

Chapter 4

Use with Section 1

ENRICHMENT

● Energy Resources

The Greenhouse Effect and Global Warming

Did you ever get into a car that had its windows closed on a sunny day? You probably jumped out quickly because the inside of the car and the car's interior was very hot. As sunlight passed through the windows, the car's interior absorbed and radiated heat energy. This process is called the greenhouse effect.

The greenhouse effect also happens in Earth's atmosphere. Gases called greenhouse gases—which include carbon dioxide, methane, and nitrous oxide—are found in the atmosphere. These gases naturally absorb heat energy from the sun. This absorbed heat warms the atmosphere, the oceans, and the land. However, increasing amounts of greenhouse gases are being produced, particularly by the burning of fossil fuels. This increase has made the atmosphere absorb more and more radiation.

Scientists are concerned that these increased concentrations of greenhouse gases could cause atmospheric temperatures to rise worldwide. This is known as global warming.

A rapid global warming trend could have devastating effects on the environment. Rainfall patterns could change, affecting the types and amount of plant life in many areas. Global warming could make present farmlands too dry to grow crops. An increase in atmospheric temperature of only a few degrees could cause polar ice caps to melt and sea level to rise, resulting in flooding in many coastal areas.

Answer the following questions, using complete sentences.

1. The absorption of energy from the sun by greenhouse gases is necessary for life on Earth. Without it the average yearly temperature of Earth's surface would be about -25°C ! So why are scientists concerned about greenhouse gases?

2. Unlike many pollutants, which affect small regions, global warming affects people worldwide. How do you think the world should approach this problem?
