

Erosion

Objective

Observe and record the different effects of weathering.

Materials

- Pen/Pencil
- Sand
- Pebbles
- Large pan/Cookie sheet
- Small Cups (3)
- Small Lid (1)
- Ruler
- Popsicle sticks
- Chalk
- Vinegar
- Water
- Drinking straws (2)

Steps

1. Make a pile of sand in the middle of the pan.
2. Now lightly blow across the sand and pebbles with the straws.
3. Make a “sand mountain” by piling sand up on one side of your pan.
4. Hold the ruler in the mountain so that the sand covers up to the 10 centimeter mark.
5. Make a “rain cup” by taking one of your small cups and poking holes into the bottom of the cup with your pen or pencil.
6. Hold your “rain cup” over your mountain and fill the other cup with water.
7. Pour the water from the second cup into your “rain cup” – the water will now “rain”.
8. After the rain has stopped, measure the height of the remaining sand.
9. Make a second mountain exactly like the first.
10. Using the popsicle sticks, build a dam on one side of the mountain.
11. Now “rain” on your new mountain and record the height.
12. Make a chemical weathering chamber by adding a piece of chalk to the last small cup and filling it $\frac{1}{2}$ full with vinegar.
13. Put the lid on your chemical weathering chamber and shake it vigorously for ten minutes – You might want to take turns with this one.

Conclusion

- Explain how chemical weathering creates caves and sinkholes
- What is the difference between weathering and erosion?

Name _____ Date _____



Weathering and Erosion Lab

Introduction

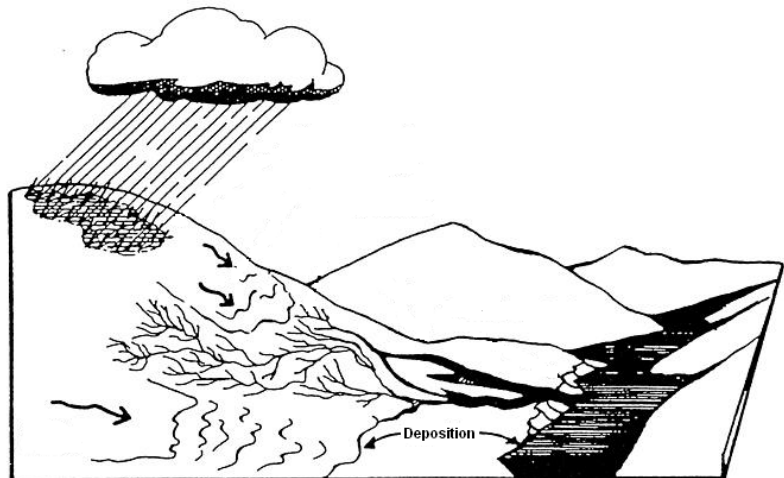
The atmosphere of our planet is constantly changing the surface of the Earth. Rocks are continually weathered down by wind, water, chemicals, and ice. After the rocks are broken down into smaller pieces we call sediment, they are eroded away and deposited in lake beds and on the ocean floor. Wind erosion is the process by which wind moves sand or soil from one location to another. Wind erosion changes the environment, especially if there is nothing to block its effects. Water erosion is the process by which water moves sand or soil from one location to another. Water erosion may change the environment, especially if there is nothing to support the sand or soil. Chemical weathering is the process by which chemicals in water wear away the surface of the earth by reacting with rocks and minerals.

Weathering : The process by which water, wind, and ice wear down rocks and other exposed surfaces.

Erosion : The movement of weathered rock by wind, water, ice, or gravity.

Materials Needed

- Pen/Pencil
- Sand
- Pebbles
- Large pan/Cookie sheet
- Small Cups (3)
- Small Lid (1)
- Ruler
- Popsicle sticks
- Chalk
- Vinegar
- Water
- Drinking straws (2)



Procedures

1. Make a pile of sand in the middle of the pan.
2. Place pebbles on the surface of the new hill, and hypothesize what will happen when you blow on the sand and pebbles by completing the following sentence: If pebbles are added to the surface of the sand, then (more / less) sand will blow away. (circle one)
3. Now lightly blow across the sand and pebbles with the straws. Write down what you observe below:

4. Make a “sand mountain” by piling sand up on one side of your pan.
5. Hold the ruler in the mountain so that the sand covers up to the 10 centimeter mark.
6. Make a “rain cup” by taking one of your small cups and poking holes into the bottom of the cup with your pen or pencil.
7. Hold your “rain cup” over your mountain and fill the other cup with water.
8. Pour the water from the second cup into your “rain cup” – the water will now “rain” on your mountain.
9. After the rain has stopped, measure the height of the remaining sand and record. Explain where some of the sand went and why.

Height of Sand: _____

10. Make a second mountain exactly like the first.
11. Using the popsicle sticks, build a dam on one side of the mountain.
12. Hypothesize what will happen when this new mountain is “rained” on by completing the following sentence. If the mountain is supported by a dam, then there will be (more / less) water erosion. (circle one)
13. Now “rain” on your new mountain and record the height. Was your hypothesis correct? Explain your results.

Height of Sand: _____

14. Make a chemical weathering chamber by adding a piece of chalk to the last small cup and filling it $\frac{1}{2}$ full with vinegar.
15. Put the lid on your chemical weathering chamber and shake it vigorously for ten minutes – You might want to take turns with this one.
16. Hypothesize what will happen to the chalk by completing the following sentence. The chalk will (stay the same/get smaller) after we are done shaking it. (circle one)

17. Explain how chemical weathering creates caves and sinkholes.

18. Explain the difference between weathering and erosion.
