



CHAPTER

12

Physical Activity and Fitness

Lesson 1

Benefits of Physical Activity

BIG Idea Being physically active benefits your total health in a variety of ways.

Lesson 2

Improving Your Fitness

BIG Idea Different types of exercise can help you evaluate and improve the various elements of fitness.

Lesson 3

Planning a Personal Activity Program

BIG Idea Planning your physical activity can help you achieve specific fitness goals.

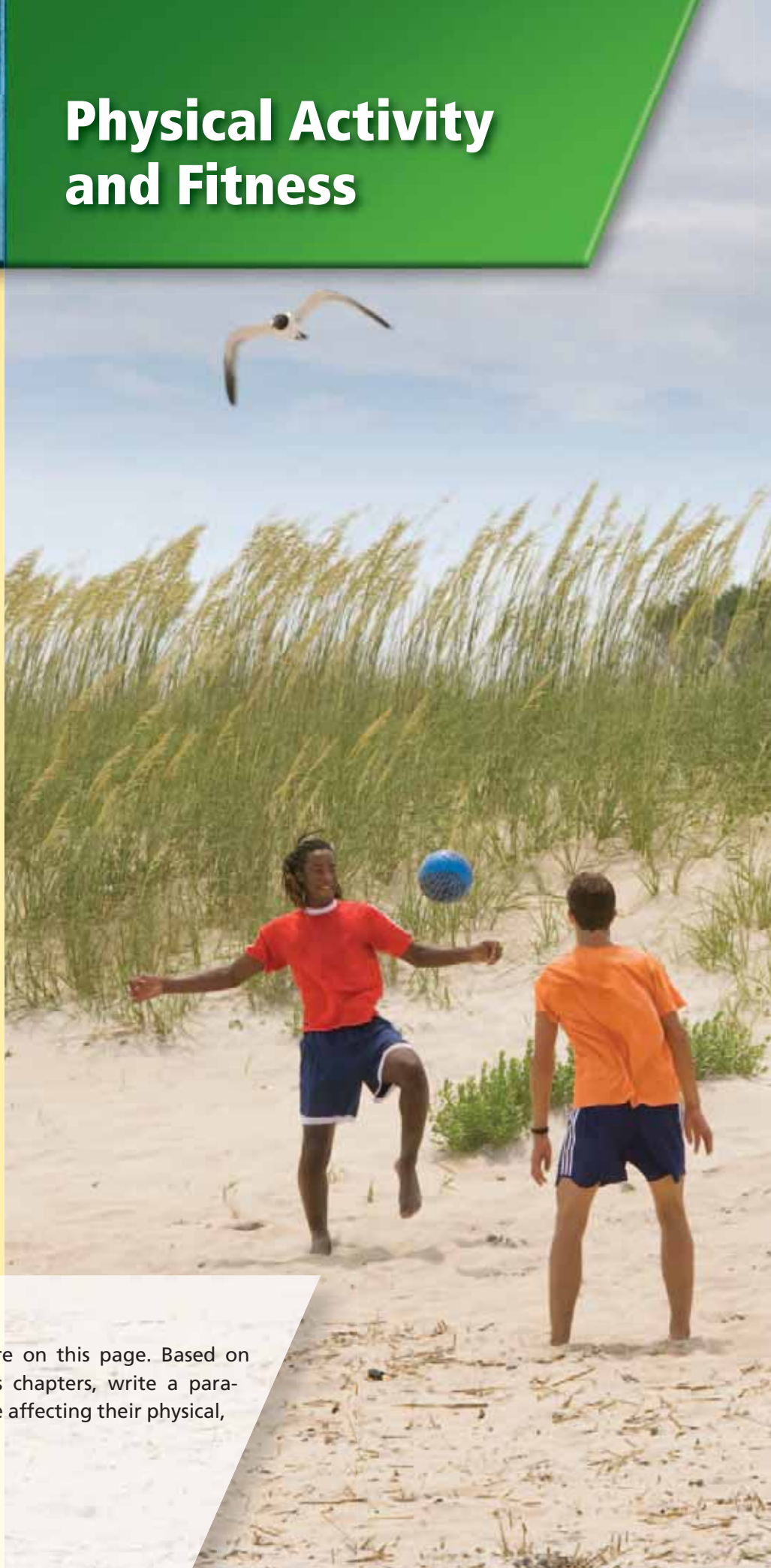
Lesson 4

Fitness Safety and Avoiding Injuries

BIG Idea It is important to learn how to prevent injuries and respond to them when they occur.

Activating Prior Knowledge

Using Visuals Look at the picture on this page. Based on what you have learned in previous chapters, write a paragraph describing how these teens are affecting their physical, mental/emotional, and social health.



Chapter Launchers

Health in Action

Discuss the **BIG** Ideas

Before beginning this chapter, think about how you would answer these questions:

- ▶ What physical activities do you enjoy?
- ▶ How does physical activity fit into your daily life?
- ▶ Do you consider yourself fit?

Watch the **Health eSpotlight** Video Series



Balance and Fitness

Physical activity can improve fitness and decrease stress. What activities do you enjoy that decrease your stress?

Assess Your Health



Visit glencoe.com and complete the Health Inventory for Chapter 12.



LESSON 1



GUIDE TO READING

BIG Idea Being physically active benefits your total health in a variety of ways.

Before You Read

Organize Information.

Divide a sheet of paper into three columns. Label them “Physical,” “Mental/Emotional,” and “Social.” As you read the lesson, fill in the chart by listing how physical activity benefits these three aspects of your health.

Physical	Mental/ Emotional	Social



New Vocabulary

- ▶ physical activity (p. 318)
- ▶ physical fitness (p. 319)
- ▶ exercise (p. 319)
- ▶ sedentary (p. 321)

Benefits of Physical Activity

Real Life Issues

Trying Something New. Nina and Marianne have been best friends since grade school. When Marianne took up kickboxing last year, Nina was disappointed that her friend had a new activity she didn’t share. Marianne kept talking about how much she enjoyed her new sport and encouraging Nina to try it. In the beginning, Nina was hesitant, but she finally decided to take up the sport as well. Now the two friends have another activity they can enjoy together.



Writing How do your friends affect your choice of sports and other physical activities? Describe an activity that someone you know has influenced you to try.



Physical Activity and Your Health

Main Idea Physical activity benefits all aspects of your health.

Suppose you decided you were going to do just one thing to improve your health. What one action would you choose? If you’re not sure, probably the single most important step you could take would be to lead a physically active life. **Physical activity** is any form of movement that causes your body to use energy. It benefits just about every system in your body, and also benefits your mental/emotional and social health.

Physical activity doesn’t just mean “working out.” It includes all kinds of activities that you do on a daily basis, such as walking to school, cleaning your room, or playing sports with your friends. There are lots of different ways to make physical activity a part of your life and enjoy its many benefits to your health.



Physical Benefits

Being active on a regular basis improves your **physical fitness**, *the ability to carry out daily tasks easily and have enough reserve energy to respond to unexpected demands*. Teens should try for at least 60 minutes of physical activity every day. Depending on what kind of activity you do, it can strengthen your muscles and bones, boost your energy level, or improve your posture. You might feel that committing 60 minutes every day to physical activity will be difficult. Try dividing the time into smaller segments to get your 60 minutes throughout the day.

You can achieve specific fitness goals through **exercise**, *purposeful physical activity that is planned, structured, and repetitive, and that improves or maintains physical fitness*. All kinds of physical activity—not just exercise—will improve your health. Being physically active can help you maintain a healthy weight and may reduce your risk of many serious diseases. **Figure 12.1** shows the ways in which physical activity can benefit several different body systems and maintain your overall health.

BusinessWeek

HEALTH NEWS



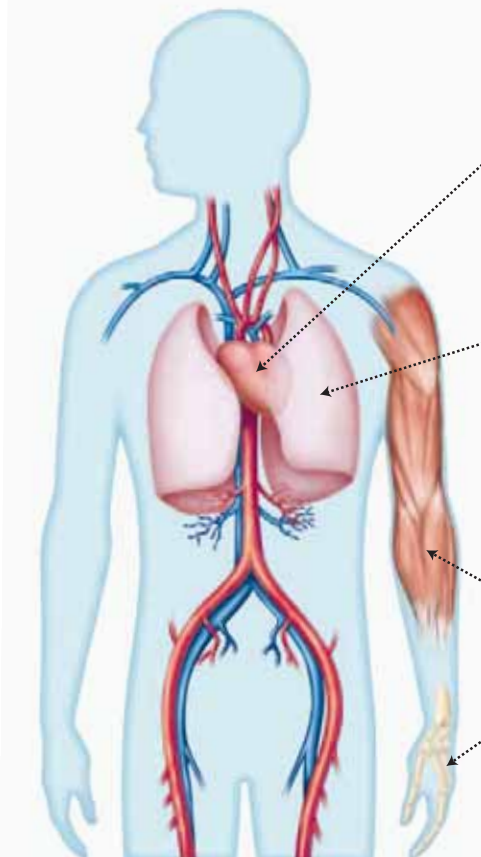
Slow Burn of Exercising

Analyze. Go to glencoe.com and watch the video *The Slow Burn of Exercising*. As a class, discuss slow motion exercises and decide if it is a fitness routine worth trying. Recall what you already know about getting in shape and share your ideas.

Figure 12.1

The Active Body

This illustration shows just a few of the ways physical activity makes your body stronger. *Which systems in your body benefit from regular physical activity?*



Cardiovascular System

Regular physical activity strengthens the heart muscle so that it pumps blood more efficiently. It reduces blood pressure and lowers the levels of artery-clogging cholesterol.

Respiratory System

As your activity level increases, your lungs begin to work more efficiently, pulling in larger amounts of air and increasing the amount of oxygen delivered to your body. As a result, you can do many activities more easily — for example, running a greater distance without becoming short of breath.

Musculoskeletal System

Physical activity strengthens muscles and bones, reducing your risk of developing fragile bones as you age. Strengthening your bones and muscles can also improve your balance and coordination.



Mental and Emotional Benefits

Being physically active maintains your physical health and has a positive effect on your mental and emotional health. It can provide the following:



READING CHECK

Explain How does physical activity benefit your mental and emotional health?

- **Stress relief.** Being active stimulates your body to produce chemicals called endorphins. This results in a feeling of well-being, aids relaxation, and relieves physical pain. Some types of physical activity, such as stretching, can ease muscle tension as well.
- **Mood enhancement.** Have you ever gone out for a walk when you were in a bad mood and returned feeling much better? Physical activity is a natural mood lifter. In addition to endorphins, it promotes the production of other brain chemicals that combat anxiety and depression. For this reason, people with anxiety and depression are advised to get regular physical activity.
- **Better sleep.** Moderate activity at least three hours before bedtime helps you relax and get to sleep more easily.
- **Improved self-esteem.** The physical fitness you develop through increased activity can translate into more self-confidence. It can give you a sense of accomplishment and also help you look and feel your best.



Social Benefits

Are you a member of a sports team at school? Do you enjoy hiking or exploring trails in nearby parks? If so, you've probably formed friendships through these activities. Physical activity can be a great way to make new friends and spend time with the friends you already have. Being active as part of a group can help motivate you to stick with your fitness program. It can also help you learn skills that will improve your relationships, such as teamwork and sportsmanship.

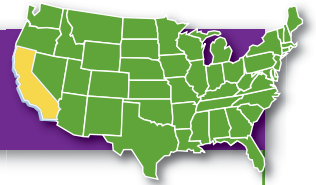
■ **Figure 12.2** Taking part in sports can teach teamwork and sportsmanship. *Name other ways physical activity can benefit your social health.*





TEENS

Making a Difference



"It feels good to help."

Giving Others the "Sole" Benefit

Greg W., of California, never realized how much running meant to him until he was diagnosed with a stress fracture in his hip. During his recovery, his injury helped him see the bigger picture. "It made me think about other kids who don't have the chance to run because they can't afford shoes."

Greg started Share Our Soles (SOS), a program that refurbishes used running shoes for kids. After the shoes are donated and collected, Greg cleans and boxes each pair. Then the shoes are picked up by Sports Gift, Inc., and distributed to inner-city areas as close as Los Angeles and as far away as Mexico, Uganda, and the Sudan. "It feels good to help," Greg says. "It's not just me who's making a difference. It's all the people who've made the effort to donate shoes."



Write your answers to the following questions in your personal health journal:

- 1 Why did Greg start Share Our Soles?
- 2 What might be some barriers to becoming physically active?
- 3 List three ways you can promote physical activity in your community.



The increased self-esteem that comes with physical fitness can help your social life as well. It can give you confidence when meeting new people or dealing with social situations. Finally, physical activity can help you manage stress, rather than letting it build up until it has a negative impact on your relationships.



For more practice with vocabulary, go to the Interactive Health Tutor at glencoe.com.

Risks of Being Inactive

Main Idea An inactive lifestyle puts you at risk for a variety of health problems.

Despite the many benefits of physical activity, many teens still lead lives that are **sedentary**—*involving little physical activity*. Sedentary teens may spend their free time watching TV, playing video games, or surfing the Internet. All of us **devote** some time to sedentary activities, but being sedentary all the time puts you at risk for a variety of health problems.

Academic Vocabulary

devote (verb): to give time or effort to an activity



READING CHECK

Identify Problems and Solutions

How can teens reduce their risk of obesity, cardiovascular disease, and type 2 diabetes?

Health problems that may result from being sedentary include

- unhealthful weight gain and obesity;
- cardiovascular disease, such as heart attack and stroke;
- type 2 diabetes;
- certain types of cancer;
- asthma and other breathing problems;
- osteoporosis, a condition in which the bones become porous and fragile, making them much more likely to break;
- osteoarthritis, a condition caused by the breakdown of cartilage and bone in the body's joints;
- psychological problems such as stress, anxiety, and depression; and
- premature death.

Increasing your level of physical activity lowers your risk of these health problems. Teens should aim for 60 minutes of physical activity every day, or at least most days.

Ed-Imaging



Making Time for Physical Activity

Main Idea There are several ways to fit physical activity into your daily life.

Setting aside an hour a day for exercise may be difficult for some busy teens. You can get the same benefits from several shorter periods of activity spread out over the course of a day. For example, engaging in 10 minutes of physical activity six times a day provides the same benefits as an hour-long workout. **Figure 12.4** shows some ways you can fit physical activity into your life by choosing active alternatives to the things you do every day.



READING CHECK

Identify List two ways that you can make time for physical activity.

■ **Figure 12.3** Just by turning off the TV and getting out of the house for a little exercise, you can reduce your risk of health problems. *What are other advantages of participating in physical activities?*



**Figure 12.4****Active Alternatives**

Instead of this . . .	Try this . . .
▶ Taking the elevator	▶ Taking the stairs
▶ Using a snowblower	▶ Shoveling snow
▶ Getting a ride to school or to a friend's house	▶ Walking, skating, or riding your bike
▶ Using a shopping cart	▶ Carrying your groceries to the car
▶ Taking the car through a car wash	▶ Washing the car by hand
▶ Playing video or computer games	▶ Playing basketball, soccer, or tennis

LESSON 1**ASSESSMENT****After You Read****Reviewing Facts and Vocabulary**

1. What is the difference between *physical activity* and *exercise*?
2. Name three body systems that benefit from regular physical activity.
3. Identify two types of disease associated with a sedentary lifestyle.

Thinking Critically

4. **Analyze.** Explain how being physically active on a regular basis makes your body better able to respond to physical demands.
5. **Synthesize.** Camilla thinks there's no point in trying to improve her physical fitness because she doesn't have a free hour in her daily schedule for exercise. What advice would you give her?

Applying Health Skills

6. **Stress Management.** Raul is taking several honors classes that require a lot of homework, and often feels stressed. How can he incorporate physical activity into his schedule to help reduce stress?

Writing Critically

7. **Expository.** Write an essay describing what might influence some teens to choose a sedentary lifestyle. Suggest ways to encourage these teens to become more physically active.



Visit glencoe.com and complete the Interactive Study Guide for this lesson.



LESSON 2



GUIDE TO READING

BIG Idea Different types of exercise can help you evaluate and improve the various elements of fitness.

Before You Read

Create a Comparison Chart. Draw a chart. Label the columns "Define," "Measure," and "Improve." Label the rows "C/E" (cardio endurance), "M/S" (muscular strength), "M/E" (muscular endurance) and "F" (flexibility). As you read, fill in your chart with information from the lesson.

	Define	Measure	Improve
C/E			
M/S			
M/E			
F			

Improving Your Fitness

Real Life Issues

Getting Motivated. Malcolm wants to improve his physical fitness. His P.E. teacher suggests making a list of all the activities he'd like to be physically fit enough to do. Malcolm thinks this is a great idea because the list would remind him of his goals and help him stay motivated.



Writing List two to three activities you would like to be physically fit enough to do. Then pick one of them and write a paragraph about how being able to do this activity would improve your life.



Elements of Fitness

Main Idea There are five elements of fitness that affect your health in different ways.

Are you physically fit if you can run five miles or do a dozen push-ups in a row? These are two of the five elements of health-related fitness that affect you in different ways.

- **Cardiorespiratory endurance** is the ability of your heart, lungs, and blood vessels to send fuel and oxygen to your tissues during long periods of moderate to vigorous activity. By maintaining good cardiorespiratory health, you can run a mile or go on a long hike without tiring. Good cardiorespiratory health lowers your risk of cardiovascular disease.
- **Muscular strength** is the amount of force your muscles can exert. You need muscular strength for all kinds of activities that put stress on your muscles, such as lifting, pushing, and jumping.



New Vocabulary

- ▶ cardiorespiratory endurance (p. 324)
- ▶ muscular strength (p. 324)
- ▶ muscular endurance (p. 325)
- ▶ flexibility (p. 325)
- ▶ aerobic exercise (p. 327)
- ▶ anaerobic exercise (p. 328)



- **Muscular endurance** is the ability of your muscles to perform physical tasks over a period of time without tiring. Muscular endurance gives you the power to carry out daily tasks without fatigue, such as carrying boxes up and down a flight of stairs.
- **Flexibility** is the ability to move your body parts through their full range of motion. If you are flexible, you can touch your toes without bending your legs or put sunscreen on the center of your back. Flexibility can improve your athletic performance and reduce your risk of muscle strain and other injuries.
- **Body composition**—the ratio of fat to lean tissue in your body—is also an element of fitness. Having low overall body fat reduces your risk of cardiovascular disease and other health problems associated with being overweight.

**READING CHECK**

Classify Which elements of fitness would help you run a marathon?

**Evaluating Your Fitness**

Main Idea You can use different tests to evaluate each element of your fitness.

So how fit are you? If you're not sure how to answer that, the tests described below may help. Each test measures a different element of fitness. By taking them all, you can figure out how you measure up in each area of fitness.

Measuring Cardiorespiratory Endurance

You can evaluate your cardiorespiratory endurance by doing a three-minute step test. You will need a sturdy bench or step about 12 inches high and a watch or clock with a second hand. Follow this procedure:

1. Step up onto the bench with your right foot. Bring up your left foot. Step back down, right foot first, then left foot.
2. Continue stepping up and back down for three minutes. Try to maintain a steady pace of about 24 steps per minute.
3. After three minutes, take your pulse. To do this, place two fingers of one hand on the wrist of your opposite hand. (Do not use your thumb, which has its own pulse.) Count the number of heartbeats you feel in 15 seconds. Then multiply that number by 4 to determine your pulse rate.

Check your pulse rate against **Figure 12.6** on page 326 to see how you did on the test.

■ **Figure 12.5** The step test is one activity that requires cardiorespiratory endurance. *What are other activities that use this element of fitness?*



**Figure 12.6****Fitness Test Scoring Chart**

Each of the columns below provides scores for the fitness tests. If you scored at or above the number shown for each of these three tests, you are in good shape. If you scored below the number shown, you need to work on that element of fitness.

Step Test	Partial Curl-Ups	Right-Angle Push-Ups	Sit-and-Reach Test
Male teens: (heartbeats per minute) 85–95: Excellent 95–105: Good 105–126: Fair 126+: Needs improvement	Boys, ages 13–14: 21	Boys, age 14: 12 Boys, age 15: 14 Boys, age 16: 16 Boys, age 17: 18	Boys: 1 inch
Female teens: (heartbeats per minute) 85–95: Excellent 95–106: Good 106–126: Fair 126+: Needs improvement	Girls, ages 13–14: 18	Girls, ages 14–17: 7	Girls: 3 inches

**READING CHECK**

Compare and Contrast How are curl-ups and right-angle push-ups alike? How are they different?

Measuring Muscular Strength and Endurance

Different muscle groups require different exercises. The two exercises below will test the strength and endurance of your abdominal muscles and your upper body. After completing each exercise, check **Figure 12.6** to see how you did.

Partial Curl-Ups Use the following procedure to measure your abdominal strength:

1. Lie on your back with your knees bent and your feet about 12 inches from your backside. Extend your arms forward with your fingers pointing toward your knees.
2. Raise your head and upper body off the floor, sliding your hands forward. Touch your knees with your fingertips.
3. Slowly return to your original position.
4. Continue doing curl-ups at a rate of one every three seconds until you can no longer maintain this pace.

The number of curl-ups you can do without tiring is a measure of your abdominal strength and endurance.

Right-Angle Push-Ups The right-angle push-up is one test to gauge your upper body strength and endurance.

1. Lie facedown in the push-up position. Place your hands under your shoulders, with your legs parallel to each other and resting on your toes.

■ **Figure 12.7** Curl-ups measure abdominal strength. *How might building abdominal strength improve your posture?*





Glennco Stock (Both)

2. Straighten your arms and push up. Keep your back and knees straight. Bend your arms and lower your body until your elbows form a 90-degree angle, with your upper arms parallel to the floor.
3. Repeat this process, doing one push-up every three seconds until you can no longer maintain this pace.



■ **Figure 12.8** Right-angle push-ups are a way of measuring upper body strength and endurance. *What other activities require upper body strength and endurance?*



Measuring Flexibility

The sit-and-reach test measures the flexibility of your lower back and hamstring muscles. To set up the test, tape a yardstick to the top of a box with 9 inches protruding over one end.

1. Remove your shoes. Place the box against a wall, or ask someone to hold the box in place, with the yardstick pointing out. Sit on the floor. Place the sole of one foot flat against the side of the box under the yardstick. Bend the other leg at the knee.
2. Extend your arms over the yardstick, with your hands placed one on top of the other, palms down.
3. Reach forward in this manner four times. The fourth time, hold this position for at least one second while a partner records how far you can reach.
4. Switch legs and repeat.

Getting Fit

Main Idea Use different forms of exercise to improve the various elements of your fitness.

To improve your overall fitness, you can choose from many different exercises and other activities. Most of these fit into two basic categories: aerobic and anaerobic.

Aerobic exercise includes *all rhythmic activities that use large muscle groups for an extended period of time*. Aerobic

Academic Vocabulary

period (noun): the completion of a cycle



■ **Figure 12.9** The sit-and-reach test measures flexibility in your hips and legs. *What are some benefits of being flexible?*



For more practice with vocabulary go to the Interactive Health Tutor at glencoe.com.



My goal this year is to get in great shape, so I started keeping a journal of what I eat and when I work out. With a journal it's easier to stick with my plan because I know exactly what I have to do. My success has kept me motivated. For more physical activity ideas, visit the Online Fitness Zone at glencoe.com.



Improving Cardiorespiratory Endurance

Aerobic exercise is important for building cardiorespiratory endurance. Aerobic activities increase your heart rate and pump more blood throughout your body. Over time, your heart and lungs adapt to the demands made by aerobic activity by working more efficiently.

Regular aerobic exercise reduces your risk of cardiovascular disease. It also helps you manage your weight and lower your risk of type 2 diabetes, certain cancers, and other diseases associated with being overweight. The Real World Connection activity explains how to determine your target heart rate when doing aerobic exercise.

Improving Muscular Strength and Endurance

In contrast to aerobic activity, anaerobic exercises improve muscular strength and endurance. The more the muscles work, the stronger they will become. Exercises that strengthen the muscles are known as resistance or strength training. Free weights, exercise machines, or your own body weight provides resistance. There are three ways to use resistance to work your muscles:

■ **Figure 12.10**

Lifting weights is one form of resistance or strength training.
What are the benefits of strength training?





- **Isometric exercises** use muscle tension to improve strength with little or no movement of the body part. Pushing against a wall or other immovable object is an example of isometric exercise.
- **Isotonic exercises** combine movement of the joints with contraction of the muscles. Try lifting free weights or doing calisthenics, such as pull-ups, push-ups, and sit-ups. These exercises build flexibility as well as strength.
- **Isokinetic exercises** exert resistance against a muscle as it moves through a range of motion at a steady rate of speed. Various types of weight machines and other exercise equipment provide isokinetic exercise.

Increasing muscle mass boosts your metabolism so your body burns the energy you consume faster. That makes it easier to control your weight.



READING CHECK

Classify What are the three types of resistance exercise?

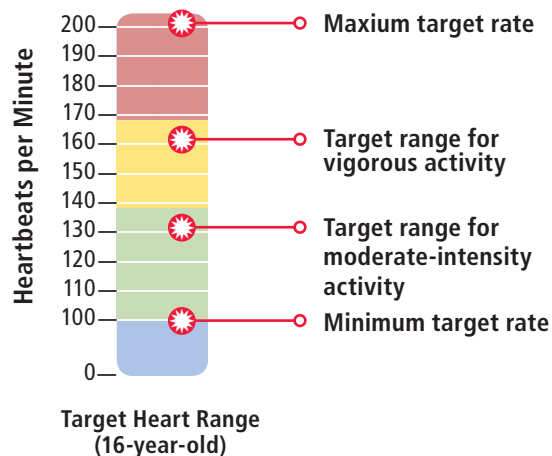


Real World CONNECTION

Targeting Cardiovascular Fitness

Your target heart range is the ideal range during aerobic activity. To calculate your target heart range:

1. Multiply your age by 0.7.
2. Subtract this number from 208 to get an estimate of your maximum heart rate. If you are 16 years old, your maximum heart rate will be 197 beats per minute.
3. Multiply this number by 50 percent to get your minimum heart rate for moderately intense activity.
4. Multiply the number in step 2 by 70 percent to get your maximum heart rate for moderately intense activity and the minimum for vigorous activity.
5. Multiply the number in step 2 by 85 percent to get your maximum target heart rate for any physical activity. Exercising above this rate is dangerous.
6. To figure out your heart rate during exercise, take your pulse for six seconds and multiply the result by 10.



Activity Mathematics

Use this procedure to calculate your target heart range for moderate activity and for vigorous activity. Try checking your pulse rate while jogging in place.

Concept Problem Solving: Make a Plan

To solve this problem, change the percent to a fraction or to a decimal, and then multiply by the number.



■ **Figure 12.11** Weight-bearing exercises, which make your body work against gravity, are a way to build bone strength. *What weight-bearing activities do you do on a regular basis?*

When lifting weights, begin each workout with one set of exercises using lighter weights. Gradually increase the amount of weight you use until you are lifting your maximum weight. Warm up before any kind of strength training with gentle aerobic activity, such as jogging or fast walking.

Improving Flexibility

Stretching exercises improve your flexibility, circulation, posture, and coordination, as well as ease stress. It may also reduce your risk of injury during other activities. Do the stretching exercises slowly, holding each stretch for 10 to 30 seconds. Don't bounce. If stretching causes pain you've pushed too far.

Exercise and Bone Strength

Exercise helps increase bone density and lowers the risk of osteoporosis. Weight-bearing exercises work with gravity, and are good for strengthening bones. Strength training, walking, aerobics, and dancing are all weight-bearing exercises.



LESSON 2



ASSESSMENT

After You Read

Reviewing Facts and Vocabulary

1. What are the five elements of fitness?
2. Which element of fitness does the sit-and-reach test measure?
3. What kind of exercise would you do to improve your cardiorespiratory endurance?

Thinking Critically

4. **Analyze.** How will your target heart range for physical activity change as you grow older? Explain why.
5. **Evaluate.** Carmen wants to get in shape. She is planning to join a gym and use only the weight machines. Is this a good plan? Why or why not?

Applying Health Skills

6. **Goal Setting.** Choose one of the five elements of fitness that you would like to improve. Write out a plan to improve that element of your fitness.

Writing Critically

7. **Personal.** Write a personal journal entry about why fitness is important to you. Describe activities that you can participate in because you are fit, or that would require you to improve your fitness.



Visit glencoe.com and complete the Interactive Study Guide for this lesson.

LESSON 3

David Young-Wolf/Photo Edit

Planning a Personal Activity Program

Real Life Issues

Getting Fit. Pete wants to get in better shape. He has decided to create a fitness plan, but he's not sure where to start. He's not even sure he knows how to determine what a good level of fitness is. He doesn't know which exercises to do, how often he should do them, or how long he should do them.



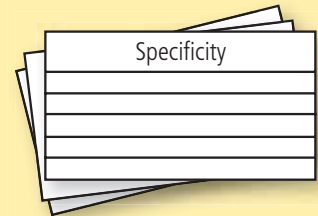
Writing *If you were Pete, what steps would you take to create an appropriate fitness plan? In a paragraph, describe the steps you would take.*

GUIDE TO READING

BIG Idea *Planning your physical activity can help you achieve specific fitness goals.*

Before You Read

Create Vocabulary Cards. Write each new vocabulary term on a separate note card. For each term, write a definition based on your current knowledge. As you read, fill in additional information related to each term.



Your Fitness Plan

Main Idea The physical activities you choose depend on factors such as your fitness goals and the activities you like.

Identifying a specific fitness goal is a good way to get motivated to get in shape. You also need to consider your personal needs, such as your current level of fitness and the resources available to you.

Your Fitness Goals

In Lesson 2, you learned how to measure your level of fitness. This knowledge can serve as a starting point for setting your fitness goals. If you found that you have good cardiorespiratory endurance but not much upper body strength, you might want to make building your upper body strength a goal of your activity plan. If your cardiorespiratory endurance needs to be strengthened, choose exercises that improve this aspect of fitness. Take a look at the Health Skills Activity on page 334 for an example of how to set specific fitness goals.

New Vocabulary

- ▶ specificity (p. 332)
- ▶ overload (p. 332)
- ▶ progression (p. 333)
- ▶ warm-up (p. 334)
- ▶ workout (p. 335)
- ▶ cool-down (p. 335)
- ▶ resting heart rate (p. 336)



Personal Needs

When planning a personal activity program, choose activities that you enjoy and that you can realistically do. The following factors may affect your activity choices:

- **Cost.** Some activities require expensive equipment. Borrow or rent equipment to try a new sport.
- **Where you live.** Choose activities that you can do close to home, and that are best for your region. For example, is your local area flat or hilly? What is the climate like?
- **Your schedule.** Choose activities that fit into your schedule and habits. If you're not a morning person, a morning jog probably won't work for you.
- **Your fitness level.** Start slowly and choose activities that are right for your level of fitness.
- **Your overall health.** Do you have a health condition that may impact your exercise plan, such as asthma? Talk to a doctor before starting a new activity.
- **Personal safety.** When choosing activities, make sure that the environment where you perform the activity is safe.



READING CHECK

Determine When might it be important to consult a doctor before trying a new physical activity?



Types of Activities

■ **Figure 12.12** Measuring your resting heart rate is one way to track your fitness. *What is your resting pulse rate now?*



Teens should aim to get at least 60 minutes of physical activity most days. Choose different types of activity to meet specific fitness goals and to prevent boredom. An exercise plan can include activities such as walking or biking to school, or playing a pickup basketball or soccer game with friends, as well as competitive sports. Sedentary activities, or those activities that do not require physical activity, should be limited to a small part of your day. **Figure 12.13** shows a page from a fitness journal. The types of physical activities to be included in a fitness journal can include the following:

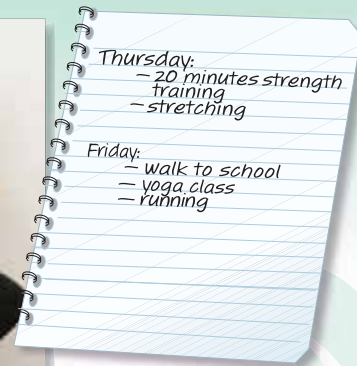
Moderate-Intensity Physical Activities These count toward your daily dose of physical activity. Examples include walking, climbing stairs, household chores, or yard work.

Aerobic Activities These raise your heart rate. Aim for at least three 20-minute sessions each week of vigorous aerobic activity. Examples include cycling, brisk walking, running, dancing, in-line skating, cross-country skiing, and most team sports.

Strength Training This develops muscle tone. Aim for at least two or three sessions per week of 20 to 30 minutes each, with at least one day off between sessions. Exercises that tone arm muscles include rowing, cross-country skiing, pull-ups, and push-ups. To tone legs, try cycling, running, and skating. Abdominal muscles can be toned by rowing or cycling, and doing abdominal crunches.

**Figure 12.13****A Variety of Physical Activities**

Choose different types of activities to meet specific fitness goals.



Flexibility Exercises These include stretching for 10 to 12 minutes a day. Examples of flexibility exercises include gymnastics, martial arts, ballet, Pilates, yoga, or stretching.

Principles of Building Fitness

Main Idea Effective fitness plans focus on four principles: specificity, overload, progression, and regularity.

When designing your physical activity program, you will consider your needs and interests. In addition, you should focus on the four key principles of building a fitness plan: specificity, overload, progression, and regularity.

- **Specificity** means *choosing the right types of activities to improve a given element of fitness*. For example, strength-training activities will build muscular strength.
- **Overload** means *exercising at a level that's beyond your regular daily activities*. Increasing the demands on your body will make it adapt and grow stronger.
- **Progression** means *gradually increasing the demands on your body*. Try working a little harder or longer during each session, and more often during the week.
- **Regularity** means working out on a regular basis. You need at least three balanced workouts a week to maintain your fitness level. Include different activities to get the recommended hour of physical activity each day.

**READING CHECK****Make Inferences**

Why do you need to increase the demands on your body over time to build fitness?



Health Skills Activity

Goal Setting Skills

Identifying Fitness Goals

Wendy enjoys playing soccer and is interested in joining her school's team. She's not sure she's in good enough shape to try out though. She has pretty good muscle strength and endurance. But Wendy is concerned about her cardiorespiratory endurance. She always seems to run out of breath sooner than she should, and it sometimes slows her down. She's worried that she won't be able to keep up with the rest of the team or that she can't run around on the field for an hour at a time. She's also not sure she's flexible enough for all the dodging and maneuvering the game involves.



Writing Write a plan for Wendy to achieve her fitness goals. Remember to use the five-step process for goal setting:

1. Identify a specific goal. Write it down.
2. List the steps to reach your goal.
3. Identify potential problems and ways to get support.
4. Set up checkpoints to evaluate your progress.
5. Reward yourself with healthy rewards once you have achieved your goal.



Stages of a Workout

Main Idea An exercise session has three stages: warm-up, workout, and cool-down.

Now that you've defined your fitness goals, chosen your activities, and scheduled time to do them, it's time to get moving. To get your body ready for physical activity and to avoid injuries, include three stages in every exercise session: the warm-up, the workout, and the cool-down.



READING CHECK

Explain What is the purpose of a warm-up?

Academic Vocabulary

instance (verb): to mention as a case or example

Warm-Up

A **warm-up** is *gentle cardiovascular activity that prepares the muscles for work*. Warming up before exercise increases blood flow, delivering needed oxygen and fuel to your muscles. It also gradually increases your pulse rate and body temperature. To warm up, choose an activity that will work the same muscles you're going to use during your workout. For **instance**, before a run, warm up by walking or jogging slowly.

After warming up your muscles, take a few minutes to stretch. Stretching can prepare your muscles for activity and increase your flexibility.



David Young Wolff/Photo Edit

Workout

The **workout** is the part of an exercise session when you are exercising at your highest peak. Use the **F.I.T.T.** formula when planning your workouts:

- **F: Frequency of workouts.** Schedule at least three exercise sessions a week, but give your body time to rest between workouts. Include other types of physical activity during the week to get an hour of activity each day.
- **I: Intensity of workouts.** Push yourself hard enough to create overload. For aerobic activities, exercise within your target heart range. For strength training, you should feel strain on your muscles, but not pain.
- **T: Type of activity.** Vary your activities throughout the week to build different elements of fitness. If you jog Monday and Wednesday, try lifting weights on Tuesday and Thursday.
- **T: Time (duration) of workouts.** To build cardiovascular fitness, keep your heart rate within your target range for at least 20 minutes. Strength-training sessions should take 20 to 30 minutes, while flexibility can be increased in just 10 minutes of stretching.



One of my friends showed me an exercise that she said would slim down just my thighs. Our coach, though, says there's no such thing as spot reducing. To get in shape, you have to change your eating habits by cutting down on fat and add a well-rounded exercise routine.



Cool-Down

A **cool-down** is low-level activity that prepares your body to return to a resting state. The cool-down allows your heart rate, breathing, and body temperature to return to normal gradually. It also reduces strain on your heart and helps prevent muscle soreness. Cool-downs should include five to ten minutes of gentle activity. The cool-down stage is also a good time for stretching.



■ **Figure 12.14** Stretching your muscles helps prevent injuries.

What stage of a workout is the best time for stretching?



Tracking Your Progress

Main Idea Track your progress to see how your fitness level increases over time.

One of the rewards of sticking to a physical activity program is seeing your level of fitness improve over time. You may notice that it takes you less time to walk to and from school, or you may not breathe as hard after climbing stairs.

A fitness journal can help you track your progress. List all of your activities, noting how long you work out, how often, and at what level. You'll see a noticeable difference in your fitness level if you stick with your plan for 12 weeks.

Another figure to list in your fitness journal is your **resting heart rate**—the number of times your heart beats per minute when you are not active. Before checking your resting heart rate, sit quietly for at least five minutes. Take your pulse for 15 seconds, then multiply the result by four. A typical pulse rate for teens and adults is between 60 and 100 beats per minute. As your fitness level increases, your resting heart rate will drop.



READING CHECK

Cause and Effect

How does regular exercise affect your resting heart rate?



LESSON 3



ASSESSMENT

After You Read

Reviewing Facts and Vocabulary

1. What personal factors can affect your choice of physical activities?
2. What are the four principles of building fitness?
3. What are the benefits of warming up before exercise and cooling down after exercise?

Thinking Critically

4. **Synthesize.** What activity might you choose if your fitness goals are to increase cardiorespiratory endurance and to strengthen your leg and abdominal muscles? How might increasing your flexibility help you achieve these fitness goals?
5. **Analyze.** How does where you live affect your choice of activities?

Applying Health Skills

6. **Analyzing Influences.** Draw five columns on a sheet of paper, labeled: "Cost," "Location," "Schedule," "Health," and "Safety." Add examples of how each influence might affect your physical activity choices.

Writing Critically

7. **Narrative.** Write a short story about a teen who designs and begins a fitness plan. List three fitness goals for this teen. Describe the types of activities the teen has chosen.



Visit glencoe.com and complete the Interactive Study Guide for this lesson.



LESSON 4

Fitness Safety and Avoiding Injuries

Real Life Issues

Preventing Injuries. Ravi is visiting his friend Tim. Tim suggests they go for a bike ride. Although Tim has a spare bike for his friend, he doesn't have a spare helmet. Tim suggests that Ravi just go without a helmet. "We're only going down to the park," he points out. "It's really safe. There's hardly any traffic."



Writing Write a dialogue between Ravi and Tim in which Ravi explains why he doesn't want to ride without a helmet. Use specific arguments and details to support Ravi's position.

GUIDE TO READING

BIG Idea It is important to learn how to prevent injuries and respond to them when they occur.

Before You Read

Create a T-Chart. Make a two-column chart on paper. Label the left column "Risks" and the right column "Prevention." As you read, fill in information about safety risks involved in different physical activities and prevention steps you can take to protect yourself.

Risks	Prevention



Safety First

Main Idea Safety precautions can help you avoid injuries during physical activity.

While getting regular physical activity benefits your health, it is possible to injure yourself. A screening before beginning a physical activity program can identify diseases and disorders that could make it unsafe to participate in some activities. Other ways to protect yourself during exercise are to

- use the correct safety equipment for an activity;
- pay attention to other people, objects, and the weather;
- play or exercise at your skill level and know your limits;
- warm up before exercise and cooling down afterward;
- stay within the areas designated for a given activity;
- obey all rules and restrictions; and
- practice good sportsmanship.

If you become ill or injured during a physical activity, get help immediately.



New Vocabulary

- ▶ frostbite (p. 339)
- ▶ hypothermia (p. 340)
- ▶ overexertion (p. 340)
- ▶ heat exhaustion (p. 340)
- ▶ heatstroke (p. 340)
- ▶ muscle cramps (p. 341)
- ▶ strains (p. 341)
- ▶ sprains (p. 342)



Video Games Get You in Shape

Analyze. Go to glencoe.com and watch the video *Video Games Get You in Shape*. In a small group, discuss whether you think interactive video games can contribute to a healthier society. Support your ideas with examples and be ready to share your ideas with the class.

The Right Equipment

Using the correct equipment can prevent injury. You might want to rent equipment when trying a new sport. Here are a few specific guidelines:

- Wear well-fitting athletic shoes that are designed for your sport or activity. Wear socks to cushion your feet and keep them dry. Choose comfortable, non-binding clothes that are appropriate for the weather.
- For cycling, always wear a helmet that fits you properly. Make sure the helmet is approved by Snell or ANSI. Use front and rear reflectors if you must ride at night. Wear light-colored clothing with reflective patches.
- For skating or skateboarding, wear a helmet, knee and elbow pads, gloves, and wrist guards.
- For contact sports, male players should wear a cup to protect the groin. For non-contact sports that involve running, they should wear an athletic supporter. Female players should wear sports bras.
- Special adaptive equipment helps those with disabilities take part in a variety of sports, from bowling to golf.

■ **Figure 12.15** Using the right safety equipment can protect you from injury during physical activity. *What type of safety equipment is required for your favorite sport?*





Watching the Weather

Check the weather and avoid exercising outside during extreme weather, such as thunderstorms or blizzards.

Cold-Weather Risks Layers of clothing will keep you warm. You can remove layers as you warm up, or add more clothing if the temperature drops. **Figure 12.16** shows how to layer clothing. Follow these tips for cold-weather activity:

- Warm up and cool down, even in cold weather.
- Drink plenty of fluids. Cold air can lead to dehydration.
- Cover your nose and mouth to prevent breathing cold, dry air. If you have asthma, talk to your doctor before exercising outdoors in cold weather.

Two other health risks in cold weather are frostbite and hypothermia. **Frostbite** is *damage to the skin and tissues caused by extreme cold*. The skin becomes pale, hard, and numb. To treat frostbite, go to a warm place and thaw the affected areas with warm (not hot) water. As the skin thaws, it becomes red and painful. If the frostbite is severe or does not respond to treatment, seek medical help.



Listen to the health podcast titled *Effective Workouts on a Busy Schedule* at glencoe.com.



I learned how important it is to drink water when I started exercising. It helps prevent dehydration, cleans out the body, and promotes healing. For more fitness tips, visit the Online Fitness Zone at glencoe.com.

Figure 12.16

Cold-Weather Layering





Academic Vocabulary

exposure (*noun*): the condition of being unprotected

Hypothermia, or *dangerously low body temperature*, occurs as a result of **exposure** to extreme cold, submersion in cold water, or wearing wet clothing in cold or windy weather. Hypothermia causes drowsiness, weakness, and confusion. Breathing and heart rate slow down, followed by shock and heart failure. Hypothermia requires emergency medical help. Try to warm the victim until help arrives.

Hot-Weather Risks Heavy sweating while exercising in hot weather can lead to dehydration, or excessive loss of water from the body. Drinking fluids before, during, and after physical activity can prevent dehydration. If you're exercising during hot weather, you may also need to replace sodium, chloride, and potassium. Sports drinks will replace these elements.

Hot-weather health problems may lead to **overexertion**, or *overworking the body*. This can cause **heat exhaustion**, *a form of physical stress on the body caused by overheating*. Symptoms include heavy sweating; cold, clammy skin; dizziness, confusion, or fainting; a weak, rapid pulse; cramps; shortness of breath; or nausea or vomiting. To recover, rest in a shady area, douse yourself with cold water, and fan your skin. If you don't feel better within half an hour, seek medical help.

Untreated heat exhaustion can lead to **heatstroke**, *a dangerous condition in which the body loses its ability to cool itself through perspiration*. Heatstroke can cause sudden death. If you recognize symptoms of heatstroke, call for medical help immediately and try to cool the person.



Sun and Wind Protection Sun and wind can pose a hazard in both hot and cold weather. Exposure to these elements can lead to the following:

- **Windburn**, or irritation of the skin caused by wind exposure. The skin's protective oil layer is stripped away, leaving it red, dry, and sore. Rubbing lotion into the skin can ease the pain. To reduce your risk of windburn, keep your skin covered and wear lip balm.
- **Sunburn**, a burning of the skin's outer layers. Mild sunburn makes the skin red and painful. Severe sunburn can cause blistering and swelling. Cool and moisturize the skin and take a mild analgesic pain reliever to ease the discomfort. Wear protective clothing when exercising in the sun. Use a sunscreen with a sun protection factor (SPF) of 15 or more, and reapply often. Avoid exercising outside when the sun's rays are most intense.
- **Skin cancer** can result from repeated or prolonged sun exposure. Sunscreens provide protection by blocking UVA, or ultraviolet A, rays, which lead to skin cancer.



■ **Figure 12.17** The SitSki is an adaptive device that lets people with limited leg strength take part in cross-country skiing. *How do adaptive devices like this benefit people with disabilities?*

- **Eye damage** can be caused by exposure to ultraviolet (UV) rays. Wear sunglasses, a wide-brimmed hat in the summer, or UV-absorbing goggles during winter months.

Coping with Injuries

Main Idea You can treat minor sports injuries yourself, but major injuries require professional medical treatment.

You can identify and take action for both minor and major exercise-related injuries.

Minor Injuries

Muscles may become sore after exercise. Applying ice and taking pain relievers can help. Below are other minor injuries related to exercise:

- **Blisters**, fluid-filled bumps caused by friction. Well-fitting shoes and athletic socks can prevent blisters. Cover the blistered area, leave blisters intact, and let them heal.
- **Muscle cramps**, or *sudden and sometimes painful contractions of the muscles*, can occur when muscles are tired, overworked, or dehydrated. Stretching the affected muscle will usually relieve the cramps.
- **Strains** result from *overstretching and tearing a muscle*. Warm up before exercise to reduce the risk of strains. The symptoms are pain, swelling, and difficulty moving the affected muscle. Use the P.R.I.C.E. procedure, outlined in **Figure 12.18** on page 342 to treat strains.



READING CHECK

Identify Problems

and Solutions Name three health problems that can result from exercising in hot weather and explain how to prevent them.



- **Sprains** are injuries to the ligaments around a joint that produce pain, swelling, and stiffness. Use the P.R.I.C.E. procedure to treat minor sprains. If it hurts to move your joint, or you can't put weight on it, see your doctor.
- **Tendonitis** is inflammation and swelling in the tendons. Tendons are bands of fiber that connect muscles to bones. Treatment may include rest, medication, physical therapy, and in rare cases, surgery.



Major Injuries

While some minor injuries may be treated at home, major injuries require medical care. Here are some major injuries:

- **Fractures**, or broken bones, cause severe pain, swelling, bruising, or bleeding. If someone has broken a bone, get medical help immediately. Do not move the victim.
- **Dislocations** occur when a bone pops out of its normal position in a joint. The joint will be painful and may appear misshapen. Call for help immediately.
- **Concussion**, an injury to the brain can result in a severe headache, unconsciousness, or memory loss. A severe concussion can cause brain damage. Signs of brain damage include vomiting, confusion, seizures, or weakness on one side of the body. If any of these symptoms occur, seek medical help immediately.



READING CHECK

Explain What are the steps of the P.R.I.C.E. procedure?

Figure 12.18 The P.R.I.C.E. Procedure

P.R.I.C.E. stands for Protection, Rest, Ice, Compression, and Elevation.

Protect the affected area with a bandage or splint to prevent further injury.

Rest the muscle or joint for at least a day. Avoid all activities that cause pain or limping. Use crutches to walk if necessary. Keep pressure off the injured area until the pain is gone. Then gradually ease back into using the affected muscle or joint.

Ice the affected area for 10 to 15 minutes at a time, three times a day for two days after the injury. Wrap the ice in a cloth first; do not apply ice directly to your skin. If the joint is still swollen after two days, see your doctor.

Compress the affected area to reduce swelling. An Ace bandage makes a good compress. Wrap it firmly, but not so tightly that you reduce the circulation. If the area feels cold or becomes discolored, loosen the bandage.

Elevate the injured area to keep the swelling down. If possible, keep it raised above the level of your heart.

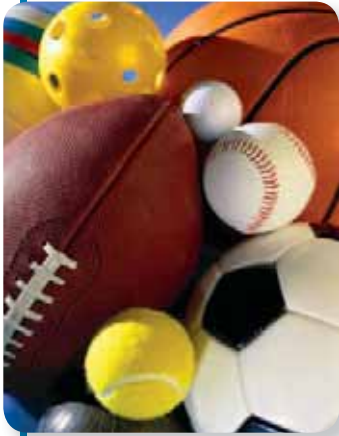




Real World CONNECTION

Playing It Safe

Sports and other recreational activities are one of the most common causes of injury among teens. In fact, teen athletes



get injured at about the same rate as professional athletes do. Many of these injuries could be prevented if teens followed guidelines and safety precautions, and used the proper safety equipment for their sport.

Activity Reading / Writing

With your group, choose a sport or recreational activity to research. Use reliable print and online sources to find injury statistics, precautions for avoiding injuries, and types of protective equipment for this sport.

Use this information to create a poster that educates teens about how injuries occur in this sport and how to stay safe. Show examples of some protective equipment. Your group can draw the poster, or create the poster using a computer graphics program. Hang the poster in the gym or make it available on your school's Web page.



LESSON 4



ASSESSMENT

After You Read

Reviewing Facts and Vocabulary

1. What is the purpose of a health screening? How can it prevent injury during physical activity?
2. How should frostbite be treated? What can you do to prevent frostbite?
3. Name three symptoms of heat exhaustion.

Thinking Critically

4. **Analyze.** What distinguishes major injuries from minor injuries? How can you use the P.R.I.C.E. procedure to treat minor injuries?
5. **Synthesize.** Suppose you are playing Frisbee with some friends, and one of them falls and injures his ankle. How do you deal with the injury?

Applying Health Skills

6. Practicing Healthful Behaviors.

Design a poster that illustrates the risks of sun and wind exposure. Include strategies for protecting yourself from these risks.

Writing Critically

7. **Expository.** Write a script for a one-minute public service announcement summarizing the importance of using the correct sports equipment. Your announcement should briefly describe the risks of injury.



Visit glencoe.com and complete the Interactive Study Guide for this lesson.

Hands-On HEALTH



Get Up and Get Fit

Now that you understand the benefits of fitness, use your knowledge to motivate others. Write a public service announcement (PSA) for a radio show. Conduct research to learn the physical, mental/emotional, and social health benefits of fitness. The PSA script should persuade others to get up and get fit.

What You'll Need

- computers with Internet access
- recording equipment (optional)

What You'll Do

Step 1

Work in groups of three or four. Identify at least five benefits of fitness, and five facts and examples demonstrating the benefits you selected.

Step 2

Write a script featuring at least three examples from your research. Support your position by citing at least one valid resource for each example.

Step 3

Present the PSA to the class as a role-play or a recording.

Apply and Conclude

Ask the entire class for feedback on each PSA. Discuss whether the message was clear, if valid examples were given, and whether the target audience was addressed.

Checklist: Advocacy

- ✓ Did I take a clear, health-enhancing stand?
- ✓ Can I support my position with reliable sources?
- ✓ Did I demonstrate an awareness of our target audience?
- ✓ Did I deliver the message with enough passion and conviction?





To download quizzes and eFlashcards to your PDA, go to glencoe.com and click on the Study to Go icon.

LESSON 1**Benefits of Physical Activity****Key Concepts**

- ▶ Physical activity can benefit all sides of your health triangle.
- ▶ A sedentary lifestyle increases the risk of health problems.
- ▶ Several short periods of physical activity throughout the day can have the same benefits as one long workout.

Vocabulary

- ▶ physical activity (p. 318)
- ▶ physical fitness (p. 319)
- ▶ exercise (p. 319)
- ▶ sedentary (p. 321)

LESSON 2**Improving Your Fitness****Key Concepts**

- ▶ The elements of fitness are five health-related components of fitness.
- ▶ Aerobic exercise improves cardiorespiratory endurance.
- ▶ Anaerobic exercises improve muscular strength and endurance.

Vocabulary

- ▶ cardiorespiratory endurance (p. 324)
- ▶ muscular strength (p. 324)
- ▶ muscular endurance (p. 325)
- ▶ flexibility (p. 325)
- ▶ aerobic exercise (p. 327)
- ▶ anaerobic exercise (p. 328)

LESSON 3**Planning a Personal Activity Program****Key Concepts**

- ▶ Consider personal needs when planning a fitness program.
- ▶ Key fitness principles are specificity, overload, progression, and regularity.
- ▶ The F.I.T.T. formula will help you plan a successful workout.

Vocabulary

- ▶ specificity (p. 332)
- ▶ overload (p. 332)
- ▶ progression (p. 333)
- ▶ warm-up (p. 334)
- ▶ workout (p. 335)
- ▶ cool-down (p. 335)
- ▶ resting heart rate (p. 336)

LESSON 4**Fitness Safety and Avoiding Injuries****Key Concepts**

- ▶ Wearing safety equipment will help protect you from injuries.
- ▶ The P.R.I.C.E. procedure can be used to treat minor injuries.
- ▶ Major injuries require medical care.

Vocabulary

- ▶ frostbite (p. 339)
- ▶ hypothermia (p. 340)
- ▶ overexertion (p. 340)
- ▶ heat exhaustion (p. 340)
- ▶ heatstroke (p. 340)
- ▶ muscle cramps (p. 341)
- ▶ strains (p. 341)
- ▶ sprains (p. 342)



LESSON 1

Vocabulary Review

Use the vocabulary terms listed on page 345 to complete the following statements.

- _____ is the ability to carry out daily tasks easily.
- To achieve specific fitness goals, use structured, purposeful physical activity, known as _____.
- People whose lives include little physical activity can be described as _____.

Understanding Key Concepts

After reading the question or statement, select the correct answer.

- Stronger muscles and bones, and greater energy, are examples of physical activity's
 - physical benefits.
 - mental benefits.
 - emotional benefits.
 - social benefits.
- Which of the following is a mental/emotional benefit of physical activity?
 - Lower blood pressure
 - Better balance and coordination
 - Reduced stress
 - Forming new friendships
- Which of the following is an example of a sedentary activity?
 - Taking a walk
 - Doing household chores
 - Bowling
 - Surfing the Internet

Thinking Critically

After reading the question or statement, write a short answer using complete sentences.

- Discuss.** Explain how physical activity can improve your social life.

- Identify.** Name two ways to fit physical activity into your daily life.
- Synthesize.** Give an example of how the physical, mental/emotional, and social benefits of physical activity are interrelated.

LESSON 2

Vocabulary Review

Choose the correct term in the sentences below.

- Running a mile without stopping is a sign of good *cardiorespiratory endurance* / *muscular endurance*.
- Muscular strength* / *Flexibility* is the ability to move your body parts through their full range of motion.
- Sprinting and lifting weights are examples of *aerobic exercise* / *anaerobic exercise*.



Understanding Key Concepts

After reading the question or statement, select the correct answer.

- Which of the following is a good test of your cardiorespiratory fitness?
 - The time it takes to run or walk a mile
 - How many curl-ups you can do
 - How heavy a weight you can lift
 - Whether you can bend over and touch your toes
- A healthy 30-year-old would have a target heart range between
 - 60 and 120 beats per minute.
 - 82 and 133 beats per minute.
 - 94 and 159 beats per minute.
 - 101 and 190 beats per minute.



15. Exercises to improve your flexibility are
- aerobic exercises.
 - isometric exercises.
 - isotonic exercises.
 - stretching exercises.

Thinking Critically

After reading the question or statement, write a short answer using complete sentences.

16. **Analyze.** Doing 50 curl-ups each day will improve what elements of fitness? What other activities can improve total fitness?
17. **Compare and Contrast.** Explain the different ways that aerobic and anaerobic exercise affect your body composition.
18. **Analyze.** Is swimming a good way to build bone mass? Why or why not?

LESSON 3

Vocabulary Review

Correct the sentences below by replacing the italicized term with the correct vocabulary term.

19. A *stretch* is gentle activity that prepares the muscles for work.
20. The part of an exercise session when you are exercising at your highest peak is called the *cool-down*.
21. Your *target heart rate* is the number of times your heart beats per minute when you are not active.

Understanding Key Concepts

After reading the question or statement, select the correct answer.

22. To build cardiovascular fitness, perform aerobic exercise at least
- twice a week for 20 minutes.
 - three times a week for 20 minutes.
 - five times a week for 10 minutes.
 - one hour per day.

23. Which principle of building fitness involves gradually increasing the demands on your body?

- Specificity
- Overload
- Progression
- Regularity



24. If you have time to stretch only once during an exercise session, it's best to do it
- before warming up.
 - after warming up.
 - in the middle of your workout.
 - while cooling down.

Thinking Critically

After reading the question or statement, write a short answer using complete sentences.

25. **Predict.** Explain what might happen if a teen builds a fitness plan around exercises that he or she strongly dislikes.
26. **Identify.** What are the four elements of the F.I.T.T. formula? How can the four elements help you become fit?
27. **Analyze.** How does your resting heart rate reflect your level of fitness? How does your active heart rate reflect your fitness level?

LESSON 4

Vocabulary Review

Choose the correct word in the sentences below.

28. *Overexertion* / *Heatstroke* is a dangerous condition in which the body loses its ability to cool itself through perspiration.
29. *Frostbite* / *Hypothermia* is damage to the skin and tissues caused by extreme cold.
30. Injuries to the ligaments around a joint are known as *strains* / *sprains*.



Assessment

Understanding Key Concepts

After reading the question or statement, select the correct answer.

31. Drowsiness, weakness, and slowed breathing and heart rate are symptoms of
 - a. heat exhaustion.
 - b. frostbite.
 - c. hypothermia.
 - d. concussion.
32. Stretching the affected muscle will usually relieve
 - a. muscle cramps.
 - b. strains.
 - c. sprains.
 - d. tendonitis.



33. Which of the following is *not* a major injury?
 - a. Fracture
 - b. Dislocation
 - c. Concussion
 - d. Sprain

Thinking Critically

After reading the question or statement, write a short answer using complete sentences.

34. **Describe.** What safety equipment is required for skating or skateboarding?
35. **Explain.** Why is it important to protect yourself from the sun during physical activity?
36. **Describe.** What are the steps in the P.R.I.C.E. procedure?



Project-Based ASSESSMENT

Physical Fitness Mural

Background

Physical fitness is more than just doing exercise and maintaining a healthy, nutritious diet. Physical fitness requires being informed. Accurate information about the importance of physical activity helps individuals to make well-informed decisions about their health.

Task

Organize and create a physical fitness mural to convince other students to incorporate daily physical activity into their lives.

Audience

Students in your school

Purpose

Provide information on physical fitness to your peers.

Procedure

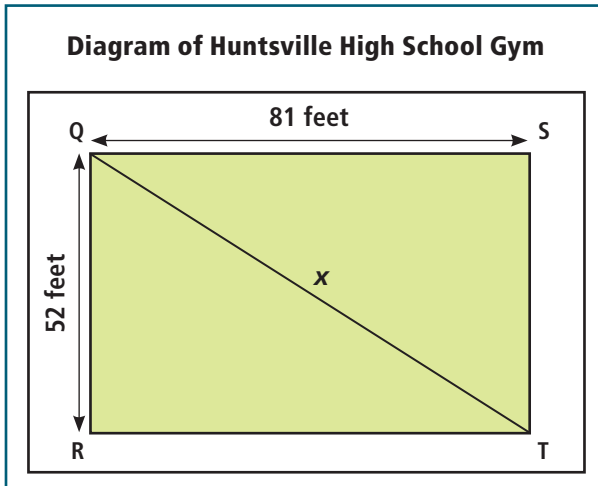
- 1 Obtain permission to create a physical fitness mural at your school.
- 2 Brainstorm topics you want presented as part of the physical fitness mural, such as the role of exercise in physical fitness, types of exercises, and nutrition. You may also want to consider physical fitness for people with disabilities.
- 3 Divide the tasks among group members. Some members may want to do research, while others may want to help design and create the mural.
- 4 After the mural is completed, ask students to complete a survey to assess its effectiveness. Also ask students what other information they would like about physical fitness.



Standardized Test Practice

Math Practice

Calculating Distances. Huntsville High's school-wide olympics will promote physical activity. Races will be run in the gym. For one race, athletes will run one lap around the gym. That distance would be approximately the same as the perimeter of the gym.



- What is the perimeter of the gym?
A. 1,112 feet C. 266 feet
B. 421 feet D. 386 feet
- One athlete covers about 5 feet every second. If she competed in the race today, approximately how many seconds would it take her to run the one-lap course?
A. 53 seconds C. 532 seconds
B. 55 seconds D. 260 seconds
- A race across the gym diagonally is represented in the diagram by line x . Line x divides the gym into two congruent right triangles. What is the approximate length, in feet, of line x , the side the two triangles share?
A. 421.2 feet C. 133 feet
B. 21.60 feet D. 96.25 feet



For more test practice, visit glencoe.com and complete the Online Quizzes for Chapter 12.

Reading/Writing Practice

Understand and Apply. Read the passage below, and then answer the questions.

On Sunday, 17-year-old Rosa Martinez completed her first marathon. Her time of 2 hours and 45 minutes won't break any records, but she's proud to have finished the race—in her wheelchair.

"I lost the use of my legs in a car crash three years ago," says Rosa. "I was really depressed, but getting into wheelchair sports inspired me. I started focusing more on what I could do in my chair than on what I couldn't do."

To train for the marathon, Rosa says she did "a lot of aerobic exercises to strengthen my heart and lungs, and a lot of work on my upper body strength."

While she's proud of her achievement, Rosa isn't going to rest on her laurels. She's already looking ahead to next year's marathon, and she's determined to beat her time from this year.

- In the final paragraph, the phrase "rest on her laurels" means
A. take a break from exercising.
B. go on to bigger challenges.
C. keep doing the same activities.
D. settle for what she's already achieved.
- Which of the following would make the best title for this passage?
A. The Winning Spirit
B. How to Train for a Marathon
C. Elements of a Fitness Program
D. Better Wheelchair Designs
- Describe the physical and mental qualities that make Rosa a successful athlete. How might she apply these qualities to other aspects of her life?

National Education Standards

Math: Number and Operations, Geometry
Language Arts: NCTE 1, NCTE 3



TEENS

*Speak Out***Body Image and the Media**

It's no secret that the average person you see on the street doesn't look like a model in a magazine. The average fashion model is 7 inches taller than the average American woman, yet weighs 23 pounds less. Men in the media also have a typical look: broad-shouldered, narrow-waisted, muscle-clad, and free of body hair. That's far from the look of the average American male.

Some people think the bodies we see in the media are unrealistic and harmful. Others think they represent a healthful ideal. Take a look at what these teens have to say, and then decide how you feel.





Problems with Images in the Media

The “ideal body” presented in the media is exceptionally thin. A typical female fashion model has a body mass index of 16.8—thinner than 98 percent of all women in America, and thin enough to put her health at risk. These media images may be making teen girls dissatisfied with their own appearance. More than half of all teen girls and women say they are unhappy with their bodies. Increasing numbers of males are also unhappy with their body image.

“Looking at magazines and seeing how perfect everyone’s body is makes me feel like my body isn’t good enough. When I look around, though, I see that I look pretty much like everyone else.”

—Ned R., age 16



Benefits of Images in the Media

In the United States today, 66 percent of adults and 17 percent of teens are overweight. Over 30 percent of adults are considered obese. Health problems related to being overweight include type 2 diabetes and cardiovascular disease. Using models who look more like the typical American could give the impression that being overweight is normal and that it doesn’t pose a health risk.

“When I read magazines, I don’t want to see people who look average. Media personalities are people to look up to—an ideal. With the obesity problem in America, media images that only show the average American may set an unhealthy example.”

—Joanna L., age 16



Activity

Beyond the Classroom

- Investigate** images from a variety of different media, such as magazines, billboards, and television. Take notes on the type of males and females that are pictured.
- Survey** other teens to find out how they feel about this issue. Ask: Do you think the bodies you see in the media are healthy? Do they make you feel good or bad about yourself?

- Express** your views on this topic. Write a newspaper column summarizing what you’ve learned from other teens about the effect of media images on body image.



For more information about body image and the media, go to glencoe.com.