

## Objective

By the end of this lesson, you will be able to explore how common chemicals affect everyday life.

## Materials and Prep

- Water
- Vinegar
- Baking soda
- Lemon juice
- Various household items (e.g., fruits, vegetables, cleaning products)
- Protective gloves and goggles (optional)
- Access to a sink or water source

Before starting the lesson, make sure you have a basic understanding of the scientific method and how to conduct experiments safely.

## Activities

### 1. Testing Acidity

Mix small amounts of water, vinegar, lemon juice, and baking soda separately in different containers. Use pH test strips or indicators to determine the acidity or alkalinity of each substance. Record your observations and compare the results.

### 2. Chemical Reactions

Perform simple chemical reactions using baking soda and vinegar, or lemon juice and baking soda. Observe and describe the changes that occur, such as fizzing or bubbling. Take note of any differences between the reactions.

### 3. Effects on Household Items

Select a few common household items (e.g., metals, fabrics, plastics) and test their reactions to different chemicals. For example, you can see if a metal object rusts when exposed to water or if a fabric changes color when exposed to vinegar. Document your findings and discuss the impact of chemicals on everyday objects.

## Talking Points

- Chemicals are all around us, and they can have both positive and negative effects on our daily lives.
- Acidity is an important property of many substances. It determines whether a substance is sour (acidic) or bitter (alkaline/basic).

- Chemical reactions occur when substances interact with each other, resulting in new substances with different properties.
- Baking soda and vinegar react to produce carbon dioxide gas, which causes the fizzing or bubbling effect.
- Different materials can react differently to chemicals. This is why it's important to understand the properties of substances before using them in various applications.