SfS Away from the Classroom!

ES14: Soil Properties (Recommended for Grades 3-5)

Please use the following resources to learn about soil properties!

Watch this Video: https://www.youtube.com/watch?v=if29mjcd5bc

Answer these questions:

- Soil is made up of four main ingredients, what is soil mostly made up of?
- What part of soil is food for plants?
- Is all soil the same?

Activities: Follow these directions to use soil as a filter!

You will need:

• 3oz and 5oz paper or plastic cups (size can vary as long as the bigger cup fits inside the smaller one) • Toothpick	• Soil from 3 places • Water • Food coloring

1. Use a toothpick to poke 3-5 small holes in the larger (5oz) cup.

2. Fill the larger cup halfway with soil.

3. Set the larger cup inside the smaller cup, with the toothpick along the inside wall, between the cups. The toothpick will let air escape from the smaller cup.

4. Add two different colors of food coloring to a small cup of water (ex. blue and red will make purple).

5. Make a prediction: what color will the water be after it goes through the soil?

6. Slowly pour some of the colored water over the soil in the cup.
    a. Wait for the filtered liquid to drain out into the bottom cup,

7. Record your observation of the water in the data table below.
    a. Hint: if you added blue and red for purple water, and the water coming out of the dirt is blue, then red was filtered by the dirt.

8. Try the experiment again using a different soil. Note: don't use the same soil more than once.

		Liquids Used, Starting colors				
		Blue and red food dye				
Soil Sample #1 **Taken from:**	Color of liquid that comes out	Fill in your observations here…				
	Dye color absorbed by soil					
Soil Sample #2 **Taken from:**	Color of liquid that comes out					
	Dye color absorbed by soil					
Soil Sample #3 **Taken from:**	Color of liquid that comes out					
	Dye color absorbed by soil					

Make observations & use Claims, Evidence, and Reasoning!

1. **Claim**: Soil can filter many chemicals out of water.
    - **Evidence**:
    - **Reasoning**:
2. **Claim**: Different types of soil will filter different chemicals.
    - **Evidence**:
    - **Reasoning**: