

Fizzing Science: Exploring the Chemistry of Alka-Seltzer Reactions!

Florida State Standard:

SC.4.P.8.1 - Recognize that the properties of matter can change in various ways, including physical changes and chemical reactions.

Florida State Benchmark:

SC.4.P.8.2 - Identify that the amount of substance remains the same before and after a chemical reaction, even though physical changes may occur.

Objective:

Students will observe and analyze the reaction between Alka-Seltzer and water, focusing on acid-base reactions and gas production. They will document their observations, analyze the factors affecting the reaction, and hypothesize how different conditions (water volume, tablet quantity) impact the results.

Materials:

- Alka-Seltzer tablets
 - Water (room temperature)
 - Clear plastic cup or small beaker
 - Stopwatch or timer
 - Stirring rod (optional)
-

Safety Precautions:

- Ensure all students wear safety goggles to protect their eyes from any splashes.
 - Handle the Alka-Seltzer tablets carefully; they are for external use only and should not be ingested.
 - Conduct the experiment on a stable surface to avoid spills.
 - Do not allow students to inhale the gas produced by the reaction directly.
 - Supervise students closely throughout the experiment and clean up any spills immediately.
-

Procedures:

1. **Prepare the Equipment:** Place the clear plastic cup or beaker on a flat, stable surface.
 2. **Add Water:** Pour a measured amount of water into the cup or beaker (approximately 100 mL).
 3. **Drop the Tablet:** Quickly drop one Alka-Seltzer tablet into the water and immediately start the timer.
 4. **Observe the Reaction:** Watch the Alka-Seltzer tablet dissolve in the water and note any visible changes, such as fizzing or bubbling.
 5. **Record Observations:** Have students document the time it takes for the reaction to begin, how long it lasts, and any observable changes such as the rate of bubbling or fizzing.
 6. **Measure Gas Production (Optional):** If desired, use a balloon attached to the opening of a bottle to capture the gas produced and measure its volume.
-

Note: Clean-up

After the experiment, make sure students properly clean their workstations. Dispose of any used materials like Alka-Seltzer tablets and empty water containers according to classroom guidelines. Encourage students to wash their hands after handling the materials. Ensure that any spilled water or chemical residue is wiped up immediately to avoid any slipping hazards. All materials should be stored away properly for future use.