American Heart Association®
Teaching Gardens®

Grade Band
3–5

Time
20 minutes

Season
Any

Location
Indoors or Outdoors

What's in the Soil?

Description:

In this activity, students dissect two very different soil samples: one from somewhere like a dirt road or parking lot, and another from a healthy garden bed that has been amended with compost. They record and compare the contents of each substance.

Connections to Content Standards:

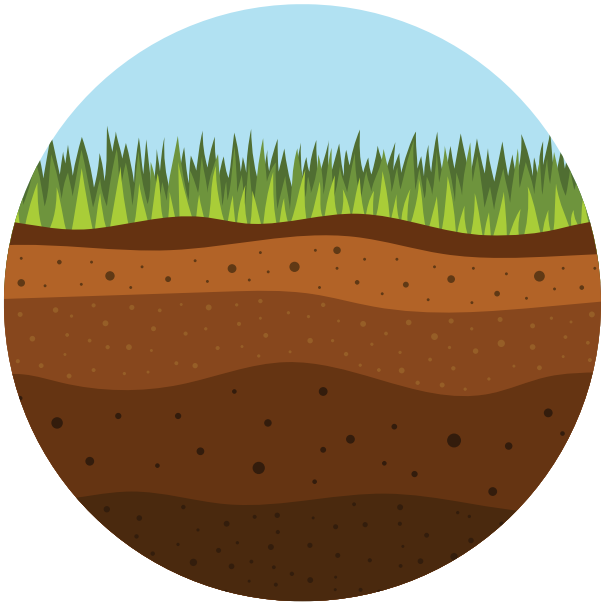
Next Generation Science Standards (NGSS):

NGSS Disciplinary Core Ideas:

LS4.D: Biodiversity and Humans
There are many different kinds of living things in any area, and they exist in different places on land and in water.

Materials:

- 1 trowelful of rich, healthy garden soil for each group of 4 students
- 1 trowelful of seemingly lifeless dirt, such as that found in a dirt parking lot, for each group of 4 students
- newspaper
- 1 hand trowel for each group of 4 students
- 1 magnifying glass for each student (or enough for groups to share)
- 1 tweezer for each student (or enough for groups to share)
- 1 piece of paper, garden journal, or science notebook for each student
- 1 pen or pencil for each student



Preparation:

- Identify a place where your students can collect the soil and dirt samples, or collect them ahead of time.

What's in the Soil?, *continued*

Activity:

1. **Discuss Soil:** Let students know, *When we think of exciting ecosystems, we might think of the rainforest or the tidepools. Few people realize that there is another incredible and diverse ecosystem just beneath our feet, in the soil! In the soil, you will find many diverse, living organisms that make it a great place for plants to grow! Today, we're going to make detailed observations of the different objects found in two different soil samples: one that has been amended and cared for by gardeners, and another from a dirt road* (or wherever you collected it from).

2. **Demonstrate:** Show students how to dissect their two soil samples. To do this, open a piece of newspaper on a table or on the ground, and pour a trowelful of soil out onto the paper. Then use your hands, a trowel, and/or tweezers to look through the soil for different components. Explain: *Every time you find something, record what you found. If you see something small, use a magnifying glass to take a closer look.* Demonstrate how to use a magnifying glass.

3. **Soil Dissection:** Give students time to dissect their two soil samples, keeping the two samples separate. Challenge them to record a list as long as they can of all the different things they find in the two different samples.

4. **Share Out:** Ask students: *How were these two soils different?* Accept all answers. Ask: *Why do you think plants grow better in healthy, garden soil than in dirt from a dirt road?* Accept all answers, highlighting that the garden soil has more water, nutrients from organic matter, living organisms, and air mixed in. Ask students: *What can we do to protect the soil, so that we can continue to grow plants for food, clothing, shelter, and more?* Accept all answers, such as building compost and incorporating it into garden beds, preventing erosion, watering, etc.