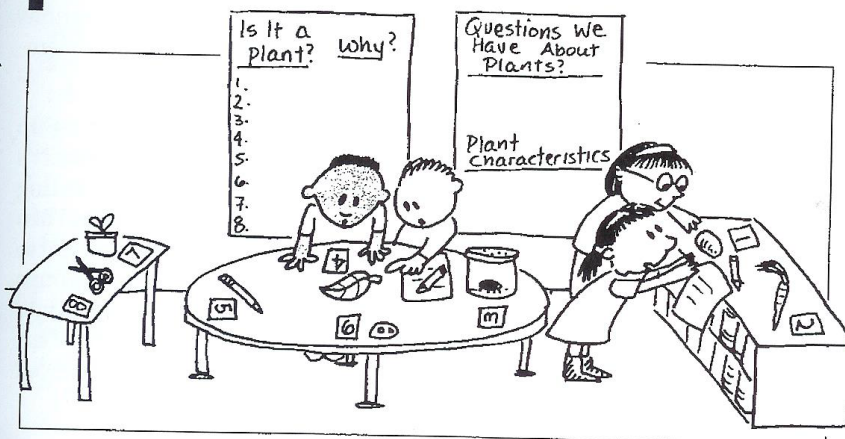


# Plant Detectives

In this preassessment activity students identify objects as plants and describe their characteristics.



## Outcome

Students describe what they know about plants and practice categorizing.

## For the Teacher

Children have many naive ideas about the natural world that contradict scientific thinking and may even seem humorous to adults. For example, they may think that clouds are smoke or bags of rain water. It is important to treat these ideas with respect, for they are the foundations on which new knowledge is built. As children compare long-held beliefs with new evidence, they grapple with contradictions and rethink their ideas. In the process they develop a firmer grasp of underlying scientific principles than if they had just learned facts by rote.

In this activity, students share their ideas about the characteristics of plants. It is the first step in understanding a more comprehensive view, which is that plants are living things and are an integral part of the web of life on Earth. Unlike other organisms such as animals, plants make their own food from air, sunlight, and water by a process called photosynthesis. They grow in the ground or in water and cannot move about under their own power. All plants have in common certain parts—roots, stems, and leaves.

Initially, students may be unable to classify objects correctly. It is important not to correct them on the spot, for this will short-circuit their own process of discovery. As the unit proceeds and they receive more information, they will most likely revise their original ideas.



Indoor



Time

30 minutes

**Related Subject**

Language Arts

**Process Skills**

Categorizing

Communicating



**Materials**

*For the Class:*

- 2 3-foot-long sheets of butcher paper
- 2 sheets of 8 1/2" x 11" paper (scrap can be used)
- a total of 8 objects: 4 plants or parts of plants (such as a potato, carrot, leaf, seedling, or house plant); an insect in a container (sow bug, spider, etc.); a rock; and 2 human-made objects from the classroom (scissors, paper, pencil, book)

*For Each Group of 3-4:*

- Plant Detectives Chart, Lab Book, pp. 17-18

### Preparation

1. Collect the 8 natural and human-made objects, and distribute them to eight stations at tables or counters around the room.
2. Cut two sheets of paper into quarters and label the pieces 1-8. Place a number next to each object.
3. Post two large sheets of butcher paper at the front of the classroom. Title one sheet, "Is It a Plant?" At the top of the other sheet, write "Questions We Have about Plants"; halfway down the sheet write "Plant Characteristics."



### Getting Started

Encourage students to share their ideas about plants by asking them to be detectives.

How does a detective solve a mystery? Tell the children that they too have a mystery to solve. We have a collection of objects, and we need to know which are plants. What clues should we be watching for? How can we tell if something is a plant?



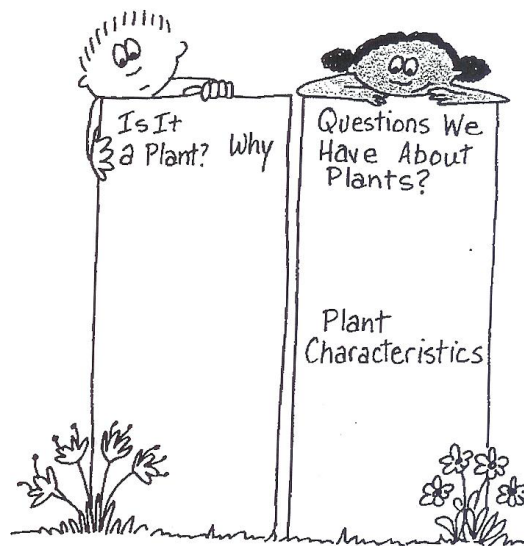
### Action

1. Divide students into teams of three or four.
2. Ask each team to turn to the Plant Detectives Chart in their Lab Book. Then direct each team to a different station. Rotate teams through all eight stations.
3. Instruct team members to look at each object and the number next to it and then decide if it is a plant or not.

4. Ask students to find the object's number on their chart and then circle the word *Plant* if they think the object is a plant, or circle *Not a Plant* if they think it is not. If they are not sure, or if the group disagrees, ask them to circle *Not Sure*. The group should also identify the clue or clues that led to their decision.

5. After each team has visited all eight stations and recorded its ideas about the objects, members should return to their seats.

6. Review each item separately by holding up the object with its number. Write the object's name on the butcher paper under the heading "Is It a Plant?" Ask if it is a plant and why. Then write students' explanations or reasons next to the object's name. Accept all answers. If groups disagree, help them to rephrase their ideas into questions, and write these on the second chart under the heading "Questions We Have about Plants."





### Assessment

Review and discuss the two lists. Assess students' understanding of plants.

What is a plant? How can you tell if something is a plant? What things on our list tell us what a plant looks, feels, or smells like? What things tell us what a plant does? What things tell us what a plant needs? List ideas on the butcher paper under the heading "Plant Characteristics." Post the list in the Life Lab Center for use in the final lesson.

### Digging Deeper

- Post two large sheets of paper in the Life Lab Center. Label one "Alive!" and the other "Not Alive!" Provide a stack of magazines and encourage students to cut out pictures and then paste them on one of the two sheets to create two class collages.

- Ask students to collect pictures of various kinds of plants, and display them in the Life Lab Center.

- Take students on a walk around the school grounds. Ask them to categorize things as plants or not-plants, living or not-living things.

### Teacher Reflections

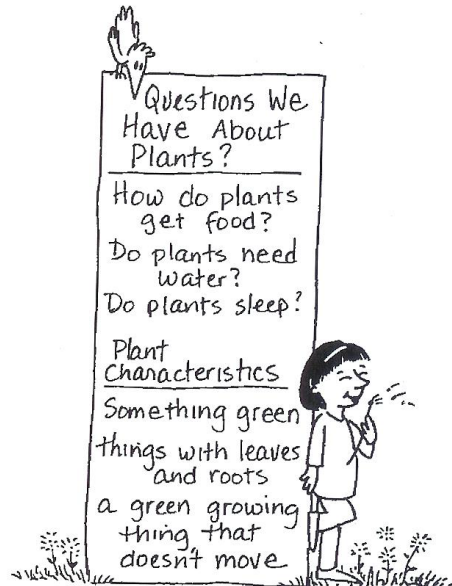
- How much do students know about plants and the characteristics of plants?

- Did students seem interested in pursuing answers to items they disagreed on?

- How can you encourage individuals to explore their own questions as part of this unit?

### In the Garden

Encourage children to continue to care for and observe their class garden. If your climate is mild enough for planting fall seeds, you can prepare the soil now for planting during the upcoming lesson, *Scientists at Work*. If you already have seeds planted, let children monitor their growth and watch for evidence of insects or birds feeding among the seedlings. See *Gardening Know-How* for the '90s, pp. 16-22, 63-64, for information on preparing soil for planting.



# Plant Detectives

Names \_\_\_\_\_ Date \_\_\_\_\_



1. Look at each object and the number next to it.
2. Find the same number on this page.
3. Then circle the word *Plant* if you think the object is a plant. Circle the words *Not a Plant* if you think it is not a plant. If you are not sure, circle *Not Sure*.
4. Then list the clue or clues that helped you decide.

**Object 1 is:**

Plant

Not a Plant

Not Sure

Clue or clues:

---

**Object 2 is:**

Plant

Not a Plant

Not Sure

Clue or clues:

---

**Object 3 is:**

Plant

Not a Plant

Not Sure

Clue or clues:

---

**Object 4 is:**

Plant

Not a Plant

Not Sure

Clue or clues:

---

**Object 5 is:**

Plant

Not a Plant

Not Sure

Clue or clues:

---

**Object 6 is:**

Plant

Not a Plant

Not Sure

Clue or clues:

---

**Object 7 is:**

Plant

Not a Plant

Not Sure

Clue or clues:

---

**Object 8 is:**

Plant

Not a Plant

Not Sure

Clue or clues:

---