Describing evidence.
6. Charting evidence.

STUDENT CENTERED LEARNING ACTIVITIES

In-Class:

A. After completing the activity, children will discuss how to change the earth:
1. Add water to it.
2. Add fertilizer.
3. Plant something.
4. Let it dry out in the sun.
5. Heat it in an oven.

B. After completing the activity, children will appreciate the use of their 5 senses in describing other environmental changes they witness.
- Using puppets, students in teams create spontaneously 5-minute skits dramatizing how the senses can help us to manage the land.

C. The Soil

1. Explore the soil with the senses - color, texture, density, smell.
2. Examine the various levels of the earth; color, texture, density.
3. Describe the smell and color of the earth:
- Touch the soil.
- What can you learn about the soil that can be determined by using your senses?

Outside or Community:

A. Ice field activity guide, "It's Your World," a sensory experience available from Project ICE.

B. By each of the following:
- Birds
- Plants
- Water
- Heat

C. Plant the same kind of seed (corn) in all foam cups (corn) in all foam cups. Give each the same amount of water.

D. Examine the various levels of the earth; color, texture, density.

Skills Used:
1. Making comparisons.
2. Observation using senses.
3. Listing.
5. Describing.
6. Charting evidence.
SUGGESTED RESOURCES
CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:
- Science In Your Own Backyard, E. K. Cooper, Harcourt, Brace, 1958
- Classroom Out-of-Doors, Wilbur Schramm, Sequoia Press, 1969
- A Handful of Soil, K. Cooper, Harcourt, Brace, 1958

Audio-Visual:
- Films:
  - Earth - Man's Home, BAVI
  - Our Earth, BAVI

Community:
- Conservation Department
- Classroom (Continued)

D. Students keep running chart of plantings in direct and window light and then write a comparison/contrast report on their findings.
E. Students evaluate their findings and list conclusions.
F. How Could You Know? Some you could hear, some you could smell, some you could taste, and others you could touch. Before each of these things named below tell just what each of these things named below was or just what was happening? Some you could see, but others you could not use your eyes, how else could you know?

18. The small bowl was very heavy.
17. The steam kept lifting the cover of the pan.
16. The pancake was too sweet.
15. The red apple was not really ripe.
14. The meat was well done inside, too.
13. The butter was too hard to use on soft bread.
12. It was fresh and not chicken cooking in the covered pan.
11. The cream had begun to turn sour.
10. Hay had been stored in the top of the barn.
  - The washing machine was full of water.
  - The baby had sticky hands.
  - The string beans were cut and not cooked.
  - The glass of milk was warm.
  - The cheese was sharp.
  - The class of milk was warm.
  - The cheese was warm.
  - The cake had orange icing.
  - The brown trunk was very light.
  - The cream was used for the pie.
  - The cream had begun to turn sour.
  - The cream had begun to turn sour.

Our Earth - Man's Home, BAVI

Films:
- Earth - Man's Home, BAVI

Audio-Visual:
- Conservation Department
- Classroom (Continued)
19. Gas and not water was running from the underside of the car.

20. The mountain lake was ice cold.

21. The bark of the oak tree was not smooth.

22. The sidewalk on the sunny side of the street burned our feet.

23. There was sea water in the pool on the ship.

24. The teeth of the olesaw were still sharp.

25. My brother ground his teeth in his sleep.

Get the youngsters to pantomime their physical reactions to tasting something that is:

1. Too hot.
2. Too cold.
3. Too bitter.
4. Too pepper.
5. Something distasteful.
7. Too sweet.
8. Too salty.
10. Very sour.

SUGGESTED RESOURCES
CONTINUED OR ADDED LEARNING ACTIVITIES
Classroom (Continued)

G. Tastings

10. Very sour.
8. Oily.
7. Very good.
6. Very pepper.
5. Something distasteful.
4. Too bitter.
3. Something familiar.
2. Too cold.
1. Too hot.

Audio-Visual:

1. My brother ground his teeth in his sleep.
2. The teeth of the old saw were still sharp.
3. The teeth of the tree were not.
4. The ship burned our feet.
5. The sidewalk on the sunny side of the street burned our feet.
6. The lake was ice cold.
7. Under the oak tree was not.
8. Eggs and not water was running from the underside of the car.
Environmental:

CONCEPT NO. 11 - Individual Acts

ORIENTATION

Integrated with:

SUBJECT

TOPIC/UNIT

Group Design

BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

Cognitive:

Applies the principle of combining individual acts to make a whole through completion of the project which is made up of individual components.

Affective:

The student accepts the responsibility of individual work to develop the whole by willingly participating in the group project.

Skills Used:

1. Construction.
2. Observation.
3. Discussion.
4. Painting.
5. Group planning.

In-Class:

E. S. E. A. Title III - PROJECT 1-C-5

1. Construction.
2. Painting.
3. Discussion.
4. Observation.

Outside or Community:

A. Each student makes one Christmas ornament to decorate a tree for the Christmas holidays.

B. Group effort to select a tree for the room to decorate.

A. Each student saves and decorates a Christmas ornament to be used for the room to decorate.

B. Compare acoustics in various community buildings, such as symphonies, theaters, school, etc. Use a tape recorder, cellophane, mache, etc.

GROUP EFFORT TO DECORATE A TREE FOR THE CHRISTMAS HOLIDAYS.

Comes from the project which is made up of individual acts through cooperation of individual parts.

The student accepts the responsibility of individual work to develop the whole by willingly participating in the group project.

E. S. E. A. Title III - PROJECT I-C-5

1. Construction.
2. Painting.
3. Discussion.
4. Observation.

In-Class:

E. S. E. A. Title III - PROJECT 1-C-5

1. Construction.
2. Painting.
3. Discussion.
4. Observation.

Outside or Community:

A. Each student makes one Christmas ornament to decorate a tree for the Christmas holidays.

B. Each student saves and brings bottom of egg cartons of the same color to tile ceiling for attractiveness and acoustic qualities. (Check fire codes). (Semester to complete). Staple or fasten together with brass fasteners.

A. Group effort to obtain a tree for the room to decorate.

B. Compare acoustics in various community buildings, such as swimming pool, church, etc. Use a tape recorder, cellophane, mache, etc.

GROUP EFFORT TO DECORATE A TREE FOR THE CHRISTMAS HOLIDAYS.
SUGGESTED RESOURCES

CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:

"Humanizing the School with Children's Art", Lewis & Clark School, St. Louis, V.T. Mealy, Instructor, 79:55 MY '70

"In the Courtyard with an Art Student, Little Boxes—Big Boxes", E. Deutsch, Arts & Activities, 69:40-1 F '71

"Design Experiments With Natural Materials", R. Moorse, School Arts, 68: 16-17 Mr. '69

"Paint a Bus!", B.J. Erdahl, '71, L. Olson, Grade Teacher, Walls", L. Friedman, School Arts, '70

Audio-Visual:

"Rag Tapestry" (wall hanging)

Community:

Community building

Art museum to view murals

Continuation:

Foundation

"Film, Interational Film"

"Rag Tapestry" (wall hanging)

Audio-Visual: (continued)

School Arts, p. 28-29, Jan. '70

Painting City Walls", L. Friedman, School Arts, Feb. '72

"Painted Mural", L. Olson, Grade Teacher, p. 82-83,

"Paint a What? Paint a Bus!", B.J. Erdahl, School Arts,

Publications (continued)
Environmental Concept No. 11 - Individual Acts

Orientation: Environmental Problems

Integrated with: Physical Education

Topic/Unit: Rope Jumping

Subject: Physical Education

Behavioral Objectives

Cognitive:
1. Determine their environmental activities by reciting two or more ditties while jumping rope.
2. Demonstrate the value of physical activity in reducing environmental problems.

Affective:
1. Indicate an enthusiasm for and enjoyment of activities that emphasize the importance of reducing environmental problems by using such ditties when no teacher is present.

Skills Used:
1. Jumping
2. Agility
3. Balance
4. Coordination
5. Speed
6. Jumping at double speed
7. Waves--one end held forth, not over.
8. Peppers--means and jumps over which to make itripple
9. Credit--back and forth
10. Some marching to jump rope, or marching songs: Marching to Pretoria.

In-Class:
A. Visit a Junior or Senior High Gymnastics Class.

Outside or Community:
A. Visit a Junior or Senior High Gymnastics Class.

Project I-C-E 56-70-0159-4
We are marching for Ecology, Ecology, Ecology.

We are marching for Ecology, Ecology, Ecology.

We are marching for Ecology, Ecology, Ecology.

As we march alone.

And so we are all together.

I’m with you and you’re with me.

(continued)
CONTINUOUS OR ADDED LEARNING ACTIVITIES

Audio-Visual:

SUGGESTED RESOURCES

CLASSROOM (Continued)

a. Move strideward right or left on each jump.
b. Turn rope twice while in air.
c. Click heels together while in air.
d. The position of feet on each jump.

Audio-Visual:

SUGGESTED RESOURCES

Silent, silent, still, still, silent.
Tell me pollution is caused by man
Papers, bottles, tires, cans
and

CONTINUOUS OR ADDED LEARNING ACTIVITIES

Audio-Visual:

SUGGESTED RESOURCES

CLASSROOM (Continued)

C. Individual rope skills.

How many trees did it burn down?
Holy smoke! The campfire got away tonight.
Campfire, campfire, where a beautiful night.
Campfire, campfire, gives us light.
Campfire, campfire, what a beautiful night.

Publication:
on each jump.

2. Turn rope backward doing the above.

3. No. 1 turns rope forward, No. 2 runs in, faces partner. No. 1 turns rope forward, No. 2 runs in behind partner.

4. No. 1 turns rope forward, No. 2 runs in, turns his back to partner.

5. No. 1 turns rope forward, No. 2 runs in, faces his partner, and both jump.

6. Partners stand side by side, inside hands joined, outside hands joined.

D. Individual--Partners Jumping:

Jumping rhythm:

Student swings rope to one side maintaining same make a different type of jump; use the slip-- change direction of jump or to permit jumper to

6. Jump with right or left foot.

C. Jump alternating hands; or direction.

5. Grasp both ends of rope in one hand, assume deep

4. Grasp--Swing the rope forward under the feet.

3. Click hands or rope together or clap hands each

2. Turn rope backward doing the above.

Published under:

Contended or Added Learning Activities

Suggested Resources

Classroom (Continued)
a) Environmental:
CONCEPT NO. 11 - Individual Acts
ORIENTATION Quality of Life
Integrated with: Mathematics

BEHAVIORAL OBJECTIVES
Cognitive:
Given a shoe box, rig-a-jig triangles and blocks the child will construct a city block & discuss the significant changes taking place in this situation. Child will also discuss a possible increase of cars passing and related problems.

The learner will propose ways of decreasing the amount of land we use.

Skills Used:
1. Graphing
2. Math skills - subtraction
3. Interpretation
4. Constructing
5. Discussing

In-Class:
1. Car Census
2. Real estate person to speak on land development.
3. Class will construct an "ideal" model being eaten up. See how forests are to a "busy" village. Contrast villas and contrast
4. Child may graph results. Many trees go? Or four blocks? How many trees go? How many buildings. How many trees go? Box. This is a box. This is a building. How many trees go?
5. Print a block into the 2. jig to act as trees. "Get a tree from a tree--" box. Stand up city. Shoe box or smaller
6. I give each student a mental change. Change a city block of trees to a shoe box, rig-a-jig,
7. I visit the site of a village.

Outside of Community:
1. Class will construct an "ideal" model: contrast housing development to a busy village. See how forests are to a "busy" village. Contrast vil-

A. Visit the site of a village.

SUBJECT Mathematics
TOPIC/UNIT Ordered Pairs

Orientation: Individual Acts
Concept No: Environmental
Classroom: (Continued)

4. George Howlett, Project ICE, has prepared an "Man in His Environment" Game. This is available from the Project ICE office.

C. Use "Man in His Environment" Game.

Audio-Visual:

1. Filmstrips:

2. Films:
   a. Cities Are Different & Alike, BAVI
   b. Cities Are Different & Alike, FILM #400

Community:

1. City Planner
2. Real Estate Man

Publications:

1. Ecology: The City, George McCue, ICE RMC, 130 Mc

Continued or Added Learning Activities

Audio-Visual:

1. Filmstrips:

2. Films:
   a. Cities Are Different & Alike, BAVI
   b. Cities Are Different & Alike, FILM #400

Community:

1. City Planner
2. Real Estate Man
Environmental Concepts:

**Concept No.** ORIENTATION

**Land Use**

**Sub-Concept**

**Language Arts**

**TOPIC/UNIT**

**Rules and Rights**

**BEHAVIORAL OBJECTIVES**

**Cognitive**:

The child will identify (possibly from pictures) some of the violations of land use which are imposing on others' rights.

List five rules or practices that each can do, as an individual, to get along well with our neighbors in the use of land.

**Affective**:

The student will support the idea that neighbors should try to get along with each other by drawing a comic strip or cartoon showing violations of personal rights and ways in which these rights can be protected.

**Skills Used**:

1. Alphabetize word list.
2. Discussion.
3. Evaluation.
4. Definitions.
5. Listing.

**In-Class**

A. In winter, get a copy of natural resources, with the hazards, and dangers of constant use abuse.

B. Are these machines safe to use? Are they good to tell about the hazards, and tell a conservationist talk about these machines in places of the community, and discuss any of their effects on the environment.

C. Prepare a word bank or dictionary of words relating to personal rights, and come up with a list of questions that can be asked to neighbors or in the neighborhood.

**Outside of Community**

A. Prepare a comic strip or cartoon showing violations of personal rights and ways in which these rights can be protected.

**E. S. E. A. Title III - PROJECT I-C-E 59-70-0135-4**
SUGGESTED RESOURCES

CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:
- Just Right, Moore
- A Small Lot, Keith
- VOYWWB, Lathrop
- Who Goes There?, Lathrop
- End of the Line, Udry
- My Side of the Mountain, Jean George
- Lorax, Dr. Seuss
- End of the Line, Udry
- Who Goes There?, Lathrop
- Follow the Brook, Lathrop
- Just Right, Moore
- Microfilm

AudioVisual:
- Films:
  - Your Friend the Forest - Save It or Destroy It, EBF
  - Your Friend the Soil - Keep It or Lose It, EBF
  - The Treehouse, Brown County Library

Filmstrip:
- Environmental Pollution...Our World in Crisis, Ward's Natural Science Estab., Inc., ICE RMC, FS St 1

Community:
-Conservativist
- PS St I Science Project, Inc., ICE RMC

Environmental Pollution - Our World in Crisis

Library
- The Treehouse, Brown County Library

Vocabulary charades.

Gesture is used whenever game is played.
Acceptable gesture for each word. This "acceptable" movement is given a certain pantomime (gesture or words.) Using the flash card method, the teacher prompts use flashcard strips to record environmental vocabulary. Use vocabulary charades, gestures, recreation, perishable, etc.
Conservation, pollution, muck, sewage, thermal, bacteria, consumption, disease, resource, wildlife, poisonous, stench, unperishable, detergents, radioactive decay, etc.

CLASSROOM (continued)

CONTINUED OR ADDED LEARNING ACTIVITIES

SUGGESTED RESOURCES
Environmental Quality for Man

BEHAVIORAL OBJECTIVES

Cognitive:

1. Children will list five situations where private ownership must involve private stewardship. 
2. Record the space measures of various areas when given the game "Rescue in Space." 

Affective:

1. Children will list six things they enjoy doing and then decide on three things they'd be willing to give up in an effort to improve environmental quality.

Skills Used:

1. Listening
2. Reasoning
3. Discussion
4. Critical thinking
5. Measuring
6. Interpretation
7. Generalization

In-Class:

A. Before class begins, the teacher will distribute her possessions around the room: on desks, under and near desks. She hopes the children will return them.

B. Discussion of what has just happened. Ask if it was right for me as a teacher to leave my things about. Why? (Someone else had to pick them up; she was just causing other people to do unnecessary work.)

C. Have students list things which they should do to show they take care of their possessions and do not cause others to suffer.

Outside or Community:

A. Language Arts

1. Have a person who has lived in both city and rural environments discuss the space used. 
2. FHA person speak on housing requirements. 
3. Go to a city street and discuss the space allowed in both city and rural environments. 

B. Each person see the space allowed under and near decks. 

C. Go to a city street and see the space allowed in both city and rural environments.
What happens.

I. Measure off an area in the room and have a use or space.
   A. You may try measurement if possible.
   B. Use Man in His Environment Game. Use only
   C. Lose of space.

II. What happens.

A. By another's use of space?

B. Where have you seen your rights encroached upon
   1. Changes the things others can do on it.
   2. Changes the things you can use it or

C. Discuss how putting things into an area or on
   property changes the way you can use it.
   Or your space used by someone else's possessions?

D. Do you like to have your area and freedom to

CLASSROOM (Continued)

SUGGESTED RESOURCES

Publications:

Man and His Environment, J.Y. Wang, ICE RMC, 160 Wa
Our Man-Made Environment, Book 7, ICE RMC
Too Many People, Richard Kimball, ICE RMC

Children's Books:

Little Boy Brown, Harris
A Small Lot, Keith
Just Right, Moore

Audio-Visual:

Game: Man in His Environment, Coca-Cola Co., ICE RMC, SG 4

Community:

Observe city streets
Listen to FHA man
Rural and urban citizen, discuss
Environmental Law

12 - Stewardship

Integrated with:

Social Studies

TOPIC/UNIT

Conservation and Government

BEHAVIORAL OBJECTIVES

STUDENT-CENTERED LEARNING ACTIVITIES

Cognitive:

1. Research
2. Communication
3. Reference
4. Observation
5. Participation
6. Critical thinking

Explain how the conservation law and the concept of private property can be in direct conflict.

Affective:

Child will participate in role-playing and discussions concerning the conflict between the conservation law and the concept of private property.

Skills Used:

1. Research
2. Communication
3. Reference
4. Observation
5. Participation
6. Critical thinking

In-Class:

A. The conflict between the conservation law and the concept of private property can be explored by debating teams of three or by role-playing a discussion between two people. It can be dramatized in a political cartoon supporting or arguing against an environmental issue. Possible responses:
   1. Trees keep your soil and your neighbors' soil from washing away.
   2. Your neighbors and visitors have a right to see the trees are beautiful.
   3. The country needs trees.
   4. The country needs easy access to the soil from washing and your neighbors and visitors have a right to see the trees are beautiful.

Outside or Community:

A. Visit City Hall to have the present community zones described and explained. Include in discussion:
   1. Noise
   2. Odor
   3. Traffic
   4. Waste disposal
   5. Education
   6. Recreation

(Continued)
SUGGESTED RESOURCES
\[ \text{CONTINUED OR ADDED LEARNING ACTIVITIES} \]

Publications:
- Let's Go To City Hall, Wolfe
- All Ways, Andrews
- Patterns of Nature, Baker
- McGale's Mountains, Benzin
- A Big Pile of Dirt, Clymer
- Teacher's Forest Fire Prevention and Conservation Kit, Grades 1-4, Forest Service, U.S. Dept. of Agriculture or your State Forestry Department, ICE RMC, 170 Fo

AudioVisual:
- Film:
  - The World Around Us
- Filmstrip:
  - Enemies of the Forest

Community:
- Property owners
- Sportsmen
- Hunter
- Fisherman
- Forest Ranger

CLASSROOM (Continued)

Responses against law:
1. I can do as I please with my land; it's a free
   2. Travel should be
      1. Greater use causes
         2. Limited. They are possible.
     1. Other energy sources
        2. Greater pollution.

Issue: Saving Gas

<table>
<thead>
<tr>
<th>Pro</th>
<th>Con</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 2/3 of the world is covered with water.</td>
<td>2. Salt water can be turned into fresh water.</td>
</tr>
<tr>
<td>1. Water is needed for life.</td>
<td>2. Sixty gallons of water per person is used each day.</td>
</tr>
</tbody>
</table>

Issue: Conserving Water

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<th>Con</th>
</tr>
</thead>
<tbody>
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<td>1. Water is needed for life.</td>
<td>2. Other energy sources are possible.</td>
</tr>
<tr>
<td>1. 2/3 of the world is covered with water.</td>
<td>2. Travel should be convenient.</td>
</tr>
<tr>
<td>1. Life.</td>
<td>2. 2/3 of the world is covered with water.</td>
</tr>
<tr>
<td>1. Salt water can be turned into fresh water.</td>
<td>2. Salt water can be turned into fresh water.</td>
</tr>
</tbody>
</table>

Issue: Saving Gas

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<th>Con</th>
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</thead>
<tbody>
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<td>1. Oil resources are limited.</td>
<td>1. Other energy sources are possible.</td>
</tr>
<tr>
<td>2. Greater use causes pollution.</td>
<td>2. Travel should be.</td>
</tr>
</tbody>
</table>

B. Using the chalkboard, the teacher would place several issues before the students. The class would give pro and con statements per issue. This technique may help illustrate just what a debate or argument involves. For example:

Issue: Conserving Water

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</table>
Make posters that illustrate the need for stewardship and the responsibility of individuals and groups in this matter.

Environmental:

**CONCEPT NO. 12 - Stewardship**

**ORIENTATION**
Stewardship and Rights

**Integrated with:**

**SUBJECT**
Art

**TOPIC/UNIT**
Drawing and Printing

**BEHAVIORAL OBJECTIVES**

**Cognitive:**
1. Define stewards of the land in their own terms.
2. Illustrate the importance of man being a good steward of the land with examples.
3. List three examples of stewards of the land not previously discussed or named.

**Skills Used:**
1. Drawing
2. Idea organization
3. Block printing
4. Cutting
5. Gluing
6. Observation
7. Care and share
8. Hang onto life for all that it's worth
9. Fries
10. Prevent forest pollution
11. Give a hoot, don't pollute
12. Help prevent forest pollution

**In-Class:**

A. Block print mottoes.
B. Could use cardboard, styrofoam, cork sheets, care and share.

**Outside or Community:**

A. Block print mottoes.
B. Students should create mottoes and print them in a place they might be easily observed. Examples:
1. Give a hoot, don't pollute.
2. Help prevent forest pollution
3. Give a hoot, don't pollute.

**In/Class:**

A. Project could be done in conjunction with:
1. Social studies using the following speakers:
   a. Neighborhood stewards.
   b. Community stewards.
   c. Moms and Dads.
   d. Student ecology club members.

2. Project could be done in conjunction with social studies using the following speakers:
   a. Neighborhood stewards.
   b. Community stewards.
   c. Moms and Dads.
   d. Student ecology club members.
CONTINUED OR ADDED LEARNING ACTIVITIES

Publications:

"Monoprints in Color", P. Carruba, Arts & Activities, p. 41, Dec. '70
"3 Color Cardboard Printmaking", E. Deutsch, Arts & Activities, p. 34-5, April '71
"Papercrafts and Mobiles", R. Perlmutter, Teaching Exceptional Children, p. 134-41, Spring
"Print with Egg Cartons", S. Rolle, Art & Activities, p. 35, Sept. '71

(Continued)

Audio-Visual:

McGraw-Hill Study Prints, Conservation 2 Picture Discussion Kit, ICE RMC, K-12
"Introducing Animals Series", McGraw-Hill Study Prints

Conservation 2 Picture Discussion Kit, ICE RMC, K-12
"Introducing Animals Series"

Pictures and bumper stickers available from the Environmental Protection Agency, Office of Public Affairs, 1200 New York Ave., N.W., Washington, D.C.

Community:

McGraw-Hill Study Prints, Conservation 2 Picture Discussion Kit, ICE RMC, K-12
"Introducing Animals Series"

Pictures and bumper stickers available from the Environmental Protection Agency, Office of Public Affairs, 1200 New York Ave., N.W., Washington, D.C.

Suggested Resources

Continued or Added Learning Activities

Publications (continued)
APPENDIX

Mr. Mars

Can be used with concepts 6, 7, 9 and 11.

One player is Mr. Mars. All other players stand in a straight line on one goal. In unison, players call, "Mr. Mars, Mr. Mars, will you chase us to the stars?" Mr. Mars replies, "Yes, if you're wearing ___________." (He calls a color such as red, green, etc.) All players wearing that color run to opposite goal and Mr. Mars tries to tag them. Any player he catches is out of the game. He has three chances, then calls everyone over.

Telephone Tag

Can be used with concepts 7 and 11.

Form a circle. Count off by five. Each player lives in his own house. Teacher calls a number and all players with that number run counter-clockwise around the circle once and back to their own houses. Last one to get home was too late to answer the phone. He sits down in his house. Continue game until one player of each number is left.

Bird Catcher

Can be used with concepts 2 and 3.

Divide the class into four or five kinds of birds. One player is the hawk. The hawk stands in the center between two goals. He tries to guess the kind of birds each group is. When he calls the bird of a group, they must try to run to opposite goal without being tagged. To give hawk hints, the birds may imitate the sound they make.

Crows and Cranes

Can be used with concepts 2 and 3.

Equal number of players in two straight lines, three feet apart. One team is crows, the other cranes. When teacher calls crows, they run to their goal line, and the cranes try to tag them. If he calls "cranes", cranes run to their goal. Any player caught goes to opposite team.