Chapter 29

Environmental Health

Lesson 1
Air Quality

Lesson 2
Protecting Land and Water

Lesson 3
Advocating for a Healthy Environment
Taking care of the environment is everyone’s responsibility. In what specific ways do you and your family actively take part in protecting the environment?

How Do You Rate?

Read each statement below and respond by writing yes, no, or sometimes for each item. Write yes only for items that you practice regularly.

1. I conserve water in my home.
2. I turn out lights when leaving a room.
3. I don’t litter.
4. I buy products in refillable containers when possible.
5. I avoid buying disposable products when reusable alternatives are available.
6. I use fans instead of turning on the air conditioning whenever possible.
7. I reuse paper and plastic bags that are brought home from the store.
8. I buy recycled paper products when I have the choice.
9. I actively participate in a recycling program in my community.
10. I put on a second layer of clothing rather than turning up the heat if I feel cold at home.

For instant feedback on your health status, go to Chapter 29 Health Inventory at health.glencoe.com.
Modern technology has improved the lives of many people in the world. However, the pollution of air, land, and water that may result from technological advances can harm the environment and therefore people's health.

Air Pollution

Air pollution is a serious problem in this nation. It is linked to an estimated 50,000 to 120,000 premature deaths each year. The U.S. health care costs associated with outdoor air pollution range from $40 to $50 billion per year. For this reason, one goal of Healthy People 2010 is to reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's (EPA) health-based standards for ozone, a major component of air pollution.

Air pollution is the contamination of the earth's atmosphere by substances that pose a health threat to living things. The EPA monitors air quality and sets U.S. air quality standards. The agency has identified five major air pollutants whose levels need to be regulated in order to have cleaner air nationwide. These pollutants are described in Figure 29.1.
## FIGURE 29.1

### FIVE COMMON AIR POLLUTANTS

The EPA has set national air quality standards for these pollutants.

<table>
<thead>
<tr>
<th>Air Pollutant</th>
<th>Sources</th>
<th>Primary Health Concerns</th>
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</thead>
<tbody>
<tr>
<td>Ozone ((O_3))</td>
<td>(O_3) forms from a chemical reaction between nitrogen oxide compounds and volatile organic compounds (VOCs). Motor vehicle exhaust, industrial emissions, gasoline vapors, and chemical solvents are the primary sources of nitrogen oxides and VOCs.</td>
<td>(O_3) can irritate and inflame lung airways. It is linked to aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses such as pneumonia and bronchitis.</td>
</tr>
<tr>
<td>Particulate Matter (PM)</td>
<td>PM may be emitted directly into the air from sources such as motor vehicle exhaust and factories. PM may also form in the air through chemical reactions between gases.</td>
<td>PM is linked to aggravated asthma, chronic bronchitis, decreased lung function, and premature death.</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>Outdoor sources of CO include motor vehicle exhaust and industrial processes. Indoor sources include gas stoves, cigarette smoke, and unvented gas and kerosene space heaters.</td>
<td>CO is poisonous. It prevents the body from receiving the oxygen it needs. It affects people with heart disease and can harm the central nervous system. Large quantities are fatal.</td>
</tr>
<tr>
<td>Sulfur Dioxide (SO(_2))</td>
<td>SO(_2) is formed when fuel that contains sulfur (such as coal and oil) is burned, when gasoline is extracted from oil, and when metals are extracted from their ores.</td>
<td>SO(_2) contributes to respiratory illnesses and aggravates existing heart and lung diseases.</td>
</tr>
<tr>
<td>Nitrogen Oxides (NO(_x))</td>
<td>These substances form when fuel is burned at high temperatures. Primary sources include motor vehicles and electric utilities.</td>
<td>Nitrogen oxides help form ground-level ozone. They form particles that cause or trigger serious respiratory problems.</td>
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</tbody>
</table>

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Ozone is a gas composed of three oxygen atoms. Ground-level ozone is a major component of smog, a yellow-brown haze that forms when sunlight reacts with air pollution.

Particulate Matter is a general term for particles such as dust, dirt, soot, smoke, mold, and liquid droplets that are found in the air.

Carbon Monoxide is a colorless, odorless gas that contains carbon and oxygen. It is formed when carbon in fuel is not burned completely.

Sulfur Dioxide is a gas made up of sulfur and oxygen. It dissolves in water to form an acid, and it reacts with other gases in the air to form sulfates and other harmful particles.

Nitrogen Oxides is a general term for a group of highly reactive gases that contain varying amounts of nitrogen and oxygen.
Reducing Air Pollution

The Clean Air Act of 1990 regulates the five pollutants described in Figure 29.1. Even with such laws in place, air quality can vary. The Air Quality Index (AQI), developed by the EPA, is an index for reporting daily air quality. Shown in Figure 29.2, the AQI informs the public about local air quality and whether air pollution levels pose health risks.

You and your family can take the following actions to help reduce air pollution.

- **Reduce car use.** Walk or bicycle, take public transportation, or carpool to your destination.

- **Conserve energy.** Turn off lights when not in use. Set the air conditioner at a higher temperature. Put on extra layers of clothing instead of turning up the heat.

- **Use air-friendly machinery.** Small motors such as those found on mowers, chain saws, and leaf blowers emit pollutants. Use manual machinery when possible.

### AIR QUALITY INDEX (AQI)

The AQI alerts people to possible health concerns of breathing polluted air.

<table>
<thead>
<tr>
<th>Range</th>
<th>Air Quality</th>
<th>Color Code</th>
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<tbody>
<tr>
<td>0 to 50</td>
<td>Good: There is little or no health risk.</td>
<td>Green</td>
</tr>
<tr>
<td>51 to 100</td>
<td>Moderate: Some pollutants may pose a health concern for a small number of individuals.</td>
<td>Yellow</td>
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<tr>
<td>101 to 150</td>
<td>Unhealthy for Sensitive Groups: Unless a person has specific health concerns, pollution levels in this range are not likely to cause health problems.</td>
<td>Orange</td>
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<tr>
<td>151 to 200</td>
<td>Unhealthy: All individuals may experience some minor negative effects.</td>
<td>Red</td>
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<tr>
<td>201 to 300</td>
<td>Very Unhealthy: More serious effects may be felt by all individuals.</td>
<td>Purple</td>
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<tr>
<td>301 to 500</td>
<td>Hazardous: Entire population is at risk.</td>
<td>Maroon</td>
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Indoor Air Pollution

Most people spend about 90 percent of their time indoors. EPA studies indicate that indoor levels of certain pollutants may be 2 to 5 times—and on occasion more than 100 times—higher than outdoor levels. Sources of indoor air pollution include building and furnishing materials such as carpeting and furniture made of certain pressed woods. Another source is old insulation containing asbestos, a fibrous mineral that has fireproof properties. When materials containing asbestos deteriorate, tiny fibers of the mineral are released into the air. Household cleaning products and other chemicals also contribute to indoor air pollution. Another major source is the particles and gases that form as a result of combustion. Stoves, furnaces, fireplaces, heaters, and tobacco smoke can all contaminate indoor air. Inadequate ventilation increases the problem. Energy-efficient homes may have so little air exchange that pollutants build up to dangerous levels.

Health Concerns of Indoor Air Pollution

The effects of indoor air pollution depend on the contaminant and the length of exposure. Immediate health concerns include irritation of the eyes, nose, and throat; headaches; dizziness; and fatigue. Long-term exposure to some pollutants can cause asthma. Exposure to lead, especially in children, can damage the kidneys, liver, brain, and nerves. Asbestos has been linked to lung cancer, especially in people who smoke. High levels of carbon monoxide can cause death.

The EPA estimates that radon, an odorless, radioactive gas, causes at least 14,000 lung cancer deaths per year. Radon is produced during the natural breakdown of the element uranium in soil, rocks, and water. It can seep into a house through cracks in the foundation. Home testing is the only way to assess exposure to radon. Homes with high levels of radon require increased indoor-outdoor air exchange. Some may need structural work to reduce radon levels.

Managing Indoor Air Pollution

To manage indoor air pollution, you must first identify the contaminants. Often, removing or replacing an object or appliance and providing sufficient indoor-outdoor air exchange will solve the problem. Make sure that hot water heaters and furnaces are properly vented and operating efficiently to avoid a buildup of carbon monoxide. Many families have installed carbon monoxide detectors to warn of a toxic buildup. Similar detectors are available for radon. Homeowners who discover the presence of asbestos or lead should seek professional help in removing these contaminants.
Chapter 29
Environmental Health

Real-Life Application

Indoor Air Pollution and Asthma: What You Can Do
The incidence of asthma in people of all ages is increasing. Indoor air pollution has been identified as a major contributor to this increase. Study the graph, answer the questions on the right, and then complete the activity.

Estimated Number of Asthma Cases

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<tbody>
<tr>
<td>All Ages</td>
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<td>Under 18</td>
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Source: National Center for Health Statistics, National Health Survey, 1982–1995

What can be done to reduce the levels of such triggers as dust and pet dander in the home?

In the 1960s children and teens were outside at least three hours each day. Today, they are outside less than two hours each day. How might these facts relate to the increase in asthma?

Today’s homes allow less air to circulate. How might this contribute to the increase in asthma? What can be done to increase ventilation?

Tobacco smoke is one of the leading contributors to asthma attacks. How can exposure to tobacco smoke be limited or prevented?

ACTIVITY

Work with a small group. Use reliable library and online sources to investigate additional measures that can improve indoor air quality. Cite your sources, and provide an explanation of why each source is reliable.

Noise Pollution
Traffic, loud music, and power tools such as mowers and construction equipment are all sources of noise pollution. Noise pollution is harmful and unwanted sound of sufficient intensity to damage hearing. Hearing impairment caused by noise rarely leads to total deafness; however, the hearing loss is permanent, and hearing aids often do not compensate for the damage.

A decibel is a unit used to express the relative intensity of loudness of sound. Normal conversation is about 65 decibels. Exposure to noise levels of 85 decibels and above can result in temporary hearing loss, often accompanied by ringing in the ears. Normal hearing will usually return, but continued exposure can lead to permanent hearing loss. Figure 29.3 shows the decibel levels of various sounds.
Reducing Noise Pollution

There are several ways to reduce noise pollution in your environment. Be sure to keep the volume down on stereos, radios, and television sets. Avoid unnecessary use of the car horn. When possible, use manual tools instead of power tools.
You’ll learn to

- Identify sources of land and water pollution.
- Assess the impact of population on community and world health.
- Analyze the influence of laws on health-related environmental issues.
- Examine strategies for reducing land and water pollution.

Write a brief public service announcement encouraging people to help keep lakes, rivers, and streams free of pollution.

The wastes generated by human activity can pollute both land and water. However, there are many actions people can take to reduce pollution and help preserve land and water resources.

Waste Disposal

Many wastes are biodegradable, or able to be broken down by microorganisms in the environment. However, when biodegradable materials are discarded in quantities too large for nature to handle, or when materials are not biodegradable, other waste disposal solutions must be found.

Solid Waste

Much solid waste ends up in landfills. A landfill is an area that has been safeguarded to prevent disposed wastes from contaminating groundwater. Landfills must be located away from certain areas to protect groundwater (water that collects under the earth’s surface) and must be lined with special materials to prevent leakage. Landfill operators must follow practices that reduce odor and control disease-carrying insects and rodents.
Hazardous Waste

A **hazardous waste** is a substance that is explosive, corrosive, highly reactive, or toxic to humans or other life forms. Industrial processes generate some hazardous wastes. Others are generated by common activities, including those described in **Figure 29.4.** Household products such as batteries are also considered hazardous wastes. Many of these wastes are banned from landfills and must be disposed of at special collection sites so that they don’t contaminate the environment.

**Nuclear wastes**, a collection of radioactive materials that pose serious hazards to humans and other life forms, are a type of hazardous waste. Exposure to radiation can increase the risk of cancer. It can also alter a person’s sex cells, causing genetic abnormalities to be passed on to offspring. Because of the long decay rates of some radioactive materials, these materials must be isolated in secure facilities for thousands of years.

Expansion and Development

Throughout history population growth has been accelerating.

It took half a million years for humankind to reach a population size of 1 billion, but the next billion people were born in a span of only 80 years, and close to 1½ billion more have been born since 1975. In certain U.S. and world regions where population growth is rapid, there is a low quality of life and much human suffering. Rapid population growth also leads to swift deterioration of the land and to a severe drain on resources such as water.

Urban development can also have a dramatic impact on the land. As new cities are built, room for them must be cleared. This clearing has been at the expense of wilderness areas and rain forests.

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**Figure 29.4**

**Hazardous Wastes**

<table>
<thead>
<tr>
<th>Source/Activity That Generates Waste</th>
<th>Type of Waste Produced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and crafts (e.g., painting, building models)</td>
<td>Solvents, paints, adhesives</td>
</tr>
<tr>
<td>Dry cleaning</td>
<td>Solvents</td>
</tr>
<tr>
<td>Construction</td>
<td>Oils, solvents, paints</td>
</tr>
<tr>
<td>Vehicle maintenance</td>
<td>Solvents, paints, ignitable wastes, used oil and batteries</td>
</tr>
<tr>
<td>Yardwork and gardening</td>
<td>Pesticides, herbicides, solvents</td>
</tr>
<tr>
<td>Household tasks</td>
<td>Solvents, oils, cleaning materials, paints, paint thinner</td>
</tr>
</tbody>
</table>
Disappearing Forests

Developing nations in Central America, Africa, and Southeast Asia are rapidly expanding in agriculture and industry. These nations have been clearing tropical forests on a massive scale for fuel and to make way for farms and ranch land. This deforestation, or destruction of forests, has upset the fragile balance of nature.

Aside from providing a home to countless plant and animal species, the world's great forests play a vital part in controlling soil erosion, flooding, and sediment buildup in rivers, lakes, and reservoirs. Deforestation interferes with these processes. It can also change regional patterns of rainfall as a result of altered rates of evaporation, transpiration (vapor exhaled from the surface of green plants), and runoff. Without trees, precipitation declines and the region grows hotter and drier. Ultimately, desertlike conditions prevail where there were once rich, tropical grasslands.

Urban Sprawl

The spreading of city development (houses, shopping centers, businesses, and schools) onto undeveloped land is called urban sprawl. As the land surrounding cities becomes developed, environmental problems can occur. Runoff from parking lots and fertilized lawns may contaminate the drinking water supply. Air quality worsens as increased automobile and lawnmower usage adds more engine exhaust to the air.

To help address the problem of urban sprawl, city planners are rethinking the way suburbs are organized to help reduce consumption of natural resources and decrease the amount of pollution. In planned communities, schools and businesses are located within walking distance of homes, and sidewalks are required. Walking the short distances from home to work, school, or shopping provides physical activity for pedestrians, saves resources, and reduces pollution. The inclusion of efficient public transportation in these communities helps reduce the number of people driving to work. Consequently, fewer vehicles are on the highways, reducing both the level of pollution and the number of injuries and deaths caused by traffic accidents.

Water Supplies and Pollution

The EPA requires water suppliers to monitor and test water before sending it through municipal or community water systems. If the water is contaminated, the supplier must shut down the system and fix the problem. No agencies monitor the quality of water coming from private wells, however. Water treatment and purity depend on actions taken by those who use the well.
All drinking water is susceptible to pollution. Because the water can come from large sources such as rivers, lakes, or aquifers (water-bearing layers of rock, sand, or gravel) that underlie several counties or states, the pollution source can be far away from where the water is used.

**Polluted Runoff**

About 40 percent of the nation’s rivers, lakes, and coastal waters are not safe for swimming or other types of water recreation. Water pollution is sometimes caused by illegal dumping of industrial chemical wastes, but a greater contamination problem is created by pollution that comes from many sources throughout the environment. Most surface water contamination is caused by polluted runoff—rainwater or snowmelt that runs over the land, picking up such contaminants as pesticides, fertilizers, and wastes. Polluted runoff can also contaminate groundwater, the primary source of drinking water for millions of people in the United States.

**Wastewater**

Wastewater, used water that comes from homes, communities, farms, and businesses, is another source of water pollution. Along with sewage, wastewater includes water that is generated and discharged from industries, feedlots, and many other sources. Wastewater contains harmful substances such as human or animal wastes, metals, and pathogens. Some wastewater must be treated by cooling in order to prevent thermal pollution. Thermal pollution occurs when the temperature of discharged water is higher than the temperature of a body of water in the environment. Because this hot water can disrupt aquatic ecosystems, it must be cooled before it enters the environment. The EPA regulates the treatment and discharge of wastewater under the Clean Water Act. Treated water that is released back into the environment must be safe for humans and other living organisms.

**Other Sources of Water Pollution**

Other sources of water pollution include:

- **Sediment**. Sediment from land erosion can destroy aquatic ecosystems and clog lakes, stream channels, and harbors.

- **Oil**. Some oil contamination comes from the cleaning of oil tankers and the release of oil from offshore drilling rigs. Problems can also occur when people dump used motor oil or household chemicals down household and storm drains.
Reducing the Risks

You and your family can take steps to help keep our land and water clean.

- Recycle materials whenever possible to reduce the amount of waste going to landfills. You’ll learn more about reducing solid wastes in Lesson 3.
- Dispose of all materials properly. Don’t put oil paints, paint solvents, or batteries into the trash. Don’t pour household chemicals or motor oil down the drain or onto the ground. Instead, take these and other hazardous materials to the appropriate collection sites.
- Follow directions when using chemicals such as cleaning products, fertilizers, and pesticides, and don’t overuse them.
- Reduce water usage. Repair leaky faucets. Follow the recommendations for landscape watering that apply to your area. Reducing water usage decreases the amount of water that must be treated.

Reviewing Facts and Vocabulary

1. What is a landfill?
2. Assess the impact of population on community and world health.
3. How can polluted runoff contaminate water supplies?

Thinking Critically

5. Analyzing. You have probably heard the saying, “Water, water everywhere, but not a drop to drink.” Explain this statement in terms of available drinking water.

Applying Health Skills

Advocacy. Create a comic book about a superhero named Captain Cleanup and his or her adventures cleaning up land and water pollution. The comic book should be targeted to elementary school students and contain a strong message about what young people can do to reduce land and water pollution.

WEB SITES Use your comic book as part of a Web page you develop on reducing pollution. See health.glencoe.com for help in planning and building your own Web site.
Many of today’s environmental problems result from the lifestyle and consumer choices we make. In this lesson you’ll learn about what you can do to protect the health of the environment.

Conserving Resources

Most natural resources don’t exist in an endless supply. The coal, natural gas, and petroleum we use for fuel took millions of years to form. It takes about 20 years for a tree to become large enough to cut for use as paper. These examples illustrate the need to conserve our natural resources. Conservation is the protection and preservation of the environment by managing natural resources to prevent abuse, destruction, and neglect. The actions that you and your family take at home have an impact on the environment. Some actions you can take to conserve natural resources are featured on the next page.
Heating and Cooling

- Seal leaks around doors, windows, and electrical sockets to prevent heated or cooled air from escaping. Keep doors and windows shut and close fireplace vents when the fireplace is not in use to keep cooled or heated air inside the home.

- During heating season, wear an extra layer of clothing instead of turning up the thermostat. Keep the thermostat at about 68°F. For further conservation, turn the thermostat down at bedtime.

- Keep the thermostat at about 78°F during air-conditioning season. Use a fan to keep air circulating—this will make the area feel cooler.

Water Conservation

- Wash clothes in warm or cold, not hot, water. Accumulate a full load before washing laundry or running the dishwasher.

- Fix leaky faucets, and never let water run unnecessarily. Turning off the water while brushing your teeth or shaving can save 4.5 gallons of water per minute.

- If you have a large-capacity toilet tank, fill plastic bottles with water, seal them, and place them in the tank. The bottles will keep the tank from filling completely, which will save up to a gallon of water per flush.

Lighting and Appliances

- Replace traditional lightbulbs with compact fluorescent bulbs, which use less energy and last longer.

- Switch off lights when you leave a room.

- Turn off televisions, radios, computers, and other appliances when they are not in use.

- Use a microwave or toaster oven instead of a conventional oven when cooking a small amount of food.

- Don’t preheat a conventional oven for longer than necessary. Avoid opening the oven door unnecessarily while the appliance is in use.
Precycling and Recycling

The easiest, most cost-efficient way of conserving natural resources is reducing the quantity of waste. Precycling and recycling are two ways of accomplishing this goal.

Precycling—reducing waste before it is generated—means purchasing and using products wisely. How can you precycle? Reduce your use of products that are used once and then discarded. For example, try using cloth napkins instead of paper ones. Purchase products in bulk or in the largest package appropriate for your use to reduce excess packaging. Buying products such as laundry detergent or fruit juice as concentrates also reduces packaging. Choose products designed to be recycled. For example, look for the code on plastic packages. Those that carry a 1, 2, or 3 are most easily recycled.

Precycling also involves reusing materials. Reusing paper or plastic shopping bags or carrying your own cloth bags is a form of precycling. So is donating unneeded household goods or clothing to charities instead of discarding them.

Recycling is the processing of waste materials so that they can be used again. Recycling has several benefits:

- **Recycling conserves resources.** Both energy and raw materials are conserved by recycling. For example, making a can from recycled aluminum takes only 10 percent of the energy needed to make a new can from raw materials.

- **Recycling reduces reliance on landfills.** Landfill space is limited, and it cannot keep up with increasing demands. Because of this, it is important to reduce the amount of waste that gets deposited in landfills.

- **Recycling protects environmental health.** Recycling utilizes materials that might otherwise harm the environment if disposed of in landfills. Thus, recycling efforts lead to a cleaner and more healthful environment.
TIPS FOR RECYCLING AND REDUCING WASTE

More than 80 percent of household waste can be recycled. The following are some guidelines for specific recyclable materials.

- **Aluminum.** Rinse cans and other aluminum items such as pie pans and frozen food trays. Crush them to save space.
- **Cardboard.** Flatten cardboard boxes and tie them together.
- **Glass.** Rinse all glass containers. Recycle metal lids separately.
- **Plastics.** Look for the code on the container. Most recyclers take those marked with a 1, 2, or 3.
- **Newspaper.** Stack newspapers and tie the bundles with string or rope, or place the papers in paper shopping bags for easy handling.
- **Glossy Paper.** Contact services that help you remove your name from mailing lists. Find out whether a local retirement or community center can use discarded magazines. What you can’t eliminate or redistribute, recycle.

**Hands-On Health ACTIVITY**

In this activity you will create a chart that demonstrates the need to conserve resources.

**What You’ll Need**
- pen or pencil and notebook paper
- poster board or construction paper
- markers

**What You’ll Do**
1. Divide a sheet of paper into three columns. Label the columns “Items I Throw Away Every Week,” “Ways of Precycling or Recycling,” and “Why It Matters.”
2. List at least five items in the first column, and complete the other two columns for those items.
3. Work in a small group. Combine the best ideas and create a poster-sized chart, similar to the one on your sheet of paper, that includes several ways to precycle or recycle commonly used items. Use persuasive language, and illustrate your group’s chart.
4. Present the chart to the class. Then display it in the classroom or in a school hallway.

**Apply and Conclude**
Find statistics on how precycling and recycling help reduce waste and pollution. Be sure to relate the data to the actions described in your poster.

Manufacturers put codes on plastic containers to give consumers information on how to recycle.
Protecting the Environment

Here are some practical suggestions for becoming involved in protecting the environment:

- **Become an informed consumer.** Evaluate products with regard to their impact on natural resources. Give feedback to companies on ways they can help protect the environment.

- **Contact organizations that promote the conservation of resources and educate people on environmental issues.** Ask for ideas on how to conserve natural resources. Consider joining an environmental organization. Most of these organizations can give you information on current environmental issues. They can also suggest ways to promote the health of the environment.

- **Take action against local polluters.** The environmental problems in your community directly affect your health. Targeting local polluters is an effective way of protecting your health and that of your family and neighbors. Join with others to inform elected officials of your concerns.

**Reviewing Facts and Vocabulary**

1. Define the term *conservation*.
2. What is the difference between *precycling* and *recycling*?
3. List three environmental benefits of recycling.

**Thinking Critically**

4. **Analyzing.** How does conserving resources protect the health of the environment?
5. **Applying.** Develop strategies to conserve natural resources in your home. List three strategies not included in this lesson that your family can undertake to conserve resources.

**Applying Health Skills**

**Accessing Information.** Research and describe a variety of environmental protection programs, both in your community and in countries throughout the world. Create a chart to display the information that you obtain. Include the name of the community or country, the name of the program, and a brief description of the program’s mission.

**SPREADSHEETS**

Use a spreadsheet to organize your information and create your chart. See health.glencoe.com for tips on how to create and use a spreadsheet.
Environmental Health in the News

In this activity, you will answer the following questions in order to compare and contrast how articles from two different print media cover the same environmental health issue.

Questions to Answer

1. What aspect of the environmental health issue does each article address?
2. How does each article convey the subject matter to the reader?
3. How does each article link the environmental issue to specific health problems?
4. Does each article include comments from environmental health experts, scientists, physicians, and/or politicians?
5. Can you detect any bias in either article?
6. Do the articles provide relevant information about how the issue affects a specific community?
7. Do the articles provide a regional or global perspective on the issue?
8. In your opinion, which source provides better coverage of the issue? Why?

Activity

Think of a specific environmental health issue. Then, locate articles in two different types of print media that pertain to this topic. You can choose from your local newspaper; a major city newspaper, such as the New York Times or the Washington Post; or a national news magazine, such as Time or Newsweek. Write an analysis of how these two different sources cover the same topic. Use the answers to the questions above to guide your analysis.

Healthy People 2010 has a number of goals that relate to environmental health issues that affect all Americans. Review these goals, and write a position paper that suggests how the media sources you analyzed have played or can play a role in helping reach the goals.
**CROSS-CURRICULUM CONNECTIONS**

**Language Arts Connection**  
**Compose a Haiku.** Think about something in the natural environment that inspires you, such as a bird in flight, a shooting star, or the soothing sounds of a stream. Compose a haiku, a Japanese form of poetry that often focuses on nature, on the subject you’ve chosen. Use vivid language to describe a certain aspect of your subject, such as its shape, size, or color.

**Social Studies Connection**  
**Conduct Team Research.** The health of humans is undeniably linked to the health of the environment. Over the past 40 years, the environmental movement has worked to clean up the earth. Work with a team to research a specific environmental organization, such as the Sierra Club or the U.S. Fish & Wildlife Service. Report to the class on the history of the organization and its purpose and goals.

**Math Connection**  
**Compute the Cost.** The health-related costs of outdoor air pollution range from $40 to $50 billion per year. Suppose that in a certain year, the health costs of air pollution were $45 billion. Given a U.S. population of 281.4 million people, how much does health care related to air pollution cost each person in this particular year?

**Science Connection**  
**Write a Report.** Some people may think that air pollution is solely the result of human activity. However, there have always been natural sources of air pollution, such as dust storms. Use reliable online and print resources to find information on various natural sources of air pollution. Summarize your findings in a brief report.

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**Career Corner**

**Environmental Engineering Technician**

Would you like to improve the quality of the environment? If so, you might enjoy a career as an environmental engineering technician. Environmental engineering technicians work closely with environmental engineers and scientists in developing methods and devices used in the prevention, control, or correction of environmental hazards. To become an environmental engineering technician, you will need a two-year associate’s degree or extensive on-the-job training. Find out more about this and other health careers by clicking on Career Corner at [health.glencoe.com](http://health.glencoe.com).
Chapter 29 Review

**EXPLORING HEALTH TERMS**  Answer the following questions on a sheet of paper.

**Lesson 1**  Match each definition with the correct term.

- **air pollution**  
- **noise pollution**  
- **asbestos**  
- **radon**  
- **decibel**  
- **smog**  

**Air Quality Index (AQI)**

1. A yellow-brown haze that forms when sunlight reacts with air pollution.
2. An index for reporting daily air quality.
3. A fibrous mineral that has fireproof properties.
4. An odorless, radioactive gas that can cause cancer.
5. A unit used to express the relative intensity of loudness of sound.

**Lesson 2**  Fill in the blanks with the correct term.

- **landfill**  
- **biodegradable**  
- **deforestation**  
- **urban sprawl**  
- **hazardous waste**  
- **wastewater**  

6. __________ wastes can be broken down by microorganisms in the environment.
7. A substance that is explosive, corrosive, highly reactive, or toxic to humans or other life forms is known as __________.
8. The destruction of forests is known as __________.
9. The spreading of city development onto undeveloped land is called __________.
10. __________ is used water that comes from homes, communities, farms, and businesses.

**Lesson 3**  Replace the underlined words with the correct term.

- **precycling**  
- **conservation**  
- **recycling**

11. Recycling is the protection and preservation of the environment by managing natural resources.
12. Conservation involves making decisions about products before you purchase them in order to reduce waste.
13. The processing of materials so that they can be used again in some form is __________.

**RECALLING THE FACTS**  Use complete sentences to answer the following questions.

**Lesson 1**

1. Name five common air pollutants.
2. List two strategies for managing indoor air pollution.
3. Temporary hearing loss may occur when a person is exposed to noise levels at or above what decibel level?

**Lesson 2**

4. If many wastes are biodegradable, why are landfills necessary?
5. What is nuclear waste?
6. List three sources of water pollution and two ways of reducing this type of pollution.

**Lesson 3**

7. Name three ways to conserve natural resources.
8. List three precycling strategies.
9. What are three practical ways to become involved in protecting the environment?
Chapter 29 Review

THINKING CRITICALLY

1. **Evaluating.** Explain how keeping your automobile engine in good condition can reduce air pollution. *(LESSON 1)*

2. **Analyzing.** Before the development of modern landfills, trash was discarded in pits or open dumps. Explain how today’s landfills are an improvement over this waste-disposal strategy. *(LESSON 2)*

3. **Applying.** List three grocery store items that create excessive waste. Suggest an alternative for each item. *(LESSON 3)*

HEALTH SKILLS APPLICATION

1. **Accessing Information.** Choose one of the five air pollutants tracked by the EPA. Research whether that pollutant is present in the air in your community. Write a brief report summarizing your findings. *(LESSON 1)*

2. **Advocacy.** Polluted runoff may occur as a result of heavy rains that pick up fertilizers and pesticides from lawns. Write a public service announcement encouraging people to carefully follow application instructions for these products. *(LESSON 2)*

3. **Goal Setting.** Talk with your family about ways to conserve natural resources. Then use the goal-setting steps to choose and work toward a family conservation goal. As part of the goal-setting process, have each family member sign a pledge to do his or her part to conserve resources. *(LESSON 3)*

Parent Involvement

**Accessing Information.** Find out what materials are recycled in your community. Work with a parent or other adult family member to interview managers of several recycling centers or hazardous waste collection sites. Put together an informative pamphlet that describes local waste management and recycling services. Make your pamphlet available to other families in your neighborhood.

School and Community

**Volunteering Opportunities.** Locate a recycling center or charitable organization in your community that collects donated items for resale. Contact the agency to find out what volunteer positions are available. Share what you have learned with your classmates.