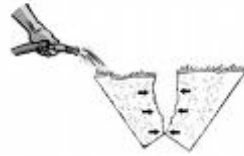


Lesson #2

SEEPING THROUGH SOILS



Overview: - In this activity, students measure and record soil infiltration different areas and depths of the Cove River field site. By measuring and recording the varying infiltration, students can examine factors that cause soil erosion.

Objectives: - Students will record the rate at which water percolates through soils of various types. Students will be able to relate soil infiltration measurements to the physical and chemical properties of soil.

Key Concepts: Water flows through soil
*soil holds water *soil properties affect flow rate and water holding capacity

Subjects: Social Studies, biology, Ecology, Geography, Mathematics

Duration: 1 class period (40 minutes)

Setting: In the field, outdoor natural landscape

Season: Spring, Summer, Fall

Interdisciplinary Connections

Frameworks: mathematics; graphing measuring and recording data

Purpose:

To develop an understanding of how water flows through soils and how the water changes as it travels.

Materials:

2L plastic water bottles with the bottom cut off and screen attached to the bottom (10-12 depending on class size)
soil samples (can use samples from *Soil Out My Backdoor*)
500 ml beakers (10-12 depending on class size)
Masking tape
Catch basins (10-12 depending on class size)

Engage:

Review with the class, the five soil forming factors from the *SOIL OUT MY BACKDOOR* activity. Have students gather around the table for the following demonstration:

Explore:

1. Place 1.2 L of soil into 2L bottle.
2. Have students look closely at the soil. What characteristics do they notice? Record observations on the board.
3. Pour 300ml of water into a 500ml beaker.
4. Have students count in cm the height of the water in the pouring container. Mark the level with a piece of masking tape.
5. Ask the students to hypothesize what will happen when water is poured onto the soil. (Ask key questions such as how long it will take for the water to pass through...how much will pass? Etc...) Record hypothesis on the board.

Environmental Education @ the Cove River Site, and other coastal Connecticut settings.



Produced by the Graduate Students in Environmental Education EVE 546 Spring 2009



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6. Pour the water on the soil. Students can time how long it takes for the water to pass through as well as take note of the quantity of water that passes.
7. Observe the look of the water after it passes through the soil.

Explain:

8. Record all observations on the board
9. Compare the hypotheses and the results of the experiment
10. After the water stops dripping from the soil, observe and record how much water passed through.
11. Have the class hypothesize what will happen if you pour another 300ml of water into the soil. Will it pass through quicker? Slower? More? Less?
12. Pour another 300ml over the soil.
13. Compare and record results on the board

Elaborate:

Students can now pair into groups of two to conduct the experiment on their own using the soil samples brought in from home.

Evaluate:

The students should record hypotheses and observations in lab notebook.