

Plant Parts and Functions

Strand	Life Processes
Topic	Investigating the parts of plants and their functions
Primary SOL	1.4 The student will investigate and understand that plants have basic life needs and functional parts and can be classified according to certain characteristics. Key concepts include b) basic parts of plants.
Related SOL	1.1 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which c) objects or events are classified and arranged according to characteristics or properties; d) simple tools are used to enhance observations; g) a question is developed from one or more observations; i) observations and data are recorded, analyzed, and communicated orally and with simple graphs, pictures, written statements, and numbers; j) simple investigations and experiments are conducted to answer questions.

Background Information

Plants have different parts or structures. These structures serve different functions in growth, survival, and reproduction. The functional parts of a plant include

- roots—absorb water and nutrients; hold the plant in place
- stems—transport water and nutrients up and down the plant; hold the plant upright
- leaves—make food for the plant
- flowers—make the plant’s seeds and attract pollen-carrying insects
- fruits—contain seeds; some can be eaten to assist in seed dispersal
- seeds—store food; grow into a new plant

Materials

- Large poster of a plant with parts identified
- Plant Parts Review Cards (attached)
- Scissors
- Glue
- Chenille stems to represent roots
- Sticks to represent stems
- Real or artificial leaves
- Artificial flowers
- Artificial fruits
- Small baggies
- Seeds
- Chart paper

- Samples of real plant parts
- Student science journals
- Student hand-held magnifying lenses

Vocabulary

flower, fruit, function, leaf, root, seed, stem

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Introduction

1. Gather students in a group meeting place in the classroom or, if available, in an outdoor classroom. Explain that the purpose of this activity is to answer the question: “What are the parts of a plant and what do they do for the plant?” Tell students that as they learn about the special parts of plants, they will learn how each part helps plants grow.
2. Using a large poster of a plant, discuss each of the plant’s parts—roots, stems, leaves, flowers, fruits, and seeds. Talk about how each part helps a plant survive and grow.
3. Distribute copies of the attached Plant Parts Review Cards, scissors, and glue. Direct students to cut out the cards and paste them in their science journals to use for review of plant parts and to assist them with assessment questions and prompts.
4. Next, have students perform a skit to help them remember plant parts, as follows:
 - a) Have four or five students hold the chenille stems to represent roots. Have them sit in a cluster on the floor and practice chanting, “We are the *roots* that suck up the juice. Water and nutrients—we won’t turn them loose!”
 - b) Have four or five more students hold sticks up straight to represent stems. Have them stand in a straight line out from the roots and chant, “We are the *stems* standing upright. In sun, wind, and rain, we reach for the light!”
 - c) Next, have more students hold leaves and stand in several clumps around the stems. Have them chant, “We are the *leaves* creating the food. When blown by a breeze, we’re in a good mood!”
 - d) Have a fourth group hold artificial flowers, stand among the leaves, and chant, “We are the *flowers* making the seeds. We’re pretty to see and important in deeds!”
 - e) Have additional students hold pieces of artificial fruit, stand next to the flowers, and chant, “We are the *fruits* containing the seeds. When we are eaten, we become needs!”
 - f) Finally, have two or three students hold baggies containing seeds. Have them skip around the room and chant, “We are the *seeds* that make the new plants. When blown by the wind, we really can dance!”

Have students practice saying and performing the skit. End by having students say together the closing line, “Together we make a plant. We hope you enjoyed our chant!”

Procedure

1. Place students in groups, and give each group a magnifying lens. Display samples of real plant parts on several tables, one display per group. Have students access their Plant Parts Review Cards and use them to review each plant part as they examine the real parts. Instruct them to record in their science journals observations and questions they may have.

Direct them to sketch a plant they particularly like and draw an example of each plant part they observe.

2. Allow students time to study, discuss, and draw the plant parts. Circulate as groups work, assisting and coaching students in their discussions. Monitor journal work to ensure students are accurately drawing each plant part. Ask students to write down questions they may have about the plants they are observing.
3. Have students share their journal drawings in their groups. Then, have student volunteers share their drawings with the class and tell why they picked the particular plant parts they drew.

Assessment

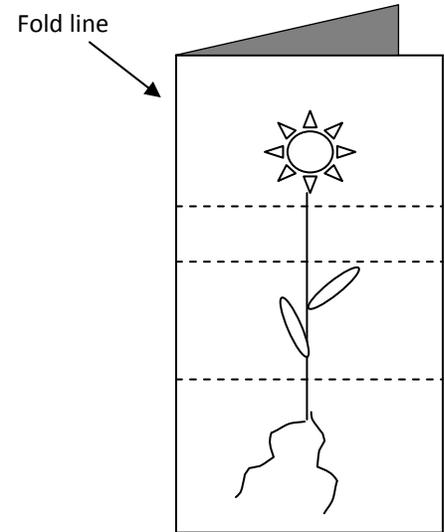
- **Questions**
 - Why does a plant need each of the six plant parts we studied? Explain.
 - What would happen to a plant if you took away its stem?
- **Journal/Writing Prompts**
 - When we acted out each part of the plant, which part was your favorite? Write about why you liked that part best.
 - Choose the plant you like best from the samples. Draw this plant in your science journal. Then, label on your drawing each plant part we studied.
 - Write a story about a plant that can talk. Tell what the plant would say about where it wants to grow.
- **Other**
 - Have students fold two plain sheets of paper into eight equal parts, cut each sheet apart on the creases to make eight cards with each sheet of paper. Label eight of the cards with Root, Stem, Leaf, Flower, Fruit, Seed, Plant, and Function. On the second set of eight cards, have students draw an example of each of the terms and write a sentence to define the term (e.g., “Function is the job done by each plant part.”)
 - Make a concentration game of the plant parts and their functions. Have students play the game for review or do it as a computerized game.

Extensions and Connections (for all students)

- Take students on a walk around the school grounds, and note different types of plants. Have students point out the plant parts studied in this lesson.
- Have students compare plants in different settings—e.g., the differences between inside plants and outside plants, the differences between cold climate trees and hot climate trees.
- Select a plant on the school grounds for students to observe throughout the school year at each season and reflect on how the plant changes throughout the year.
- Invite a master gardener or nursery worker to come to a class and talk with students about their jobs working with plants.
- After gaining permission, have students adopt an area of the school grounds to plant a small flower or vegetable garden. Ask for parent volunteer help with this project.
- Take students on a field trip to an area nursery or farm to observe a business that concentrates on growing plants.

Strategies for Differentiation

- Create a poster on plant parts and functions. Use concrete objects to form the parts so that students can have a tactile experience. For example, use yarn glued to the poster to form roots, sticks to form the stems, artificial leaves, artificial flowers, artificial fruits, and real seeds.
- Fold a large piece of cardstock in half, vertically. Draw a flower on the front half, as shown at right. Cut the top fold into four flaps: the first flap includes the flower, the next flap includes only the stem, the next includes the leaves, and the bottom flap includes the roots. Open each flap, and write the *function* of each plant part. Use for student review.
- Have students use interactive software to create the parts of a flower. Drag labels to identify the plant part and the functions.
- Video the skit from the introduction. Use the video as a review and interactive play for students to practice and eventually perform for an audience.



Plant Parts Review Cards

Cut out the cards on the solid lines. Fold them on the dotted lines.
Use them to review plant parts and their functions.

<h2>Roots</h2>	<p>Absorb water and nutrients for the plant to grow. Hold the plant in place.</p> 
<h2>Stems</h2>	<p>Move water and nutrients from the roots up and down the plant. Hold the plant upright.</p> 
<h2>Leaves</h2>	<p>Uses sunlight to make food for the plant.</p> 
<h2>Flowers</h2>	<p>Make the plant's seeds.</p> 
<h2>Fruits</h2>	<p>Contain seeds. Some can be eaten.</p> 
<h2>Seeds</h2>	<p>Store food. Grow into a new plant.</p> 