

What's Consistent About Matter?

Unit Overview



DESIGN CHALLENGE:

How do we use physical and chemical changes to prepare delicious food?

ANCHORING PHENOMENON:

Raw cake ingredients are mixed together to make batter, which can then turn into cake.

STORYLINE

This physical science unit is about the states and properties of matter and different changes and interactions of matter. This unit prominently features the Crosscutting Concepts of Scale, Proportion, and Quantity, Matter and Energy, and Cause and Effect. The unit begins with a discussion of matter and the common states of matter, including exploration of whether or not air is matter. Then students describe and classify matter based on common physical properties. Students also learn how to measure matter.

After gaining an understanding of matter and its properties, students explore how different substances interact as mixtures. They attempt to separate mixtures. They then model the particle view of substances dissolved in water and attempt to separate solutions by using evaporation.

Finally, students explore common physical and chemical changes of matter and learn how to determine what kind of change may have occurred. They then discuss how mass is conserved when physical and chemical changes occur.

The understanding gained in this unit is applied in the design challenge, where students describe the states of matter, changes of state, physical changes, and chemical changes involved in cooking a meal.

OVERVIEW

Section 1 <i>What is matter?</i>	Section 2 <i>How can we use properties of matter to study mixtures?</i>	Section 3 <i>How does matter change?</i>
<i>Total Time: 6 days</i> LESSON 1 What are the states of matter? LESSON 2 What are the properties of matter?	<i>Total Time: 6 days</i> LESSON 3 How can we use properties of matter to separate mixtures? LESSON 4 What happens when we mix substances with water? LESSON 5 How can we separate mixtures when we cannot see the components?	<i>Total Time: 12 days</i> LESSON 6 What are physical and chemical changes? LESSON 7 How can we use physical and chemical properties to identify unknown substances? LESSON 8 What happens to the total weight of matter when it changes? LESSON 9 How do we use physical and chemical changes to prepare delicious food?

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Washington University in St. Louis Institute for School Partnership