

Shake It Up!

Name _____

Background: Many of the smaller rocks you see around your school were once much larger rocks. How did they get to be so small? Larger rocks break into smaller rocks as a result of a process called weathering. Weathering involves the breaking down of rocks and other materials on Earth's surface. There are two major types of weathering: mechanical and chemical. In this activity, you will learn more about mechanical weathering. Mechanical weathering is the process by which rocks or other materials change physically, but not chemically.

Materials:

Large, clean plastic mayonnaise jar with lid
24 pieces of limestone, approximately the same size
water
8 index cards
something to write with

Activity:

1. Write the following numbers on an index card, using one index card per number: 0, 100, 200, 300, 400, 500, 600, and 700. These numbers indicate the number of times you will shake the mayonnaise jar.
2. Arrange the cards on a large, flat surface, leaving space to place 3 rocks below each index card.
3. Place three of the limestone rocks under the index card marked 0.
4. Place the remaining 18 rocks in the mayonnaise jar and fill half of the jar with water.
5. Place the lid on the jar and make sure it is sealed tightly. Quickly shake the jar 100 times. Then remove three of the rocks and place under the index card marked 100.
6. Repeat step 5 for each of the index cards until three rocks have been placed beneath all of the cards.
7. Observe the 8 piles of rocks. Notice how the piles are similar to and different from one another.

Questions:

1. Compare the surface of the piles of rocks. How does the surface change based on the number of times the rocks were shaken?
2. Compare the size of the piles of rocks. How does the size change based on the number of times the rocks were shaken?
3. Did the water change by the end of the experiment? If so, how? Why do you think this occurred?
4. What is the name of the process that caused the rocks to change size, texture, and shape?
5. Where might this type of similar process happen in the natural world?