

Changes Activity (Unshifted)

In this activity, you'll experiment with chemical reactions that take place in a ziplock sandwich bag. The sealed bag prevents any chemicals from escaping before you have a chance to observe the reactions.

Chemists gather evidence by observing. A chemical detective watches out for these four indicators (among others) of a chemical reaction:

change of color

change of temperature

formation of solids

formation of gases

A good chemist must be careful and take the time to look for each of these kinds of evidence.

Procedure

- Put on your safety equipment.
- Place $\frac{1}{4}$ teaspoon of sodium bicarbonate (NaHCO_3) and $\frac{1}{2}$ teaspoon of calcium chloride (CaCl_2) into the ziplock bag.
- Pour 5 mL of phenol red into the medicine cup.
- Place the cup carefully in the baggie so that it stays upright, squeeze out as much air as possible, and seal the bag.
- Tip over the cup and mix the contents together.

Use the back of this sheet if you need more room to record your observations and discoveries.

Questions

1. Write detailed observations of the changes you see. _____

2. What evidence have you gathered that a chemical reaction took place? _____

3. Predict what would happen if you left out the calcium chloride (CaCl_2). Try the experiment again, make careful observations of the changes you see and record them below. Predict what would happen if you left out the sodium bicarbonate (NaHCO_3). Try this, and record your observations and results.

4. What happens when you use $\frac{1}{8}$ teaspoon of sodium bicarbonate (NaHCO_3)? What if you use 1 teaspoon of calcium chloride (CaCl_2)? Record everything that happens and the amount of each chemical added.

5. What have you discovered about chemistry from this experiment? _____

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