

## Chemical and Physical Changes Stations

**OBJECTIVE:** Observe and evaluate evidence of chemical and physical changes.

**BACKGROUND:** Any observable change in matter can be described as either a chemical or physical change. **Physical Changes** occur without any changes to the molecular composition of the materials. No new substances are created as a result of this change, which can often be easily reversed. **Chemical Changes** happen when a reaction occurs. The original materials of the reaction are chemically combined which creates one or more new substances.

**Safety: DO NOT** mix any items unless instructed by teacher or directions.

**DO NOT** taste any materials; some are poisonous

Wear Goggles at all times.

Wash your hands before leaving class.

<p><b>Station #1</b> Place a small piece of styrofoam on top of a napkin (do not unfold the napkin). Use a dropper to drop 20 drops of acetone onto the piece of styrofoam. Record your observations.</p> <p>Clean up: Throw plate and napkin away.</p>	<p><b>Chemical Why:</b>      <b>Physical</b>      <b>Both</b></p>
<p><b>Station #2</b> Cut a <b>small</b> fresh slice of potato. Put 1 drop of iodine solution on the potato slice. After observations are complete, throw away the used slice of potato into the trash can.</p>	<p><b>Chemical Why:</b>      <b>Physical</b>      <b>Both</b></p>
<p><b>Station #3</b> Measure 15mL of water into a test tube. Using the stick, scoop about 1 gram of sodium chloride onto the stick and then tap the sodium chloride into the test tube. Cover the mouth of the test tube with your thumb and vigorously shake the tube. Observe what happens to the sodium chloride</p> <p>Clean Up: Dump contents in sink and rinse tube.</p>	<p><b>Chemical Why:</b>      <b>Physical</b>      <b>Both</b></p>

<p><b>Station #4</b> Fill test tube with 10 mL of water. Add 1 piece of Alka-Seltzer tablet. Watch and record observations.</p> <p>Clean Up: Dump contents down sink and rinse tube.</p>	<p><b>Chemical Why:</b>                      <b>Physical</b>                      <b>Both</b></p>
<p><b>Station #5</b> Add 10 mL water to a test tube. Add 1 gram of citric acid to water. Swirl water til citric acid is mostly dissolved. Add one drop of detergent solution. <b>Hold test tube over sink</b> Then add 1 gram of sodium bicarbonate.</p> <p>Clean Up: Dump contents down sink and rinse tube. Wash Hands</p>	<p><b>Chemical Why:</b>                      <b>Physical</b>                      <b>Both</b></p>
<p><b>Station #6</b> Fill test tube A with 5 mL of distilled water. Test tube B with 5mL of acetic acid. Test tube C with 5 mL of tap water. Test tube D with 5 mL of Sprite. Put 10 drops of pH indicator into each test tube and record observations.</p> <p>Clean Up: Dump contents down sink and rinse tube.</p>	<p><b>Chemical Why:</b>                      <b>Physical</b>                      <b>Both</b></p>
<p><b>Station #7</b> Add 50 mL of water to a ziploc bag. Add 10 drops of Phenol Red pH indicator. Record observation 1. Add 1 gram of Calcium chloride. Watch and <b>feel</b> the reaction. Record observation 2. Finally add 1 gram of sodium bicarbonate. Watch and <b>feel</b> the reaction and record observation 3.</p> <p>Clean Up: Dump contents down sink and throw away bag.</p>	<p><b>Observation 1.</b></p> <p><b>Observation 2.</b></p> <p><b>Observation 3.</b></p> <p><b>Chemical Why:</b>                      <b>Physical</b>                      <b>Both</b></p>
<p><b>Station #8</b> Use a dropper to measure out 10mL of Iron acetate into a test tube. Using a dropper, slowly add 40 drops of ammonia.</p> <p>Clean Up: Dump contents down sink and rinse tube.</p>	<p><b>Chemical Why:</b>                      <b>Physical</b>                      <b>Both</b></p>