

Environmental Science Chapter 6: Acid Rain Lab

Purpose: To demonstrate the effect of acid rain on limestone, a major constituent of marble.

Materials:

Four 20 mL beakers
25 mL graduated cylinders
Water
Vinegar
Marble Chips
pH paper
Tweezers
Balance
Tape

Procedure:

1. Label the four beakers as #1, #2, #3, and #4.
2. Using the graduated cylinder, measure 10 mL of water for beakers #1 and #2. Then measure 10 mL of vinegar for beakers #3 and #4.
3. Tear off two small pieces of pH paper. Using tweezers, dip one into beaker #1. Record the pH value of the contents by comparing the color of the test strip and the key. Repeat with beaker #3.
4. Record your answers in the table below. Remember beakers #1 and #2 should have the same pH since they contain the same substance. Likewise, beakers #3 and #4 should also have the same pH.
5. Take four marble chips.
6. Mass two of the marble chips. Record the mass. These will be going into beaker #2.
7. Mass the remaining two marble chips. Record the mass. These will be going into beaker #4.
8. Place the marble chips into their appropriate beakers and record your observations.
9. After ten minutes, test the pH of *all* four beakers. Record your results in the table below.
10. Answer the following questions regarding the experiment.

Beaker	Liquid	pH	Mass of chips	pH after
1			NONE	
2				
3			NONE	
4				

Observations:

Questions:

1. What happened to the marble chips in beaker #2?
2. What happened to the marble chips in beaker #4?
3. What was the purpose of the beakers with just water and vinegar and no chips?
4. Marble is a popular building material. Can you name at least three uses of marble?
5. How does this experiment relate to the acid rain that we have been studying in class?