Plant Structures

Purpose & SOL

- Students will be exploring the parts of a plant and their functions: roots, stems, xylem, phloem, leaves, flower, and fruit.
- Science 4.4(a), 5.5 9 (c)

Preparation

Make sure there is an example of a flower and a fruit available in the garden. If not, bring one from an outside source.

Materials

- Magnifying Glass
- Diagram of internal plant biology
- Flower or fruit available in the garden

Engage

- What are the primary parts of a plant and what function does each part serve?

Procedure

1. Students will take a full plant from the garden, roots and all, and examine it under the magnifying glass. They will be asked to identify the following parts and explain their function.
   - Roots - absorb nutrients and water; store sugars and carbs; anchoring
   - Stems - transport water and nutrients; provide structure as plant grows
   - Xylem cells - move water
   - Phloem cells - move nutrients
   - Leaves - catch light, move air and water, etc (simple/compound leaves)
   - Flowers - reproductive parts, makes seeds; female part (pistil) male part (stamen)
   - Fruit - ripened ovary (part of the flower) that becomes a protective case for the seeds; seeds contain the information for creating new plants
2. Through movement, students will represent the functions of each of the previously learned plant structures. Model each movement for students.
   - Roots - Students anchor in the ground by planting their feet. The teacher will demonstrate the difference in strength between feet together and feet apart. After planting their feet, students will make a slurping noise simulating pulling air and water up through a straw.
   - Stems - Act like an elevator transporting the nutrients and water from the roots upward and the leaves downward. Xylem up, phloem down. (Remember: xylem water, phloem nutrients)
   - Leaves - Students should spread their arms to imitate catching a giant beach ball. This simulates leaves capturing light.
   - Flowers - Students will flower by spreading their hands starting with their palms together, then spread their arms up and out. They will end in a "Y" position.
   - Fruit - Keeping their arms extended in a "Y," students will slowly bring their hands together making a circle. This will represent the fruit.
3. To review, the teacher will call out a plant part and students will act out the corresponding movement.

Classroom Extension

Have students draw a diagram that includes the plant structures covered in this lesson.