3. Compare vegetables and fruits.
   Ask: Can the way a plant part tastes or looks tell you if it is a vegetable or a fruit? Why or why not? (No; some vegetables are sweet, and some are not. The same is true for fruits. Both come in all sizes and shapes.)

4. Define fruit.
   Ask: What feature tells you if something is a fruit? (seeds) Can a vegetable actually be a fruit? (Yes, if it has seeds.)

Assessment
   Give each student a slice of unknown vegetable, and ask the student to determine whether it is a fruit. (It must have seeds.)

Extension

Seed Mosaics
   Buy bulk seeds from a discount grocery store, feed store, or health food store. Have students glue the seeds onto a piece of cardboard in patterns or shapes. After displaying the seed art on a bulletin board, interested students can bury the art in soil to see if the seeds will grow.
Will Plant Parts Grow?

30 minutes for setup, 10 minutes per day for three weeks for observations

Objective
• Students observe the growth of new plants from root, stem, and leaf cuttings.

Materials
For the class
• plastic cups
• potting soil
• *prepared plant cuttings

*Not provided in kit

In Advance
• Prepare plant cuttings. Cut the tops off a carrot, turnip, beet, and radish. Cut off about one-quarter of a potato that has several “eyes.” Slice a three-inch piece of sugar cane. Cut off the top of a pineapple with the leaves. Remove one or two leaves from ivy and African violet plants. Fold two paper towels to fit into each of five jar lids. Place the carrot, turnip, beet, radish, and pineapple tops on top of the paper towels, one vegetable per lid. Put a crumpled paper towel into each of three plastic cups. Place the sugar cane into one cup with the cut end touching the paper towel. Insert toothpicks into the potato for support, and place the potato in the second cup. Put the two leaves in the third cup. Pour enough water into the lids and cups to dampen the paper towels thoroughly.

1. Students observe plant cuttings.
Have students observe the prepared plant cuttings every day for three weeks. Ask: **What is happening to the cuttings?** *(After several days, students should be able to observe new roots, stems, or leaves growing from the cuttings.)*

2. Discuss asexual reproduction in plants.
After three weeks, have students plant the cuttings in potting soil. Ask: **What do you think the plant cuttings will do over the next few weeks?** *(They will continue to grow and become full-sized plants.)* Explain to students that they are observing asexual reproduction. In this kind of reproduction, a part of a plant that is not a seed can grow into a new plant.

Teaching Tip
Step 1: Add water as needed to keep the toweling moist.
Assessment

Have students list as many plant parts as they can that they observed reproducing from cuttings. (Roots—carrots, turnips, beets, radishes; stem—sugar cane; leaves—pineapple, ivy, African violet. The potato is a tuber, which is an extension of a stem.)

Extension

Leaf and Stem Rubbings

Have students place white paper over plant leaves and stems, including tree trunks, and rub the paper with a crayon to show patterns of leaf veins or bark. Ask them to compare textures, shapes, and sizes.

Section Assessment

Name Date

Section 1 Assessment

Vocabulary

1. What part of a plant is celery? Circle your answer.
   - stem
   - root
   - leaf

Vegetables with Seeds

2. Which of these vegetables contains seeds? Circle your answer.

3. Which of the vegetables is a fruit?
   - cucumber

4. Which of the vegetables can grow from the root?
   - carrot

Measuring Plant Parts

5. Use a ruler to measure the length and width of the plant part your teacher gives you. Write the length and width in the box.

<table>
<thead>
<tr>
<th>Length (cm)</th>
<th>Width (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make sure students hold one end of the plant part at zero.</td>
<td>Suggest that students measure the widest part.</td>
</tr>
</tbody>
</table>

Materials

For each station

1. *metric ruler
2. plastic tray
3. *vegetables from Investigate 1

*Not provided in kit

Student Resource Pages

- 1.3 Section 1 Assessment

1. Set up enough materials stations around the room to allow one-third of the class to work alone at a station during the hands-on portion of the assessment.
2. Make copies of the Section 1 Assessment Resource Page and distribute to students.
3. Divide the class into three groups. While one group is working at the stations to complete the hands-on portion of the assessment, the other two groups can be completing the top part of the Resource Page. Rotate the groups through the stations until each has completed the hands-on portion of the assessment.
4. For question 5, students can measure the same vegetable or different kinds of vegetables (roots, stems, leaves).
5. Discuss the answers as a whole-class activity.