

Health and Physical Education

Teacher: Mr Berry

Focus: Fitness Studies

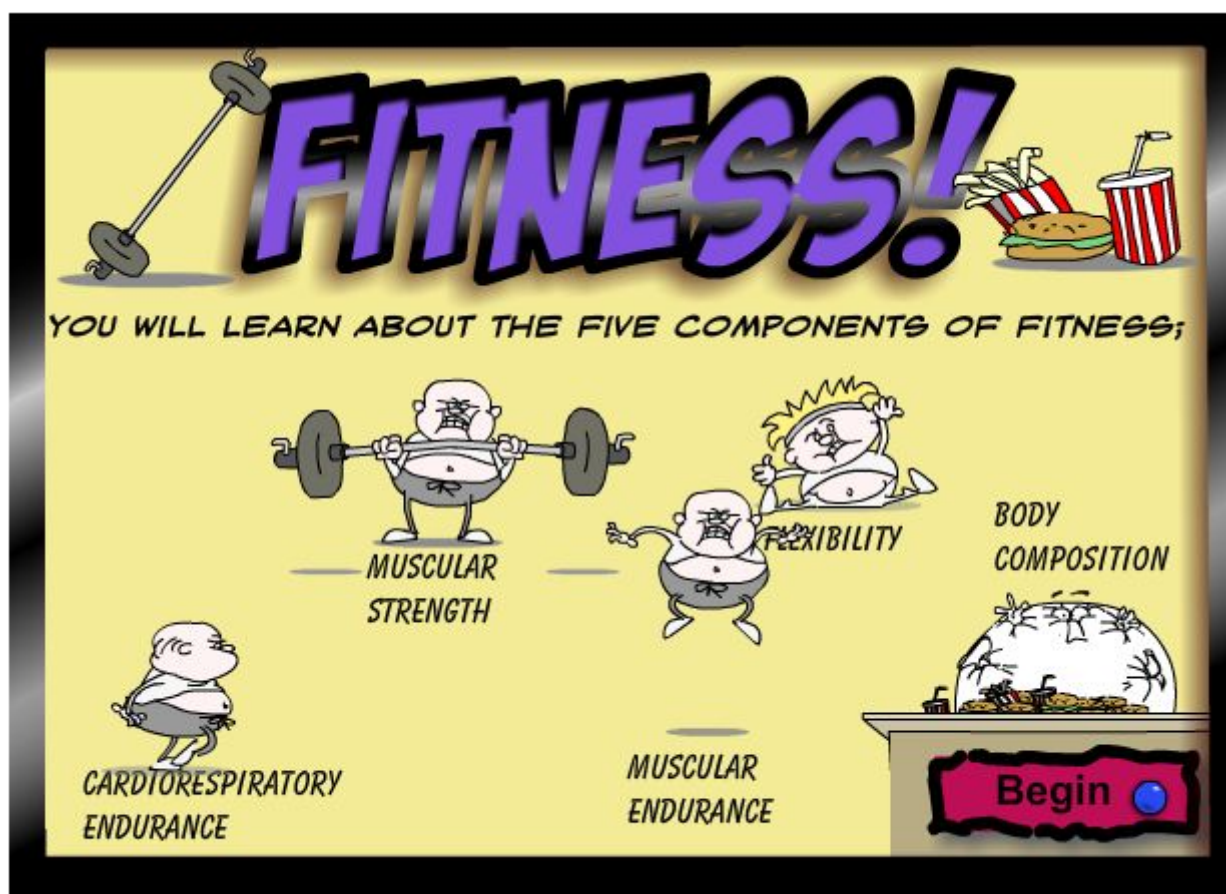
Lesson 1: Definition of Physical Fitness and Components of Fitness

Instructions: Read Introduction

Physical fitness is an important aspect of a healthy lifestyle. There are different types of physical fitness, that can contribute to performance and overall health through appropriate training. This chapter discusses ways of developing and measuring physical fitness.

Physical fitness

Physical fitness is the ability to perform moderate to vigorous physical activity on a regular basis. This level of fitness requires an understanding of the different components of physical fitness and an awareness of the relationship between training and performance.



Definitions of physical fitness

Physical fitness refers to health-related and skill-related components of fitness, which impact on the ability to perform physical activity on a regular basis.

Health-related physical fitness describes the components of fitness that keep you healthy, including cardiovascular fitness, strength, muscular endurance, flexibility and body composition.

Skill-related physical fitness describes the components of fitness that require certain skills like agility, balance, coordination, power, reaction time and speed.

Health-related physical fitness

There are five components of health-related physical fitness:

Cardiovascular fitness is sometimes referred to as aerobic fitness and is the ability of the heart, lungs and blood vessels to supply oxygen to the muscles during prolonged physical activity of moderate to vigorous intensity.

Strength is the maximum amount of force a muscle or muscle group can produce in a short period of time.

Muscular endurance is the ability to exert force several times while resisting fatigue.

Flexibility is the ability to move a joint through its complete range of movement and the degree of flexibility is specific to each joint.

Body composition is a measure of the proportionate relationship of body tissues, including muscle, bone and fat. In terms of fitness, it refers to the percentage of body weight that is made up of body fat.

Skill-related physical fitness

There are six components of skill-related physical fitness:

Agility is the ability to change the direction of the body or body parts quickly and with control.

Balance is the ability to keep the body upright or in position while static or moving.

Coordination is the ability to move different parts of the body together at the same time.

Power is the ability to use strength with speed, or the maximum force exerted in the shortest time possible.

Reaction time is the amount of time it takes to respond to stimulus.

Speed is the ability to perform movement quickly.

Task 1

List and Describe the five components of fitness

MATCHING: Match the activity below with the Component of Physical Fitness from above Then tell us WHY you made that decision Activity: Fitness Component WHY? The mile run activity is done for you as an example.

Bicycling Weight

Lifting

Pilates

Counting Calories

Plank exercises

Mile Run

Cardio

Gets heart rate up for long time

Push-Ups

Swimming

Yoga

Jump Rope

Pull-Ups

Nutrition

Dynamic Stretching

Now it's your turn: Choose 3 physical activities that you do outside of school that would fall under one of the 5 components of Fitness. List the activity, the component of fitness and why you believe it falls under that component. Your activity may incorporate more than one component each.

Activity	Fitness Component	Why

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Lesson 2: Benefits of Physical Fitness

Instructions: Read intro and complete task question.

The benefits of physical fitness
 There are many benefits of regular physical activity on health and wellbeing. The benefits of physical fitness include the same physical, mental and social benefits listed with specific potential benefits depending of the type of physical fitness training.

The benefits of physical fitness can include:

- improved cardiovascular endurance
- increased strength
- increased flexibility
- improved muscular endurance
- decreased body fat
- increased lean muscle mass
- increased power
- increased balance
- improved agility
- increased speed
- improved coordination
- improved reaction time.

The benefits received from physical fitness will vary from person to person depending on the type and level of training in which they are involved.

Task: What are the benefits of Physical Activity and Health: Please list and summarise using the explanations below this table:

Reduced Risk of Diseases	
Improved Bone Health	
Heart Health	
Posture	
Functional Strength	
Independence in old age	
Brain function and Mental Health	

Physical activity and health

The benefits of regular physical activity are wide-ranging. Someone undertaking regular physical activity will benefit from an improved level of fitness and find it easier to maintain a healthy weight. In addition their health will benefit as regular physical activity has a number of key health benefits including:

Reduced risk of certain diseases: people undertaking regular physical activity have a reduced risk of developing diseases including cancers, heart disease and diabetes.

Improved bone health: regular physical activity helps people build and maintain a healthy skeleton.

Heart health: physical activity places an increased demand upon the heart which makes it stronger, larger and more efficient.

Posture: the strengthening of the core muscles and key stabilising muscles means that people who take part in physical activity are likely to have a better posture than their inactive peers. The likelihood of improved posture increases further amongst those who follow a balanced resistance training programme.

Functional strength: regular physical activity helps people to maintain their functional strength making everyday activities easier.

Independence in old age: the fitter a person is the more likely they are to maintain their fitness throughout their senior years.

Brain function and mental health: regular physical activity has been shown to result in improved brain and nervous system function, better mental health, an improved ability to cope with stress and a lower risk of suffering from depression or anxiety disorder. Physical activity also helps prevent the development of dementia and Alzheimer's disease in old age.

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Lesson 3: Practical lesson on maintaining health and fitness

Instructions: Read intro and complete task question and poster.



Fitness and Health

HEALTH-RELATED PHYSICAL FITNESS



5 Things to do Daily to keep your Heart Healthy



You know that exercise and a good diet can keep your heart healthy. But what else can you do to keep your ticker going strong? Here are five key things you need to do every day to help your heart work most efficiently. Incorporate these habits into your lifestyle and your heart health will be the best it can be for you.

1. Eat healthy fats, NOT trans fats

We need fats in our diet, including saturated and polyunsaturated and unsaturated fats. One fat we don't need is [trans fat](#), which is known to increase your risk of developing heart disease or having a stroke over a lifetime. This is because trans fat clogs your arteries by raising your bad [cholesterol levels](#) (LDL) and lowering your good cholesterol levels (HDL). By cutting them from your diet, you improve the blood flow throughout your body. So, what are trans fats? They are industry-produced fats often used in packaged baked goods, snack foods, margarines and fried fast foods to add flavor and texture.

Tip: Read the labels on all foods. Trans fat appears on the ingredients list as partially hydrogenated oils. Look for 0 percent trans fat. Make it a point to avoid eating foods with trans fat.

RELATED: [Trans Fats, Not Saturated Fats, Link to Health Risks](#)

2. Practice good dental hygiene, especially flossing your teeth daily

[Dental health](#) is a good indication of overall health, including your heart, because those who have periodontal (gum) disease often have the same risk factors for heart disease. Studies continue on this issue, but many have shown that bacteria in the mouth involved in the development of [gum disease](#) can move into the bloodstream and cause an elevation in C-reactive protein, a marker for inflammation in the blood vessels. These changes may in turn, increase your risk of heart disease and stroke.

Tip: Floss and brush your teeth daily to ward off gum disease. It's more than cavities you may have to deal with if you are fighting gum disease.

RELATED: [Could You Be Ruining Your Teeth With These 5 Bad Habits?](#)

3. Get enough sleep

Sleep is an essential part of keeping your heart healthy. If you don't sleep enough, you may be at a higher risk for cardiovascular disease no matter your age or other health habits. One study looking at 3,000 adults over the age of 45 found that those who slept fewer than six hours per night were about twice as likely to have a stroke or heart attack as people who slept six to eight hours per night. Researchers believe sleeping too little causes disruptions in underlying health conditions and biological processes, including blood pressure and inflammation.

Tip: Make sleep a priority. Get 7 to 8 hours of sleep most nights. If you have sleep apnea, you should be treated as this condition is linked to heart disease and arrhythmias.

RELATED: [Do You Snore? How Sleep Apnea Can Hurt Your Heart](#)

4. Don't sit for too long at one time

In recent years, **research** has suggested that staying seated for long periods of time is **bad for your health** no matter how much exercise you do. This is bad news for the many people who sit at sedentary jobs all day. When looking at the combined results of several observational studies that included nearly 800,000 people, researchers found that in those who sat the most, there was an associated 147 percent increase in cardiovascular events and a 90 percent increase in death caused by these events. In addition, sitting for long periods of time (especially when traveling) increases your risk of **deep vein thrombosis (a blood clot)**.

Tip: Experts say it's important to move throughout the day. Park farther away from the office, take a few shorter walks throughout the day and/or use a standing work station so you can move up and down. And remember to exercise on most days.

RELATED: [Can Sitting Too Much Cause Your Heart Attack?](#)

5. Avoid secondhand smoke like the plague

Studies show that the risk of developing heart disease is about 25 to 30 percent higher for people who are exposed to secondhand smoke at home or work. According to the Heart Association, exposure to tobacco smoke contributes to about 34,000 premature heart disease deaths and 7,300 lung cancer deaths each year. And nonsmokers who have high blood pressure or high blood cholesterol have an even greater risk of developing heart disease when they're exposed to secondhand smoke. This is because the chemicals emitted from cigarette smoke promote the development of plaque buildup in the arteries.

Tip: Be firm with smokers that you do not want to be around environmental smoke—and keep children away from secondhand smoke.

Follow these five tips and you'll be doing your heart a favor. You'll feel better and be able to stay active with a heart-healthy lifestyle.

Health-Related Physical Fitness 5 Things For Better Heart Health

Based on the article, state one thing about each category:

1. Eat healthy fats:

2. Practice good dental hygiene:

3. Get enough sleep:

4. Don't sit for too long at one time:

5. Avoid secondhand smoke:

**HEALTH EDUCATION
CREATE A POSTER
HEART HEALTH POSTER**

DRAW A POSTER OR CREATE ONE ON THE COMPUTER

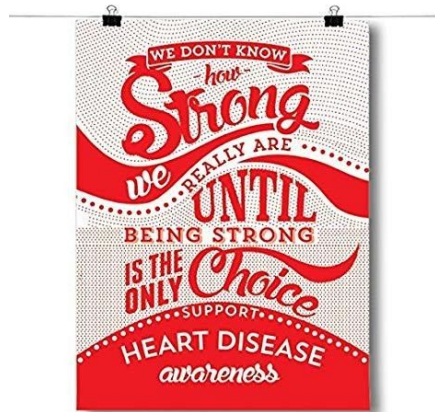
For this assignment, you will be making a HEART HEALTH POSTER, promoting someone to practice healthy heart habits. Remember, it is very important for people to keep their heart as healthy as possible.

In the poster, you should have:

- A Heart
- A Person
- A phrase promoting Heart Health

In the poster, you could have:

- A symbol for an ambulance
 - A Stethoscope
- Heart healthy foods or activities



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Lesson 4: Practical lesson on maintaining health and fitness

Instructions: Answer Questions related to You Tube Video

HEALTH-RELATED PHYSICAL FITNESS

Health-Related Physical Fitness

Video Response: Exercise vs Physical Activity

Based on the video, https://www.youtube.com/watch?v=Sorri3d_paU

Answer the questions below.

1. ACCORDING TO THE VIDEO, WHAT IS PHYSICAL ACTIVITY?

2. ACCORDING TO THE VIDEO, WHAT IS EXERCISE?

3. ACCORDING TO THE VIDEO, THOSE WHO EXERCISE:
(Write two)

Health-Related Physical Fitness
PICTURE YOUR ACTIVITY

What is your favorite activity or event that you like to participate in?

In the box below, put a picture of your favorite activity: (copy and paste from a website source/google search.



Why do you like this activity?

What body movements, body motion, or physical skills do you need to play this activity?

Find a video on YouTube of your activity. Write down the link/name of video: (optional)

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Lesson 5: Practical lesson on maintaining health and fitness

Instructions: Complete exercise chart using you tube or google or alternatively answers are below to assist with filling in chart

Task 1:

EXERCISE LIST
(USE PROVIDED FILLED FITNESS CHART TO COMPLETE BELOW WHICH HAS ANSWERS)






In this task, we are going to be learning about various types of exercises and the weights that you can use to perform these exercises. We will be filling out a chart stating; the muscle being worked, the exercise being performed, and the weight that is being used. Before we begin, let’s identify the weights in the images: Use a google search to find the types of exercise equipment below.









EXERCISE LIST

Choose exercises from the charts below. Use exercises, that a person could use, to train for the physical activity you have chosen.

PICTURE	MUSCLE	EXERCISE	WEIGHT USED
			







			
			
			
			
			







PICTURE	MUSCLE	EXERCISE	WEIGHT USED
			






			
			
			
			
			

PICTURE	MUSCLE	EXERCISE	WEIGHT USED
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PICTURE	MUSCLE	EXERCISE	WEIGHT USED
			
			
			
			
			
			

PICTURE	MUSCLE	EXERCISE	WEIGHT USED
			
			
			
			
			
			

PICTURE	MUSCLE	EXERCISE	WEIGHT USED
			
			
			
			
			
			

Task 2: Health-Related Physical Fitness
FITNESS PLAN PROJECT

Using the chart below, create a fitness plan. Choose exercises that would help someone train for the event or activity that you have chosen. The event or activity is in the picture you have chosen.






What activity or event are you training for?


MUSCLE	AREA OF BODY		Name of Exercise #1	Type of Weight Used	Name of Exercise #2	Type of Weight Used
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				





How does this exercise plan help you perform your activity or event better?



EXERCISE LIST ANSWERS




Choose exercises from the charts below. Write them into your Fitness Plan Project. Use exercises, that a person could use, to train for the physical activity you have chosen.

PICTURE	MUSCLE	EXERCISE	WEIGHT USED
	CHEST/ PECTORALS	FLAT CHEST PRESS	BARBELL
	UPPER CHEST/ PECTORALS	INCLINE CHEST PRESS	BARBELL
	CHEST/ PECTORALS	CHEST FLY	DUMBBELL
	LOWER CHEST/ PECTORALS	DECLINE CHEST PRESS	DUMBBELL
	CHEST/ PECTORALS	PUSH UP	BODY WEIGHT



	UPPER CHEST/ PECTORALS	INCLINE PUSH UP	BODY WEIGHT
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PICTURE	MUSCLE	EXERCISE	WEIGHT USED
	BACK RHOMBOIDS	DUMBBELL ROW	DUMBBELL
	BACK RHOMBOIDS	BARBELL ROW	BARBELL
	ERECTOR SPINAE	DEADLIFT	BARBELL
	LATS	PULL-UP	BODY WEIGHT



	BACK	ROW	MACHINE
	LATS	PULL-DOWN	MACHINE




PICTURE	MUSCLE	EXERCISE	WEIGHT USED
	SHOULDERS	PRESS	DUMBBELL
	SHOULDERS	PRESS	BARBELL
	SHOULDERS	RAISE	DUMBBELL


	SHOULDERS	LATERALL RAISE	DUMBBELL
	SHOULDERS	UPRIGHT ROW	MACHINE
	SHOULDERS	SHRUGS	DUMBBELL






PICTURE	MUSCLE	EXERCISE	WEIGHT USED
	ABS	CRUNCH	MACHINE
	ABS	AB ROLLER	BODY WEIGHT

	ABS	AIR BIKE	BODY WEIGHT
	ABS	SIT UP	DUMBBELL
	ABS	SIDE BEND	DUMBBELL
	ABS	LEG RAISE	BODY WEIGHT

PICTURE	MUSCLE	EXERCISE	WEIGHT USED
	BICEPS	STANDING CURLS	BARBELL
	BICEPS	CONCENTRATION CURLS	DUMBBELL

	BICEPS	SEATED CURLS	MACHINE
	TRICEPS	BENCH DIPS	BODY WEIGHT
	TRICEPS	TRICEP EXTENSION	DUMBBELL
	TRICEPS	CLOSE GRIP TRICEP EXTENSION	BARBELL

PICTURE	MUSCLE	EXERCISE	WEIGHT USED
	QUADS	STANDING CURLS	MACHINE

	HAMSTRING	LYING LEG CURL	MACHINE
	CALF	CALF RAISES	MACHINE
	LOWER BODY MUSCLES: QUADS, HAMSTRING, CALF	SQUATS	BARBELL
	LOWER BODY MUSCLES: QUADS, HAMSTRING, CALF	LUNGE	DUMBBELL
	LOWER BODY MUSCLES: QUADS, HAMSTRING, CALF	LEG PRESS	MACHINE

Guided answer examples for Task 2:

NAME _____

DATE _____

FITNESS PLAN PROJECT (EXAMPLE)

Using the chart below, create a fitness plan. Choose exercises that would help someone train for the event or activity that you have chosen. The event or activity is in the picture you have chosen.

MUSCLE	AREA OF BODY		Name of Exercise #1	Type of Weight Used	Name of Exercise #2	Type of Weight Used
ABDOMINALS	UPPER BODY	LOWER BODY	SIT-UPS	BODY WEIGHT	CRUNCHES	CRUNCH MACHINE
BICEPS	UPPER BODY	LOWER BODY	BICEP CURL	BARBELL	REVERSE PULL-UP	BODY WEIGHT
CALF	UPPER BODY	LOWER BODY	CALF RAISE	BODY WEIGHT	LUNGES	DUMBELLS
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				
	UPPER BODY	LOWER BODY				

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Lesson 6: Practical lesson on maintaining health and fitness

Instructions: Complete questions based on you tube video link provided.

Health-Related Physical Fitness Video Response: Benefits of Exercise

Based on the videos, answer the questions below.

1. According to the video; <https://www.youtube.com/watch?v=KRCGNM9hxxU>

What are the benefits of anaerobic exercise?

2. According to the video; <https://www.youtube.com/watch?v=tNpgHMCkxKE> what are the benefits of aerobic exercise?

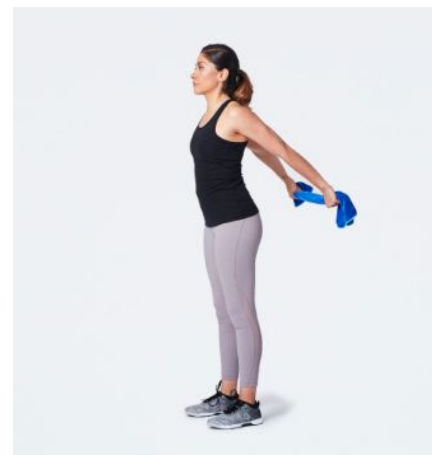
3. According to the video; <https://www.youtube.com/watch?v=kSBoRey1MF8> what are the benefits of stretching exercise?

Label the Images!

For each picture, label if the picture is; aerobic, anaerobic or stretching.



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Lesson 7: Practical lesson on maintaining health and fitness

Instructions:

Complete REVIEWING FACTS AND VOCABULARY

**Complete THINKING CRITICALLY AND AFTER YOU READ ANSWER
QUESTIONS**

Physical Activity and Your Health

Guide to Reading

Building Vocabulary

As you read this lesson, write each new highlighted term and its definition in your notebook.

- ▶ physical activity (p. 74)
- ▶ physical fitness (p. 74)
- ▶ sedentary lifestyle (p. 77)
- ▶ osteoporosis (p. 78)
- ▶ metabolism (p. 78)

Focusing on the Main Idea

In this lesson, you will learn how to:

- ▶ Analyze how regular physical activity will enhance and maintain health.
- ▶ Describe the effects of regular physical activity on body systems.
- ▶ Assess how regular physical activity aids in disease prevention.
- ▶ Combine physical activity into your daily life.

Reading Strategy

Predict

- ▶ After scanning the lesson headings and subheadings, list three topics that you believe will be covered in this lesson.

Quick Write

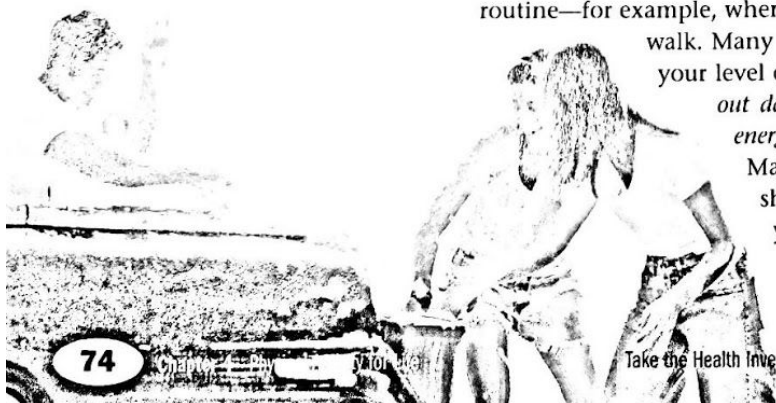
Write a brief paragraph describing at least two of the physical activities you enjoy.

- ▼ Tasks such as vacuuming, raking leaves, or washing the car can help you fit more physical activity into your life. What physical activities do you include in your daily routine?

What kinds of physical activities do you enjoy? Do you like to play basketball? Maybe you prefer skiing, riding mountain bikes, or playing volleyball. Whatever your preference, regular physical activity enhances your health.

What Is Physical Activity?

Physical activity is any form of movement that causes your body to use energy. It may be purposeful, such as when you exercise or play sports. It may also occur as part of your regular routine—for example, when you wash the car or take the dog for a walk. Many forms of physical activity can improve your level of **physical fitness**, the ability to carry out daily tasks easily and have enough reserve energy to respond to unexpected demands. Maintaining a high level of physical fitness shows that you accept responsibility for your own health, and that you value regular physical activity.



What Are the Benefits of Physical Activity?

Physical activity provides health benefits that last a lifetime. Knowing strategies for health enhancement and risk reduction helps strengthen not only the physical but also the mental/emotional and social sides of your health triangle.

Benefits to Physical Health

Physical activity makes your body stronger, increases your energy, and improves your posture. It can reduce chronic fatigue and stiffness and can improve motor responses. It strengthens your muscles and bones and helps reduce the risk of many serious diseases. Health problems associated with inadequate levels of health-related fitness can affect the following body systems:

- ▶ **Cardiovascular System.** Regular physical activity strengthens the heart muscle, allowing it to pump blood more efficiently.
- ▶ **Respiratory System.** When you engage in regular physical activity, your respiratory system begins to work more efficiently—you can breathe larger amounts of air, and the muscles used in respiration don't tire as quickly. This helps you perform such activities as running farther without getting out of breath.
- ▶ **Nervous System.** By helping you respond more quickly to stimuli, physical activity can improve your reaction time. This is especially helpful when driving or cycling.

Benefits to Mental/Emotional Health

Being physically active has many positive effects on your mental/emotional health. It can help reduce stress. Doing some stretching exercises before bed, for example, can help you relax tense muscles and sleep better after a difficult day at school. Physical activity also allows you to manage anger or frustration in a healthy way. By stimulating the release of certain chemicals that affect the brain, physical activity can improve your mood and decrease your

Reading Check

Name _____ What are two body systems that benefit from regular physical activity?

- ▼ Participating in a community event such as the one shown here is a good way to be physically active, to help others, and to engage in positive social interaction.



risk of depression. As well as improving your overall health, participating regularly in health-enhancing activities and personally rewarding physical activity outside the physical education class setting can benefit your mental/emotional health by

- ▶ helping you look and feel better, which can increase your self-confidence.
- ▶ contributing to a positive self-concept by giving you a sense of pride and accomplishment in taking care of yourself.
- ▶ reducing mental fatigue by bringing more oxygen to the brain. This improves your concentration, allowing you to think more clearly and work more productively.
- ▶ giving you a “can-do” spirit when faced with new challenges.

Hands-On Health **ACTIVITY**

Promote the Benefits of Physical Activity

In this activity you'll think of ways that different activities benefit all three parts of the health triangle. Then you'll choose an activity and create a plan to try it out.

What You'll Need

- paper and pencil
- markers or colored pencils

What You'll Do

1. Make a four-column chart on a sheet of paper. Label the columns “Activity,” “Physical,” “Mental/Emotional,” and “Social.”
2. Work in a group of three. Take turns identifying and recording a physical activity that you enjoy. Then work

together to think of a physical, mental/emotional, and social benefit of each activity listed. Record these in the appropriate columns.

3. Choose one of the activities on your chart. Using markers or colored pencils, create an ad that illustrates the physical, mental/emotional, and social benefits of that activity. Present your finished ad to the class.

Apply and Conclude

Based on class presentations, choose an activity that you're interested in but have never tried. Write a plan to try the activity to see if you like it.

Benefits to Social Health

Are you a member of a recreational or school team? Do you swim laps at a neighborhood pool? Do you like hiking or exploring trails in your community? If so, you have probably met—and possibly formed friendships with—others who share your interests. Participating in a fitness regimen with friends can be fun and may motivate you to stick with your fitness program; in turn, you can help motivate your friends. Physical activity can also benefit social health by

- ▶ building self-confidence, which helps you cope better in social situations, such as when you meet new people.
- ▶ giving you the opportunity to interact and cooperate with others.
- ▶ helping you manage stress, which can enhance your relationships with others.

Risks of Physical Inactivity

According to the Centers for Disease Control and Prevention (CDC), some teens do not make physical activity a part of their lives. The CDC's Youth Risk Behavior Surveillance Survey (YRBSS) 2003 includes these troubling facts about the level of physical activity among U.S. teens.

- ▶ More than one in three teens (35 percent) do *not* participate regularly in vigorous physical activity (that is, for at least 20 minutes three times a week).
- ▶ Only 55 percent of all U.S. students attend a physical education class one or more days a week.
- ▶ Only 29 percent of teens attend a daily physical education class—a serious decline from 42 percent in 1991.

Clearly, many teens have a **sedentary lifestyle**, or a way of life that involves little physical activity. They may spend much of their time watching TV, playing video games, or working on the computer rather than being physically active. It is important that teens learn to evaluate the benefits of various physical activities in order to reduce the risks of a sedentary lifestyle. The negative effects of a sedentary lifestyle may include

- ▶ unhealthful weight gain, which is linked to several potentially life-threatening conditions, including cardiovascular disease, type 2 diabetes, and cancer. Cardiovascular disease is the leading cause of death among Americans. **Diabetes** is a serious disorder that prevents the body from converting food into energy.

CHARACTER CHECK

Responsibility. When you participate in regular physical activity, you take responsibility for your health. By taking care of yourself, you are saying that you are worth investing in. Be positive about the benefits these activities bring you, and don't forget to compliment yourself: "I like how I feel, and I like how I look!"
Write three other positive statements that reflect the benefits you receive from regular physical activity.

Reading Check

Explain What are the benefits of physical activity?

Did You Know?

▶ The number of obese adult Americans doubled between 1980 and 1999. During the same period, the number of overweight teens tripled. In children and teens, these weight increases correspond to higher occurrences of asthma and type 2 diabetes. Eating a well-balanced diet and increasing the amount of physical activity can help reverse these trends.

Reading Check

Name _____ What are some of the risks of a sedentary lifestyle?

- ▶ an increased risk of **osteoporosis**, a condition characterized by a decrease in bone density, producing porous and fragile bones. Porous and fragile bones fracture more easily than healthy bones.
- ▶ a reduced ability to manage stress.
- ▶ decreased opportunities to meet and form friendships with active people who value and live a healthy lifestyle.

You can lower your risk of these and many other health problems by including more physical activity in your daily life. For example, when you go shopping, walk to the store or, if you have to drive, park farther away from the entrance. **Figure 4.1** suggests other healthful alternatives to sedentary activities.

FIGURE 4.1

APPROACHES TO EVERYDAY ACTIVITIES

Instead of . . .	Try . . .
<ul style="list-style-type: none"> • Taking an elevator or escalator • Playing video or computer games • Getting a ride to a friend's house • Using a shopping cart • Watching TV or taking a nap • Taking the car through a car wash 	<ul style="list-style-type: none"> • Taking the stairs • Playing soccer, basketball, or tennis • Walking, skating, or riding your bike there • Carrying groceries to the car • Gardening or mowing the lawn • Washing the car yourself

Physical Activity and Weight Control

The CDC reports that more than one-half of American adults and 14 percent of teens are overweight. This situation can be traced to a sedentary lifestyle and overeating. To stay within a weight range that is healthy for you, it's important to develop good eating habits and be physically active on a regular basis.

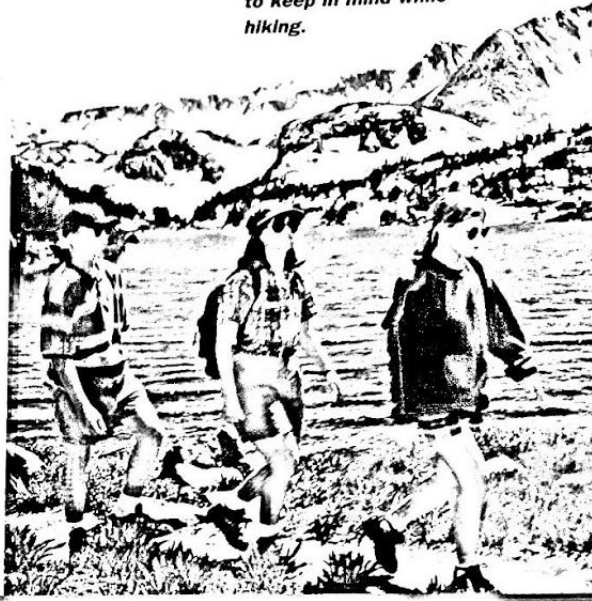
Understanding how the food you eat gets converted into energy can help you maintain a healthy weight. **Metabolism** is the process by which your body gets energy from food. Food's energy value is measured in units of heat called calories. Your body needs a sufficient number of calories each day to function properly. Additional calories must be burned through physical activity or they will be stored in the body as fat. When you are physically active, your metabolic rate rises and your body burns more calories than when it is at rest. The number of calories burned depends in part on the nature of the

activity. When you stop being active, your metabolic rate slowly returns to normal. For several hours afterward, however, you continue to burn more calories than you did before you began the activity.

Fitting Physical Activity into Your Life

Health professionals recommend that teens incorporate 60 minutes of moderate physical activity into their daily lives. Any activities that get you moving count toward your daily total and shows that you have set a personal goal for maintaining a healthy body. For example, walk or bike to school instead of getting a ride. Suggest to your family that you go for a hike or a swim on the weekend. Organize a basketball game with friends. Be sure to include some activities that you can participate in throughout your life. Hiking, swimming, golfing, biking, racquetball, tennis, and bowling are just a few examples of lifelong activities.

▼ Hiking is a physical activity that you can enjoy throughout your life. Name two safety considerations to keep in mind while hiking.



LESSON

1

REVIEW

Reviewing Facts and Vocabulary

1. What is the difference between *physical activity* and *physical fitness*?
2. Examine and briefly describe the effects of regular physical activity on three body systems.
3. Analyze the relationship between regular physical activity, health promotion, and disease prevention.

Thinking Critically

4. **Analyzing.** Explain why watching television and walking affect metabolism differently.
5. **Synthesizing.** Why does it take longer to get the maximum health benefit from a leisurely walk than from swimming laps?

Applying Health Skills

Advocacy. Design a pamphlet with eye-catching headlines and graphics to educate younger students about the importance of physical activity. Your pamphlet should encourage and guide them to determine and then participate in the types of physical activity best suited to their interests and abilities.

After You Read

Compare and Contrast. After reading the lesson, write two brief paragraphs comparing the effects of a physically active lifestyle to those of a sedentary lifestyle.



Visit health.glencoe.com for the Interactive Study Guide for Lesson 1.

ON A SEPARATE PIECE OF PAPER
REVIEWING FACTS AND VOCABULARY
THINKING CRITICALLY AND AFTER YOU READ

Health and Physical Education

Teacher: Mr Berry

Focus: Fitness Studies

Lesson 8: Practical lesson on maintaining health and fitness

Instructions: Muscular System reviewing facts and vocabulary

Complete REVIEWING FACTS AND VOCABULARY

**Complete THINKING CRITICALLY AND AFTER YOU READ ANSWER
QUESTIONS**

The Muscular System

Guide to Reading

Building Vocabulary

As you read this lesson, write each new highlighted term and its definition in your notebook.

- ▶ smooth muscles (p. 395)
- ▶ skeletal muscles (p. 395)
- ▶ flexors (p. 395)
- ▶ extensors (p. 395)
- ▶ cardiac muscles (p. 395)
- ▶ muscle tone (p. 396)
- ▶ tendonitis (p. 398)
- ▶ hernia (p. 398)

Focusing on the Main Ideas

In this lesson, you will learn how to:

- ▶ Describe the functions of the muscular system.
- ▶ Examine the different types of muscles in the body and the effects of health behaviors on the muscular system.
- ▶ List problems of the muscular system.

Reading Strategy

Organize Information

- ▶ Create a two-column chart. As you read, list ways to care for the muscular system in the first column. In the next, list some of the problems of the muscular system.

Quick Write

Write a paragraph describing some of the benefits of having good muscle tone.



- ▲ Proper warm-up and stretching before and cool-down after any physical activity keeps your muscles flexible and strong.

The action of a slingshot is the result of two interdependent parts—a forked stick and a rubber band or other elastic material. The same is true of the human body. The role of the stick is played by the skeleton. The role of the rubber band is played by the muscular system. Muscles are elastic; they stretch to allow a wide range of motion.

Functions of the Muscular System

Certain muscles in your body are always at work. Even when you sleep, muscles help you breathe, make your heart beat, and move food through your digestive system. These involuntary processes happen without your consciously controlling them. At other times, such as when you play the piano or a video game, make a dash toward first base, or throw a ball, you are using muscles that are under conscious, or voluntary, control. Without the use of both voluntary and involuntary muscles, you would be unable to perform any of these activities.

Structure of the Muscular System

A muscle is made up of hundreds of long cells called fibers. Major muscles in the body are made up of hundreds of bundles of these fibers. Muscles work by means of two complementary, or opposing, actions. These are contraction, the shortening of a muscle, and extension, the stretching of a muscle. Muscle contraction is triggered by nerve impulses. Some nerves provide impulses for many muscle fibers, especially to large muscles such as the calf muscle or biceps. In other areas, such as your eyes, a single nerve may provide impulses to only two or three muscle fibers.

Types of Muscles

The body contains three types of muscle tissue: smooth muscle, skeletal muscle, and cardiac muscle.

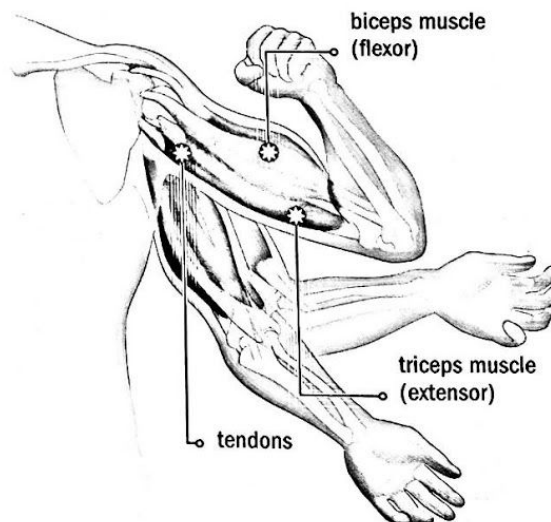
- **Smooth muscles** act on the lining of passageways and internal organs. These muscles can be found in the lining of the blood vessels, the digestive tract, the passageways that lead into the lungs, and the bladder. Smooth muscles are under involuntary control.
- **Skeletal muscles** are attached to bone and cause body movements. Skeletal muscle tissue has a striated, or striped, appearance under a microscope. Most of your muscle tissue is made up of skeletal muscle, and almost all skeletal muscles are under voluntary control. Skeletal muscles often work together, undergoing opposing actions to produce movement. One muscle contracts while the other muscle extends. An example of this can be seen in the diagram at the right, which shows the biceps and triceps muscles of the upper arm. To bend and straighten your arm at the elbow, these muscles oppose each other's action. The **flexor** is the muscle that closes a joint. In this example the biceps is the flexor. The **extensor** is the muscle that opens a joint. In this case the triceps is the extensor. Identify other opposing skeletal muscles that appear in **Figure 15.2** on page 396.
- **Cardiac muscle** is a type of striated muscle that forms the wall of the heart. The involuntary cardiac muscles are responsible for the contraction of your heart, the most important part of the cardiovascular system. The heart contracts rhythmically about 100,000 times each day to pump blood throughout your body.

Reading Check

Explain What are the three types of muscles?

- ▼ **Skeletal muscles produce movement by working in pairs. One muscle contracts while the other extends. Try holding your thigh as you bend your leg at the knee. Identify the flexor and the extensor muscles as you perform this action.**

Muscle Movement



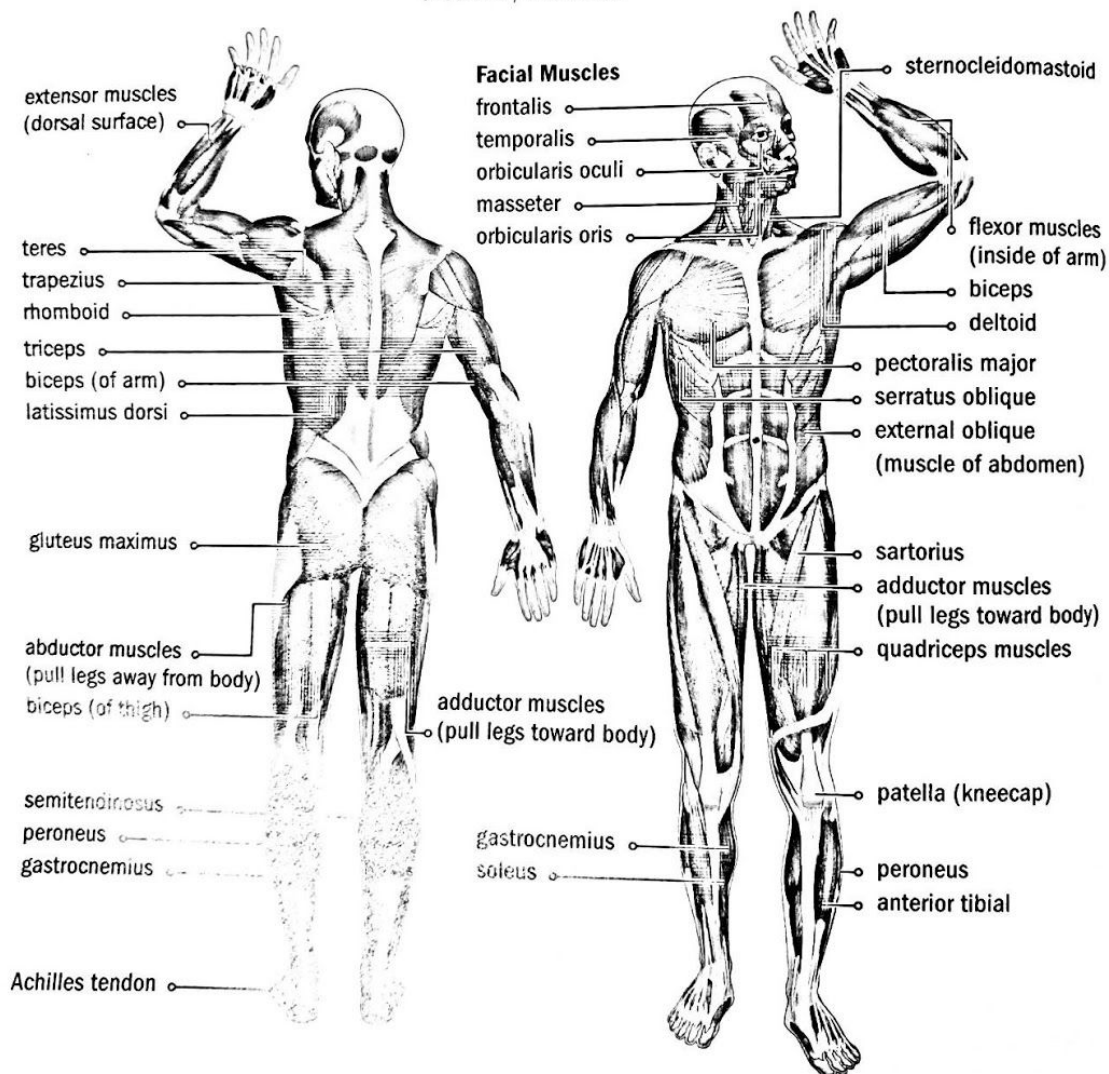
Care of the Muscular System

Regular physical activity is the best way to keep your muscles strong and healthy. Muscles that remain unused for long periods of time will *atrophy*, or decrease in size and strength. **Muscle tone** is the natural tension in the fibers of a muscle. Regular **physical activity** helps keeps muscles toned and healthy. Practicing good posture strengthens back muscles. Wearing safety equipment and appropriate clothing can protect muscles during physical activity.

FIGURE 15.2

THE SKELETAL MUSCLES

Major muscle groups include the arms, legs, back, abdomen, shoulders, and chest.



Hands-On Health **ACTIVITY**

Training Safety Checklist

Participating in weight-bearing exercise throughout life is important to maintain muscle tone and to keep bones strong and healthy. As with any physical activity, however, safety comes first. In this activity you will create safety checklists for teens doing weight or resistance training.

What You'll Need

- paper and pen or pencil
- textbook and other sources of information

What You'll Do

1. In your group, identify at least one weight-bearing exercise for every major muscle group.
2. Use a separate sheet of paper for each exercise. Describe the exercise, and then list the following: appropriate clothing, when and where to work out, safe exercise procedures, and how to

use equipment properly. Refer to your textbook and other reliable sources to develop your checklist.

3. For each exercise, include at least five easy-to-remember tips for practicing safe weight training. Create an acronym that teens can recall easily.
4. Staple the pages together to make a guide. If your classroom has a computer, input the text and print copies. Place the guides in the gymnasium and in other areas around the school.

Apply and Conclude

Write a paragraph explaining what you have learned about the benefits of weight-bearing exercise. Note the importance of following safety procedures while keeping your muscles healthy.

Problems of the Muscular System

When you are exercising, your muscles are working very hard. They might be sore after strenuous activity, such as going for an all-day hike or bike ride. Although it can be painful, muscle soreness is usually temporary. However, other problems of the muscular system are far more serious and can affect a person's overall health and lifestyle. The recovery time for injury-related muscle problems varies with the type and severity of the injury.

By getting regular physical activity, you strengthen your muscles. This shows that you know how to delay the onset of and reduce the risk for potential health problems during adulthood.

Reading Check

Explain What are some of the ways to protect muscles during physical activity?

Did You Know?

➤ Muscles produce heat when they contract. Shivering is an involuntary contraction of skeletal muscles in an effort to warm the body.

- Smooth muscles located in the skin at the base of hairs contract involuntarily, raising the hair and producing "goose bumps" in response to cold or fear.
- A muscle spasm occurs when a single muscle involuntarily contracts. A tic is the twitching that results when muscles involuntarily contract in a repeated spasm.

- **Bruise.** A bruise is an area of discolored skin that appears after an injury causes the blood vessels beneath the skin to rupture and leak. Swelling can be reduced with an ice pack.
- **Muscle strain or sprain.** A strained muscle results when a muscle is stretched or partially torn as a result of overexertion. Strains are usually treated by using the P.R.I.C.E. (protection, rest, ice, compression, elevation) procedure. A sprain is an injury to the ligament in a joint, and it requires medical treatment.
- **Tendonitis. Tendonitis**, or the inflammation of a tendon, can be caused by injury, overuse, or aging. Signs of tendonitis include joint pain or swelling that worsens with activity. Treatment includes rest, anti-inflammatory medication, or ultrasound.
- **Hernia.** A **hernia** occurs when an organ or tissue protrudes through an area of weak muscle. This condition can result from straining to lift a heavy object. Hernia repair usually requires surgery.
- **Muscular dystrophy.** Muscular dystrophy is an inherited disorder in which skeletal muscle fibers are progressively destroyed. There is no cure, but with early detection muscle weakness can be delayed through exercise programs.

LESSON

3

REVIEW

Reviewing Facts and Vocabulary

1. Give examples of how muscles work together with other body systems.
2. Describe *cardiac muscle*.
3. What is *tendonitis*? Why does it occur?

Thinking Critically

4. **Applying.** Examine the effects of health behaviors on the muscular system. Which muscles are most involved in your favorite physical activities? What behaviors can help you protect the health of these and other muscles?
5. **Analyzing.** Describe two types of muscle injury, and suggest strategies that can prevent them.

Applying Health Skills

Goal Setting. Set a goal to begin a program of strengthening your muscles. Decide on a weight-training program or another physical activity that will increase muscle strength. On which muscle groups will you focus? Use the steps of goal setting to develop your plan.

After You Read

Explain. Write a brief paragraph describing each of the three types of muscles. What can you do to care for your muscular system?

Health and Physical Education

Teacher: Mr Berry

Focus: Fitness Studies

Lesson 9-10: Practical lesson on maintaining health and fitness

Instructions: Managing Stress



ON A SEPARATE PIECE OF PAPER

Complete REVIEWING FACTS AND VOCABULARY

Managing Stress

Guide to Reading

Building Vocabulary

As you read this lesson, write each new highlighted term and its definition in your notebook.

- ▶ stress-management skills (p. 208)
- ▶ relaxation response (p. 209)

Focusing on the Main Ideas

In this lesson, you will learn how to:

- ▶ List personal causes of stress.
- ▶ Apply refusal strategies for avoiding some stressful situations.
- ▶ Discover strategies for managing stress.
- ▶ Develop healthful behaviors that help reduce stress.

Reading Strategy

Explain

- ▶ Describe at least two of your stressors. Under what conditions do you feel stress?

Quick Write

Write a brief paragraph describing your personal causes of stress. Describe how you are managing your stress.

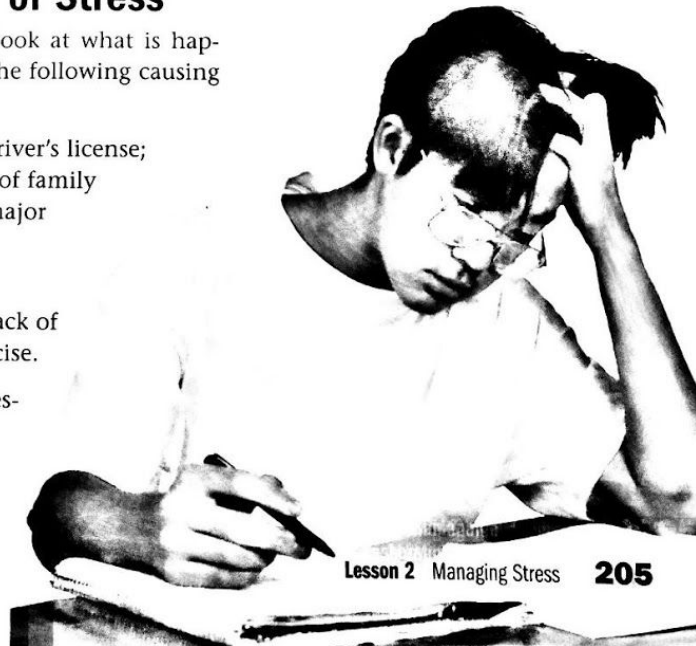
Identifying stressors and managing stress shows that you know strategies for health enhancement and risk reduction. Although it is impossible to live completely free of stress, it is possible to develop and practice effective coping skills for managing stress to prevent self-destructive behaviors.

Identifying Personal Causes of Stress

To help identify your personal stressors, look at what is happening around you right now. Is any of the following causing you stress?

- ▶ **Life events.** These can include getting a driver's license; graduation; moving or relocating; addition of family members by marriage, birth, or adoption; major illness; and parents' divorce or separation.
- ▶ **Physical stressors.** These can include pollution, excessive noise, physical injury, lack of rest, drug use, and excessive dieting or exercise.
- ▶ **Daily hassles.** These may include time pressures, too many responsibilities, deadlines, and conflicts with fellow students.

If you can identify your stressors, you have a better chance of controlling them. What positive behaviors would help you control the stress of a particularly busy week?



Avoiding Stress with Refusal Skills

Demonstrating refusal strategies may help you avoid certain stressful situations altogether. Sometimes, just walking away from a tense situation will calm you down. Say no at appropriate times when you see the possibility of stress, conflict, or threat. For example, you can avoid the potentially stressful situation of being at a party at which there will be no adult supervision by simply refusing to go.

HEALTH Online

TOPIC Time Management

Go to health.glencoe.com and click on Tech Projects to learn about ways to manage time using graphs.

ACTIVITY After you have completed the tech project, write a sentence or two stating whether you think time management is an effective way to manage and reduce stress. Explain your position.

Ways to Manage Stress

Sometimes, you can manage stress by changing the way you perceive or react to the stressor. You may be able to get a new perspective on a stressful situation by thinking of it as a learning opportunity instead of a threat. Other ways to manage stress include planning ahead, getting enough sleep, engaging in regular physical activity, eating nutritious food, and avoiding tobacco, alcohol, and other drugs.

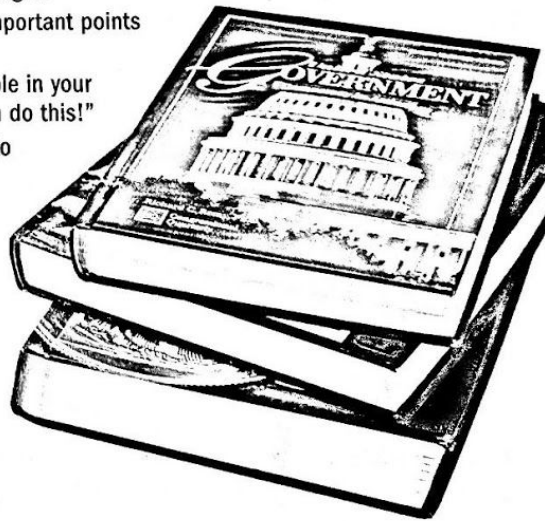
Plan Ahead

When you plan ahead, you decide in advance what you want to accomplish and what steps you'll take. Thinking through a situation in advance also helps you recognize where variations to your plan may occur. This better prepares you for unexpected changes. A well-thought-out plan is not a rigid series of steps to follow but rather a flexible map with many ways of reaching your goal. **Figure 8.2** shows ways to reduce stress as you plan for and take your next test.

FIGURE 8.2

OVERCOMING TEST ANXIETY

- Plan for tests well in advance, studying a little bit each night.
- Learn to outline material, highlighting and numbering important points so you can spot them quickly.
- During the test, do some deep breathing. Get comfortable in your chair. Give yourself a quick positive message like, "I can do this!"
- Answer all the questions you are sure of; then go back to answer the ones that are more difficult.
- After getting your corrected test back, examine your mistakes and try to understand why you made them. If you don't understand them, ask questions.



Hands-On Health **ACTIVITY**

Managing Your Time

When you manage your time well, you reduce your stress. In this activity, you'll develop a time-management plan for the coming week.

What You'll Need

- pencil
- large sheet of paper

What You'll Do

1. Divide your paper into seven columns, one for each day of the week. Create and label 24 rows, one for every hour of the day.
2. Pencil in the week's activities, including time for school, work, exercise, sleep, family, and friends. Include specific goals or deadlines, such as "History paper due." Include preparation time, such as "Go to library to research history paper."
3. Analyze your schedule. Are you surprised at how much time you spend on some activities? Where do you see conflicts? Are there things you'd like to do that you are not doing? Do you have adequate time to relax? To eat healthful meals and get plenty of physical activity?
4. Prioritize your tasks. Write "A" next to any task you need to do, "B" next to any you would like to get done, and "C" for any that can wait.
5. Rework your schedule. Be flexible, and remember that you may not be able to do everything. Try to consolidate tasks and delete low-priority activities.

Apply and Conclude

Keep your time-management schedule on hand as you go through the week. At the end of the week, evaluate your schedule and change it if necessary.

Get Adequate Sleep

Not getting enough sleep can affect your ability to concentrate. This in turn becomes a source of stress because it can interfere with schoolwork, athletics, and even relationships with others. To avoid the stress caused by lack of adequate sleep, manage your time wisely so that you get enough rest each night. Getting eight to nine hours of sleep will help you face the challenges and demands of your day. You will be in a better mood, you will think more clearly, and you will improve your chances of success.

Reading Check

Explain How can refusal skills help you avoid stress?



Health Minute

Sweat Your
Stress Away

When you're feeling stressed:

- ▶ Go running, bicycling, or skating.
- ▶ Play soccer, volleyball, or basketball.
- ▶ Participate in aerobic dance or martial arts.

Physical activity will:

- ▶ calm you down.
- ▶ improve your mood.
- ▶ improve your appearance.
- ▶ increase your ability to handle physical and emotional stress.
- ▶ aid digestion and help you sleep better.
- ▶ help you maintain a healthy weight.
- ▶ improve immune system function.
- ▶ remind you that you are in control of your responses to life.

Get Regular Physical Activity

Participating in regular **physical activity** is another helpful technique for managing stress. When you are under stress, your body has an excess of nervous energy. Engaging in physical activities, such as jogging, walking, or even cleaning your room, can release this pent-up energy. As a result, you will feel more relaxed.

Eat Nutritious Food

Balanced **nutrition** is important for overall health, but it's also important in dealing with stress. Poor eating habits can actually be a source of stress by causing fatigue, weakness, and a reduced ability to concentrate. Inappropriate dieting and over- or undereating can also put the body under additional stress. Too much stress can cause poor absorption of vitamins and minerals, which can lead to deficiencies.

To help reduce stress and feel more energetic, eat a variety of different foods, drink plenty of water, and eat fresh food whenever possible. Eating healthful foods and getting regular exercise shows that you have developed and practice effective coping skills for managing stress to prevent self-destructive behaviors. Here are a few nutrition tips that will help you when you are dealing with stress.

- ▶ **Eat regular meals.** Common reactions to stress can be either snacking all day or not wanting to eat at all.
- ▶ **Limit "comfort" foods.** Although foods such as brownies and cookies may make you feel good or even bring back happy memories, they are loaded with fat and sugar.
- ▶ **Limit caffeine.** The stimulant effect of caffeine causes a rise in blood pressure. Thus, caffeine will actually increase the physical effects of stress on the body.

Avoid Tobacco, Alcohol, and Other Drugs

Some people make the mistake of turning to tobacco, alcohol, or other drugs to relieve stress. However, using these substances does not relieve stress; it increases one's problems and harms one's health. Substance use makes the body more prone to disease and has dangerous long-term effects.

Stress-Management Techniques

To reduce the effects of stress, it's important to know strategies for managing stress. Developing and practicing **stress-management skills**, or *skills that help an individual handle stress in a healthful, effective way*, is one of the steps to good mental health.

Successful techniques for managing stress include the following:

- ▶ **Redirect your energy.** Working on a creative project or going jogging will release your nervous energy.
- ▶ **Relax and laugh.** The **relaxation response** is a state of calm that can be reached if one or more relaxation techniques are practiced regularly. Some relaxation techniques include deep breathing, thinking pleasant thoughts, and stretching. Laughing can help, too.
- ▶ **Keep a positive outlook.** A positive outlook can help relieve stress because the way you think often determines how you feel.
- ▶ **Seek out support.** Confide in someone you trust, such as a parent, guardian, sibling, teacher, or close friend. Just talking with someone about your problem may help you feel better about it.
- ▶ **Express yourself.** Learn positive strategies for expressing needs, wants, and feelings. Share your feelings with someone you trust. Set goals for your future, and share those goals with family members and friends.



▲ Spending quality time with a parent or other family member can help relieve stress. In what ways can family members help during stressful times?

LESSON

2

REVIEW

Reviewing Facts and Vocabulary

1. List three personal causes of stress.
2. Name three ways to protect yourself from stress.
3. Define the term *relaxation response*, and identify three relaxation techniques.

Thinking Critically

4. **Applying.** To help reduce the effects of stress, Cathy drinks milk, fruit juice, or water instead of cola drinks. Why is this an effective stress-management technique?
5. **Synthesizing.** Jarod has a big biology test on Friday. As he is heading to his room to study, his friend Ben calls and asks him to go bowling. Use the techniques discussed in this lesson to help Jarod balance his activities and manage his stress.

Applying Health Skills

Stress Management. Make a “How to Survive” flyer advising teens on ways to manage the stress of one of the following life events: moving to a new school, not making a team, getting a failing grade, winning a major award, receiving a scholarship.

After You Read

Identifying Problems and Solutions. After reading the lesson, create a two-column chart. On one side, list some of your stressors. On the other side, list some new strategies you will try to relieve stress.



Visit health.glencoe.com for the Interactive Study Guide for Lesson 2.