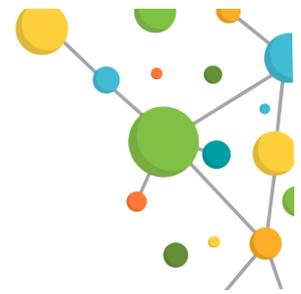


15-MINUTE STEAM: FIZZ FAST: MEASURING ALKA-SELTZER REACTION TIME



SUPPLIES PROVIDED

Several clear cups
Alka-Seltzer tablets
Notepad and Pencil for observations (printable pages included)

SUPPLIES FROM HOME

Water (cold, hot & room temp)
Thermometer (optional)
Stopwatch or timer

1. Prepare the Water: Gather three clear cups or jars and fill each with water. Ensure each cup has the same amount of water at a different temperature: one with cold water, one with room-temperature water, and one with hot water
2. Get Ready to Race: Open three Alka-Seltzer tablets and have them ready to drop into the cups simultaneously.
3. Start the Experiment: Drop a whole tablet into each cup simultaneously and start your timer.
4. Observe: Watch closely and note how quickly each tablet dissolves at different water temperatures.
5. Record Your Observations: Write down how long it takes for each tablet to fully dissolve in each cup.

THE SCIENCE

When the Alka-Seltzer tablet dissolves, one of the ingredients, called sodium bicarbonate, breaks apart into smaller pieces, including bicarbonate ions. These bicarbonate ions mix with hydrogen ions from the citric acid in the tablet.

When they react, they create carbon dioxide gas (which makes the bubbles) and water. The rate of a chemical reaction depends on things like water temperature or how the tablet is broken up. The faster the reaction happens, the quicker the bubbles form, which is why the tablet fizzes at different speeds!

Temperature affects the rate of a reaction. When water is heated, its molecules move faster. Faster-moving molecules cause the tablet to break down more quickly, speeding up the chemical reaction. That's why the tablet dissolves faster in hot water than in cold water. In scientific terms, increasing temperature speeds up the reaction rate, which is a principle that applies to many chemical reactions.

Taken in part from littlebinsforlittlehands.com/alka-seltzer-reaction-rate-experiment/



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