

Soil Curriculum

3-5

Read the Book *Dirt the Scoop on Soil* by Natalie Rosinski

Have students conduct the soil separation exercise from pg. 6

After the soil layers separate, ask students what kind of soil do you think is best for growing plants in? Why?

Soil PH

Explain to your kids what pH is. It's the measure of the soil's alkalinity and acidity and is measured on a scale of 1 to 14. The higher the number, the more alkaline the soil. Seven is neutral.

Share these real life pH examples:

We'll start with the middle of the pH scale: with a pH of 7, plain water is exactly in the center. So if you want to feel and taste something with a neutral pH, go pour yourself a glass of water and take a big drink.

Acidic pH

Moving on down the scale towards things with a more acidic pH, you could try some milk: milk has a pH between 6 and 7, so it's just a little more acidic than water. If you drank some coffee instead of milk, you'd be down to a pH of 5. If you had some grapefruit juice, you'd be looking at a pH around 3, and ordinary vinegar has a pH of 2. Below a pH of 2, things aren't safe for people to eat.

Ask your kids why pH is important. Explain that the soil pH will help dictate what nutrients can be taken up by certain plants. All plants have a preferred pH range where they grow best. For example, blueberries like an acidic pH. If the soil pH is too high, the blueberry plant won't be able to take up iron and it will not grow well.

Explain that there are certain materials that can raise or lower the pH in soils.

Get some soil samples from the school garden or somewhere nearby. Have students conduct the following: Soil PH Test

Materials:

To create your homemade soil acidity-alkalinity test, you'll need just a few common household items. Gather together the following:

- A soil sample
- White vinegar
- Baking soda
- Water
- Two sample containers (such as disposable cups)

Administering the Test

To test your soil, follow these simple steps:

1. Scoop some soil into a container. Then, add 1/2 cup of vinegar. If the soil bubbles or fizzes, it's alkaline. The chemical reaction that you're seeing occurs when an acid (vinegar) comes into contact with something alkaline (soil).
2. If no reaction occurs, scoop a fresh soil sample into a second container. Add half a cup of water, and mix. Then, add 1/2 cup of baking soda. If the soil bubbles or fizzes, the soil is highly acidic. The reaction you're seeing is the result of acidic soil coming into contact with an alkaline substance (baking soda).

If your soil doesn't react to either test, it has a neutral pH and doesn't require any tweaking.

Based on the results of the pH testing, have students research what they would need to add to their soil to have the proper pH balance.