

Lesson Six: Parts of a Plant (50 min)

Driving Question: How do the land and weather in our state help plants grow?
Can we grow healthy food using just water and nutrients?

Vocabulary:

stem, flower, seed, leaf, root

Materials:

- Assembled Aquatree® Garden
- Microgreens plants
- Microscope or magnifying glass for each group
- Blank drawing paper
- Microscope or magnifying glass
- A slide
- Tweezers
- A paper towel
- Slide cover

Resources:

- Seed to Salad Lab Books - Parts of a Plant diagram

Background Knowledge:

The students will develop a basic understanding of plant biology, focusing on the main parts of a plant and their functions. They will learn about roots, which gather water and minerals from the soil, and leaves. All are crucial for photosynthesis - the process by which plants make their own food using sunlight. Students will discover how plants reproduce and spread through flowers and seeds. They'll understand that flowers produce pollen, which attracts bees and other insects for pollination. Seeds then grow into new plants when they fall to the ground. The stem's role is to support the entire plant structure. This foundational knowledge will help students appreciate how each part contributes to the plant's survival and growth.

Plant the Seed (warm-up):

1. Play Musical Drawing. Students will begin drawing a detailed plant while the music is playing. When the music stops, they will pass their drawing to another student. This will repeat for multiple rounds.
 - a. Give each student a blank half sheet of paper.
 - b. Begin playing classical music while the students are drawing. Stop the music after about 2 minutes and tell the students to pass their drawing to a neighbor. Restart the music, for the next round.
 - c. Continue for about 3 rounds.
 - d. For the final 2 rounds, the students will color the drawing.
 - e. Display the finished drawings and discuss the different plant parts students included in their artwork.

Grow Time (lesson):

1. Give each student their **Seed to Salad Lab Books**.
2. Working independently or with a partner, students will complete the labeling of the **Parts of the Plant** diagram.
3. Remove one tray from the **Aquatree® Garden** system. Using a knife, harvest (<https://www.youtube.com/watch?v=-S61r0z0i70>) the roots from a small section of the Micro Lid. Then remove the stems from the opposite side of the Micro Lid. Share the roots and stems with the students.
4. Give each student a microscope or magnifying glass, a slide, tweezers, and a paper towel. Distribute the roots and microgreens.
5. Encourage the students to taste the microgreens. Remind them to save several plants to look at under the microscope.
6. *Optional if you are using microscopes for the first time:* At the front of the classroom, set up the experiment as a demonstration. Show the students how to separate the plants and place one on a slide. Place a slide cover over the plant on the slide. Show the students how to focus the microscope and how to move the slide left to right to see different parts of the plant.
7. While the students are looking at the plants under the microscope, they will sketch the plant in their **Seed to Salad Lab Books** and label the drawing. If the students have time, they can color their labeled drawing.

Food for Thought (reflection/assessment):

1. After the students have cleaned up their lab experiment, ask them to complete the question at the bottom of the lab page. “In a hydroponic garden, plants grow without soil. Without soil, what part of the plant helps it stand up straight? How does this part help the plant get water to its leaves?”