

Garden Lesson: Seed Dispersal

Season: Fall | Grades: 4th, 5th and 6th

Ohio Science Concept

- Grade 4 (LS): Earth's Living History- Environmental change
- Grade 5 (LS): Interactions within Ecosystems- Organisms perform a variety of roles in an ecosystem
- Grade 6 (ESS): Rocks, Minerals and Soil- Rocks, minerals and soil have common and practical uses

Science Inquiry and Application

- Employ simple equipment and tools to gather data and extend the senses
- Develop models
- Think critically and logically to connect observations, evidence and explanations

Next Generation Science Standards

- 4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior and reproduction
- 5-ESS3: Obtain and combine information about ways communities use science to protect the Earth's resources.
- MS-LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

Ohio Mathematics Standards

- Grade 4: Generate and analyze patterns
- Grade 5: Analyze patterns and relationships

Objectives

Students will...

- Use observational skills to sketch and describe a seed of their choice
- Design a model to represent a seed dispersal mechanism
- Apply proper weeding techniques to care for their garden space

Materials

- Transition signal (bell, chime, etc.)
- *Observe Station*: paper, clipboards, pencils, seed examples
- *Explore Station*: aluminum foil, pipe cleaners, tape, tissue paper, construction paper, scissors
- *Garden Station*: hand lenses, paper bags

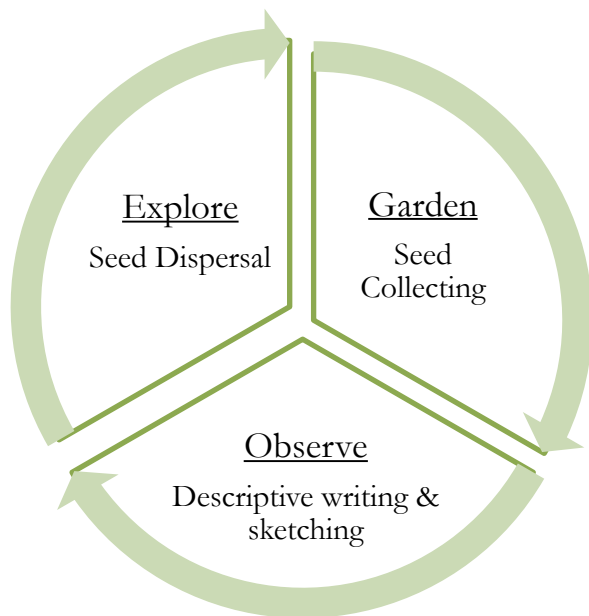
Overview

The focus of this lesson is seed dispersal. Students will interact with this concept in three different ways. At the Observe Station, students will sketch and write their observations of a seed and hypothesize about its dispersal mechanism. At the Explore Station, students will create a model of a seed dispersal mechanism. At the Garden Station, students will collect and save seeds from plants in the garden. The lesson will close with a group discussion about how students can apply what they've learned to protect their garden and natural spaces.

5 minutes Introduction

- Garden tour, observations and expectations
- Overview of agenda and seed dispersal
- Break into three groups for station time

20 minutes Station Rotation (5 minutes per station + 1 minute for transition)



Observe: descriptive writing and sketching

- Materials: “Seed Sketch” paper, clipboards, pencils, seed examples
- Prep: Pass out a clipboard, paper and pencil to each student
- Each student should:
 - Choose a seed and record their observations about the seed on their paper
 - Sketch their seed
 - Hypothesize about how the seed is dispersed

Explore: Seed Dispersal

- Materials: Aluminum foil, pipe cleaners, tape, tissue paper, construction paper, scissors
- Explain that seeds have adapted amazing mechanisms for traveling away from the mother plant: wind, water, and animal assistance
- In groups, students will use the materials to make a model that represents one of these techniques

Garden: Seed Collecting

- Materials: hand lenses, paper bags
- Discuss states of matter involved in seed germination and growth
- How did the seeds arrive in the garden? What does the soil contribute to the growth of a plant?
- Look for plants with seeds ready to be harvested (Sunflowers, Cilantro, etc.) and collect the seeds in the bags

5 minutes Conclusion: What Can You Do?

- While you collect the materials, ask the students what they can do to make sure the garden stays healthy
- What can they do to help the environment around the school and neighborhood?
- Ask if they have any questions

Observation Station: Seed Sketching

1. Draw the shape of your seed.
2. Draw and/or label it's unique characteristics
 - How does it feel?
 - What color is it? Be as specific as possible
 - Does it have any unique patterns?
 - What is its length and width?
 - What kind of seed case did/does it have?
 - Do you think it feels heavy or light?

3. Based on the observations you've made regarding your seed, how do you think it is dispersed (animals, wind, water, or other mechanism)?