UNIT 5

Hydrocarbons and Energy

UNIT 5 CONTENTS

UNIT 5 OVERALL EXPECTATIONS

- What are the structures of different types of hydrocarbons?
- What are the properties of hydrocarbons?
- What energy changes occur when hydrocarbons are combusted?
- How do hydrocarbons affect our lives? How do they affect the environment?

Unit Project Prep

Look ahead to the end-of-unit project, "Consumer Chemistry." Start thinking now about the consumer item that you would like to investigate. As you study this unit, plan how you will investigate the chemical nature of the product you have chosen.

Think of what the world must have been like 560 million years ago. Temperatures were much warmer than they are now. Lush green vegetation covered much of the North American landscape. Through photosynthesis, these ancient plants (like plants today) stored energy from the Sun as food. Abundant marine life filled the oceans. Other animals thrived on the land. Humans did not yet exist.

Today our society relies heavily on the remains of ancient forests and long-dead marine life. From these remains, we manufacture products such as the gasoline that fuels cars and the plastic wrap that covers the sandwich in your lunch. How does this incredible transformation take place?

In this unit, you will learn about fossil fuels. Fossil fuels are carbon compounds that have been produced over millions of years from the remains of ancient living things. You will examine the structures and properties of many hydrocarbon compounds that we obtain from fossil fuels. As well, you will find out how these compounds can be refined to produce many useful materials.

Later in this unit, you will discover how modern society obtains energy from hydrocarbons.