

Lesson: Resilient Plant

AGE GROUP: ALL, BEST FOR GRADES 2-4 TIME TO COMPLETE: 30-60 MIN

LEARNING OBJECTIVES

- Students will understand that plants have adaptations that make them resilient against external factors in the wild.
- Students will practice teamwork in building a resilient plant model.

INTRODUCTION

In this lesson, students will work as groups to build resilient plant models that can withstand the forces of nature. After constructing the models, students will test their plants against wind, rain, hail, and hiking humans!

Hold a discussion with students either before or after the activity. Here is some information to inspire your discussion/lecture:

Plants have adaptations, parts, and functions that aid in survival and reproduction. Ask students to name some plants and discuss unique adaptations that those plants have. Interesting plants to discuss include venus flytraps with their carnivorous ‘chompers’ or sunflowers with their disc florets. You can discuss cacti as an example of a plant with an adaptation that protects against predators.

STATE STANDARDS

Standard 2.2.4 Design a solution to a human problem by mimicking the structure and function of plants and/or animals and how they use their external parts to help them survive, grow, and meet their needs. Define the problem by asking questions and gathering information, convey designs through sketches, drawings, or physical models, and compare and test designs. (LS1.A, LS1.D, ETS1.A, ETS1.B, ETS1.C)

Standard 3.2.4 Construct an explanation showing how variations in traits and behaviors can affect the ability of an individual to survive and reproduce. (LS2.D, LS4.B)

Standard: 4.1.1 Construct an explanation from evidence that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. Emphasize how structures support an organism’s survival in its environment and how internal and external structures of plants and animals vary within the same and across multiple Utah environments. (LS1.A)

MATERIALS

- A wide range of craft materials. Use what you have on hand including, but not limited to:
 - construction paper
 - paper plates, bowls, and cups
 - tape and glue
 - pipe cleaners
 - popsicle sticks
- Watering can or water container
- Poster board or large book
- Wood chips or small rocks



INSTRUCTIONS

1. Divide students into teams of 2-4.
2. Explain that students will design a resilient plant that can protect itself against “the elements”. Give them 15-30 minutes.
3. After constructing and admiring, go outside to put the plants to the test. Either let the students do this or do it yourself. Pour water on the plant with a watering can to represent rain. Throw wood chips or some small, hard material to represent hail. Buffet the plant with a large book or poster board to represent wind. If the students agree, stomp on the plant to represent a hiking human (a good reminder to stay on trails when hiking!)
4. Ask students for feedback and reflections and real life examples of resilience in nature.

EXTENSIONS

You can connect this lesson to these topics and activities:

- plant anatomy
- garden tour
 - Visit our campus or your local community garden to compare plant adaptations.
- pollination
 - plants need to be resilient to survive the elements but also need to be attractive to pollinators.
- ecology
- climate change and biodiversity loss
 - discuss how many plants are struggling to survive in a changing world.

CLASSROOM MANAGEMENT TIPS

1. Clearly communicate to students that their creations will be damaged.
2. Feel free to allow students to work on their own.

