

SOIL OBSERVATIONS

What does a wetland soil look and feel like?

Objective: Students will observe and then describe physical properties of wetland soil and compare it to upland soil

Age Group: Elementary

Materials:

- ✓ Wetland Soil Sample (~3 cups)
- ✓ Upland Soil Sample (~3 cups)
- ✓ Paper towels for cleanup
- ✓ Soil “feel method” chart--[Accessible here](#)

Curriculum Connection:

K.P.2 → Understand how objects are described based on their physical properties and how they are used

1.E.2 → Understand the physical properties of Earth materials that make them useful in different ways

L.K.5 → Explore nuances in word meanings (adjectives)

What you need to know:

All soils can be composed of one, two, or three kinds of particles: Sand, silt, and clay. The biggest difference in the particles is their size. Sand is largest, silt is smaller, and clay is the smallest. Soil will have a different color and feel depending on its composition. Wetland soils are chemically and physically different from upland soils and they vary in color due to these differences. Wetland soils also vary in the amount and duration of water that is present, causing them to be devoid of oxygen all or part of the year. They are called “hydric soils” or wet soil, and the lack of oxygen results in removal of “rust” color by bacteria, which will change the color of the soil from reddish to gray. Wetland soils can also have lots of dead plant material that takes a very long time to break down without oxygen, giving the soil a dark or black color and an accompanying “rotten eggs” smell. Wetland scientists use the Munsell Color Chart to determine what type of soil they have found.

The activity:

- ❖ Split students into groups of 3-4
- ❖ Start by giving each group a sample of upland soil
- ❖ Have students use their sense of touch, smell, and sight to observe the soil
- ❖ What does it smell like? What does it feel like? What does it look like? Have students use as descriptive wording as they can, and be recording their descriptions on the board
- ❖ As a whole class, walk students through the feel method to determine what type of soil makeups they have
- ❖ Repeat the observation, description, and feel method process with wetland soil samples



Wetland scientists use a Munsell Color Chart to determine soil types in wetlands.

Follow up:

What was the biggest difference between the wetland soil and upland soil?

Which soil was more sandy?

Which soil do you think would hold more water? Why? (1.E.2 only)

→ For a more in-depth exploration of soil retention, see our “Create a Wetland” activity!