



About the Experiment

Soil is a living and life-giving natural resource that promotes plant growth, makes a habitat for living things, and stores water. Soil is mixture of organic matter, minerals, gases, liquids, and organism, working together to support life. The process of weathering is the transformation of rock into soil through physical, chemical, or biological processes. Erosion is the next step in the process where soil is displaced to another location through movement caused by water, wind, and/or ice. Some of the greatest natural wonders of the U.S. including the Grand Canyon, Natural Bridges National Monument, and Devil's Tower were carved and transformed in part by erosion and deposition of soil over time.



Ages – 5-12



Time – 15 minutes + few minutes a day for 3 days



Difficulty – Easy

What You'll Need for the Experiment



- Soil or Dirt of various colors and types such as sand, silt, and/or clay
- Trays or containers with four sections (aluminum or lined cardboard box)
- Clean spray bottle or water bottle
- Clear cup or measuring cup
- Water
- Pen and Paper/Journal



Let's Do This!

Soil Experiment #1

1. Gather up a handful of four different types of soil. This can be dirt, sand, clay, silt, chalk, etc.
2. Place the soil types in different sections of your tray. Soil can be dry or add a little bit of water to build a landform.
3. Draw a picture of your soils and describe the texture, color, and shape of each.
4. Use a spray or water bottle to dribble drops of water on each soil to represent a light rain. Record your observations, what is happening to the soil, how is it changing, if at all?
5. Now, pour a cup of water into each soil tray to represent a heavy rain. Record your observations, what is happening to the soil, how is it changing, if at all?

6. Leave the tray in a secure location outside for three days, preferably when there is no rain expected. Observe the soils the same time each day and record your daily observations as it relates to erosion by wind.

Soil Experiment #2

1. Fill one cup with water.
2. Collect dirt clumps from two different soil types (see above).
3. Draw a picture of the dirt clumps and write a description of each that may include but not limited to diameter, color, texture, etc.
4. Drop one clump of dirt in the cup of water and record your observations at it relates to how the water erodes the dirt.
5. Repeat step 4 with the other dirt clump and cup of water and record your observations.



Reflection Questions

1. How did the different soils react to the light rain, the heavy rain, and the wind?
2. What happened to their composition?
3. Did their color change?
4. How did the soils maintain the water over the course of three days?
5. How did the soils look and feel compared to the first day?
6. Which soil(s) do you think is best to handle heavy rains or high winds?
7. If the soils... they withstood weathering and erosion well. By comparison, if the soils...they were more vulnerable to soil and erosion.