Safety and Emergencies

Safety includes planning ahead and being prepared for emergencies. Do you or your family have a plan in place to handle emergencies?
Start-Up Activities

Before You Read
Do you know how to protect yourself from injury? Answer the Health eSpotlight question below and then watch the online video. Keep a record of your answers.

Health eSpotlight
Personal Safety

One way to prevent injury when participating in sports or outdoor activities is to learn about the risks involved and the use of the proper safety equipment. What steps do you take to stay safe when participating in your favorite activity?

Go to glencoe.com and watch the health video for Chapter 20. Then complete the activity provided with the online video.

As You Read
Make this Foldable® to organize what you learn in Lesson 1 about safety at home and at school. Begin with two sheets of notebook paper.

1. Fold one sheet in half from top to bottom. Cut about 1” along the fold at both ends, stopping at the margin lines.

2. Fold the second sheet in half from top to bottom. Cut the fold between the margin lines.

3. Insert the first sheet through the second sheet and align folds.

4. Fold the bound pages in half to make a booklet, and label the cover as shown. Then label each page as instructed by your teacher.

Take notes, define terms, and give examples of home and school safety on the appropriate page of your Foldable®.

Visit glencoe.com and complete the Chapter 20 crossword puzzle.

Go Online
Safety in the Home and at School

Building Vocabulary
As you read this lesson, write each new highlighted term and its definition in your notebook.
- accident (p. 540)
- accidental injuries (p. 540)
- accident chain (p. 541)

Focusing on the Main Ideas
In this lesson, you will learn to
- explain how to stay safe in the home and at school.
- identify the parts of an accident chain.
- develop safe habits.

Reading Strategy
Predicting Quickly look over the headings in this lesson. For each heading, write a sentence describing what information you think will be covered in that section.

Quick Write
Write a short paragraph that completes this sentence opener: “I practice safe habits when I __________.”

Developing Safe Habits
An accident is any event that was not intended to happen. Accidents kill at least one person between the ages of 10 and 19 in the United States every hour of every day. About 60 percent of those deaths result from accidental injuries, which are injuries that result from an accident. Falling on an icy sidewalk in front of your home and injuring yourself is an example of an accidental injury. Most accidental injuries can be prevented by developing safe habits.

When engaging in physical activity, stay safe by sticking to your level of skill. What are some other safety precautions you should take?
Injuries often occur as a result of an **accident chain**. This is a series of events that include a situation, an unsafe habit, and an unsafe action. Understanding accident chains, such as the one illustrated in **Figure 20.1**, can help you avoid injuries. Here are some guidelines:

- **Concentrate on your actions.** Be extra careful when you are tired, excited, upset, sad, or in a hurry.
- **Recognize your limits.** For example, do not mountain bike down a steep hill if you are just learning how to ride a mountain bike.
- **Think ahead.** Plan ahead by thinking of possible risks before it is too late.

**Safety in the Home**

The most common type of home injury involves falls. Other injuries result from poisonings, electrical shocks, and guns. Fires are the third leading cause of unintentional injury and death in the home. Many home injuries and deaths can be prevented.

**FIGURE 20.1**

**THE ACCIDENT CHAIN**

Many injuries can be prevented by breaking the accident chain.

**What strategies could Margo have used to prevent the accidental injury shown here?**

**The Situation**

1. Margo arrives home from school and rushes to answer the phone.

**The Unsafe Habit**

2. Margo often leaves her things scattered on the floor of her room.

**The Unsafe Action**

3. After talking on the phone, Margo goes to get ready for her soccer game and trips over a pile of belongings on the floor.

**The Accident and the Injury**

4. Margo falls and hurts her ankle. Now she can’t go to her soccer game.
Preventing Falls

Most injuries from falling occur in the kitchen, the bathroom, and on stairs. To help prevent falls, wipe up spills right away. Use non-skid rugs, or place a rubber pad under loose rugs. Keep stairways well lit and free of clutter.

Preventing Poisonings

Poisoning can happen by ingestion (swallowing), absorption (through the skin), injection (from a syringe), or inhalation (breathing). Store cleaning products, insecticides, and other potential poisons out of reach of young children.

Preventing Electrical Shocks

Electrical items found in the home can cause serious injury or death if they are misused. Unplug any appliance that is not working properly. Replace broken or frayed electrical cords, and avoid running cords under rugs. Never use electrical appliances near water.

Preventing Gun Accidents

The best way to prevent a gun accident in the home is to not have guns in the home. If a gun must be kept in the home, use the following safety precautions:

- Guns should have trigger locks and be stored unloaded in a locked cabinet.
- Ammunition should be stored in a separate locked cabinet.
- Anyone who handles a gun should be trained in gun safety.
- All guns should be handled as if they are loaded.
- Guns should never be pointed at anyone.

Fire Safety

A fire needs three elements to start—fuel, heat, and air. A cigarette, match, or electrical wire are sources of heat. If these sources come in contact with household chemicals, rags, wood, or newspapers, a fire can result.

Here are some safety guidelines to help you prevent fires in the home:

- Keep stoves and ovens clean to prevent pieces of food or grease from catching fire.
- Keep flammable objects at least three feet away from portable heaters.
- Remind adults who smoke never to smoke in bed or on overstuffed furniture.
• Regularly inspect electrical wires, outlets, and appliances to make sure they are in proper working order.
• Discard old newspapers, oily rags, and other materials that burn easily.
• Use and store matches and lighters properly. Keep them out of reach of young children. Don’t leave candles burning unattended.
• Install smoke alarms on each level of the home, including the basement. They should be located in hallways outside bedrooms. Remember to check the batteries regularly.

Reducing Risk of Injury in a Fire

Knowing what to do if there is a fire in your home can reduce your risk of injury. Follow these guidelines:
• Leave the house immediately if possible. Call the fire department from a nearby house or a cellular phone.
• While you are in the house, stay as close to the floor as you can below the smoke. Try to keep your mouth and nose covered to avoid breathing in smoke.
• Before you open a closed door, feel it. If it is hot, find another way to leave the room.
• If your clothing catches fire, *stop, drop, and roll*. Stop. Don’t run. Drop to the ground and roll to put out the fire.

Give Examples What are three ways to prevent fires in the home?

Prevent electrical shock by using the proper number of cords per outlet. Why might an overloaded electrical outlet cause a problem?
Lesson 1 Review

Review this lesson for new terms, major headings, and Reading Checks.

What I Learned

1. **Vocabulary** Define accident. Use the word in an original sentence.

2. **Identify** Name the sequence of events in an accident chain.

3. **Recall** What are two strategies for preventing falls at home?

Thinking Critically

4. **Apply** Molly’s older sister was frying food on their stove last night. Some of the oil she was using spilled onto the stovetop. This morning Molly noticed that the oil was still there. What advice would you give Molly?

5. **Evaluate** What is your family’s fire safety plan? How could it be improved?

Applying Health Skills

6. **Advocacy** Kyle is babysitting for a family that has just moved into town. Both of the children are under age 5 and cannot read yet. Kyle notices several bottles of cleaning products, including ammonia, under the kitchen sink. None of the bottles have childproof caps. What can Kyle do to advocate for the safety of the children?
Traffic Safety

The behavior of the passengers riding in a car can be just as important as the driver’s behavior. Using good decision-making skills while you are a passenger in a car will reduce your risk of injury. Here are some safety factors to follow:

- Follow the rules of the road.
- Always buckle your safety belt.
- Never get in a car with a driver who has been drinking alcohol or using drugs.
- Don’t distract the driver.

Safety on Wheels and Motorized Vehicles

Riding bicycles and using skates, skateboards, scooters, and motorized vehicles are activities many teens enjoy. One way to prevent injury while participating in these activities is to learn about the risks and then follow rules to avoid them.

- Buckling up every time you ride in a car is a simple action that could save your life. **What are some other precautions you could take to ensure your safety on the road?**
**Bicycle Safety**

The number-one way to stay safe while riding a bicycle is to always wear a bike helmet. Head injuries cause 70 to 80 percent of the deaths from bicycle accidents. Wearing a helmet every time you get on your bike can reduce your risk of head injury by 85 percent.

It is also important for bicycle riders to obey traffic signs and signals. Bicyclists and drivers must practice **defensive driving**, which means **watching out for other people on the road and anticipating unsafe acts**. To stay safe, do not ride at night or in bad weather.

**Skates, Skateboards, and Scooters**

Skates, skateboards, and scooters can be a lot of fun, but only when they are used safely. Here are some guidelines for having fun while staying injury free.

- Wear protective gear, including a hard-shell helmet, wrist guards, gloves, elbow pads, and knee pads.
- Do not let your speed get out of control.
- Do not skate or ride in parking lots, streets, and other areas with traffic.
- Before you head downhill, practice a safe way to fall on a soft surface.

**Analyse** What are some ways to stay safe when riding a bike?
Even if a traffic signal tells you that it’s okay to cross, don’t forget to look both ways beforehand. **What other safety precautions should you take as a pedestrian?**

**Pedestrian Safety**

Each year thousands of pedestrians are injured or killed in traffic accidents. A pedestrian is a person traveling on foot. The following guidelines will help you reduce your risk of injury while walking or running.

- Cross streets only at crosswalks. Don’t jaywalk, or cross the street in the middle of the block.
- Obey all traffic signals.
- During the day, wear bright clothing. At night, wear reflective gear and carry a flashlight.
- Walk on the sidewalk if there is one. If there is no sidewalk, walk facing oncoming traffic, staying to the left side of the road.

**Reading Check**

Name What are two safety guidelines for pedestrians?

**Recreational Safety**

There are a lot of risks associated with outdoor activities. If you know these risks ahead of time, you can take preventive actions to stay safe. When enjoying an outdoor activity, use common sense and follow these two rules:

- **Be attentive to the weather.** A major risk present during outdoor activities is an electrical storm. If you are caught outdoors during an electrical storm, try to find shelter in a building or car. On a hot day, drink plenty of water, stay in the shade if possible, and do not do any strenuous exercise. On a very cold day, dress in warm layers and stay dry.

**Emergency Medical Technician**

An emergency medical technician (EMT) provides on-the-spot emergency medical care to victims of accidents, injuries, or serious illnesses. EMTs can work in paid positions or as volunteers. Employment for EMTs is growing as paid positions replace many volunteer positions. You can prepare for a career as an EMT by taking biology or anatomy classes that help you learn about the body.

**What skills does an EMT need?**

Go to [Career Corner at glencoe.com](http://glencoe.com) to find out.
• **Use the buddy system.** Agree to stay with at least one other person. With a buddy, you can help each other avoid or cope with a potentially dangerous situation.

**Water Safety**

Thousands of Americans die each year from drowning, including many children. You can protect yourself and others by following these water safety rules:

• Learn to swim if you don’t know how.
• Never swim alone.
• Always use a life jacket when boating or waterskiing. If you fall in cold water, use the survival techniques shown in Figure 20.2.
• If you get caught in a strong current, swim parallel to the shore. When the current lessens, swim to shore.
• Never dive into water unless you know it is at least 9 feet deep and free of obstacles.

**Hiking and Camping Safety**

Preparation is the first step in a safe and enjoyable hike or camping trip. First, check the weather forecast, and take the necessary clothing and equipment. Always let an adult know where you will be and when you plan to return. Some additional safety guidelines are provided on the next page.

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**Academic Vocabulary**

*technique (tek NEEK) (noun)* a method used to accomplish a task. *In science class, the students were required to use a certain technique to conduct a lab experiment.*

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**FIGURE 20.2**

**Survival in Cold Water**

Hypothermia is a dangerous drop in body temperature which can be life threatening to people in cold water. Use these techniques to help you survive until help arrives. Why should you always wear a life jacket while boating?

- Reduce heat loss by drawing your knees up to your chest and keeping your upper arms close to the sides of your body. About 50 percent of heat loss is from your head, so try to keep it out of the water.
- If you are with other people, huddle close together in a circle to preserve body heat. A child or smaller person who loses heat faster should be placed in the center of the circle.
• **Wear protective clothing.** Dress in layers and wear long pants to protect yourself against ticks.

• **Bring equipment and supplies.** You should have a map, compass, first aid kit, flashlight, extra batteries, and an adequate supply of drinking water.

• **Follow fire safety rules.** Light campfires only where allowed. To put out your campfire, drown it with water or bury it with dirt that is free of debris.

• **Be able to identify poisonous plants and animals.** Learn first aid to treat reactions to poisonous plants, insects, and snakebites.

• **Stay with a buddy.**

## Outdoor Sports

Whether you like summer or winter sports, you should always wear appropriate safety gear and stay within your ability level. In the summer, you need to protect yourself against sunburn and heatstroke. Wear sunscreen with a sun protection factor (SPF) of at least 15, sunglasses, a hat, and appropriate clothing. Avoid direct sunlight during the hottest times of the day (10 A.M. to 4 P.M.), if possible, and drink plenty of water. Also, pay attention to your body’s signals. If you feel tired or overheated, take a break.

In the winter, protect yourself against cold weather by wearing layers of clothing, a hat, mittens or gloves, and proper footwear.

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**Lesson 2 Review**

**Review this lesson for new terms, major headings, and Reading Checks.**

**What I Learned**

1. **Vocabulary** What is *defensive driving*? Use it in an original sentence.

2. **Analyze** What are some safety factors that can reduce your risk of traffic injuries?

3. **Identify** Name three ways to stay safe while in the water.

**Thinking Critically**

4. **Analyze** How does practicing the buddy system help keep you safe outdoors?

5. **Explain** Why is it important to learn how to fall when skating or riding a bike?

**Applying Health Skills**

6. **Accessing Information** Think about an outdoor sport or activity you would like to try. Using reliable print or online sources, research how you could get hurt, what safety equipment you would need, and what safety rules you should follow.
List several weather emergencies that might occur where you live. Write two emergency preparations for each.
Tornadoes

A **tornado** is a whirling, funnel-shaped windstorm that may drop from the sky to the ground. Tornadoes are extremely dangerous storms, often destroying everything in their path. If a tornado is headed your way, take the following steps to help reduce your risk of injury:

- **Stay clear of windows.** Go to an inner hallway or any central, windowless room such as a bathroom or closet.
- **Take cover.** A basement or cellar that has no windows is the safest place to wait out a tornado.
- **Get low.** Lie down in a ditch if you are outside or other low-lying area.

**Explain** What are some precautions to take in the event of a tornado?

Hurricanes

A **hurricane** is a strong windstorm with driving rain that originates at sea. The storm clouds of a hurricane can extend over hundreds of miles and revolve around a calm center called an eye. Hurricanes occur most often in late summer and early fall.

The National Weather Service tracks tornadoes and hurricanes. **Figure 20.3** shows one hurricane’s path. To prepare for a hurricane, secure your home by boarding up windows. Close storm shutters before the winds start blowing. Then, leave the area and head inland, away from the hurricane.

Blizzards

A **blizzard** is a very heavy snowstorm with winds up to 45 miles per hour. Visibility usually is reduced to less than 500 feet, making it easy to get lost or disoriented. You can protect yourself during blizzards and winter storms by following these precautions:

- **Stay indoors.** The safest place during a blizzard is inside.
- **Bundle up.** If you must go out, wear layers of loose-fitting lightweight clothing under layers of outerwear that is both wind- and waterproof. Add a scarf, hat, gloves and boots.
- **Don’t wander.** Use landmarks to avoid getting lost, or stay put until help arrives.
Schools have drills to prepare for weather emergencies. **Does your school have drills to practice safety strategies?**

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**Floods**

In the event of a flood, head to high ground and stay away from the water. Never swim, walk, bike, or ride in a car through floodwaters. Drowning and electrocution from downed power lines pose a serious risk.

Flash floods are responsible for the majority of flood fatalities. Water can rise so fast and move so swiftly that people, cars, and even homes can be swept away. During a flood, pay attention to bulletins from the National Weather Service and follow their advice.

**Earthquakes**

An **earthquake** is a violent shaking movement of the earth’s surface. Earthquakes can occur anywhere in the United States, but happen most often west of the Rocky Mountains. Collapsing walls and falling debris are responsible for causing most injuries in an earthquake. To reduce your risk of injury, follow these precautions:

- **Stay indoors.** Crouch under a sturdy piece of furniture, against an interior wall, or in a strongly supported doorway. Stay away from objects that might fall, shatter, or cave in. Use your arms or a pillow to cover your head.

- **Get in the open if outdoors.** Avoid buildings, trees, telephone and electric lines, streetlights, and overpasses. Drivers should stop their cars and both the driver and passengers should stay inside the car.

- **Be careful afterward.** After the shaking stops, stay out of damaged buildings. Electrical and gas lines could be damaged and may be hazardous. Small quakes called aftershocks often occur after the main earthquake.

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**Recall** What are three ways to stay safe during a blizzard?
What I Learned

1. **Vocabulary** Define *hurricane*, and use it in a sentence.
2. **Describe** Describe how to protect yourself during a flood.
3. **Identify** What are four kinds of weather emergencies?

Thinking Critically

4. **Analyze** Why is it dangerous to be outside during a blizzard?

Thinking Critically

5. **Synthesize** After a major earthquake, your friend wants you go with him or her to inspect a damaged building. How would you respond? Explain your answer.

Applying Health Skills

6. **Communication Skills** With a partner, choose a weather emergency from this lesson. Write and perform a skit to demonstrate strategies for staying safe during that event.

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**Preparing for Weather Emergencies**

Follow these tips to plan ahead for weather emergencies:

- Identify which weather emergencies are likely to affect your area.
- Check with a reliable source about precautions to take during these types of weather emergencies.
- Develop and maintain a personal and family emergency plan.
- Prepare and maintain an emergency supplies kit that includes a battery-operated radio and flashlight, extra batteries, canned and ready-to-eat foods, a can opener, water (one gallon per person per day), a first-aid kit, and blankets.
- Identify emergency evacuation routes in your local area.

**With a Group**

In small groups, choose a weather emergency that occurs in your area. Prepare information sheets on preparing for and staying safe during this type of emergency. Post these at home, with your parents’ permission.

For more Lesson Review Activities, go to glencoe.com.
First Aid

First aid is the immediate temporary care given to an injured or ill person until he or she can get professional help. You can prevent further injury and may even speed recovery if you know what to do in an emergency. Knowing what not to do is equally important. Administering the proper first aid sometimes means the difference between life and death. Staying calm allows you to better help the victim. In this lesson you will learn what supplies are needed for a basic first-aid kit. You will also learn how to respond in an emergency and how to protect yourself when providing first aid.
**Being Prepared**

Without warning, at any time or place, you might find yourself in a position where you need to give first aid. Learning basic skills will help you handle most common emergencies. Keeping a list of emergency numbers near all phones is one simple way to be prepared. Another way is to keep a first-aid kit at home and in the car. First-aid kits come pre-packaged, or you can assemble your own. **Figure 20.4** lists some basic first-aid supplies. You may need to add specific medicines if someone in your family has a medical condition.

**Taking Universal Precautions**

Viruses such as HIV and hepatitis B and C can be spread through contact with an infected person’s blood. As a result, steps should be taken to minimize contact with another person’s blood. To protect yourself when giving first aid, follow **universal precautions**. These are *actions taken to prevent the spread of disease by treating all blood as if it were contaminated*. Wear protective gloves while treating a victim. If possible, use a face mask or shield, when giving first aid for breathing emergencies. Cover any open wounds on your body with sterile dressings. Avoid touching any object that was in contact with the victim’s blood. Always wash hands thoroughly after giving first aid.

**Citizenship**

A good neighbor and citizen is prepared to report accidents, fires, serious illnesses, injuries, and crimes. Familiarize yourself with emergency phone numbers to call in your community. **Make a list to keep handy by the telephone.**

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**First-Aid Supplies**

Keeping a first-aid kit in your home will help your family be prepared for emergencies. **What other supplies might you add to this kit?**

**Instruments:** tweezers, scissors  
**Equipment:** thermometer, cotton swabs, blanket, cold pack  
**Medications:** antiseptic ointment, sterile eyewash, activated charcoal, syrup of ipecac  
**Dressings:** gauze pads, adhesive tape, adhesive bandages, triangular bandage  
**Miscellaneous:** small flashlight, tissues, hand cleanser, disposable gloves, face mask, plastic bags
The First Steps

Although every emergency situation is unique, there are four steps to take for most emergencies. Recognize the signs of an emergency, take action, call for help, and provide care until help arrives.

Identifying the Signs of an Emergency

Often something you see, hear, or smell will alert you to an emergency. Is someone calling out in trouble? Have you heard glass shattering? Do you smell smoke or anything unusual that makes your eyes sting or causes you to cough or have difficulty breathing? These sensations can signal a chemical spill or toxic gas release.

Taking Action

Before deciding what action to take, **evaluate** the situation. Consider your strengths and limitations. Do not dive into a lake to rescue someone who’s drowning unless you are trained in lifesaving. Instead, you might throw a life preserver or something else that floats. Protect your own safety first. Putting yourself in danger can harm both you and the person who needs help. One action that never hurts is calling for help. Getting help can save a life and is sometimes the best and only action for you to take.

Calling for Help

Dial 911 for all emergencies in most of the United States. In some small towns, dialing zero (for operator) is an option. When making a call for help, stay calm. Describe the emergency to the operator and give a street address or describe the location by using landmarks. The operator will notify the police, fire, or emergency medical service departments. Stay on the phone until the operator tells you to hang up.

Providing Care Until Help Arrives

After you have called for help, stay with the victim until help arrives. Carefully loosen any tight clothing on the victim. Use a coat or blanket to keep the person warm or provide shade if the weather is warm. This will help the person maintain a normal body temperature.

What are some ways to stay safe when you are home alone?

When someone calls and you don’t know who they are, don’t tell them you are alone. Lock the doors, even if it is daylight. Stay indoors if it is dark outside. Of course, don’t answer the door to strangers, and don’t let people into the house unless you know them.

Alberto T.
Albuquerque, NM
Avoid moving the victim to prevent further pain or injury. Only move the victim if he or she is in danger, such as in the path of traffic.

Cardiopulmonary resuscitation (CPR) may be necessary if the victim is unconscious and unresponsive. This lifesaving technique is described in Lesson 6 of this chapter.

**Reading Check** Explain What are some signs of an emergency?

**Lesson 4 Review**

**After You Read**

*Review this lesson for new terms, major headings, and Reading Checks.*

**What I Learned**

1. **Vocabulary** Define *first aid*. Use the term in a sentence.

2. **Recall** Name four universal precautions to take when administering first aid.

3. **List** Give two examples of ways you can help an injured person until professional help arrives.

**Thinking Critically**

4. **Analyze** Why is it important to know basic first-aid strategies?

5. **Apply** If you come upon an injured person on a hiking trail, should you try to move the person off the trail? Why or why not?

**Applying Health Skills**

6. **Accessing Information** Investigate how to report emergency or dangerous situations to appropriate authorities in your area. Prepare a report of your findings. Keep this information with your emergency phone list at home.
Common Emergencies

Common emergencies include insect and animal bites, burns, poisoning, foreign objects in the eye, nosebleeds, and fainting. Others include heat cramps and heatstroke as well as sprains, bruises, and broken bones. In this chapter you will learn how to treat these minor conditions and recognize more serious conditions that need professional medical assistance.

Treating a sprained ankle can include elevating it above the level of the heart. How does this help the injury?
Sprains

A sprain is a condition in which the ligaments that hold the joints in position are stretched or torn. The most commonly sprained joints are ankles and knees. Symptoms of sprains include swelling and bruising. While a doctor should evaluate serious sprains, minor sprains can be treated using the P.R.I.C.E. method:

- Protect the injured part by keeping it still. Moving it could cause further injury.
- Rest the affected joint for 24 to 48 hours.
- Ice the injured part to reduce swelling and pain. A cloth between the skin and ice bag will reduce discomfort.
- Compress the injured area by wrapping it in an elastic bandage.
- Elevate the injured part above the level of the heart to reduce swelling.

Broken Bones

A fracture is a break in the bone. An open fracture is a complete break with one or both sides of the bone piercing the skin. A closed fracture does not break the skin and may be difficult to identify. Pain, swelling and a misshapen appearance are typical symptoms of a closed fracture. However, not all broken bones cause immediate pain. An X ray is the only way to be sure if a bone is broken.

Insect and Animal Bites

Insect bites and stings can be serious for people with certain allergies. Call for help if a person shows signs of an allergic reaction, like difficulty breathing, nausea, or confusion.

To treat insect bites and stings, wash the area with soap and water. Remove an insect’s stinger by scraping it off with a firm, straight-edged object. Apply ice or a cold pack to the site for ten minutes to reduce pain and swelling. Alternate ten minutes on and ten minutes off.

For minor animal bites, wash the bite with soap and water and apply pressure to stop the bleeding. Apply antibiotic ointment and a sterile bandage.

Burns

First-aid techniques for treating burns vary depending on the location and the severity of the burn. Third-degree and some second-degree burns are very serious and require immediate medical help. Figure 20.5 on the next page explains how to recognize and treat three classifications of burns.
Three Degrees of Burns

Treatment for burns depends on the severity of the burn. Which type of burns require immediate medical help?

<table>
<thead>
<tr>
<th>Type of Burn</th>
<th>Description</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First-Degree</strong> (superficial burn)</td>
<td>Affects only the outer layer of the skin. The skin is usually red, but the outer layer has not been burned through. There may be swelling and pain.</td>
<td>Flush the burned area with cold water for at least 20 minutes. Do not use ice. Loosely wrap the burn with a sterile bandage.</td>
</tr>
<tr>
<td><strong>Second-Degree</strong> (partial-thickness burn)</td>
<td>Burns through the first layer of skin and burns the second layer of skin. Blisters develop, and the skin looks red and splotchy. Usually there is severe pain and swelling.</td>
<td>A burn no longer than 2 to 3 inches in diameter can be treated as a first-degree burn. If the burn is larger, or is on the hands, feet, face, groin, buttocks, or a major joint, get medical help immediately.</td>
</tr>
<tr>
<td><strong>Third-Degree</strong> (full-thickness burn)</td>
<td>Involves all layers of skin and may affect fat, muscle, and bone. The burned area may be charred black or appear dry and white. There may be little or no pain felt at this stage. If the burn is deeper than the skin, then it is called fourth degree.</td>
<td>Call for medical help. While you are waiting, treat the victim for shock as described in Lesson 6. Do not remove burned clothing. Apply cold water to the burn, then cover with a sterile bandage or clean cloth. Keep the victim still and help him or her to sip fluids.</td>
</tr>
</tbody>
</table>

Poisoning

A poison is a substance that causes harm when swallowed, inhaled, absorbed by the skin, or injected into the body. Medicines and household products play a role in about half of all poisonings. All poisonings require immediate treatment. In the event of a poisoning, call the nearest poison control center, a 24-hour hot line providing medical information about treating poisoning victims. Be ready to provide information about the victim and the suspected poison. The poison control center will advise you about how to proceed. The victim might need to drink water or milk to dilute the poison, or a dose of syrup of ipecac, a medication that causes vomiting.

If a poisonous chemical such as a pesticide or household cleaning agent has made contact with someone’s skin, first remove all clothing that has touched the chemical and rinse the skin with water for 15 minutes. Then wash gently with soap and water. Call the poison control center while the skin is being washed.
Foreign Object in the Eye

Do not rub your eye if there is a foreign object in it. Use clean water to flush the object out. Hold the rim of a small, clean glass filled with water against the base of your eye socket. Gently pour the water into the open eye. Repeat the process until the object washes out, or get assistance if you cannot clear your eye.

If someone else has a foreign object in the eye, locate the object by gently pulling the lower lid downward while the person looks up and then holding the upper lid open while the person looks down. If it is floating on the surface of the eye, lightly touch the object with a moistened cotton swab or corner of a clean cloth. Call for medical assistance if you cannot remove the object.

Nosebleed

An injury or even a cold can cause a nosebleed. It can also be caused by being in a very dry place. To stop a nosebleed, pinch the nostrils shut with the thumb and index finger and breathe through your mouth for 5 to 10 minutes. If the bleeding is heavy and it continues for more than 15 minutes, get medical help.

Fainting

Fainting is a brief loss of consciousness that occurs when the blood supply to the brain is cut off for a short amount of time. If you feel faint you should lie or sit down, placing your head between your knees. If someone else faints, here’s how to help:

- Leave the person lying down and check the airway. Raise the legs above the level of the head if the person is breathing.
- Loosen any tight clothing.
- Call for help if the person does not regain consciousness in a minute or so. Call for help and start CPR if the person is not breathing. CPR is discussed in Lesson 6.
- Losing consciousness as a result of a head injury is not fainting. If this occurs, call for help immediately. Begin CPR if the person is not breathing.
Heat-Related Illnesses

Heat cramps, heat exhaustion and heatstroke are heat-related illnesses. **Heat cramps** are **painful, involuntary muscle spasms that usually occur during strenuous exercise in hot weather.** Resting, cooling down, and drinking water or a sports drink containing electrolytes should help to relieve heat cramps. Gentle stretching exercises and massage also may help.

**Heat exhaustion** is **characterized by faintness, nausea, rapid heartbeat and hot, red, dry, or sweaty skin.** Anyone with these symptoms needs to lie down in a shady or air-conditioned place and elevate his or her feet. Loosen the victim's clothing and offer cold, but not iced, water to drink. Fan the person while spraying them with cool water. Watch the victim carefully. Heat exhaustion can quickly become heatstroke, the most serious of heat illnesses.

**Heatstroke** is **the most serious form of heat illness.** A heatstroke occurs because the body has stopped sweating. Sweating is the body's way of releasing heat. Heatstroke can be life-threatening. The primary symptoms are a significant increase in body temperature—generally higher than 104° F—and rapid heartbeat and shallow breathing. Call immediately for medical assistance while treating the victim for heat exhaustion as described above.

**Explain** How do you treat a person with heat exhaustion?

Lesson 5 Review

Review this lesson for new terms, major headings, and Reading Checks.

**What I Learned**

1. **Vocabulary** Define sprain and fracture. Use both terms in a sentence that demonstrates their meanings.

2. **Name** What are the different types of common emergencies?

3. **List** Name two symptoms of heatstroke.

**Thinking Critically**

4. **Compare and Contrast** How does the treatment for insect bites differ from that for animal bites?

5. **Analyze** How would you respond to this accidental injury: a burn on the elbow of about 1½ inches in diameter that has burned through the first and second layer of skin.

**Applying Health Skills**

6. **Practicing Healthy Behaviors** With a partner, write a scenario for dealing with a common emergency. Demonstrate strategies for responding to accidental injury by acting out your scenario for the class.
Lesson 6: Life-Threatening Emergencies

When Emergency Strikes

Unless the proper treatment is given, a person may have only minutes to live in a life-threatening emergency. You could help save someone's life if you stay calm, call for help, and provide appropriate first aid.

Choking

Choking kills more than 3,000 people every year in the United States. When a piece of food or some other object blocks a person's airway, oxygen cannot reach the lungs. If a person is clutching his or her throat, that is the universal sign for choking. Other symptoms include gasping or wheezing, a reddish-purple coloration, bulging eyes, and an inability to speak. If a person can speak or cough, it is not a choking emergency.

This teen is demonstrating the universal sign for choking—grabbing the throat with thumbs and fingers extended. How would you respond to someone showing this sign?
A choking person could die if the object is not removed quickly. If an adult or child is choking, give the person five blows to the back. To perform back blows, stand slightly behind the person who is choking. Place one of your arms diagonally across the person’s chest and lean him or her forward. Strike the person between the shoulder blades five times. If this does not dislodge the object, give five abdominal thrusts. The abdominal thrusts maneuver involves quick upward pulls into the diaphragm to force out an obstruction blocking the airway. The proper technique for performing abdominal thrusts is shown in Figure 20.6.

If you are alone and choking, there are two ways to give yourself an abdominal thrust. First, make a fist and position it slightly above your navel. With your other hand, grasp your fist and thrust inward and upward into your abdomen until the object dislodges. Another technique is to lean over the back of a chair, or any firm object, pressing your abdomen into it.

**FIGURE 20.6**

**FIRST AID FOR A CHOKING ADULT OR CHILD**

Before you perform abdominal thrusts, ask the person if he or she is choking. How can asking this question help you determine if a person is choking?

Stand behind the person who is choking. Wrap your arms around the person’s waist and tip the person slightly forward. Make a fist. Place the fist just above the person’s navel but below the breastbone. Position the fist so the thumb side is against the victim’s abdomen. Grab your fist with your other hand.

Quickly, thrust inward and upward. The motion is similar to one you would use if you were trying to lift the person off the ground. Perform five back blows and then five abdominal thrusts. Repeat this cycle until the food or object is dislodged. If the person becomes unresponsive, call for medical help and begin CPR.
Infants who are choking require a different first-aid procedure. If an infant is choking, hold the infant face down along your forearm, using your thigh for support. Give the infant five back blows between the shoulder blades. If this does not dislodge the object, turn the infant over and perform five chest thrusts with your fingers. Chest thrusts are quick presses into the middle of the breastbone to force an object out of the airway. Figure 20.7 shows the steps to use to provide first aid to an infant who is choking.

Recall What are some signs that a person may be choking?

Severe Bleeding

Severe bleeding can be a life-threatening emergency because the organs and tissues in the body are not getting enough blood or oxygen to function properly. When providing first aid to a person who is bleeding severely, follow universal precautions. Avoid touching the victim’s blood or wear gloves, if possible. Always wash your hands when you are finished. Call 911 or other local emergency number before beginning first aid. Then begin by washing the wound with mild soap and water to remove dirt and debris. Use the following steps to help control the bleeding:

• Raise the wounded body part above the level of the heart, if possible.
• Cover the wound with sterile gauze or a clean cloth. Press the palm of your hand firmly against the gauze and apply continuous pressure for five minutes, or until help arrives.
• If blood soaks through the gauze or cloth, do not remove it. Add another cloth or gauze pad on top of the first and continue to apply pressure.
• Once the bleeding slows down or stops, secure the pad or cloth with a bandage or other material. The pad should be snug, but not too tight.
• Stay with the person until help arrives.

Explain What universal precautions should you take when providing first aid to a person who is bleeding severely?

Follow these steps to help an infant who is choking. How many back blows and chest thrusts should you perform?

1 For infants
   Hold the infant facedown on your forearm. Support the child’s head and neck with your hand. Point the head downward so that it is lower than the chest. With the heel of your free hand, give the child five blows between the shoulder blades. If the child doesn’t cough up the object, move on to chest thrusts (step 2).

2 Turn the infant over onto his or her back. Support the head with one hand. With two or three fingers, press into the middle of the child’s breastbone—directly between and just below the nipples—five times. Repeat chest thrusts until the object comes out or the infant begins to breathe, cry, or cough. Make sure a health care professional checks the infant. If the infant becomes unconscious, call 911.
CPR

Imagine being in an emergency situation when someone loses consciousness. The person does not respond when gently shaken and when asked, “Are you okay?” If this happens, a trained person should begin administering **cardiopulmonary resuscitation (CPR)**—a first aid procedure that combines rescue breathing with chest compressions to restore breathing and circulation. The process for combining rescue breaths with chest compressions is illustrated in **Figure 20.8**. For adults and children 12 years and older, alternate two rescue breaths with 30 chest compressions. A first-aid manual will explain the ways in which to administer CPR to younger children and infants.

**FIGURE 20.8**

**THE STEPS OF CPR**

The first steps of CPR involve checking for breathing and rescue breaths. If you have an available breathing mask, follow the directions that come with the mask. **In what type of situation should you use CPR?**

1. Look inside the victim’s mouth. If you see anything blocking the airway, remove it. Lay the person flat on a firm surface. Gently tilt the head back with one hand and lift the chin with the other. If you suspect head or neck injuries, do not move the victim’s head. Open the airway by lifting the jaw instead.

2. Look, listen, and feel to find out if the victim is breathing. Look for chest movement. Listen at the victim’s mouth for breathing sounds. Feel for exhaled air on your cheek. If the victim is not breathing, begin rescue breathing. Pinch the person’s nostrils shut, take a normal breath and place your mouth over the victim’s, forming a seal. Give two breaths, each about one second long. The victim’s chest should rise and fall with each breath.

3. Begin chest compressions. Kneel next to the victim’s chest and place one hand on the center of the chest. Place the other hand on top of the first hand and interlock your fingers. Press straight down quickly and firmly at a rate of about 100 compressions per minute. Allow the victim’s chest to spring back between compressions. After every 30 compressions, give two rescue breaths.
Shock

Shock is a life threatening condition in which the circulatory system fails to deliver enough blood to vital tissues and organs. Injury, burns, and severe infection can cause a person to go into shock, as can heat, poisoning, blood loss and heart attack. Always look for the signs of shock when providing first aid because it can result from a medical emergency.

Signs to watch for include cool, clammy, pale or gray skin; weak and rapid pulse; and slow, shallow breathing. The eyes may have a dull look with the pupils dilated. The victim, if conscious, may feel faint, weak, confused, and anxious.

If you think someone is in shock or about to go into shock, call for medical help and take these precautions:

- Help the person to lie down quietly on his or her back with feet raised slightly higher than the head. Try to keep the person as still as possible.
- Loosen tight clothing.
- Use a blanket, coat or any available cover to help keep the person warm.
- Do not give the person anything to drink.
- Roll the person onto his or her side to help prevent choking in the event of vomiting or bleeding from the mouth.

Lesson 6 Review

Review this lesson for new terms, major headings, and Reading Checks.

What I Learned

1. **Vocabulary** Define shock. Use the term in a sentence.

2. **Recall** What is the universal sign for choking? What is the first thing you should do if an adult is choking?

3. **List** Name two symptoms of shock.

Thinking Critically

4. **Compare and Contrast** How does the treatment for choking for adults differ from the treatment for infants?

5. **Apply** A friend has fallen while hiking. His leg is bleeding severely. You have brought a first-aid kit with you. What will you do?

Applying Health Skills

6. **Advocacy** Research where CPR is taught in your community. Develop a flyer encouraging teens to complete a CPR training class. Include information on the cost, location, requirements, and certifications issued after completion of the course.
Why Is it Important to Practice Healthful Behaviors?

When you practice healthful behaviors you take specific actions to stay healthy and avoid risky behaviors. This will help you prevent injury, illness, disease, and other health problems. The following behaviors will help you practice fire safety at home.

- Change smoke alarm batteries twice a year. Check smoke alarms regularly to make sure they are working properly.
- Make sure all kitchen appliances are in good working order.

Complete a House Inspection

1 Model

Read how Aaron practices healthful behaviors to protect his home against potential fire hazards.

Many fires in the home can be prevented. One effective way to keep your family safe is to regularly inspect your home for possible fire dangers.

Aaron decided to complete a home inspection for fire dangers after a fire-fighter came to his school and spoke about the importance of fire prevention. As Aaron went through each room in his home, he made notes of possible fire hazards. Some risks, like piles of old newspapers, needed to be removed. Others, like an appliance with a frayed cord, needed to be repaired. Aaron showed the list to his parents. The family made a plan to address each fire hazard Aaron identified.
Practice healthful behaviors by reading the paragraph below and answering the questions that follow.

Below is a list of possible hazards to check for in your home. Use the list to create a Home Inspection Check-Off List that you can use to inspect your home for potential fire hazards.

- Are all kitchen appliances in good working order?
- Is the stove clean?
- Are all electrical wires and outlets working properly?
- Have you thrown out all piles of newspapers or other materials that burn easily?
- Are all flammable objects at least 3 feet away from portable heaters?
- Is there a smoke alarm on each level of your home?
- Does each smoke alarm have working batteries?
- Are matches and cigarette lighters stored out of reach of young children?

Apply what you have learned about safety by completing the activity below.

Using the Home Inspection Check-Off List you created, complete an inspection of your home. Write down any items on the list that indicate a possible fire danger. Then write down what steps you can take to eliminate each possible fire danger. Be prepared to share your findings with the class.

Self-Check

- Did I identify any possible fire dangers in my home?
- Did I list the steps I need to take to eliminate each possible danger?
A Home Emergency Kit

Weather emergencies and natural disasters are situations that no one can prevent. You can, however, be prepared. Creating a home emergency kit for your family can help keep you safe and secure until the emergency is over.

What You Will Need

- one piece of poster board
- marker
- paper
- pencil or pen

What You Will Do

1. Working in a small group, brainstorm all of the supplies you would include in a home emergency kit. Your kit should include enough items to last for three days.

2. Have one member of the group write all the items on the poster board.

3. Discuss why you feel certain items should or should not be included.

4. Make your list final. Then, compare your list with other groups in the class. Are your lists similar? How are they different?

Wrapping It Up

Write down the final list on a piece of paper. At home, discuss creating a home emergency kit with your family using the list you created.
Lesson 1  Safety in the Home and at School

Main Idea Developing safe habits at home and at school can help you prevent accidental injuries.
- Accident chains include a situation, an unsafe habit, an unsafe action, and the resulting injury.

Lesson 2  Safety on the Road and Outdoors

Main Idea Following safety rules can help you prevent injury on the road and outdoors.
- Always wear a helmet when riding a bike or using skates, a skateboard, or a scooter.
- Two important behaviors to keep you safe during outdoor activities are being prepared and using the buddy system.

Lesson 3  Safety in Weather Emergencies

Main Idea Being prepared will help you stay safe during weather emergencies or natural disasters.
- Weather emergencies and natural disasters include tornadoes, hurricanes, floods, blizzards, and earthquakes.

Lesson 4  Basic First Aid

Main Idea Knowing how to administer basic first aid can save a person’s life in an emergency.
- There are four steps to take for most emergencies: recognize the signs, take action, call for help, and provide care until help arrives.
- Following universal precautions involves taking action to minimize contact with another person’s blood.

Lesson 5  First Aid for Common Emergencies

Main Idea Common emergencies include insect and animal bites, burns, poisoning, nosebleed, fainting, heat-related illnesses, sprains, bruises, and broken bones.
- Sprains require the P.R.I.C.E. method to treat them: Protect, Rest, Ice, Compress, and Elevate.

Lesson 6  Life-Threatening Emergencies

Main Idea During a life-threatening emergency, staying calm, calling for help, and providing first aid can save a person’s life.
- Life-threatening emergencies include choking, severe bleeding, loss of consciousness, and shock.
- The process for administering CPR to adults and children 12 years and older involves alternating two rescue breaths with 30 chest compressions.
Reviewing Vocabulary and Main Ideas

On a sheet of paper, write the numbers 1–6. After each number, write the term from the list that best completes each sentence.

- poisonings
- blizzards
- helmet
- accident
- defensive driving
- earthquake

Lesson 1 Safety in the Home and at School

1. A(n) ________ is any event that was not intended to happen.
2. Cleaning products and medicines are the most common causes of ________ among children.

Lesson 2 Safety on the Road and Outdoors

3. ________ involves watching out for other people on the road and anticipating unsafe acts.
4. Cyclists can reduce the risk of head injury by wearing a(n) _________.

Lesson 3 Safety in Weather Emergencies

5. If you are indoors when a(n) ________ starts, crouch under sturdy furniture.
6. People can easily become disoriented and lost during _________.

Lesson 4 Basic First Aid

7. Universal precautions are steps taken to prevent disease by treating all blood as if it was contaminated.
8. ________ Taking action is your first step in any emergency situation.

Lesson 5 First Aid for Common Emergencies

9. A sprain is an invisible break in a bone.
10. A marked increase in body temperature is a main symptom of heat exhaustion.

Lesson 6 Life-Threatening Emergencies

11. The abdominal thrusts maneuver is used to help a victim of shock.
12. Gasping is the universal sign for choking.

Visit glencoe.com and take the Online Quiz for Chapter 20.
Thinking Critically

Using complete sentences, answer the following questions on a sheet of paper.

13. Evaluate How would you assess whether a victim needed CPR?

14. Analyze How does an understanding of accident chains help prevent injuries?

Write About It

15. Narrative Writing Write a short story about a teen involved in a situation that leads to an accident. Describe the situation and the events that make up the accident chain. Then, write an alternate ending describing how the teen used strategies to prevent the accident from happening.

Reading and Writing

Read the passage and then answer the questions.

A severe lightning storm hit Baltimore yesterday evening, causing a power outage in the northern section of town. One bolt struck a tree branch that fell and injured a Mini Mart employee. The lightning struck when the Mart was crowded with customers. Power was out for more than two hours after the storm.

When the lightning hit, Mini Mart owner Mike Wojer told customers and employees to stay inside and away from the doors and windows. He turned off the lights and appliances and asked customers to not make any phone calls.

“Thankfully, no one in the store was injured by lightning,” said Wojer.

The injured employee, however, was outside the store when lightning struck. He was hit by a tree branch that had been struck by lighting, witnesses said. Thankfully, he is now in good condition at the hospital.

1. What is this news article about?
   A. The events of lightning striking near a store
   B. The store owner’s bravery
   C. The damage lightning can cause
   D. The injuries caused by lightning

2. A reader can conclude that
   A. lightning is not dangerous.
   B. it’s safer to be indoors when lightning strikes.
   C. lightning strikes only trees.
   D. all thunderstorms have lightning.