

Seltzer Reaction Rates

Section: Chemical Reactions; Topic: Reaction Rates & Catalysts

Name: _____

Date: _____

Inquiry Question

Write down what you'll be learning today! What do you want to understand?

Procedure

1. Fill three cups with the same amount of water: one with hot water, one with room temperature water, and one with ice-cold water.

Optional: Take the temperature of each sample and record.

2. Label each cup as "hot," "room temperature," or "cold"
3. At the same time, drop a seltzer tablet into each cup. Observe and record your findings.

Alternate method:

1. Fill three cups with the same amount of water: one with hot water, one with room temperature water, and one with ice-cold water. Label each cup accordingly.

Optional: Take the temperature of each sample and record.

2. Drop the seltzer tablet in the cold water and start the stopwatch immediately.
3. Stop the stopwatch when bubbles stop forming and record the time.
4. Take the temperature of the water solution at the end of the reaction and record.
5. Repeat for the other two samples of water: room temperature and hot.

Observations, Data Collection & Analysis

Write down your observations below.

1. What are the physical properties of the seltzer tablet? How do you think it works?

2. Write your observations: what was happening in each cup? What was different between each sample? Why do you think that is?

3. If you timed the experiment, how long did it take the bubbles to stop forming in the hot water? The room temperature water? The cold water? What does this tell you? Graph your data to look for a pattern.

4. In which cup was the reaction the slowest? The fastest? Why?

5. Where do you think the bubbles were coming from? What are the bubbles composed of?

6. Was this a chemical or physical change? How do you know? What evidence do you have?

7. Feel each cup at the end of the experiment. Do they feel warmer or cooler than at the start? Or, if you measured the temperature, did it change from the start to the end of the experiment? What does this mean?
