



## POST-TRIP LESSON: SEEDS ON THE MOVE

**Overview:** Students explore seed dispersal by using classroom materials to create structural adaptations to help seeds get around.

**Sauvie Island Center Field Trip Connections:** Seed to Harvest, Plant Parts

### Objectives

**Students will be able to:**

- Define a structure and describe several examples of how structures help plants and seeds to move around
- Design creative solutions to help seeds disperse

**NGSS Essential Questions:**

- *How do the structures of organisms enable life's functions?*
- *How do organisms interact with the living and nonliving environments to obtain matter and energy?*
- *What is the process for developing potential design solutions?*

**Grades:** K-5

**Time:** 1 hour

**Location:** In classroom

**Materials:**

- Ping pong balls (enough for each small group to have one)
- A variety of construction materials, such as:
  - Construction paper
  - Tape
  - Glue
  - Scissors
  - Rubber bands
  - Springs
  - Paper clips
  - Balloons
  - Sticks
  - Cotton balls
  - Play dough



# POST-TRIP LESSON: SEEDS ON THE MOVE CONT.

## Lesson Outline:

1. Review the life cycle of plants. How do all flowering plants begin their lives? As seeds! Explain that most plants have structures to help move their seeds away from the parent plant. In this lesson, students will explore the different ways seeds move around.

Brainstorm different seed dispersal mechanisms, and share examples.

- Wind: dandelions, helicopter seeds of maple trees
- Hitchhiking on animals: seeds with burrs
- Exploding outwards from parent plant: Wild peas and many other plants with seed pods (Check out an awesome video of a Jewelweed seed pod exploding in slow motion: <https://youtu.be/4WCkHVwRaCs>) (Note- farmers over thousands of years have bred this trait out of edible peas)
- Attracting an animal, being eaten and traveling through scat: Nearly any kind of fruit, including berries, apples, cherries, etc
- Floating in water: Coconuts

- For each, discuss what kind of structures the seeds have to help them disperse this way (function)
- Discuss what seed dispersal methods students saw on the farm.

2. Divide the class into groups of 3 or 4, and give each a ping pong ball “seed.” Assign each group a different dispersal method. Using the different materials, they must build a structure that allows their seed to disperse in the following ways:

- Hitchhike on an animal for at least 20 feet
- Float in the wind for at least 5 feet
- Be thrown from the parent plant at least 3 feet

3. Before building, each group should discuss why their plan will work, and how it will meet the distance requirements for their dispersal method.

4. Once all the groups have completed their seeds, have students demonstrate their dispersal methods or even have contests to see whose structures were the most effective. Discuss what worked well and what did not.

5. Discuss why seeds need to disperse from their parent plant. What would happen if all the seeds of an apple tree fell and began to grow right next to their parent? Would they all be able to survive?

## Extension Opportunities:

- Go on a seed hunt around the school. Collect as many different seeds as possible and sort them into categories based on how they disperse. What common structures do you notice among seeds that disperse the same way?
- See seed dispersal methods in action! Cover each child’s shoes in a large sock, and then take a walk through an area where plants are producing seeds. See how seeds attach to the socks and “hitchhike,” just like they do on animals’ fur. What structures do they use to help them catch a ride?

# POST-TRIP LESSON: SEEDS ON THE MOVE CONT.

## Next Generation Science Standard Connections:

### Disciplinary Core Ideas:

#### **Life Science 1.A: Structure and Function** *How do the structures of organisms enable life's functions?*

- o All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)
- o Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)

#### **Life Science 2.A: Interdependent Relationships in Ecosystems** *How do organisms interact with the living and nonliving environments to obtain matter and energy?*

- o Plants depend on water and light to grow. (2-LS2-1)
- o Plants depend on animals for pollination or to move their seeds around (2-LS2-2)

#### **Engineering, Technology, and Applications of Science 1.B: Developing Possible Solutions** *What is the process for developing potential design solutions?*

- o Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (K-2-ETS1-2)

.....

### References:

Inspiration for this lesson came from The Growing Classroom lesson "Adapt-A-Seed" (Jaffee and Appel, 2007)