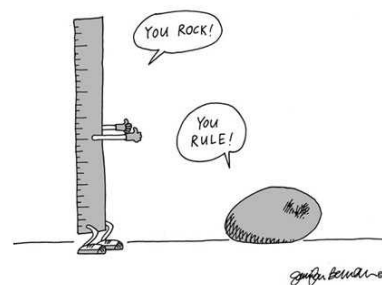


Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

## Rocks that Fizz

### Learner Outcomes:

- Research information relevant to a given question  
(e.g., research information regarding the effect of acid rain on the rate of rock weathering)



### Key Terms:

Chemical weathering

Mechanical weathering

Biological weathering

Acid Rain

### Background Information:

Rain and ground water can be acidic. When acids react with certain rocks, carbonates are dissolved and carbon dioxide gas is produced. This can be a problem for some rock structures and statues, depending upon the type of rock they are made from.

### Research Question:

Which types of rocks are most affected by acid rain?

**Hypothesis:** Formulate a hypothesis about which rocks would be most affected by acid rain or acidic groundwater.

### Manipulated Variable:

### Responding Variable:

### Controlled Variables:

### Materials:

Watch glass

hand lens

10% hydrochloric acid

Tweezers

eyedropper

rock samples

This investigation / activity has been adapted from:

Bullard J, Krupa G, Krupa M, et al. *Science Focus 7*. Toronto, ON: McGraw-Hill Ryerson.

**Procedure:**

1. Observe and record the physical characteristics such as color, texture and other properties of each rock sample.
2. Put a small sample on the watch glass and place about 3 drops of 10% hydrochloric acid on the sample. Record your observations.
3. Repeat steps 1 and 2 for all specimens.

**Observations:**

Type of Rock	Appearance / Observations	Reaction with HCl

**Analysis:**

1. What evidence did you observe to know that a rock sample reacted with the acid?
2. How did you determine which sample reacted the most?
3. Why did some samples react more than others
4. What might happen if a building or a statue was made out of these 'reactive' rocks?

This investigation / activity has been adapted from:

Bullard J, Krupa G, Krupa M, et al. *Science Focus 7*. Toronto, ON: McGraw-Hill Ryerson.

5. Write your own definition of chemical weathering.

**Conclusion:**

Which types of rocks are most affected by acid rain?

This investigation / activity has been adapted from:

Bullard J, Krupa G, Krupa M, et al. *Science Focus 7*. Toronto, ON: McGraw-Hill Ryerson.

### Extension:

1. Ecosystems in some geographic areas such as Eastern Canada are more affected by acid rain than others in Western Canada. Lakes in the east are much more acidic than those in the west. Research the differences in the types of rocks found in the east and in the west to come up with an explanation for this phenomenon.
2. Select two types of rock that are used in building materials. Create a flowchart to illustrate where they came from, what kind of parent rock they came from and how they were formed.

This investigation / activity has been adapted from:

Bullard J, Krupa G, Krupa M, et al. *Science Focus 7*. Toronto, ON: McGraw-Hill Ryerson.