

Garden Lesson: Seasonal Changes

Season: Spring

Grades: 4, 5 and 6

Ohio Science Concept

- 4th Grade: Earth's living history- Environmental change
- 5th Grade: Interactions with Ecosystems
- 6th Grade: Rocks, minerals and soil- common and practical uses

Science Inquiry and Application

- Identify questions that can be answered through scientific investigations
- Use appropriate mathematics, tools and techniques to gather data and information
- Think critically and logically to connect 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-ESS3-1: Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment
- MS-LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

Ohio Mathematics Standards

- 4th Grade: Number and operations- fractions: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- 5th Grade: Number and operations- fractions: Use equivalent fractions to add and subtract fractions
- 6th Grade: Ratios and proportional relationships- Understand ratio concepts and use ratio reasoning to solve problems.

Objectives

Students will...

- Make observations and measurements about the weather and connect this data to seasons and plant life cycles.
- Identify and document characteristics of seasonal change.
- Learn and practice proper square foot gardening techniques for Cincinnati spring crops.

Overview

In this lesson students build their understanding of the interconnectedness between seasonal change and characteristics of the garden. At the observation station students are guided in collecting weather data and discussing characteristics of different seasons. At the explore station, students identify signs of seasonal change in the garden and sketch models of these changes. At the garden station students practice appropriate garden techniques and mathematical skills when planting spring seeds. This lesson creates opportunities for students connect with their gardens while developing the skills, knowledge and confidence necessary to play an active stewardship role now and in the future.

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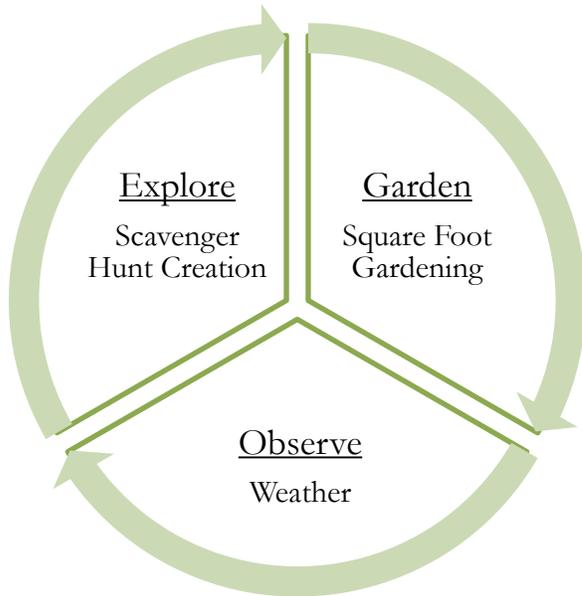
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5 minutes Introduction

- Welcome & review expectations
- What causes seasons? Describe winter season. Is the winter season the same everywhere?
- Break into three groups for station time

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



Observe: Weather

Materials: Thermometer, wind sock, rain gauge, chalk, measuring tape, compass, “Weather Recording” worksheet, clipboard, pencil weather measuring tools handout, cloud ID, “Weather Recording Sheet”, newspaper

- What is weather? How is this different from climate?
- What are some tools used to investigate weather?
- Read through tools for measuring weather worksheet and show thermometer, rain gauge, compass, etc. Discuss a few scenarios.
- Complete “Weather Recording Sheet” using tools and newspaper
- Use cloud ID guide to determine cloud types (if time allows)

Explore: Create signs of spring scavenger hunt

Materials: “Signs of Spring” Scavenger Hunt, clipboard, pencils

- Briefly brainstorm ideas for what they could include on their scavenger hunt and explain they’ll have the opportunity to seek inspiration from the garden.
- Ask for suggestions/review rules and expectations for respecting nature and other groups while completing this activity
- Scavenger hunt can be completed in partners or individually, each group needs scavenger hunt, clipboard and pencil.
- Encourage groups to share exciting things, take their time, and enjoy their findings. Set off on the scavenger hunt.

Garden: Square foot gardening

Materials: CGC spring seeds packet, flour, plant ID markers, yarn for square foot measurements, scissors, measuring tape

- On 4x8 raised garden bed, demonstrate how to mark every foot on each side of bed; connect markings with yarn to create square foot boxes; have students repeat this procedure to finish the bed
- Choose a seed variety to plant and use square foot spacing guide to identify planting pattern. Have students mark where they will plant with flour.
- Demonstrate proper planting technique and have students plant the seeds. Have students plant and place markers.
- Ask questions that require students to apply knowledge regarding fractions and ratios when or after planting.

5 minutes Conclusion: What Can You Do?

- Encourage students to share what they learned
- Ask the students what season comes next? What are some things you can do in the garden during winter and spring?

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In class literary component:

- Readworks: Weather and Climate

In class science continuation component:

- "My Weather Report"

Resources

<http://www.agclassroom.org/ny/resources/pdf/activities/right.pdf>

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Civic Garden Center
of Greater Cincinnati

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SIGNS OF SPRING

scavenger hunt

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