

# UNIT 1

## Matter and Chemical Bonding

### UNIT 1 CONTENTS

#### CHAPTER 1

Observing Matter

#### CHAPTER 2

Elements and the Periodic Table

#### CHAPTER 3

Chemical Compounds and Bonding

#### CHAPTER 4

Classifying Reactions:  
Chemicals in Balance

#### UNIT PROJECT

Developing a Chemistry Newsletter

### UNIT 1 OVERALL EXPECTATIONS

- What are the relationships among periodic trends, types of chemical bonds, and properties of compounds?
- How can laboratory investigations help you represent the structures and interactions of chemicals in chemical reactions, and classify these reactions?
- How can understanding the properties and behaviour of matter lead to the development of useful substances and new technologies?

#### Unit Project Prep

Begin collecting ideas and resources for the project at the end of Unit 1.

**N**ame ten things in your life that do not, in some way, involve the products and processes of chemistry. Take your time.

Are you having trouble? Can you name five things that do not involve chemistry?

Are you still thinking? Consider each room in your home. Think about the bathroom, for example. Does soap involve chemistry? Do toothpaste, cosmetics, and shampoo involve chemistry? Think about the light in the bathroom. Without chemistry, there is no glass to make lightbulbs.

Move to another room. Walk quickly. The floor is disappearing beneath your feet. Pause briefly to watch the paint fade away from the walls. In a moment, the walls will be gone, too.

The story is the same if you step outdoors. There are no sidewalks, vehicles, people, trees, or animals.

A world without chemistry is a world without anything! Everything in the world, including you, is made up of matter. Chemistry is the study of matter: its composition, its properties, and the changes it undergoes when it interacts with other matter. In this unit, you will explore matter. You will learn how to predict the kinds of bonds (the chemical combinations) and the reactions that occur during these interactions.



