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ABSTRACT

This bulletin is one in a series of environmental education activity guides for grades K-12, developed and field-tested by teachers in the Montgomery County(Maryland) Public Schools. Primarily for use in the middle grades four through six, the guides are not intended to constitute complete units in themselves. They are, rather, a compilation of activities considered appropriate for particular environmental studies. In this guide about seasonal changes, for grades K-1, are activities entitled: Observing and Recording Seasonal Changes in Nature; Describing the Life Cycle of an Animal, Insect, or Plant; Observing Ways in Which Seeds are Scattered; Measuring Temperature and Finding Life Underground; and Listing Ways in which Man Adapts to Seasonal Change. Each activity indicates the instructional objective, procedures to follow, and materials required. Teacher notes are added when necessary. A student evaluation sheet concludes the bulletin. Related documents in the series are SE 015 885 through SE 015 889 and SE 015 891 through SE 015 895. (BL)

Activities for Studying Seasonal Change

Environmental Education Series · Bulletin No. 247-F

ENVIRONMENTAL EDUCATION SERIES
ACTIVITIES FOR STUDYING SEASONAL CHANGE
GRADE LEVEL K – 1

Bulletin No. 247-F

Montgomery County Public Schools
Rockville, Maryland
Homer O. Sherrard
Superintendent of Schools

INTRODUCTION

For some time, there has been a need for curriculum materials to assist teachers who wish to move the teaching/learning experience beyond the school walls. Although individual schools have prepared materials useful to their own unique purposes, such information and teaching aids have not generally been shared with other schools.

This series of bulletins on Environmental Education was developed after arrangements were made in Area 11 for approximately a dozen 12-month teachers to produce outdoor education materials during the summer of 1969. Field testing of these materials occurred, primarily in Area 11, during the 1969-70 school year.

In the summer of 1970, an Outdoor Education Curriculum Development Workshop was conducted at Randolph Junior High School, during which twelve teachers developed additional materials and reviewed and tested those prepared earlier.

The bulletins in the Environmental Education series are not intended to constitute complete units in themselves. They are, rather, a compilation of activities considered appropriate for particular environmental studies. Whether the series should be used separately or as a supplement to other aids should be determined by the needs and purposes of each teacher and his students.

A word of explanation about format: Each activity suggested has its own stated instructional objective. The achievement of that objective will be an individual experience for each student, even though in some cases the procedures suggested may be group rather than individually-directed.

PURPOSE

The purpose of these activities is to suggest specific lessons which can be used outdoors with younger children to help them become aware of changes in nature throughout the year. For instance, they include ways to observe those changes which occur in trees, plants, birds, insects, and other animals in the various seasons.

TREES Leaves change color and drop off in the fall. Many trees are bare in winter. They bud and send out new growth in the spring.

PLANTS Plants produce seeds which are scattered by various means in the fall. Plants then either die or are dormant in the winter. The latter start growing underground and break through the ground to start a new plant in the spring.

BIRDS Those which cannot find food migrate in the fall. Birds which don't migrate can keep warm, but they will eat supplementary food in the winter. Birds build nests and start new families in the spring.

INSECTS There are different growth stages for insects as well as other creatures. In the fall, some prepare for hibernation. In the spring they emerge in different forms.

ANIMALS Some store food in the fall. Some change coats in the winter; others hibernate. Snow protects animals in cold weather, but it also hides their food. In the spring, animals start new families.

MAN Man also has to adapt to the changes in season.

TABLE OF CONTENTS

Activity 1: Observing and Recording Seasonal Changes in Nature

Instructional Objective:

The student will be able to describe differences in the same natural area in different seasons.

Procedure:

1. Pick a definite area of the playground, a yard with trees, or a wooded area near the school which can be observed regularly.

2. Make a large calendar. On it, record the names of birds seen in the area every Tuesday during the year.

3. Obtain a bird feeder. Hang it in the area. Keep it supplied. Observe the birds that come to it. Make an experience chart notebook about those that come. [Bird feeders can be made of a stovepipe-shaped coconut, a plastic gallon jug partially cut away, a log with wire over it, or a pine cone. A wooden feeder with sides could be made by an interested father. It should be hung or mounted so that squirrels and rats cannot get at either the birds or the food. The children can prepare the bird food. Put string through nuts, cover the pine cone with peanut butter and bird seed, etc.]

4. Make a "track trap," and observe the footprints of the animals who feed there. On the afternoon, scatter sand over an area three feet in diameter. Rake it. Put food in the center. The kinds of food will determine which animals come. Put food for rabbits, raccoons, squirrels, blue jays, sparrows, turtles, etc. Smooth the sand to remove all marks. Sprinkle it to remove human odor and make it firmer. Go to the area first thing in the morning to discover whether any animals have visited it. [You may have to fence the area to keep out children and large animals such as dogs.] In the winter, tracks can be observed after a fresh snow.]

5. Take a walk and look for animal homes. Before you start, show the children pictures of animal homes; e.g., bird nests, rabbit burrows, spider webs, cocoons, etc. In the spring, look for new homes or new tenants.

6. Have children make art projects related to trees at different seasons. In the fall, collect leaves from the trees in the area. If possible, get green and other colored leaves from the same tree. Make tracings or rubbings, or laminate the leaves. Make a finger painting of a tree in winter. Take a branch and cover it with wet Ivory flakes, or spray it with a decoration to resemble snow. Make a watercolor of a flowering tree. A small piece of sponge dipped in paint gives the effect of lovely cherry blossoms.

7. Make a picture of wild flowers seen on a walk. Have pupils identify the wild flowers they know and make up names for those they don't know. Take a walk in winter and then later in spring to look for new green shoots.

8. Observe animals preparing for coming cold weather. Take a walk to see whether you can find any squirrels storing nuts for the winter, or birds perched on a telephone line before flying south, or any caterpillars spinning cocoons.

Materials:

chart paper
coconut or Clorox bottle, or log and wire
suet, peanut butter, bird seed, raisins
sand
animal food, tomatoes, worms, lettuce, carrots, hamburger, chicken bone, insect grubs
art paper, crayons, charcoal
clear plastic laminate
finger painting paper, finger paint
Ivory flakes, snow spray
watercolor paints, sponge
blotters, newspapers, cardboard, laminate

Activity 2: Describing the Life Cycle of an Animal, Insect, or Plant

Instructional Objective:

The child will be able to describe the life cycle of a particular animal, insect, or plant.

Procedures:

1. Obtain a box turtle. Build an enclosure or terrarium for him outdoors. Feed him carrots, lettuce, tomatoes, cabbage. Watch him dig down to hibernate when cold weather comes. Observe him come out in the spring.

2. Find a caterpillar. Place it in a large jar. Put sand in the bottom. Put a branch with live leaves in the jar. Put holes in the lid for air. Keep it outside the classroom window. Watch the caterpillar build a cocoon. Observe the moth or butterfly emerge in the spring.

3. Keep a rabbit or pair of rabbits in an outside hutch. Note seasonal changes in fur. (This requires someone willing to tend the rabbits properly every day during the year.)

4. Plant a bean in a glass container in February or March. Plant the bean next to the glass. Observe it growing before it pushes through the ground and afterward.

5. Have each child plant a bulb or stones in a flower pot or other appropriate container. Keep some in the classroom to observe the full growth cycle. Let the children take theirs home as gifts.

Materials:

box turtle, wire enclosure or terrarium
turtle foods, carrots, lettuce, tomatoes, cabbage
caterpillar, jar, sand, branch and leaves
rabbit hutch, rabbit food
bean, glass or stones, soil
bulbs, containers for bulbs, stones

Activity 3: Observing Ways in which Seeds Are Scattered

Instructional Objective:

The child will be able to name three ways in which nature scatters seeds.

Procedures:

1. On a windy day, take a milkweed pod that has dried. Have a child pop it. Watch the way the seeds float through the air. Blow them to make them continue to float. Chase them.

2. Take a walk in a field or woods. Have the children wear long pants, long shirts, or drag clothes. Have them note how many hitch hiker seeds they pick up.

3. Take a walk to look for a squirrel storing nuts, or a bird carrying seed, or birds scattering seed from a feeder. Discuss how man too scatters seed from fruits.

4. While on a walk, note any other seeds like winged seeds from maple trees, parachute seeds from dandelions, or balls of Queen Anne's lace. Make a winged seed out of paper to simulate the maple seed. Throw it up and watch it spiral down.

Activity 4: Measuring Temperature and Finding Life Underground

Instructional Objective:

The child will be able to describe ways in which life is protected by nature in winter.

Procedures:

1. At a snow, hang a thermometer from a branch in the shade and bury another beneath the snow. Compare readings after five or more minutes. Also note that snow contains air. Discuss ways in which animals find food under the snow.

2. If possible, dig into the frozen soil and bring some back to thaw in the classroom. Go through it carefully for worms, grubs, insects, bulbs, etc.

Activity 5: Listing Ways in which Man Adapts to Seasonal Change

Instructional Objective:

The child will name some ways in which man changes his behavior in different seasons.

Procedures:

1. Discuss man's clothing, food, housing, and recreation at different times of the year.
2. Relate this to seasonal changes that children have observed in nature.

STUDENT EVALUATION SHEET

Student's Name _____

		Observed	Not Observed
1.	Describes seasonal differences in natural area	_____	_____
2.	Describes life cycle of animal, insect, or plant	_____	_____
3.	Names ways in which nature scatters seeds	_____	_____
4.	Describes how nature protects life in winter	_____	_____
5.	Names ways in which man's behavior changes seasonally	_____	_____