2nd Grade Matter Unit

Unit Overview

The Matter unit, taught using STC *Changes*, provides students opportunities to investigate examples of changes that affect their daily lives. Specifically, students examine some changes that occur when solids and liquids are mixed or change state. They consider how water freezes and melts. They observe the properties of solids and liquids and describe some of the changes that take place when substances are combined and separated. Throughout the lab investigations, students discuss and model good scientific practices.

Essential Question:

1. How can solids and liquids change?

Unit Questions:

1. How can water be changed back and forth between a solid and a liquid?
2. How are ice and water (liquid) alike and different?
3. How does the amount of water change if it is frozen and then melted?
4. What happens to water left out in an uncovered container? What happens to water left in a container with a lid?
5. How are mixtures alike and different from their original parts?
6. How can mixtures be separated? Does the same method work well on all mixtures?
7. Why is it important to keep accurate records or notes about things that are observed?
8. What are some ways to describe objects?

Lesson Summary (Page 4 in STC *Changes* Teacher's Guide)

Lesson 1: Lesson 1 serves as a pre-unit assessment of students' knowledge. The lesson begins with a brainstorming session in which students share what they know about the concept of change and about solids and liquids. Then, looking at cards that illustrate everyday scenes, students identify solids and liquids and predict how the materials pictured might change over time. Students have the opportunity to observe change taking place as they add an effervescent tablet to a cup of water. Finally, students prepare for Lesson 2 by watching their teacher fill ice cube trays with water. The trays are put in a freezer for the next lesson.

Lessons 2 and 3: Students investigate how water changes state. They begin by describing how the water in the ice cube trays has turned to ice. Students then design a method to melt the ice in the quickest time possible. At the close of the lesson, they place the melted ice in a Petri dish. Over the next few days they observe changes in the water as it evaporates over time. In Lesson 3, students discuss these changes caused by evaporation.

Lesson 4: Lesson 4 begins a series of lessons in which students investigate changes involving mixtures. To grasp the concept of "mixture," students first put two solids--salt and gravel-- in a cup, observing how the component parts intermingle as they are dispersed throughout the cup. Using a sieve, students then discover that they can separate their mixture again into its individual parts, and they develop a basis for understanding the mixtures they create in later lessons.

Lessons 5 and 6: Students mix a liquid--water--with three different solids--gravel, toilet tissue, and salt--and observe and compare the changes that result. As students observe the three different mixtures and ask, "Where did the salt go?" they are preparing for Lesson 6, in which they use filtration to attempt to separate the three mixtures.