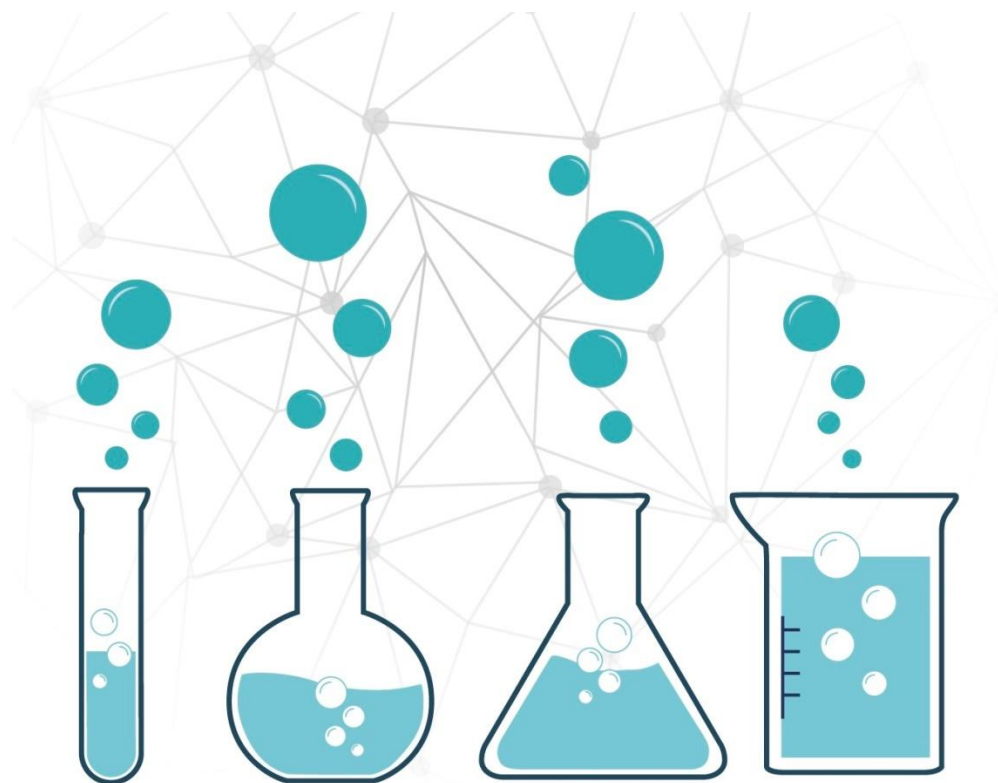


## Inquiry Question

How can I tell if a chemical change occurred?

Name: \_\_\_\_\_ Date: \_\_\_\_\_



There are two types of changes: physical change and chemical change. It's important to be able to tell the difference between these two types of changes. If you change something physically you still have what you started with and usually this is reversible (you can easily get back the substances into their original form). However, if you change something chemically then this results in something very different than what you started with. The original substance or reactant changes into a new substance, called a product, with different properties. Most chemical changes are non-reversible.

How can we tell if something is a chemical change? What evidence can we look for?

Does it look different after the change? Was heat or gas given off during the change? Did solid particles form? Would it be difficult to change back to the reactants? One of these changes alone is often not enough to determine if a chemical change occurred. We may need to consider several clues.

In this project you will react vinegar and baking soda to investigate the evidence of chemical change.

**General Instructions**

The goal of this project is to investigate the evidence of chemical change.

**Materials you'll need:**

- 1 balloon.
- Small pop bottle.
- Small funnel or make paper funnels (paper circle and tape).
- 2 Tbsp of baking soda.
- 100 mL of vinegar.

**Ideas and Hints:**

- Add the baking soda to the balloon using the funnel. You might need help with this step.
- Pour vinegar into the pop bottle.
- Connect the balloon to the pop bottle without letting any baking soda into the bottle.
- When the balloon is securely attached to the mouth of the pop bottle you can lift the balloon to add the baking soda to the vinegar.
- Observe the reaction and record your observations.
- Clean up and return materials to the proper location.

Answer the following questions:

1. What does the result of the experiment suggest about this reaction? List any evidence of chemical change.
2. Why did the balloon not pop?
3. What were the reactants in this reaction?
4. What was produced in this reaction?
5. Write an equation to represent this reaction.

**Project Submission:**

Include your observations and your answers to the previous questions and upload your document to the project submission folder at the end of the unit.