Name: _____

Date: _____

Soil Splash Test

What conditions cause soil erosion? How do different soil erosion factors affect soil displacement? How can you play a role in managing soil erosion? Complete this experiment to discover what variables play a role in the erosion of soil.

Do ... the activity

1. In groups of two to three, place about a quarter cup of dry soil (one clay and one sand) in a small dish or plate. Alternatively, cut off the bottom of a paper cup to the height of 1-inch and fill with soil. Using a large piece of white paper (easel pad) placed on the floor (or the white back of a laminated poster/ piece of paper), place the plate with the dry sandy soil in the center.

2. Have one person from each group fill a pipette with water and from a height of about 4' release the water from the pipette aiming for the soil pile. Record your measurements of how far soil is displaced when it is dry.

3. Continue to rain on the soil until the point of saturation. Once the soil is saturated, observe soil particles that have been displaced from the plate onto the white paper. Measure the distance that some of the particles have traveled using a ruler and record your findings on the Splash Test Data handout. You may also choose to draw concentric circles on the paper, like a bullseye, with the rings providing a scale to measure the distance traveled by the soil particles.

4. Further explore variables that affect soil displacement by changing:
   a. The height of the pipette (rainfall)
   b. The volume of rainfall (use a different water dropper, like a turkey baster)
   c. The slopes of the splash test

5. Observe differences in splash effect between the variables. Plot your measurements on the Splash Test Data Sheet and possibly on the chalkboard as well to share results of their experimentation with the entire class.

7. Repeat this experiment with another soil texture and record measurements on another Soil Splash Test Data Sheet.

The soil splash test lends itself to multiple variations, as a group come up with additional ideas to test. You might try additional soil textures or soils with strong structure.

Talking it Over: Soil Splash Test

Share ...what you did

What soils did you use in your experiment? What variables did you change? How did the different variables (height of rainfall, rain intensity, slope) affect soil dispersal?

List the most surprising thing(s) you observed. Explain why you were surprised by these results

Reflect ...on the results

Based on the results of your experiment, what factors cause significant erosion? Explain.

Based on the results of your experiment, explain the importance of managing soil erosion.

Generalize ...to your community

Based on the results of the splash test, how, if at all will you change the way you manage the soil at your school, your house, your community?

Based on the results of your experiment, explain things you might look for when looking at sites that might be susceptible to erosion?

Apply ...to your community

Based on the knowledge you have gained from your experiment, how do you think soil should be managed to prevent erosion?

Based on your new knowledge, what do you think you should do if you observe soil erosion occuring?

Name: _____
Date: _____

Soil Splash Test
Data Sheet

Record the distance your soil particles travel. You may or may not explore all of the variables listed below. For each additional soil texture, simply print another copy of this table and use again.

Variable	Distance soil traveled (cm)	Notes
_____Dry (record soil texture)		
_____Wet (record soil texture)		
_____Height of Rainfall		
_____Height of Rainfall		
_____Volume of Rain		
_____Volume of Rain		
_____% slope		
_____% slope		
_____Length of Slope		
Other, explain: _____		
Other, explain: _____		