

# Lesson Plan

## Section: What Is Chemistry?

### Objectives

1. Describe ways in which chemistry is a part of your daily life
2. Describe the characteristics of three common states of matter.
3. Describe physical and chemical changes, and give examples of each.
4. Identify the reactants and products in a chemical reaction.
5. List four observations that suggest a chemical change has occurred.

### National Science Education Standards Covered

#### UNIFYING CONCEPTS AND PROCESSES

UCP 1 Systems, order, and organization

UCP 2 Evidence, models, and explanation

UCP 3 Change, constancy, and measurement

#### PHYSICAL SCIENCE—STRUCTURE AND PROPERTIES OF MATTER

PS 2e Solids, liquids, and gases differ in the distances and angles between molecules or atoms and therefore the energy that binds them together. In solids, the structure is nearly rigid; in liquids, molecules or atoms move around each other but do not move apart; and in gases, molecules or atoms move almost independently of each other and are mostly far apart.

#### PHYSICAL SCIENCE—CHEMICAL REACTIONS

PS 3a Chemical reactions occur all around us, for example in health care, cooking, cosmetics, and automobiles. Complex chemical reactions involving carbon-based molecules take place constantly in every cell in our bodies.

PS 3b Chemical reactions may release or consume energy. Some reactions such as the burning of fossil fuels release large amounts of energy by losing heat and by

emitting light. Light can initiate many chemical reactions such as photosynthesis and the evolution of urban smog.

## KEY

**SE** = Student Edition

**ATE** = Annotated Teacher Edition

## Block 1 (45 minutes)

### FOCUS 5 minutes

- \_ **Bellringer**, ATE. (GENERAL) This activity has students make a list of any chemicals they can think of.

### MOTIVATE 10 minutes

- \_ **Demonstration**, ATE. (GENERAL) This demonstration illustrates the properties of different chemicals.

### TEACH 30 minutes

- \_ **Skill Builder**, ATE (BASIC). Have students discuss their ideas about the properties of solids, liquids, and gases before beginning the lesson.
- \_ **Using the Figure**, ATE. (GENERAL) Have students link the models depicted in the circles to the states of matter.

## HOMEWORK

- \_ **Reading Skill Builder**, ATE (BASIC). Have students list things that they already know about the structure of matter and changes in matter.
- \_ **Skill Builder**, ATE (GENERAL). Have students research where the nearest chemical production facility is and write a short essay addressing the questions in this feature.
- \_ **Interactive Tutor for ChemFile**, Module 1: States of Matter, Topic: Defining the States and Classes of Matter. (GENERAL) This engaging tutorial reviews and reinforces the states and classes of matter through modeling and guided practice.

## OTHER RESOURCES

- \_ **go.hrw.com**

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- \_ [www.scilinks.org](http://www.scilinks.org)

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### Block 2 (45 minutes)

TEACH 35 minutes

- \_ **Demonstration**, ATE. (BASIC) This demonstration shows the reactivity of marble with acid as an example of evidence of a chemical change.
- \_ **Demonstration**, ATE. (GENERAL) This demonstration shows the burning of copper as an example of evidence of a chemical change.

CLOSE 10 minutes

- \_ **Reteaching**, ATE (BASIC). Students create a graphic organizer that shows the difference between physical and chemical changes.
- \_ **Quiz**, ATE (GENERAL). This assignment has students answer questions about the concepts in this lesson.
- \_ **Assessment Worksheet: Section Quiz** (GENERAL)

#### HOMEWORK

- \_ **Section Review**, SE (GENERAL). Assign items 1–14.
- \_ **Skills Worksheet: Concept Review** (GENERAL)
- \_ **Interactive Tutor for ChemFile**, Module 1: States of Matter, Topic: Defining the States and Classes of Matter. (GENERAL) This engaging tutorial reviews and reinforces the states and classes of matter through modeling and guided practice.

#### OTHER RESOURCES

- \_ **Demonstration**, ATE. (GENERAL) This demonstration illustrates the difference between chemical and physical changes.
- \_ [go.hrw.com](http://go.hrw.com)
- \_ [www.scilinks.org](http://www.scilinks.org)