

Garden Lesson: Exploring Soil

Season: Fall | Grades: Preschool, Kindergarten and 1st

Ohio Science Concepts

- Kindergarten (LS): Physical and behavioral traits of living things: Living things are different from nonliving things
- Grade 1 (LS): Basic needs of living things: Living things have basic needs

Science Inquiry and Application

- Observe and ask questions about the natural environment
- Employ simple equipment and tools to gather data and extend the senses
- Communicate about observations

Next Generation Science Standards

- K-ESS3-3: Communicate solutions that will reduce the impact of humans on the land, water, air and/or other things in the local environment
- K-2-ETS1-1: Ask a question, make observations and gather information about a situation people want to change to define a simple problem that can be solved through developing a new or improved object or tool.

Ohio Mathematics Standards

- Kindergarten: Count to tell the number of objects.
- Grade 1: Reason with shapes and their attributes

Objectives

Students will...

- Use hand lenses to examine the components and characteristics of soil and compost
- Observe and identify organisms living in soil
- Compare and contrast different soil samples from the garden

Materials

- Transition signal (bell, chime, etc.)
- *Observe Station*: tarp, hand lenses, popsicle sticks, compost, sorting bins
- *Explore Station*: trowels, paper plates
- *Garden Station*: plants to be composted (leaves, roots, weeds), compost pile

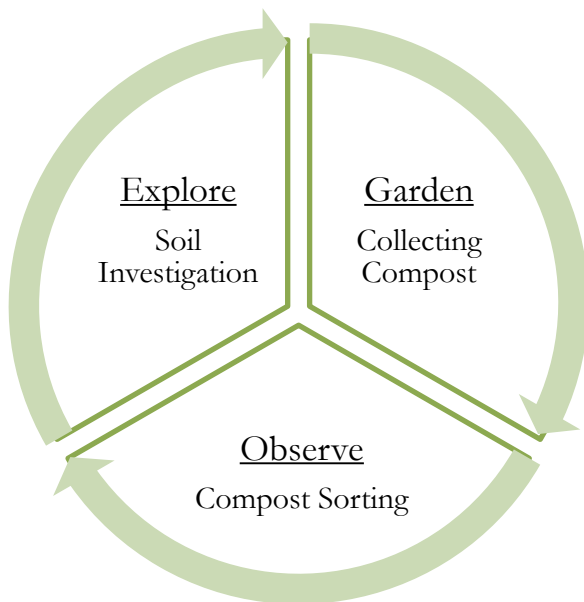
Overview

In this lesson students investigate the soil in the garden and the compost habitat. At the Observe Station hand lenses are used to observe and identify soil components based on physical characteristics. The Explore Station gives students the chance to collect soil samples from different locations in the garden, make observations and then compare and contrast each sample. The Garden Station engages students in collecting garden plants that are spent and need to be put in the compost pile. These activities develop a foundation for the concepts of decomposers, nutrient cycles and conservation of natural resources.

5 minutes Introduction

- Welcome & review expectations
- Soil-what is it? Why is it important? Are there living things in soil?
- Break into three groups for station time

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



Observe: Compost Sorting

Materials: tarp, hand lenses, popsicle sticks, compost, sorting bins

- Prep: place a small amount of compost onto the tarp and give each student a hand lens and popsicle stick
- Explain that students will be searching in compost for items that fit the descriptions on the sorting boxes (leaves, roots, wood, etc.)
- Review proper treatment of living creatures
- Ask the students to think about the changes that happen in the compost bin and hypothesize why these changes occur

Explore: Soil Investigation

Materials: trowels, paper plates

- Ask the students to point to the soil in the garden
- Dig a little bit of soil out of one of the raised beds and put it on a paper plate for the students to observe
- Dig a little bit of soil out of the ground and put it on a paper plate for the students to observe
- Ask the students to compare the two soil samples, identifying differences and similarities

Garden: Collecting Compost

- Materials: plants to be composted (leaves, roots, weeds), compost pile
- Tell the students to look around the garden for items that are finished growing
- They can collect fallen leaves, brown plant parts, weeds, etc.
- Instruct the students to add the plants to the compost pile

5 minutes Conclusion: What Can You Do?

- While you collect the materials, ask the students to give ideas on how they can help the soil
- Ask if the students have any questions

Observe Station Sorting Bin Labels

Seeds



Roots



Compost Critters



Will Not Decompose



Leaves & Stems



Wood & Paper



Food Scraps



Extension: Worm Story and Picture Book

My Worm Story and Picture Book **Name** _____

Fill in the blanks to create Wally's story. Then, draw pictures to show what he has done. To make your book, cut along the dotted line and staple the half-sheets together.

Wally the worm went for a squirm...

up the _____

.....

around the _____

and into the _____.

.....

Along the way, Wally bumped into Sammy the Spider, his best friend,
and they decided to go towards the _____

and into the _____

.....

across the _____

.....

and back to the _____.