

Skittle Erosion

Learn About Erosion and Deposition with
Badlands National Park



Badlands National Park's 244,000 acres include mixed-grass prairie habitat, one of the richest fossil beds in the world, and striking rock formations that show the geologic history of the park over time. The formations of Badlands National Park are the product of erosion and deposition.

Background:

Erosion is the geological process of rocks gradually wearing away. This can be caused by natural forces, such as wind or water. In this experiment, you will model erosion by water, which can happen in different ways, from rain beating down on rocks to ocean waves pounding against them to rivers rushing through a landscape. Little by little each of these forces chip away at the rock and soil they come in contact with.

The erosion of Badlands National Park began about 500,000 years ago with the Cheyenne and White Rivers carving through the landscape. Today, the park's soft, sedimentary rock erodes at a rate of one inch per year, which for rocks is very quick!

Deposition is the process of rocks gradually building up. This also happens by natural forces, such as rivers or wind carrying and depositing sediment. Through this process (and over the course of millions of years), the layered rock formations of Badlands National Park were slowly stacked on top of each other, beginning about 75 million years ago with the formation of the Pierre Shale. The Pierre Shale is the base layer of the geologic formations in the park. That means the oldest rocks in the park are at the bottom of the formations!



Materials:

- 1 small bag of Skittles
- 1 pipet or eye dropper
- Water
- 1 small white plate
- 1 paper towel or coffee filter



Procedure:

- Place a skittle on the plate on a flat surface and fill your eye dropper with water.
 - The skittle represents a rock, and the water represents precipitation.
- Using the eye dropper, place 10 drops of water onto the skittle.
 - Observe and take note of what happened.
 - Did the water wash away some of the color of the skittle? The color washing away represents **erosion**.
- Repeat step 2 until you've dropped 50 drops in total.
- What has changed from before you started dropping any water to now?
 - The part of the skittle that is in contact with the built-up water on the plate should begin to dissolve. This demonstrates another way in which water can cause erosion.
- Once you have reached 50 drops and made your observations, remove the skittle from your plate and pour the remaining water into your paper towel or coffee filter.
 - Make observations about what happened.
 - The water should pass through the filter, leaving the colors behind. This represents **deposition**. The sediments (colors) eroded off the rock (skittle), were carried by the water and settled in a new location.

