

Shake it Up

Question: What is physical weathering, and what are the factors that can affect it?

Kentucky Core Content:

SC-M-2.2.1 The Earth's processes we see today, including erosion, movement of lithospheric plates, and changes in atmospheric composition, are similar to those that occurred in the past. Earth's history is also influenced by occasional catastrophes such as the impact of an asteroid or comet.

Objectives:

The students will be able to:

1. Describe physical weathering.
2. Name some types of physical weathering.
3. List factors that affect physical weathering.

Materials:

For each group of two:

Part 1:

Cup with 20 Plain M&Ms
Ziplock bag
Stopwatch

Part 2:

Cup with 20 Peanut M&Ms
Ziplock bag
Stopwatch

Procedure/Time:

This activity will take approximately one class period.

Part 1: Students should complete the following steps:

1. Record 5 observations about M&Ms.
2. Place M&Ms in the ziplock bag and shake for 5 minutes.
3. Pour the M&Ms back into the cup and make 5 new observations about M&Ms.
4. Answer the following questions:
 - a. How do the M&Ms look different?
 - b. What may have caused these differences?
 - c. Are there any natural processes that could cause the same changes?

Part 2: Students should complete the following steps:

1. Make 3 predictions about doing the same procedure to Peanut M&Ms
2. Record 5 observations about Peanut M&Ms
3. Place Peanut M&Ms in the ziplock and shake for 5 minutes
4. Pour the M&Ms back into the cup and write down 5 new observations about Peanut M&Ms
5. Answer the following questions
 - a. How do the M&Ms look different after shaking?
 - b. What may have caused these differences this time?
 - c. Are there any difference between your results from the plain and peanut M&Ms
 - d. Where might you find these same differences in the real world?

- e. In the real world, this process is called physical weathering. What examples of physical weather can you find around the school?

Assessment:

Students' observations and answers to questions should be used for assessment.

Teacher Notes:

Before students answer the last questions for part 2, you may want to discuss physical weathering and the different types. Bring extra M&Ms for students to enjoy while completing activity.