NAME _____   DATE _____

Believe it or not … Weathering can be real Sweet !!

INTRODUCTION: **Just like candy melts in your mouth, the forces of nature wear away at rocks and minerals at the Earth's surface. To speed things up in our simulation, we'll use sugar cubes in place of actual rocks or minerals.**

VOCABULARY:

Weathering   _____

Abrasion   _____

Sediment   _____

PROCEDURE A:

1. **Obtain 10 sugar cubes.**

2. **Find the mass of the 10 sugar cubes by using a digital scale.**
    Record the mass at time 0 on the data chart to the nearest tenth of a gram.

3. **Place the sugar cubes into a plastic container and tightly cap the container.**

4. **Shake the container for 2 minutes at a steady tempo.**

5. **Remove the large solid pieces of sugar cube from the container and discard the powder created in the trays provided.**

6. **Weigh the sugar cubes and record the new mass at time = 2.**

7. **Return the sugar cubes to the container and repeat the process 4 more times or until all cubes have been weathered to dust. (shaking for 2 minutes, re-weighing, and recording data)**

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8. **Calculate the percent of mass remaining after each 2 minute interval.**
   Round your calculation to the nearest whole percent.

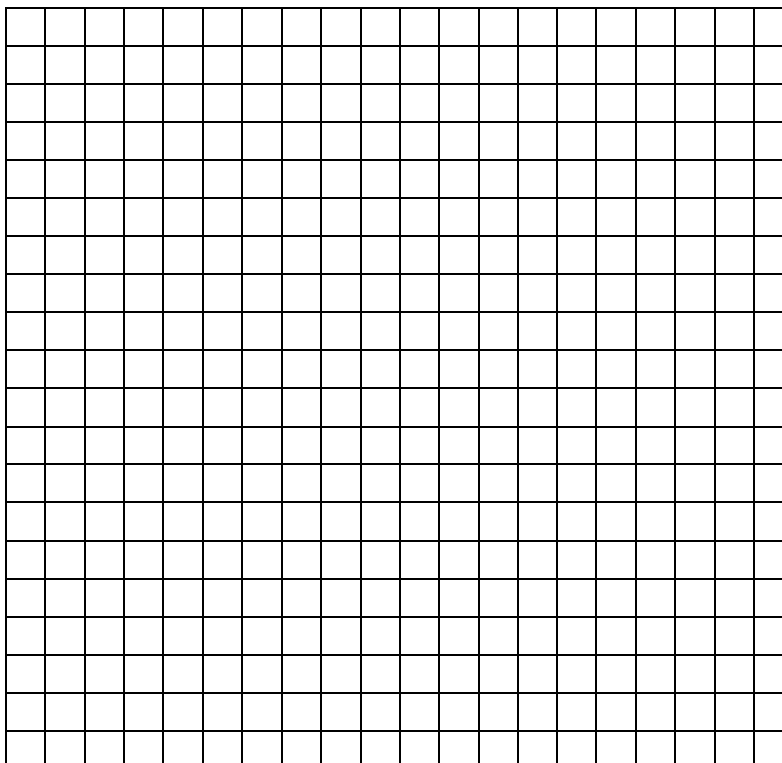   **Use the equation :**

   $$\% \text{ Mass Remaining} = \frac{\text{New Mass}}{\text{Mass at time 0}} \times 100$$

9. **On the graph, plot the data for <u>percent mass remaining</u> versus time. Draw a line graph.**

Data Chart

Weathering Time (minutes)	Mass Remaining (grams)	% Mass Remaining (%)
0		
2		
4		
6		
8		
10		

Sugar Cube Abrasion Graph

DISCUSSION QUESTIONS
(ANSWER IN COMPLETE SENTENCES)

1. Was this an experiment to demonstrate physical or chemical weathering? Support your answer.

2. What is the relationship between the amount of time and the amount of weathering?

3. Does the hardness of a rock or mineral have an effect on its weathering rate? Explain.

4. How would the rate of weathering change if water was added to the container to simulate a humid climate?

5. What is the average rate of loss of the mass of sugar for the 10 minutes that the experiment was conducted? You know it by now: Write the formula, substitute data, and solve with correct units.

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