

Changes Activity

In this activity, you'll investigate the question, **“What indicates a new substance has been formed when two or more substances are mixed?”** Careful observations will help you gather evidence.

Exploration: Part 1

Read all of part 1. Then design a method for data-collection in your notebook to record what you do and what you observe. Be sure that it is in a format that is easy to follow and can be shared with others. Then do the activity.

- 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.
- Fill a medicine cup with 5 mL of phenol red solution. Carefully place the cup in the bag, keeping it upright until after you zip the bag closed.
- Squeeze out as much air as possible and seal the bag.
- Keeping the bag sealed, tip the cup over, mix the chemicals together, and observe the result.
- Record what you did and what you observed in your notebook.
- When finished, follow the clean-up procedures.

Exploration: Part 2

Choose Option A or Option B (below) to continue your investigation. Design a method for recording the data collection in your notebook. Complete the second option only if time permits. **Record your claim, evidence, and reasoning in your notebook.**

Option A

- Predict what would happen if you tried the experiment again but left out one of the chemicals.
- Test your prediction. Record what you did and what you observed.
- Repeat this experiment, leaving out a different chemical.

Option B

- Predict what would happen if you varied the amount of one of the chemicals.
- Test your prediction. Record what you did and what you observed.
- Repeat this experiment several times, each time varying a different chemical.

Claim - answers your question in a complete sentence.

Evidence - specific data to support your claim.

Reasoning - scientific explanation or concept to explain why you got the results that you did.