

Grade Level/Subject: 9th-12th grade
Program: Trees, Please!

Stage 1 – Desired Results

Established Goal:

Students will be able to explain why plants are important and will be able to name the parts of a plant and their functions.

Standards: MS-LS1-4 Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

Takeaways:

- Students will be able to name what parts of a plant are.
- Plants need water, sunlight, air, and nutrients to grow.
- Some plants require a lot of water while others require very little.
- Some plants belong here and other plants were brought here from other places.
- People, animals, and insects depend on plants for various resources.

Essential Questions:

- What do plants provide for people?
- What do plants provide for animals?
- What does a plant need to grow?

Student Objectives: *Students will know . . .*

- Students will know that each part of the plant has a specific function.
- Students will know that every different species of plant produces a different type of seed.
- Students will know that seeds have a protective outer shell to help ensure they grow a new plant.
- Students will know that animals, insects, water, gravity and wind move seeds from one location to another.
- Students will know that photosynthesis is the process that plants use to convert carbon dioxide and water into sugars using sunlight.
- Students will know that plants are an essential part of the food chain.

Stage 2 – Assessment Evidence

Performance Tasks:

- Starter- Insect and flower phenomena
 - Reviewing how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction.
- Why people and animals need plants?
- What are parts of a plant?
- How do seeds disperse?
- What do we need to grow a plant?
- Wrap up questions to check for comprehension.

Other Evidence:

- Comprehension checks during the program.
- Wrap up questions to check for comprehension.

Stage 3 – Learning Plan

Learning Activities:

- **Teacher will create the initial interest in the topic by beginning with phenomena.**
 - **Ask students:**
 - **What do you see?**
 - **What do you notice?**
 - **What are you wondering?**
- **Teacher will make sure the students understand the key concepts by asking comprehension-checking questions throughout the program.**
- **Teacher will ask the students questions after the program and evaluate if they understood the key concepts taught during the program.**
- **After the program, teacher will engage students in companion activity to reinforce topic.**
 - **Students will be assigned a pollinator: bee, bat, bird, butterfly, moth, or fly.**
 - **Students will construct explanations about what flower features attract their pollinator.**
 - **Students will conduct further research to modify or strengthen their explanations.**
- **The program incorporates multiple strategies for reaching the different types of learners including visual and audio.**
- **The program is designed to keep the students engaged during the entire program to maximize the amount of learning that is possible.**

Vocabulary Words

- **Adaptation**
- **Biodegradable**
- **Cambium layer**
- **Carbon Dioxide**
- **Compost**
- **Conserve**
- **Decompose**
- **Drought Tolerant**
- **Environment**
- **Germination**
- **Habitat**
- **Heartwood**
- **Invasive Species**
- **Native plant**
- **Natural Resources**
- **Phloem**
- **Photodegradable**
- **Photosynthesis**
- **Pollination**
- **Sapwood**
- **Species**
- **Xylem**