

Rock Abrasion Lab

Name: _____

Period: _____

Background:

Through weathering, erosion, and deposition of materials, Earth's surface is constantly changing.

- Large rocks can become smaller rocks through the processes of weathering, including wind, and abrasion.
- Weathering is a process where large particles are broken into smaller particles called sediments.
- Sediments grinding against each other wear away surfaces. This type of weathering is called abrasion, and it happens as wind or water rush over rocks. The rocks become smoother as rough and jagged edges break off ("physical weathering").
- Wind blowing sand acts an abrasive to anything in its path.
- Water expands and contracts (freezing and thawing) resulting in the breaking down of rocks (also a form of "physical weathering")
- Water can dissolve some chemicals in rocks ("chemical weathering").
- Erosion is the moving of sediments and occurs through wind, water, and ice transport.

Objective:

In this activity, you will model how abrasion works.

Materials:

- 2-3 sugar cubes
- 2-3 pieces of gravel, about the same size as the sugar cubes
- Small plastic container with a lid
- Magnifying glass
- Notebook and pen
- Paper (e.g., newsprint) to cover work surface

Procedure

1. Cover your work surface with paper. Look at the sugar cubes with your magnifying glass. Record your observations by drawing and in writing.

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2. Place your sugar cubes in the small plastic container and tightly close the container. Predict how the sugar cubes will change after they have been shaken inside the container for one minute. Record your predictions.

3. Shake the container with the sugar cubes inside for one minute. Open your container and pour the contents onto the table. Look again at the sugar cubes. What do you observe?

4. Now, put the sugar cubes back into the container along with the gravel. Close the containers tightly. Predict how the sugar cubes will change after they have been shaken inside the container with the gravel for one minute. Record your prediction.

5. Shake the container a second time for 1 minute. Use your magnifying glass to re-examine the sugar cubes. What happened this time, and why?

6. How long do you think this type of weathering takes? Why?

7. What would happen if you added water to the container prior to shaking? Would both types of "rocks" change equally? Why?