

Name: \_\_\_\_\_

Surface Processes

Date: \_\_\_\_\_ Period: \_\_\_\_\_

Earth Science

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## Lab Activity: Weathering and Soils

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### INTRODUCTION:

Running water wears down Earth's surface and breaks up sediments along the way. The weathering of rock fragments causes the edges to be rounded as they roll and bounce along a stream channel. Running water also can dissolve some minerals in solution.

### OBJECTIVE:

You will determine some factors that control the rate of weathering in a moving stream.

### VOCABULARY:

Abrasion -

Weathering -

Erosion -

Hardness -

Soluble -

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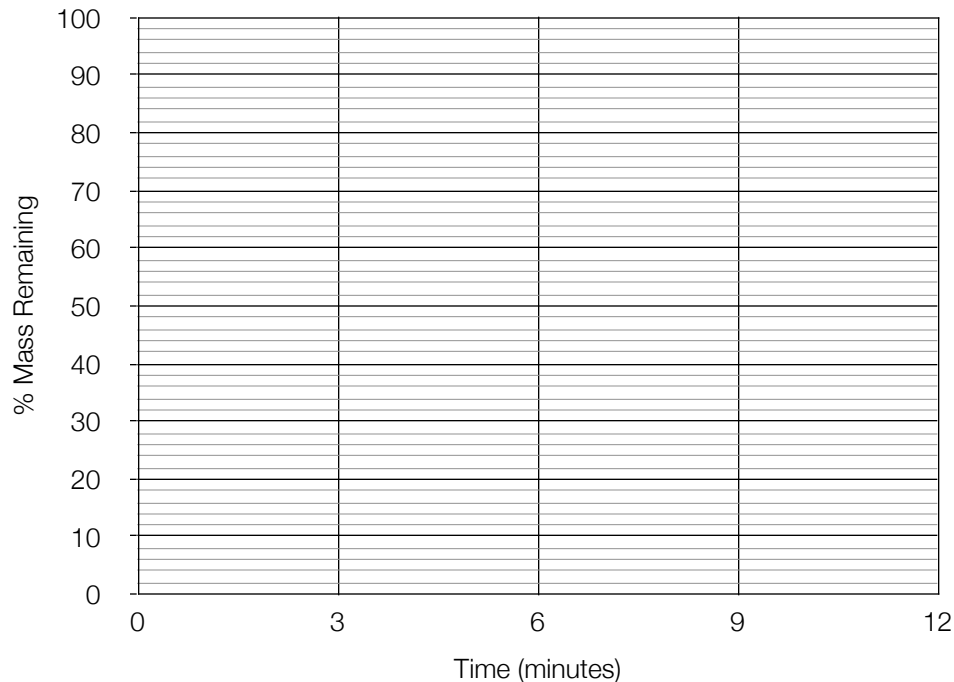
## PROCEDURE A:

1. Weigh 100 grams of limestone chips and place the chips in the clear plastic container.
2. Add 200 mL of water, tightly secure the cap, and shake at an even tempo for three minutes.
3. Drain the limestone chips and dry with a paper towel. Be sure not to lose any of the limestone.
4. Weigh all the chips to the nearest tenth. Be sure to record the new mass at "Weathering Time 3".
5. Return the limestone chips to the container and repeat 3 more times.
6. Calculate the percent of mass remaining after each 3 minute interval and graph your results.

### LIMESTONE CHIPS GRAPH

Weathering Time	Mass Remaining	% Mass Remaining
0	100 grams	100%
3		
6		
9		
12		

### LIMESTONE CHIPS GRAPH



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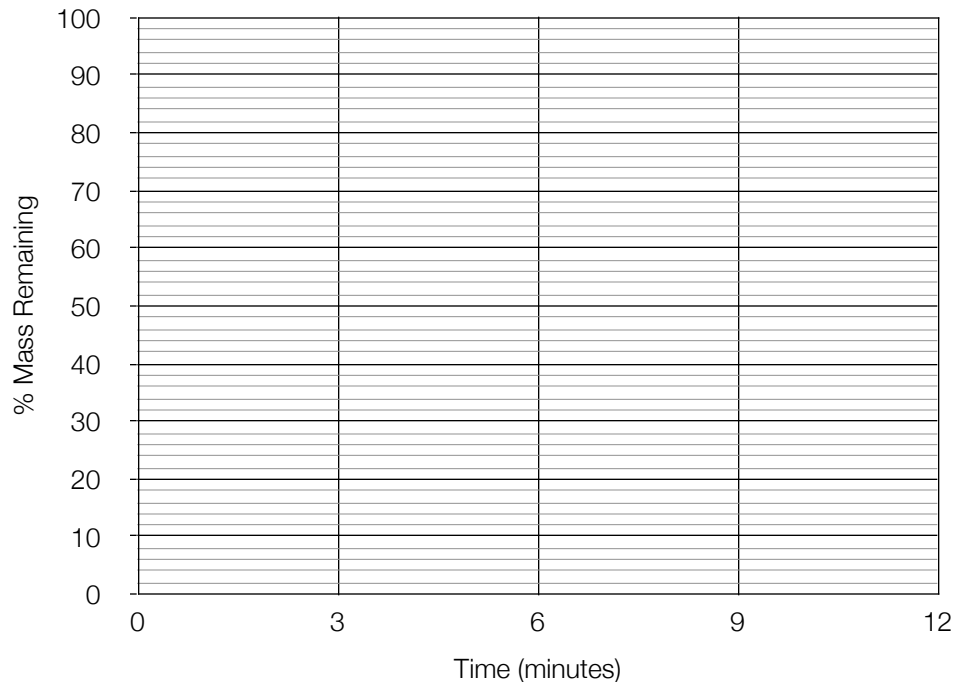
## PROCEDURE B:

1. Weigh 100 grams of quartz chips and place the chips in the clear plastic container.
2. Add 200 mL of water, tightly secure the cap, and shake at an even tempo for three minutes.
3. Drain the quartz chips and dry with a paper towel. Be sure not to lose any of the limestone.
4. Weigh all the chips to the nearest tenth. Be sure to record the new mass at "Weathering Time 3".
5. Return the quartz chips to the container and repeat 3 more times.
6. Calculate the percent of mass remaining after each 3 minute interval and graph your results.

### QUARTZ CHIPS GRAPH

Weathering Time	Mass Remaining	% Mass Remaining
0	100 grams	100%
3		
6		
9		
12		

### QUARTZ CHIPS GRAPH



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## DISCUSSION QUESTIONS:

1. What percent of limestone remained after three minutes?
2. What percent of quartzite remained after three minutes?
3. Describe the effect on the size as time of abrasion increased?
4. Describe the effect on the shape as time of abrasion increased?
5. What effect does hardness have on the rate at which rock abrades?

**CONCLUSION:** What are some factors that affect the rate at which rocks abrade in a stream?