

Observing Plants and Animals

BROWARD COUNTY ELEMENTARY SCIENCE BENCHMARK PLAN

Grade 1—Quarter 2

Activity 14

SC.F.1.1.5

The student compares and describes the structural characteristics of plants and animals.

SC.F.2.1.2

The student knows that there are many different kinds of living things that live in a variety of environments.

SC.G.1.1.4

The student knows that animals and plants can be associated with their environment by an examination of their structural characteristics.

SC.H.1.1.1

The student knows that in order to learn, it is important to observe the same things often and compare them.

SC.H.1.1.5

The student uses the senses, tools, and instruments to obtain information from his or her surroundings.

SC.H.3.1.1

The student knows that scientists and technologists use a variety of tools (e.g., thermometers, magnifiers, rulers, and scales) to obtain information in more detail and to make work easier.

ACTIVITY ASSESSMENT OPPORTUNITIES

The following suggestions are intended to help identify major concepts covered in the activity that may need extra reinforcement. The goal is to provide opportunities to assess student progress without creating the need for a separate, formal assessment session (or activity) for each of the 40 hands-on activities at this grade level.

1. Ask students to name several different plants and animals that live in their local environment. Have students describe the major features of their local environment in simple terms—for example, “warm all year,” “lots of rain,” “sandy soil,” and the like. Then, for each plant or animal that students named, have them describe two or three characteristics that help the organism live in the specific environment. (For example, a pelican has wings that let it fly over water hunting fish for food and a large beak pouch for carrying the food.)
2. Use the Activity Sheet(s) to assess student understanding of the major concepts in the activity.

In addition to the above assessment suggestions, the questions in bold and tasks that students perform throughout the activity provide opportunities to identify areas that may require additional review before proceeding further with the activity.

Observing Plants and Animals

OBJECTIVES

Students discuss major differences between plants and animals. They examine pictures of plants and animals in their natural environments and describe their structural characteristics and habitats. Students then examine a real plant, name its major parts, and discuss the importance of plants on Earth.

The students

- ▶ distinguish between animals and plants
- ▶ associate a variety of plants and animals with their specific natural environments
- ▶ examine and name the parts of a plant
- ▶ acknowledge the importance of plants to life on Earth
- ▶ discuss some human uses for plants

SCHEDULE

About 50 minutes

VOCABULARY

animal
environment
leaves
plant
roots
stem

MATERIALS

For each student

- 1 Activity Sheet 14
- 1 pair gloves, disposable
- 1 pair safety goggles*



For each team of two

- 1 box crayons

For the class

- 1 bag, plastic, 8" x 10"
- 8 magnifiers
- 1 marker, felt-tip, black *
- 1 sht paper, white, 11" x 17"*
- 4 sets Plant and Animal Picture Cards: Wetland, Temperate Forest, Desert, and Pond
- 1 plant, bean
- 1 roll tape, transparent *

*provided by the teacher

PREPARATION

- 1 Make a copy of Activity Sheet 14 for each student.
- 2 You will need one of the bean plants you have been growing. (See Advance Preparation, page 141.) Remove the plant from its pot by placing one hand over the surface of the soil so the plant stem is between your fingers, gently turning the pot upside down, and tapping around the outside until the plant and root ball come free. Shake most of the soil from the roots. Store the plant in the 8" x 10" plastic bag until class time.

Safety Note: Check for any student allergies to plants or pollen before having students handle plants or plant parts.

- 3 Shortly before class, set up a plant examining table by covering a desk or table with a large sheet of white paper. Spread the bean plant flat on the paper,

and use transparent tape to secure it in place. Place a black felt-tip marker and several magnifiers at the table.

- 4 Each team of two will need a box of crayons. Students will need an opportunity to examine the plant at the plant examining table.

BACKGROUND INFORMATION

All plants have two traits in common that distinguish them from **animals**: First, unlike animals, plants are immobile; second, plants make their own food.

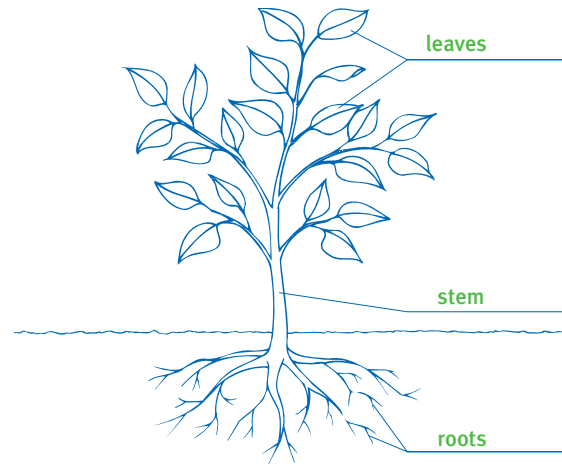
Vascular plants, which have supportive water-conducting tissues, make up the largest division of the plant kingdom. Vascular plants have three main parts. The **roots** are the part of the plant that grows underground. The **stem** is the long, tube-like structure that supports the plant and connects the roots with the leaves. The **leaves** are the usually broad, flat parts that grow out of the stem. Each plant part has one or more important functions, which students will learn about in Activities 15–18.

Plants (along with some bacteria and protists) are the only living things that make their own food. Because of this, plants are the first and most important link in almost every **food chain**. Every animal is dependent on plants, either directly or indirectly.

▼ Activity Sheet 14

Observing Plants and Animals

1. Label the parts of the plant. Color the drawing.



2. Name two things that people get from plants.

Possible answers: food, drinks (coffee, tea, juices), clothes (cotton), medicine, furniture, shelter (boards), wood products, paper.

Guiding the Activity

- 1 Write the words *animal* and *plant* on the board, and read (or have a student volunteer read) the words aloud.

Ask, **What is the difference between an animal and a plant?**

Tell students that there are two main differences between animals and plants. Ask, **How do animals move?**

Ask, **How do plants move?**

Begin a chart on the board similar to the one in Figure 14-1.

Additional Information

Students are likely to comment on the differences in appearance between the two. Accept all answers at this point.

They walk, run, swim, fly, crawl, hop, and so on.

Plants cannot move from place to place on their own. Most plants are rooted in one place but can be moved by animals, people, wind, or water. If time permits, have students act out the movement of animals and plants.

	Animals	Plants
Movement	Can move on their own.	Cannot move from place to place on their own.
Food	Eat plants and other animals.	Make their own food in their leaves.

▲ Figure 14-1. Two main differences between animals and plants.

- 2 Next, ask, **What do animals eat?**

Ask, **What do plants eat?**

Tell students that plants do not “eat” food the way animals do. They absorb water and other things they need from the soil, but they make their own food inside their leaves. That is the second main difference between animals and plants. Add this information to the chart.

Students may name a wide variety of foods. Point out that animals eat both plants and other animals.

Students may respond that plants eat dirt and drink water. Accept all reasonable answers.

Guiding the Activity

Additional Information

3 Divide the class into four groups of about the same size. Give each group one set of Plant and Animal Picture Cards. Let each group examine all of the pictures in their set. Call on each group to name the plants and animals in the set and to tell whether each organism is a plant or an animal.

Do not require students to read the names of the plants and animals printed on the cards, but let them offer their own names—“trees” instead of “American beech” in the Forest set, for example. Also help students identify any organisms that are unfamiliar to them, such as the sundew, the cicada and mayfly (students may simply call them “insects”), and the red-tailed hawk, cactus wren, robin, snail kite, and roseate spoonbill, all of which students can simply call “birds.”

4 Write *environment* on the board, and ask, **What is an environment?**

*Accept all reasonable responses, then emphasize that an **environment** is a plant or animal’s surroundings, the place where it lives.*

Ask each group to carefully examine the pictures in their set again and as a group decide what kind of environment their cards show.

Again, do not require students to read the labels on the backs of the cards but accept students’ own words—“marsh” or “swamp” instead of “wetland,” for example.

Also ask, **How can you tell what kind of environment it is?**

Students should mention elements in the pictures that give clues to the environment. For example, the pictures in the Desert set show dry, sandy, pebbly ground and low-growing, scrubby plants. The Pond and Wetland pictures show plants and animals in or near water.

5 Have volunteers in each group select a plant or animal from the card set and describe specific characteristics that would help it live in that environment.

Accept all reasonable responses. Example: In the Pond set, the fish (brook trout) has fins and a tail that let it swim through the water. The turtle in the Pond set and the tortoise in the Desert set have hard shells that protect them from being eaten by other animals. The cactus plants in the Desert set have sharp spines that help keep animals from eating them.

6 Collect the picture cards, then invite students to gather around the plant examining table. Have students take turns using the magnifiers to closely examine the parts of the plant.

Guiding the Activity

Write the words *roots*, *stem*, and *leaves* on the board and read (or have student volunteers read) them aloud. Ask, **What are roots? Where are they located?**

Use a marker to draw an arrow on the white paper and label the roots (see Figure 14-2).

Ask, **What is a stem? Where is the stem located?**

Draw an arrow and label the stem.

Ask, **What are leaves? Where are they located?**

Draw an arrow and label the leaves.

If the plant also has flowers, berries, or seeds, name and label those, too.

Distribute a copy of **Activity Sheet 14** to each student and a box of crayons to each team of two. Ask students to work in pairs to complete the top part of the activity sheet. Tell them to color the picture of the plant, adding flowers, berries, or fruit to the diagram if they like.

7

Finally, ask students to name some of the things they eat at mealtime. Elicit that plants are an important part of their diet. Then ask students to name some animals that eat plants. Lead students to conclude that plants are an important food source for many animals on Earth.

Ask, **Besides food, how else do people use plants?**

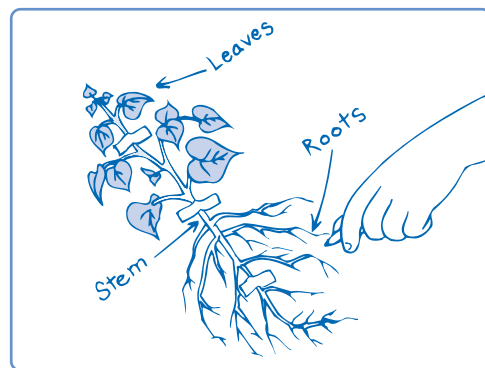
Have students complete the bottom part of the activity sheet. Review their answers as a class.

Additional Information

Roots are the pale, stringy parts at the bottom of the plant. The roots grow below ground.

The **stem** is the long, thin part that holds the plant up and connects the roots to the leaves.

Leaves are the flat green parts that grow out of the stem. They are located at the top of the plant and sometimes along its stem.



▲ Figure 14-2. Labeling the parts of a plant.

Accept all reasonable answers. Students may say that we build houses and other things with wood from trees, we make clothes of cotton from plants, and the like.

REINFORCEMENT

Provide other uprooted plants for students to examine, and have them identify the roots, stems, and leaves.

SCIENCE JOURNALS

When students have done Activities 15 and 16, have them place their completed activity sheets in their science journals.

CLEANUP

Return the picture cards, magnifiers, and boxes of crayons to the kit. Discard the plant and paper from the examining table. Collect the activity sheets for use again in Activities 15 and 16.

SCIENCE AT HOME

Have students draw pictures of three different types of plants that grow in or around their homes or that they pass on their way to school. Tell them to label their drawings and bring them to class the next day. As a class, compare the drawings, noting the variety of plants found in the home and around the neighborhood. What do all of these plants have in common? (They all have roots, a stem, and leaves or perhaps needles.)

Connections

Science Challenge

Show students a natural sponge, and explain that it was once alive. Ask them whether they think it was a plant or an animal and to explain why they think so. Accept all responses, then tell them that sponges are animals—a very simple type of animal with no head, eyes, legs, or arms. Explain that what you are showing them is not the dead animal but the stiff walls that it had built around itself and then left behind when it died. Provide a variety of resources—books, videos, and CD-ROM programs—that show living sponges and other plantlike animals, such as coral and sea anemones, for students to examine.

Science Extension

Shuffle all four sets of picture cards together to make one large deck. Let individual students or small groups take turns sorting the cards into categories by various criteria, including the following:

- kind of environment
- plant or animal
- type of animal: fish, birds, mammals (animals with four legs and fur/hair), insects, reptiles (scaly animals: alligator, snake, turtle, tortoise) or animals with shells (snails, tortoise, turtle)

Science, Technology, and Society

When students name things that are made from plants, they may not think of paper. Explain that most paper is made from trees. Let students try making their own paper, as follows: Tear newspaper into small pieces and soak in water until reduced to pulp. Squeeze a large handful of the pulp to remove as much water as possible. Spread the pulp in a thin layer on some screening to drain. (A piece of nylon or cheesecloth stretched over a baking pan works well.) When the water has drained out of the pulp, use a heavy, flat object (such as a cool iron) to flatten the pulp into a smooth sheet.

