



Erosion Lab – Middle School

Standards met: NGSS-Standards: MS-ESS2-1, MS-ESS2-2, MS-ESS2-4, MS-ESS3-1

Introduction:

The surface of the Earth is constantly changing. Different types of land formations can be found all over the world. The atmosphere plays an important role in shaping Earth due to wind and water. Rocks are continually worn down from weathering by wind, rain, chemicals, and ice. Small particles of rocks are called sediment and can be carried by water and wind where they eventually settle at the bottom of the ocean. Erosion occurs as sediment is moved across surfaces, causing them to become worn down. Water erosion is when water carries the sediment from one place to another, while wind erosion is a result from wind picking up and carrying sediment to a new location. Chemical weathering is a process caused by the chemicals in water that wear away rocks by reacting with rocks and minerals.

Pre Lab Questions:

1. In your own words, define weathering.

2. In your own words, define erosion.

3. Identify and explain 2 types of erosion.

Material:

- Large aluminum baking pan
- Sand
- Pebbles
- Disposable cup (3)
- Straws (2)
- Ruler
- Popsicle sticks
- Water
- Pencil/pen

Procedure:

Part 1

1. Make a pile of sand (mountain) in the middle of the baking pan.
2. Use the straw to gently blow across the top of the sand mountain. Write down your observations:

3. Place pebbles on top of the new sand hill. Make a prediction on what will happen when you blow across the sand and pebble and how this is different from just the sand.

4. Use the straw to gently blow across the top of the sand and pebbles. Write down your observations.

Part 2

5. Make a new sand mountain at one end of the pan. Make sure the “mountain” is 10 cm high by placing the ruler in the center to measure it.
6. Make holes in the bottom of a cup to make rain.
7. Hold the rain cup over the mountain and use the other cup (with no holes) full of water to pour water in the rain cup. The water will “Rain” on your mountain.
8. After all the rain is out of the cup, measure the height of your mountain. Record the height: _____
9. Explain what happened to the sand on the mountain.

10. On one end of the pan, make a new mountain like the first (10cm high).
11. Build a dam on one side of the mountain with the popsicle sticks.
12. Predict what will happen to the new mountain when it rains.

13. Using the rain cup like you did before, make it rain on the new mountain. Record the height: _____
14. Write down your observations. What happened to the sand on the second mountain after it rained?

Conclusions:

1. Explain the difference between weathering and erosion.

2. In part 1 of the procedure, compare and contrast between blowing on the sand mountain, versus the sand and pebble mountain.

3. What role did the pebbles play?

4. In part 2 of the procedure, how did the dam affect the height of the mountain after it rained?
