CHAPTER 11
Workplace Health and Safety

Section 11.1
Becoming a Healthy Worker

Section 11.2
Safety and Wellness on the Job

Exploring the Photo

PROTECTING WORKERS The federal government requires many industries to put certain safety measures into practice. What workplace safety measures can you name?
Chapter Objectives

After completing this chapter, you will be able to:

- Explain the relationship between good health and career success.
- Describe how a nutritious diet and good sleep hygiene contribute to health.
- Identify the causes of stress and ways to manage stress.
- Describe rules and procedures for maintaining a safe workplace.
- Summarize the role of the employer and the employee in protecting the environment.
- Explain how to respond effectively to workplace emergencies.

Writing Activity

How healthy are you? Write a half-page journal entry describing your physical and mental health. Reread your journal entry after you have studied this chapter. Write a second journal entry explaining some new things you could do to improve your health.

Get Motivated! Choose a career that interests you in your area. Talk to an employee in that career about the health issues that workers in that career face. List these, then describe changes that you could make in your health habits to offset any health consequences of the career in a one-page report.
Section 11.1

Becoming a Healthy Worker

Reading Guide

Before You Read

Preview Look at the photo and figure in this section and read their captions. Write one or two sentences predicting what the section will be about.

Read to Learn

- The relationship between good health and career success
- Ways to keep yourself healthy through diet, exercise, and rest
- What causes stress and how to manage stress

Main Idea

Good health is a solid foundation for success in life and in the workplace.

Key Concepts

- Health and Success
- Care for Your Body
- Manage Your Stress

Key Terms

- nutrients
- MyPyramid
- addiction
- sedentary
- sleep hygiene
- depression

Academic Vocabulary

You will find these words in your reading and on your tests. Use the academic vocabulary glossary to look up their definitions if necessary.

- mental
- genes

Graphic Organizer

Create an idea wheel. Draw a small circle in the center of a piece of paper and write the words “To Do for My Health” inside. As you read, add spokes to your wheel that contain specific things you can do for your health.

Follow MyPyramid Guidelines

To Do for My Health

Log On Go to this book’s Online Learning Center through glencoe.com for an online version of this graphic organizer.
Health and Success

Good health means having mental and physical strength and energy. It also means being free of pain and illness. Good health is a solid foundation for life success. Good health is so important to career success that many employers pay a large portion of their employees' medical, dental, and vision care.

Your genes influence your health. Your genes may make you more likely to develop or resist certain illnesses. However, your choices influence your health even more. You can choose to practice good hygiene and to get regular physical and dental checkups. You can also choose to control these three powerful health tools: diet, exercise, and rest.

Eat Wisely and Guard Against Addiction

A healthy diet gives you the energy and stamina you need to succeed in your career. A healthy diet is high in nutrients, the substances in food that the body needs to produce energy and stay healthy.

Check for the nutrients you need in Figure 11.1. This figure shows MyPyramid, a guideline created by the U.S. Department of Health and Human Services to show us the nutrients and other things we

**Figure 11.1 MyPyramid**

<table>
<thead>
<tr>
<th>Food Groups</th>
<th>Female 14-17 years</th>
<th>Male 14 years</th>
<th>Male 15 years</th>
<th>Male 16-17 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains</td>
<td>5 ounces</td>
<td>8 ounces</td>
<td>8 ounces</td>
<td>10 ounces</td>
</tr>
<tr>
<td>Vegetables</td>
<td>2.5 cups</td>
<td>3 cups</td>
<td>3.5 cups</td>
<td>3.5 cups</td>
</tr>
<tr>
<td>Fruits</td>
<td>2 cups</td>
<td>2 cups</td>
<td>2 cups</td>
<td>2.5 cups</td>
</tr>
<tr>
<td>Milk</td>
<td>3 cups</td>
<td>3 cups</td>
<td>3 cups</td>
<td>3 cups</td>
</tr>
<tr>
<td>Meat &amp; beans</td>
<td>5.5 ounces</td>
<td>6.5 ounces</td>
<td>6.5 ounces</td>
<td>7 ounces</td>
</tr>
</tbody>
</table>

Source: USDA

**STAYING HEALTHY**

The portion amounts shown here are those recommended for 14- to 17-year-olds who exercise 30 to 60 minutes a day. Why is exercise included in MyPyramid guidelines?
need for good health. MyPyramid also shows foods that we should consume in moderation. Nutrients include carbohydrates, sugars, fats, vitamins, minerals, and fiber, as well as adequate water. A healthy diet is high in vitamins, minerals, and fiber and low in fat, sugar, and salt. Getting enough nutrients boosts your energy, helps prevent disease, and improves your appearance and job performance. Because each person has slightly different needs, the recommendations differ according to a person's age, gender, and activity level. Are you meeting your nutritional needs?

**Plan Your Diet**

The quality of your diet depends on both internal and external factors. Internal factors include knowledge, planning, and effort. External factors include the price and availability of healthy food in your home and community.

Eating well takes commitment. Shop where you can get healthy food, and plan your meals ahead of time so that you will not be tempted by low-nutrient convenience foods. Learn to read nutrition labels and always check them before you buy food. Eat moderate portions and choose foods low in salt, sugar, and fat. Eat a wide variety of foods. Check the foods you eat each day against MyPyramid to make sure you are getting all the nutrients you need.

**Guard Against Addiction**

Another important part of nourishing yourself is avoiding substances that can cause addiction. Addiction is a physical or psychological need for a substance. Both legal and illegal drugs can be addictive. Addiction can lead to physical and mental health problems, including depression, heart disease, liver disease, and even death.

Addiction does not have to be severe or illegal to cause problems. For example, many people rely on the caffeine in coffee to stay alert at work. The caffeine causes trouble sleeping, so they wake up tired and have to drink more coffee the next day in order to be alert.

At work, addiction can cause injuries, absenteeism, and poor productivity at work. Many companies have established drug-testing programs to detect illegal drug use. Some companies might test you when you apply for a job; others have a policy of testing employees periodically. Companies are not likely to hire job applicants who test positive for drugs. Employees who test positive for drugs may lose their jobs or be referred to counseling and treatment.

**Reading Check**

**SUMMARIZE** How can you make sure you are eating a healthy diet?
Care for Your Body

You can care for your body with exercise and sleep. Exercise takes energy, but it also gives back energy. Exercise helps you build strength and endurance, feel mentally alert, and be more productive. It increases your lifespan, and reduces tension and anxiety. Exercise is particularly important if you have a sedentary job. Sedentary means requiring much sitting or not physically active.

You only need to exercise 30 to 60 minutes a day to get in good shape. Choose any form of exercise: dancing, basketball, yoga, or walking. Try to combine exercise that gets your heart pumping with exercise that builds flexibility and muscle strength.

Recharge Yourself with Sleep

Sleep restores your body and recharges your mind and mood. Almost everyone needs about seven to eight hours of sleep a night. Some people need nine or ten hours.

Many people struggle to find enough time for work, school, home, family, and friends. So they cut back on sleep. Unfortunately, too little sleep can make you irritable and cause difficulty concentrating. It can make you more likely to get sick or cause an accident. Everything seems harder when you do not sleep enough.

Practice Sleep Hygiene

Sleep hygiene is the practice of following good sleep habits to sleep soundly and be alert during the day. To get a good night’s sleep, try to go to bed about the same time every night and get up at the same time each day, even on weekends. Try to avoid caffeine-rich foods and drinks, such as chocolate and caffeinated sodas, after noon. Make your bedroom as dark and quiet as possible. Create some quiet time before bed to relax with something calming, such as reading. Making a to-do list for the next day helps many people relax, because then they do not worry about what they have to do.

Reading Check DESCRIBE How do exercise and sleep help you succeed in your career?

KEEP MOVING

Exercising 30 to 60 minutes a day will help to keep you healthy and fit. How can exercise make you a better worker?
Manage Your Stress

To feel well, you need to pay attention to your mental health as well as your physical health. Learning to manage stress helps you stay mentally healthy. Stress is a natural reaction to conflict. During stress, your heart rate and breathing accelerate, your muscles tighten, and your blood pressure climbs. In the short term, these effects can be positive because they help you focus more clearly and act more decisively. When the challenge is over, your body returns to normal.

Stress becomes negative when your body does not return to normal but stays in an unnecessary state of alertness. This can cause irritability, sleeplessness, chest pain, and headaches. Severe stress can even lead to heart disease, cancer, and depression. Depression is severe, ongoing sadness and hopelessness that makes it difficult to go about your daily life. About ten percent of the American population suffers from some form of depression each year.

An estimated one million workers are absent on an average workday due to stress-related complaints. Stress on the job is estimated to cost U.S. industry $300 billion per year in accidents, absenteeism, and diminished productivity.

Beware of Burnout and Depression

When stress goes on for weeks and months, it can cause burnout—a state of feeling exhausted, powerless, resentful, and no longer interested in your work.

Creative Business Practices

NORTHWESTERN MUTUAL

Promoting Good Health

Northwestern Mutual Life Insurance Company encourages employees to make healthy lifestyle choices. The company’s commitment to employee health started more than 20 years ago, when it began paying employees’ health club memberships. Today, the company headquarters in Milwaukee has its own fitness center, complete with exercise machines and weight-training equipment. Almost half of the 4,400 home-office employees work in Milwaukee. Other employees exercise at outside gyms, where memberships are paid for by the company.

Northwestern Mutual regularly offers their employees medical tests to evaluate health, such as tests for high blood pressure. The company also provides programs to help employees lose weight and reduce stress.

CRITICAL THINKING  How do you think a healthy worker benefits an employer?

Connect to the Real World  To read more about Northwestern Mutual, visit the company’s Web site via the link on this book’s Online Learning Center through glencoe.com.
To avoid burnout, you need to take care of yourself mentally and physically. Give yourself good nutrition, regular exercise, and enough sleep. If you notice any symptoms of depression, such as severe sadness or anxiety, see your doctor right away.

**Tackle Your Stress**

The best way to deal with stress is to identify what causes stress for you and then deal with the causes directly. Overwork and unclear instructions can often cause stress at work. Asking your supervisor to clarify and prioritize your tasks is a good first step. If the problem is a personal conflict, you may consider talking to the person directly to try to work out a solution. Most employers have human resources workers or even counselors who can help you solve a workplace problem.

Here are three widely used stress-management techniques:

- **Deep Breathing**  Focusing on your breath has a calming effect.
  Breathe in and out slowly, both to a count of ten.

- **Visualization**  Close your eyes and picture yourself in a calm place—for example, resting on a beach or under a tree.

- **Taking a Time-Out**  Get away from a pressure-packed situation for a few minutes—for example, take a walk outside. When you return, you may see solutions you did not see before.

Reducing stress helps you be more productive, feel more satisfied with your job, and enjoy greater well-being. Handling stress is also a leadership skill. Only people who can manage themselves can lead others effectively.

---

**Section 11.1 After You Read**

**Review Key Concepts**

1. Explain how being healthy can help you succeed in your career.
2. Name three things you can do to keep yourself healthy.
3. Theo is generally a good worker, but whenever he is assigned to work with Sheila, who is extremely critical, he becomes so stressed that he makes a mistake. Identify two strategies that might help Theo cope with this situation.

**Practice Academic Skills**

**English Language Arts**

4. Your supervisor, Sue, is in charge of instructing you how to do your work. Unfortunately, she often changes her mind and forgets to tell you. This causes stress, because you have to work overtime to redo your work. Prepare for a meeting with Sue by writing a script that describes the current situation and explains how it is affecting your work, giving specific examples. Include suggestions for improving the situation and explain how your suggestions will improve the quality of your work.

Check your answers at this book’s OLC through glencoe.com.

---

Science In Action

**Modes**

A wildlife biologist measures the top speed of 8 cheetahs and comes up with the following data set in terms of kilometers per hour: 160, 65, 70, 65, 58, 65, 50, 65. What is the mode of this data set?

**Starting Hint:** A mode is the number in a set of data that shows up the most often.

For more science practice, go to this book’s OLC through glencoe.com.
Section 11.2
Safety and Wellness on the Job

Reading Guide

Before You Read
Preview: Choose a Key Term or Academic Vocabulary word that is new to you. Write it on a piece of paper. When you find it in the text, write down the definition.

Read to Learn
• Rules and procedures for maintaining a safe workplace
• The role of the employer and the employee in protecting the environment
• How to respond effectively to workplace emergencies

Main Idea
Being aware of rules and procedures that promote workplace safety helps you protect yourself and your coworkers.

Key Concepts
• Workplace Safety
• Ergonomics Makes Work Safer
• Protect the Environment
• Prepare for Emergencies

Key Terms
• Occupational Safety and Health Administration (OSHA)
• workers' compensation
• ergonomics
• musculoskeletal disorders (MSDs)
• Environmental Protection Agency (EPA)
• emergency action plan
• first aid

Academic Vocabulary
You will find these words in your reading and on your tests. Use the academic vocabulary glossary to look up their definitions if necessary.
• reviling
• violate

Graphic Organizer
As you read, create a list of actions you can take at work to prevent accidents or emergencies. Use a two-column chart like the one shown to help organize your information.

<table>
<thead>
<tr>
<th>I can...</th>
<th>To prevent...</th>
</tr>
</thead>
</table>

Academic Standards

English Language Arts
• Read texts to acquire new information. (NCTE 1)
• Conduct research and gather, evaluate, and synthesize data to communicate discoveries. (NCTE 7)

Mathematics
• Understand meanings of operations and how they relate to one another

Science
• Life Science: Regulation and behavior
Workplace Safety

Learning about workplace safety and maintaining good working conditions helps you avoid injuries at work. Working conditions include the place you work, the tasks you do, and the hours you work.

Cooperate to Improve Workplace Safety

Workplace accidents cost businesses billions of dollars annually in lost wages, medical expenses, and insurance claims. Government, employers, and workers all cooperate to develop rules and procedures that make workplaces safer.

The Government’s Role

The federal government protects American workers by setting workplace safety standards and by making sure that injured workers receive care. The Occupational Safety and Health Administration (OSHA) is the branch of the U.S. Department of Labor that sets and enforces job safety standards and inspects job sites. If a company fails to meet OSHA standards, it can face fines and other penalties. Workers can also file a complaint with OSHA if they cannot resolve a safety problem at work. OSHA keeps pace with the world of work by revising standards when work conditions change or new technologies are developed.

The government also makes sure that workers are compensated, or paid, if they have experienced a workplace or work-related illness or injury that prevents them from working. Workers’ compensation is an insurance program that provides financial help to cover lost wages and medical expenses for employees who are injured on the job.

WORKPLACE SAFETY

Employers must comply with government safety regulations. What is this worker doing to ensure her own safety?
The Employer’s Role

Your employer must make sure your workplace is safe. All employers must:

- Provide a workplace free from known health and accident hazards.
- Provide safety education and training, and communicate safety policies and procedures to workers.
- Provide all necessary personal protective equipment, such as helmets and gloves, and teach employees how to use it.
- Inform employees when materials or conditions are hazardous, and post labels or signs to warn employees of potential hazards.
- Keep records of job-related illnesses and injuries.

Your Role

Most accidents and injuries happen through carelessness and occur because of human error. For example, a small puddle of water on the floor could cause a fall. Be alert at all times, and follow all of the safety procedures that your employer has explained to you. As a worker, you also must:

- Learn to perform your job safely, and follow all safety instructions.
- Know how to operate, maintain, and troubleshoot tools and equipment safely.
- Wear your personal protective equipment correctly and report any problems with it.
- Report unsafe conditions or practices immediately.
- Read all safety labels and signs, and ask your supervisor if you have any questions or concerns about safety.

If your workplace is not safe, tell your supervisor right away. If your employer does not fix the problem, you have the right to report the problem to OSHA. It is illegal for your employer to take action against you for complaining about a safety issue.

Reading Check

Compare: How does the government’s role in workers’ safety differ from the employer’s role in workers’ safety?

Ergonomics Makes Work Safer

Ergonomics is the science of designing the workplace to fit the worker. Ergonomic work equipment lets you adjust your workstation and your work movements to your size, your height, and your natural way of moving. Ergonomic equipment also shields you from vibrations and uncomfortable motions, such as twisting and pushing, that can cause injury.
Ergonomics are helpful in the prevention of both workplace accidents and musculoskeletal disorders (MSDs), which are ailments of the muscles, joints, nerves, tendons, ligaments, or spinal discs caused by forceful or repeated motions. MSDs can cause aching, tingling, numbness, or stiffness in the affected area. MSDs often develop slowly. For example, you could develop tendonitis if your job involves many hours using vibrating hand tools or typing at a computer keyboard. Musculoskeletal disorders are often called repetitive stress injuries (RSIs) because they often occur when you repeat the same motion again and again.

**Prevent and Treat MSDs**

You can minimize your chances of developing MSDs by taking these precautions at work:

- Learn how to use all your work equipment safely to prevent injuries.
- Take frequent short breaks to stretch and walk around.
- Try to maintain a comfortable temperature ideally between 68° and 72° Fahrenheit, to prevent cramping and stiffness.
- Arrange your workspace so that the tools you use frequently are within easy reach.
- When you work, hold your wrists and neck straight, rather than awkwardly bent or placed.
- If you work at a computer, arrange your monitor at arm’s length. Protect your eyes by using a non-glare filter and by tilting the screen so it does not reflect light.

If you experience numbness, swelling, redness, or loss of color, or loss of strength or mobility, you may be developing an MSD. Get medical help right away. Conditions may worsen if you ignore the problem and can cause permanent damage to your health. Use a wet ice pack at 34° Fahrenheit or above to reduce the swelling. Your doctor may prescribe rest, stretching, and anti-inflammatory medications to help you recover.

EVALUATE Why would someone who works at a computer be at risk for an MSD?
**The 21st Century Workplace**

A Greener Workplace

Today’s businesses realize that using recycled products, encouraging ride shares, and telecommuting are a few easy ways to operate a business that is both profitable and environmentally friendly.

Environmentally-friendly business practices or equipment can actually lower a company’s operating costs. Flat-screen computer monitors give out less heat than traditional ones do, and strategic use of air conditioning and fluorescent lighting can cut costs by conserving energy. Using hybrid vehicles for a business may earn that business certain tax breaks and save on fuel costs.

**CRITICAL THINKING**

What are some benefits of operating a “green” business?

**In Your Community**

Research your local recycling programs. What is done well, and what could be improved? Describe the local programs in a five-minute oral presentation.

[Extend Your Learning] What are some environmental workplace trends? For links to Web sites about green business practices, go to this book’s OLC through glencoe.com.

---

**Protect the Environment**

Employers must also follow laws that protect the environment and workers’ health. For example, they must dispose of hazardous waste according to strict environmental laws. The Environmental Protection Agency (EPA) is the arm of the federal government that enforces environmental laws. If you see any practice that may violate an environmental law, you can contact the EPA for advice.

Many employers go beyond what is required by law and design their own workplace programs to make the workplace healthier. For example, some employers use nontoxic building materials, such as zero-emission paint, to make sure that the air workers breathe is healthy. Some manufacturers design cars, computers, and even tennis shoes that can be recycled or reused for parts when they are no longer useful. This reduces the amount of raw materials the company has to buy. It also cuts down on the amount of waste sent to landfills.

**HOT JOBS!**

**Sustainability Specialist**

A sustainability specialist helps plan and implement processes that lessen the environmental impact of a business. With a background in engineering or environmental management, the specialist considers such factors as water efficiency, energy use, and indoor environmental quality to research and plan sustainability programs.

---

**Do Your Part to Conserve**

What can you do as an employee to protect the environment? Save energy by turning off lights and machines when they are not in use. Know and follow all environmental laws that relate to your work, and let your supervisor know right away if you see a possible violation. Take advantage of any incentives for taking public transportation, or join a ride-share program and carpool to work. Participate in your company’s recycling program—or help get one started. Share your ideas for how to make your company’s workplace and products healthier.

**Reading Check**

**EXPLAIN** How do carpooling and recycling help conserve resources?
Prepare for Emergencies

Your safety and the safety of your coworkers can depend upon your awareness of what to do during an emergency. On your first day of work, learn the location of emergency exits at your workplace and where to assemble once you have reached safety. Give your supervisor and human resources contact the name and phone number of a friend or family member so that they know who to call in an emergency. Sign up for any safety training your company offers.

Have an Emergency Action Plan

An emergency action plan describes what you should do to ensure your safety if a workplace emergency occurs. Most emergency action plans discuss common emergencies such as fires, storms, earthquakes, accidents, and medical crises. Look in the plan to find guidelines for the following:

- How to report a safety hazard, fire, chemical spill, or other emergency.
- Where to find emergency supplies, such as a flashlight and first aid kit.
- Who belongs to the emergency response team and where you fit in.
- What escape route to use in an emergency and where to assemble for safety.
- How to evacuate or get help if you have a disability or work with someone who does.
- Who to call for training or if you have questions.

Most companies with ten or more employees are required to have written emergency action plans. Small companies may not have written emergency plans, so you may need to ask your supervisor or human resources about the plan. Write down all the key points and keep your notes handy.

You can also be prepared for an emergency by assembling your own emergency preparedness kit containing first aid supplies, water and nonperishable food, a flashlight, a battery-powered radio, and any medications you may need if you are unable to leave work.

BE PREPARED You can ensure your safety and the safety of others by learning safety procedures. What are some natural disasters that might occur in your area?
HANDLING STRESS

What is a good way to handle stress?

CUSTOMER SERVICE Lately, a coworker has been rude to other employees and customers at the grocery store where you work. She often leaves early and does not do her share of work. You have been handling the work she leaves behind, and the situation has caused you to have a poor attitude toward your job. When you approach your boss about your coworker’s behavior, he says that she is stressed out from problems at home and that she should get better soon.

What Would You Do? How do you respond to your boss’s reaction to the situation?

DISCUSS IT In teams, discuss ways to maintain a good attitude while working with a difficult coworker.

Prevent and Respond to Common Emergencies

Find out what kinds of emergencies are most likely to occur in your workplace and how to respond to them. For example, do you work in a geographic area that often experiences floods? Do you work with chemicals that might spill? Being aware and prepared could save your life and the lives of your coworkers and customers.

Floods and Storms Be prepared for floods by learning proper evacuation routes and planning where to find higher ground. The safest place to be during a severe storm, such as a hurricane or tornado, is indoors away from windows.

Earthquakes Prevent injury by bracing heavy equipment and storing bulky or breakable objects on lower shelves. If an earthquake happens when you are inside, stay inside. Move away from windows, brace yourself against an interior wall, and protect your head. If you are outdoors, stand in the open, away from trees, utility poles, and buildings.

Fire Help prevent fires by reporting risky conditions such as overloaded outlets or frayed electrical cords. If a fire breaks out at work, alert your coworkers and leave the building right away via a designated escape route. Report the fire according to your company’s emergency management plan—do not fight the flames yourself.

Workplace Violence Violence at work affects more than two million people a year. Help prevent violence by reporting any threats, verbal abuse, intruders, or suspicious behavior right away. Never enter a location if you feel it might be unsafe. If you handle money or work alone or at night, make sure that your workplace is secure.

Hazardous Materials or Chemical Spills If a toxic material spills in your workplace or there is an environmental emergency nearby, alert your coworkers and report the emergency immediately according to your company’s emergency action plan. Do not attempt to clean up the spill unless it is your job to handle hazardous materials.
Master First Aid

Knowing first aid, which is emergency care for an injured person, can save lives at work and at home. If you are present when someone has a medical emergency or an accident, follow these emergency action steps developed by the American Red Cross, Check-Call-Care:

1. **Check** Calmly survey the scene and make sure that it is safe for you to approach. Figure out what has happened and what may happen next. Check the condition of the victim.

2. **Call** Call out for help. Call 911 or the number listed in your company’s emergency action plan. Explain the situation and tell the operator whether the victim has any life-threatening conditions, such as unconsciousness or severe bleeding.

3. **Care** Give basic medical assistance until help arrives. Soothe a burn with cool water, reduce shock by elevating the legs, and control bleeding by covering a wound with a cloth and pressing down firmly. Do not move the victim unless absolutely necessary.

You can be even more prepared for a medical emergency by learning to give rescue breathing and CPR. Businesses or local Red Cross chapters may offer free training.

Section 11.2 After You Read

**Review Key Concepts**

1. Define OSHA and explain how OSHA benefits workers.
2. Identify ways you can help protect the environment at work.
3. Explain what Check-Call-Care means and how it can help you cope in an emergency.

**Practice Academic Skills**

**Mathematics**

4. Two-thirds of an 18-hour safety training program given at your workplace is spent learning about disaster response. How many hours will you spend learning about disaster response?

**UNCP** Multiplying by a Fraction To multiply a whole number by a fraction, multiply the numerator of the fraction by the whole number. Then reduce the fraction if possible, dividing both the new numerator and the denominator by the same number.

**Step 1** Set up the problem by writing a multiplication problem with the total number of hours (18) and the fraction of time spent learning about disaster response (2/3).

**Step 2** Multiply the whole number (18) by the numerator (2). Then divide the numerator and the denominator by three to reduce the fraction to a whole number.

**Math** For math help, go to the Math Appendix located at the back of this book.
Jim Crawford
Toy Designer and Manufacturer

Q: Describe your job.
A: I am the owner of a collectible toy company in San Francisco, California. We produce original toys designed by artists from the worlds of street art and comics. We also distribute new and original design objects and commission exclusive versions of the best toy designs from around the world. Collaborators and partners come from as far away as Japan, England, and Australia.

Q: Describe a typical workday.
A: I arrive at work at 10 a.m. and spend most of my time on the telephone with our toy designers and the stores that carry our toys. In the late afternoon, I generally correspond and talk with our factory representatives in Asia. The time difference between California and Asia means that when I am ready to stop working, the factories that we work with are just starting their day.

Q: What skills are most important to you in your job?
A: Organization and communication skills are really important because there are so many steps to creating, fabricating, and selling manufactured goods. You have to make sure each step is done properly to make a high-quality product on schedule and on budget.

Q: What academic skills and lifelong learning skills are helpful in preparing for your career?
A: I have a degree in English from a university, which has helped me tremendously with being able to think critically and communicate clearly.

Q: What is your key to success?
A: Keys include time management, hard work, and being flexible enough to “roll with it” when things go wrong.

Q: What training and preparation do you recommend for students?
A: Toy manufacturing involves basic processes of mold making and casting. It would be very helpful to understand how to do this on a small scale beforehand, because, for the most part, the same principles apply to what our company does. Spending a lot of time playing with toys and visiting toy stores helps as well! You have to know your market because customers and especially collectors can tell if you’re faking it.

Q: What are some ways you recommend students prepare for this career?
A: There are quite a few toy design programs offered by different universities. Internships at toy companies can also be helpful for learning the business end of the trade.

Q: What do you like most about your work?
A: After all the work that goes into designing and making a toy, it’s a real kick to hold the final product in my hand! We won’t stop until everyone has a designer toy on his or her shelf, computer, kitchen counter, or hi-fi console.

@ For more about Career Clusters, go to this book’s OLC through glencoe.com.
**Career Facts**

- **Education or Training** A high school diploma or GED is required for many manufacturing production positions. An associate degree in a specific trade or a bachelor’s degree in industrial design or engineering is required for some entry-level commercial and industrial design positions. Company-specific training for manufacturing production positions is also common.

- **Academic Skills Required** English Language Arts, Mathematics, Science, Social Studies

- **Technology Needed** In design and manufacturing, employees are expected to work on a variety of standard and proprietary software, machinery, and tools.

- **Aptitudes, Abilities, and Skills** Problem-solving skills and the ability to work independently are important traits. People in the manufacturing industry need self-discipline to start and finish projects, budget their time, and meet deadlines and production schedules.

- **Workplace Safety** Manufacturing production workers should pay attention to ergonomics and avoid potential strain and injury from repetitive tasks and machinery.

- **Career Outlook** Employment of commercial designers is expected to grow about as fast as average for all occupations over the next ten years, while jobs in manufacturing are expected to decline.

- **Career Path** Manufacturing production employees can move on to supervisory positions or design positions. A manufacturer can expand or create new product lines.

### Academic Skills Required to Complete Tasks

<table>
<thead>
<tr>
<th>Tasks</th>
<th>English Language Arts</th>
<th>Mathematics</th>
<th>Science</th>
<th>Social Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work with employees</td>
<td>★</td>
<td>★</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Collaborate with artists</td>
<td>★</td>
<td></td>
<td></td>
<td>★</td>
</tr>
<tr>
<td>Work with manufacturing facilities</td>
<td>★</td>
<td>★</td>
<td></td>
<td>★</td>
</tr>
<tr>
<td>Control quality of products</td>
<td></td>
<td></td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Communicate with customers</td>
<td>★</td>
<td></td>
<td></td>
<td>★</td>
</tr>
</tbody>
</table>

**Critical Thinking**

What are some other jobs involved in the creation, design, and manufacture of toys?
CHAPTER 11 Review & Activities

CHAPTER SUMMARY

Section 11.1 Being healthy means having mental and physical strength and energy. Stay physically healthy by eating a diet rich in nutrients and low in fat, sugar, and salt, and by staying on guard against addiction, a physical or emotional dependence on any kind of drug. Follow the guidelines in MyPyramid to achieve a balanced diet. Stay fit by exercising 30 to 60 minutes a day, and practice good sleep hygiene to stay rested and alert. Manage your stress by identifying and addressing the causes of your stress.

Section 11.2 Government, employers, and employees share responsibility for creating and maintaining safe workplaces. Through OSHA, the government sets and enforces safety standards. Employers must provide hazard-free workplaces, safe equipment, and health and safety information. As an employee, you must know and follow safety rules, report hazards, and work with your employer to follow environmental laws. Know your employer’s emergency action plan and learn how to prevent and respond to common emergencies. Follow the American Red Cross guideline to check-call-care during a medical emergency.

Key Terms and Academic Vocabulary Review

1. Use each of these key terms and academic vocabulary words in a sentence.

   **Key Terms**
   - nutrients (p. 243)
   - MyPyramid (p. 243)
   - addiction (p. 244)
   - sedentary (p. 245)
   - sleep hygiene (p. 245)
   - depression (p. 246)
   - Occupational Safety and Health Administration (OSHA) (p. 249)

   **Academic Vocabulary**
   - workers’ compensation (p. 249)
   - ergonomics (p. 250)
   - musculoskeletal disorders (MSDs) (p. 251)
   - Environmental Protection Agency (EPA) (p. 252)
   - first aid (p. 255)

   **Academic Vocabulary**
   - mental (p. 243)
   - genes (p. 245)
   - revising (p. 249)
   - violate (p. 252)

Review Key Concepts

2. Explain the relationship between good health and career success.
3. Describe how a nutritious diet and good sleep hygiene contribute to health.
4. Identify the causes of stress and ways to manage stress.
5. Describe rules and procedures for maintaining a safe workplace.
6. Summarize the role of the employer and the employee in protecting the environment.
7. Explain how to respond effectively to workplace emergencies.

Critical Thinking

8. Predict What materials found in offices, warehouses, or retail stores might affect the quality of the indoor air? Why?
9. Analyze Why is it the employee’s responsibility to report damaged personal protective equipment and hazards in the workplace?
Real-World Skills and Applications

Organization and Time-Management Skills

10. Planning for a Healthy Diet
   Eating a healthy diet takes time and planning. List and describe six specific activities you could do to have a healthy diet as shown in MyPyramid. Explain whether these activities would require more time, less time, or the same amount of time and money as you currently spend on your diet.

Technology Applications

11. Creating a Safety Spreadsheet
   Research the four most common types of workplace injuries using data from the Bureau of Labor Statistics. Create a spreadsheet with three columns. In the first column, name the injury and state how many workers it affected in the past year. In the second column, describe which workers are most at risk for that particular injury and why. In the third column, list ways that workers can help prevent that particular injury.

Information Literacy Skills

12. Comparing Sources of Information
   Use the Internet to research the amount of and types of exercise you should do each day. Write down the exercise recommendations you find on the Web sites of a non-profit organization, a government agency, and a for-profit company, such as a fitness center. Nonprofit organization Web site addresses often end in .org; government sites end in .gov; and company Web sites often end in .com or .net. Compare and contrast the exercise recommendations you find for accuracy and usefulness in a one-page summary.

13. Keep a Sleep Journal
   A sleep journal is a good way to keep track of how much you sleep. Place a piece of paper or notebook by your bed for a week and use it to record exactly when you go to sleep and when you wake up. Also note whether you have trouble falling or staying asleep and whether you feel drowsy during the day. At the end of the week, write a one-page analysis of your sleep hygiene. Calculate how much you slept each night and analyze whether you felt drowsy on days following nights with less sleep. Figure out how many hours of sleep you need each night to be at maximum alertness. Share your findings with the class.

14. Emergency Planning
   Situation: You are part of your company's emergency planning team. Your group has been asked to make a plan for dealing with a specific weather emergency.
   Activity: Within your group, select a specific weather emergency. Identify the specific procedures for workers to follow in such an emergency. Present your plan to the class.
   Evaluation: You will be evaluated on how well you meet the following performance indicators:
   - Identify specific emergency preparations.
   - Present clear instructions for protection and evacuation.
   - Answer any questions that your classmates may have.
Academic Skills in the Workplace

15. **Create a Nutrition Guide** Tomás, a teacher’s aide at your school, eats fast food every day for lunch. He says he does not have time to do the shopping and cooking it takes to eat better. Create a MyPyramid poster and eating plan for Tomás, including foods that are easy to buy and prepare.

16. **Calculate Time** Al works out after work. It takes him ½ of an hour to get to the gym, ¼ of an hour to work out, and ½ an hour to get home. How much time passes between when Al leaves work and when he gets home?

Adding Unlike Fractions Use the least common multiple of the denominators to rename the fractions with a common denominator before adding unlike fractions. Then, add the numerators. The denominator stays the same.

**Starting Hint** Use 12 as a common denominator for adding these three fractions. Begin by converting ½ to ½.

17. **Plan a Workplace Workout** Imagine that you work in a busy office, often sitting at your desk for nine hours a day. You are usually too tired to exercise before or after work and need to develop an exercise program to boost your health and productivity. Research online and print fitness and health publications to find ways you can do mini-workouts throughout the day in a sedentary environment, such as stretches and strength training. Use computer or traditional art materials to create a poster of exercise directions and diagrams for at least one exercise.

18. **Research Safety Laws** Choose a country that interests you and research its industrial safety and health laws. What laws are in place to protect workers? How do these laws compare to laws in the United States? Does the country have a government agency like OSHA? If not, how does that country’s government handle violations of workplace safety laws? Summarize what you learned in a five-minute oral presentation.

---

**STANDARDIZED TEST PRACTICE**

**ANALOGIES**

**Directions** Select the pair of words that best expresses a relationship similar to that expressed in the capitalized pair.

**Test-Taking Tip** Analogies are relationships between two words or concepts. Common relationships in analogy questions include cause and effect, part-to-whole, general classification and specific example, and synonym/antonym.

1. NUTRIENTS-HEALTH
   a. safety-OSHA
   b. stress-deep breathing
   c. sleep-alertness
   d. emergency-rescue breathing

For more Standardized Test Practice, go to the OLC at slencoe.com.
Writing Skills Practice

19. **Taking Notes** Notes help you focus on and remember important information. The process of taking notes also helps you pay attention and organize information mentally.

- **Practice** Practice your note-taking skills at a talk, lecture, or video podcast.
- Focus on central and important points, examples, keywords, and facts. Do not try to write down every word.
- Listen for clues that the speaker is making an important point, such as tone, body language, or repetition.
- Use abbreviations to save time. Write in fragments or very short sentences.
- Note your own questions, ideas, and opinions to think about later.
- Review your notes after the end of the presentation. Fill in blanks while your memory is still fresh.

**Net Connection**

20. **Research Environmental Procedures**

Interview someone to learn about conservation and environmental practices followed in that person's workplace. Find out what environmental laws apply to that company's business, and what voluntary programs the company has put in place to protect the environment. Describe your findings in a one-page report.

- **Log On** Conduct research on the Internet to find additional ways that the company could improve its environmental practices. Visit this book's OLC through glencoe.com for helpful links. Add those recommendations to your report.

---

**Adding Your Health and Safety Information**

The information you have learned about health and workplace safety will be helpful not only in guiding your career choice, but also in helping you stay healthy once you enter the workforce. Research the rate of on-the-job injuries and illnesses in the occupations that interest you. What health and safety risks are you likely to face in the jobs that interest you, and how can you minimize them? Add this information to your portfolio. Knowing the risks of different occupations helps you make an informed choice.

The following guidelines will help you organize and add the results of your research to your portfolio:

- Create a new section for your portfolio, using a divider for hard copy material and an electronic folder for electronic files.
- Label the section Health and Safety.
- You may wish to create subsections or subfolders such as Common Workplace Emergencies and Diet and Exercise Guidelines.
- Add the section to your table of contents.
- Add the following: personalized guidelines on nutrition, exercise, and sleep; information on what you can do to protect the environment in the occupations that interest you; and tips on preventing and handling workplace emergencies.
- Update your research results as you continue to explore your career options.

**Portfolio Help** Go to the Succeeding in the World of Work OLC through glencoe.com for help developing your portfolio.

---

**Reading Connection**

Go to this book's Online Learning Center through glencoe.com for a list of reading suggestions.