

SOIL DETECTIVES

In this investigation, students will use evidence to identify differences between wetland soils and soils from other locations (e.g., upland area, beach).

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GA standard:

SKE2 (Kindergarten)

Driving investigation question:

What are some differences between wetland soils and other types of soil (e.g., upland area, beach)?

Learning goal:

I can identify differences between wetland soils and soils from other locations through color, texture and smell.

Focal scientific practices:

- Collecting and analyzing data
- Developing explanations

Materials:

- Soil core sampler
- Magnifying glasses
- Soil cores from a wetland area
- Soil cores from other areas (upland, beach)

Key science terms:

Hydric	Soil core
Observe	Upland
Soil	Wetland

Time: 30 minutes

Background information

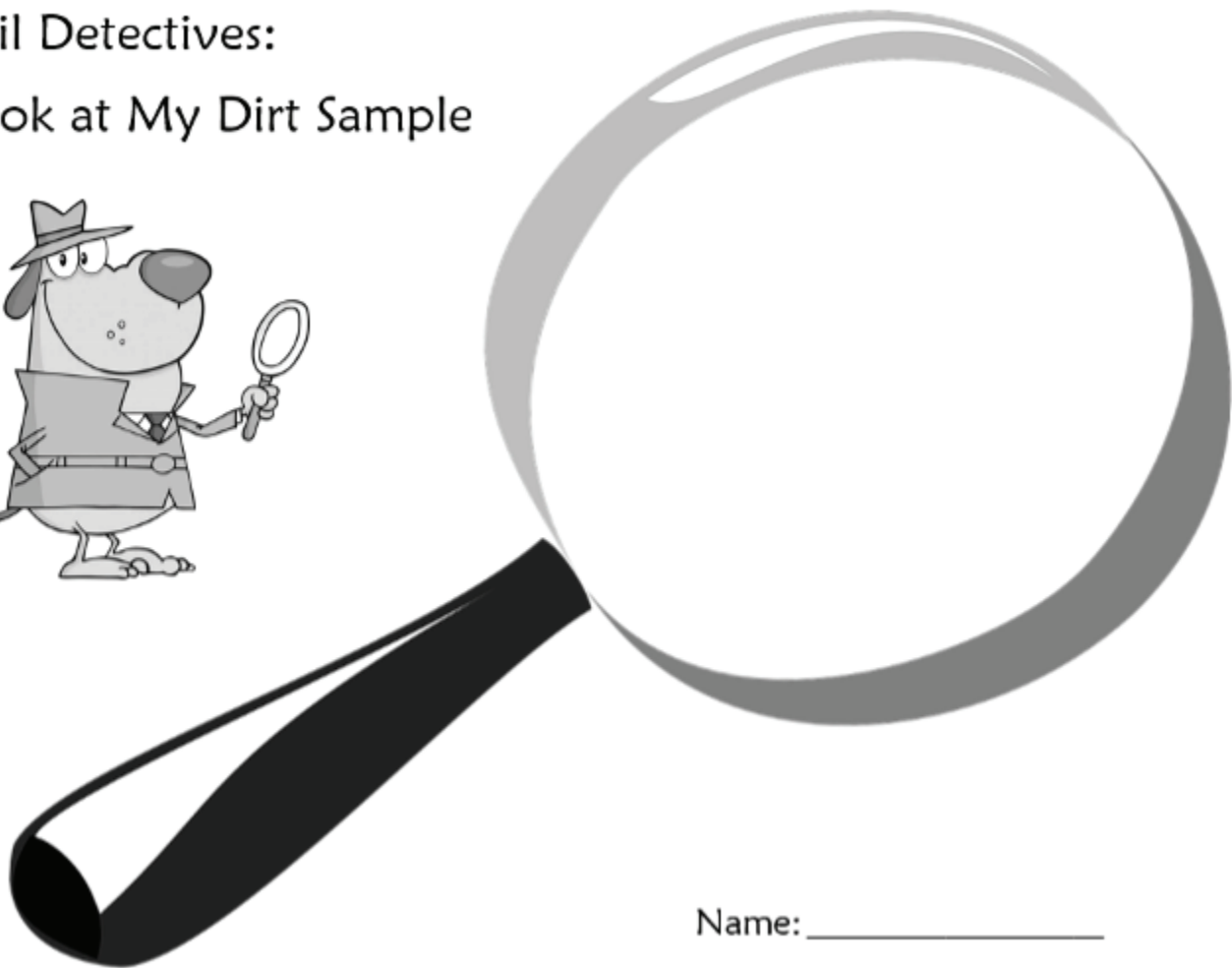
Have you ever wondered why there are different types of soil in different places? Wetlands, or transitional areas between land and water, have soils that are different from the soils you may find upland or on the beach. Wetland soils are also called hydric soils because the space between the soil grains is filled with water. Hydric soils have been saturated with water long enough to develop anaerobic or low oxygen conditions. These anaerobic conditions create some characteristics of wetland soils that can be explored through your senses: a sulfur or rotten egg smell, soil that ranges in color from brown to gray or black, and soil that may ooze between your fingers.

Procedure

1. Welcome students as they walk into the class or lab and share that you are excited to witness their detective skills in class. This should get students excited about what is going to happen next.
2. Invite students to move from their seats to the carpet. While students are moving, place **Graphic Organizer #1: “Look at My Dirt Sample”** on their desks for them to have when they return from the carpet.
3. While on the carpet, ask students to share with you what they already know about soil and different types of soil. Introduce students to the meaning of “wetland” and “upland” soils and where each can be found.
4. Have students return to their desks to use the **“Look at My Dirt Sample”** graphic organizer and write or draw a picture of what they think both wetland and non-wetland soil will look like (add details!). This will allow students to make predictions about the soil prior to the actual investigation.
5. Pass out **Graphic Organizer #2: “Types of Soil”** and have students write their name (or group number, if applicable) on the top. In this part of the investigation, students will use their senses to identify characteristics of wetland soils and upland soils (maritime forest, beach). Pick one sample of soil to model the activity with the students. Investigate the soil sample by **(a)** examining it with a magnifying glass, **(b)** touching or feeling the soil, and **(c)** smelling the soil. Along with the students, write or draw your observations and findings on the graphic organizer.
6. Pass out the **soil samples** (one set per table). Prompt students to take time to look closely at the soil samples with a magnifying glass in addition to touching and smelling the different soils. Students should write or draw what they see, feel and smell, being as detailed as possible, using words or pictures on the graphic organizer.
7. Near the end, bring students together and have them share their findings. *What are some of the key differences between wetland soils and soils from other locations (e.g., upland, beach)? What do you think causes these differences?*

Graphic Organizer #1:

Soil Detectives:
Look at My Dirt Sample



Name: _____

Graphic Organizer #2:

Soil Detectives: Types of Soil



WETLAND

BEACH

UPLAND

SEE	FEEL	SMELL