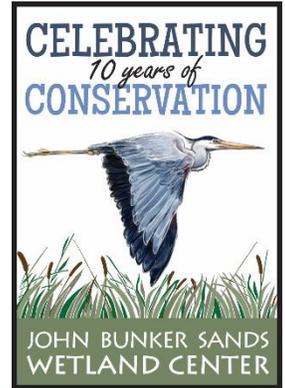


JBS in Your Backyard Soil Testing at Home



Activity: Soil Testing at Home

Goals:

1. To help students learn about soil health
2. To help students learn how to test soil with equipment commonly found in the kitchen and garage
3. To help students learn about the pH scale
4. To have fun with soil

Equipment:

1. Soil Testing at Home activity sheet
2. Garden soil or just a pile of dirt in your yard!
3. Tarp or piece of cardboard about 30" by 30" or larger
4. Trowel or shovel
5. Large soup or serving spoon
6. Measuring cup and measuring teaspoon
7. Two plastic or glass bowls at least quart size
8. Ruler or tape measure
9. White vinegar
10. Baking soda

Duration: Approx. 45 minutes (could be longer depending on how many worms you count or if you do multiple soil samples)

Directions: *Test #1: The Squeeze Test.* Help students scoop up a good handful of soil and squeeze it in their hand. Release the hand flat. Observe: Does the soil form a shape? If it does, have them poke the shape with a finger. Does the shape fall apart? Loamy soil forms a shape, but the shape falls apart when you poke it. Clay soil forms a shape and holds the shape if you poke it. Sandy soils do not form a shape. Have the students fill out the results for Test #1 on the activity sheet.

Test #2: The Worm Test. Put the tarp or cardboard on the ground near the soil location. Help the students dig a hole 8" across and 8" deep using the trowel or shovel. Place the soil from the hole on the tarp or cardboard. Have the students sift the soil with their fingers and count all the worms they find in the soil. Help them record the number of worms. If you have more than eight worms, your soil is healthy! Have the student record their conclusions on the activity sheet.

Test #3: The pH Test. Have the students collect one cup of soil from the same location you used for the first two tests. Put a heaping soup or serving



spoon of soil into each bowl. Help the students add $\frac{1}{4}$ cup of white vinegar to the first bowl. Watch for any fizzy reaction. If it fizzes, then the soil is alkaline with a pH of 7.5-8. If it does not fizz, then add distilled water to the second bowl until the mixture is muddy and thin. Have them sprinkle one tablespoon of baking soda over the muddy soil and observe for any fizzing. If it fizzes, then you have acidic soil with a pH of 5-6.5. If neither bowl fizzes, then the soil sample is neutral with a pH of 7. Have the students record their observations on the activity sheet.

Conclusion: Discuss the results from the three tests. Based on the observations, is the soil healthy? Why or why not? Have the students record their conclusions in the bottom section of the activity sheet.

Review: Discuss which test was the most interesting and what they learned from this experiment with soil.

Extensions: Research more about soil and discover the layers of soil:

<https://www.soils4kids.org/about>

Take multiple soil samples from different parts of your yard or elsewhere.

Compare the results to your first soil tests. How are they alike? How are they different?

