

# Classroom Chemistry

## Overview

Students learn about the properties and interactions of some safe to handle household liquids and solids. They test a variety of materials to see what happens when things are mixed together: what dissolves, what reacts and what remains unaffected. They discover that when a solid material dissolves, it can be recovered as a crystal by evaporating the liquid. They also learn that when two materials react to form a new material, the original materials cannot be recovered. As an example of a chemical reaction, students learn to produce carbon dioxide gas and show that this gas differs from ordinary air.

## General Learner Expectations

*Students will:*

5–7 Describe the properties and interactions of various household liquids and solids, and interpret their interactions.

## Specific Learner Expectations

*Students will:*

1. Recognize and identify examples of the following kinds of mixtures:
  - a. two or more solids; e.g., sand and sugar
  - b. a solid and a liquid; e.g., sugar and water
  - c. two or more liquids; e.g., milk and tea.
2. Apply and evaluate a variety of techniques for separating different materials.
3. Distinguish substances that will dissolve in a liquid from those that will not, and demonstrate a way of recovering a material from solution.
4. Demonstrate a procedure for making a crystal.
5. Recognize that the surface of water has distinctive properties, and describe the interaction of water with other liquids and solids.
6. Produce carbon dioxide gas through the interaction of solids and liquids, and demonstrate that it is different from air.
7. Distinguish reversible from irreversible changes of materials, and give examples of each.
8. Recognize and describe evidence of a chemical reaction. Explain how the products of a reaction differ from the original substances.
9. Use an indicator to identify a solution as being acidic or basic.