

Weathering and Erosion

Investigation Data Sheet



Observing Erosion In Soil Samples

Running water is the greatest force of erosion on Earth. Water from rain and melting snow carries rocks and sediments downhill and can create cuts and gullies in hillsides.

Objective

Observe how running water erodes different types of soil samples at different rates.

Materials

- 5 foam cups
- 3 rulers
- masking tape
- 3 baking pans
- a pitcher of water
- a marker
- a pencil
- 3 different soil samples (a sample composed of hard-packed dirt which has been formed into balls and dried; soil mixed with rocks; and a small piece of sod with well-established roots.)

Safety Notice: All applicable laboratory safety rules must be followed. Students should not perform any experimental activity without the teacher's supervision and express permission. Students must follow safety guidelines and wear appropriate protective gear.

Procedure

1. Use the marker to label three of the foam cups with the numbers 1, 2 and 3. These three cups will hold your soil samples.
2. Use a pencil to carefully poke eight holes around the sides at the bottom of cups 1, 2 and 3.

3. Create a "rainmaker" by poking 10-12 holes in the bottom of another cup. You'll pour water into this cup while holding it above the soil samples to simulate rainfall.
4. Fill cups 1, 2 and 3 with your soil samples. Put the hard-packed dirt balls into cup 1, the soil and rock mixture into cup 2 and the sod into cup 3.
5. Place each sample cup in a baking pan.
6. Tape a ruler to the sides of cups 1, 2 and 3 so that one end rests evenly with the bottom of the cup.
7. Fill another cup with water. Hold your "rainmaker" cup ten centimeters, or around four inches, above cup number 1. Slowly pour the water so it runs through the "rainmaker" into soil sample 1.
8. Repeat this procedure with sample number 2 and sample number 3. Record your observations in the data table.
9. Wait five minutes and then pour another cup of water over each sample and record what happens. Did any dirt erode and flow into the baking pans?

- Which sample erodes the most?

Conclusions

- In the investigation, which soil sample seemed to erode the least? Why?

- Which soil sample seems most like soil that has been disturbed by farming or development? Based on your observations, how do these practices affect soil erosion?

	Sample 1	Sample 2	Sample 3
Initial Observations			
Observations after 1 cup of water			
Observations after 2 cups of water			