



Nutrition



Chapter Preview

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▲ Working with the Photo

Learning how to make healthy food choices helps you meet your nutritional needs. **What healthy foods do you like to eat?**

Start-Up Activities

Before You Read

Do you know how to create a healthy eating plan? Answer the Health eSpotlight question below and then watch the online video. Keep a record of your answer.



Health eSpotlight

Making Smart Food Choices



Do you know how to make healthy food choices? Where do you go to find reliable information about how much and what kind of food to put into your body?

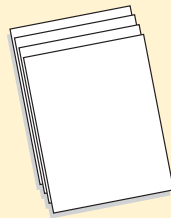
Go to glencoe.com and watch the health video for Chapter 4. Then complete the activity provided with the online video.

FOLDABLES® Study Organizer

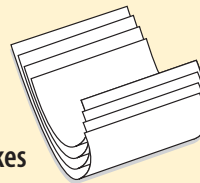
As You Read

Make this Foldable® to record what you learn about the types of nutrients in Lesson 1.

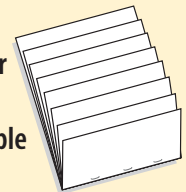
- 1 Begin with four plain sheets of $8\frac{1}{2}'' \times 11''$ paper. Place the sheets $\frac{1}{2}''$ apart.



- 2 Roll up the bottom edges, stopping them $\frac{1}{2}''$ from the top edges. This makes all tabs the same size.



- 3 Crease the paper to hold the tabs in place and staple along the fold.



- 4 Label the tabs as shown.

Record information on each type of nutrient and define key vocabulary terms under the appropriate tab.



Visit glencoe.com and complete the Health Inventory for Chapter 4.

Lesson 1

Nutrients for Good Health

Guide to Reading

Building Vocabulary

Write each of the terms below. As you read this lesson, write the definition next to each term.

- nutrients (p. 104)
- carbohydrates (p. 105)
- fiber (p. 105)
- proteins (p. 105)
- fats (p. 105)
- saturated fats (p. 105)
- unsaturated fats (p. 105)
- cholesterol (p. 106)
- trans fatty acids (p. 106)
- vitamins (p. 106)
- minerals (p. 106)

Focusing on the Main Ideas

In this lesson you will be able to

- **list** the nutrient groups your body needs to be healthy.
- **discuss** the health benefits of good nutrition.
- **identify** nutrient-rich foods.
- **analyze** the information on a Nutrition Facts panel.

Reading Strategy

Predicting Quickly look over the headings in this lesson. Then write a few sentences describing what you think this lesson will be about.

FOLDABLES® Study Organizer Use the Foldable® on p. 103 as you read this lesson.

Quick Write

List all the foods you ate yesterday. Underline those you think were the most nutritious.

What Nutrients Do You Need?

Just as a car needs fuel in order to run, your body needs the nutrients in food to perform the activities of daily life. **Nutrients** (NOO-tree-ents) are *substances in foods that your body needs to grow, have energy, and stay healthy*. The six types of nutrients are carbohydrates, proteins, fats, vitamins, minerals, and water. Each of these is explained in more detail below.

- ▶ Fortunately for pizza lovers, the food combinations in pizza contain varying amounts of the nutrient groups.
What are the nutrient groups?





Carbohydrates

A baked potato, breads, and noodles all contain carbohydrates. Fruits and vegetables also contain carbohydrates. **Carbohydrates** are *the starches and sugars found in foods*. Your body uses carbohydrates as its main source of energy. When the energy from carbohydrates is not used right away, it is stored as body fat.

There are two kinds of carbohydrates: simple and complex. *Simple* carbohydrates are sugars. They occur naturally in foods like fruit, milk, and honey. Sugars may also be added when foods are processed. *Complex* carbohydrates are starches, which are made up of many sugars. Complex carbohydrates are found in foods such as potatoes, beans, and cereals. In order to use complex carbohydrates, the body must break them down into sugars.

Fiber is a *complex carbohydrate that the body cannot break down or use for energy*. Some fiber is found in the tough, coarse part of plant foods such as the bran in whole-grain wheat and oats.

Proteins

In order to grow and develop, your body needs **proteins** (PROH·teenz), *the nutrient group used to build and repair cells*. Proteins are made of compounds called amino (uh·MEE·noh) acids. Complete proteins contain all the essential, or necessary, amino acids and are found in meat, fish, eggs, dairy products, and soybeans. Essential amino acids are those your body cannot make. Most foods that come from plants are sources of incomplete proteins. They are called incomplete because, except for soybeans, they don't have enough of one or more of the essential amino acids. However, you can get all the needed amino acids by eating certain plant-based foods, such as beans and rice.

Fats

We hear about fats in the news, but what are they? **Fats** are *nutrients that promote normal growth, give you energy, and keep your skin healthy*. Fats help build and maintain your cell membranes. They also carry vitamins A, D, E, and K to all parts of the body.

Saturated fats are *fats that are usually solid at room temperature*. More of these types of fats are found in meat, poultry, butter, and many other dairy products. Many solid margarines also contain saturated fats. Over time, eating too much saturated fat can increase the risk of developing heart disease and other diseases. **Unsaturated fats** are *fats that are usually liquid at room temperature*. These fats are found mostly in plant-based foods such as olives, nuts, avocados, and vegetable oils. Over time, switching to mostly unsaturated fats and eating less total fat may lower the risk of diseases such as heart disease.



Connect To... Science



Building Bones

Your bones need to last your entire lifetime. One way to keep them strong is to make sure you get enough calcium. Eating too little calcium over a long time can lead to osteoporosis (ahs·tee·oh·poh·ROH·sihs), a thinning and weakening of the bones. This disease can cause bones to break easily later in life.

Use reliable sources to find out what other factors play a part in building strong, healthy bones.





You probably have heard of **cholesterol** (koh-LESS-tuh-rawl), *the waxy, fat-like substance that the body uses to build cells and make other substances*. Your body makes two kinds of cholesterol. HDL cholesterol is known as the “good” cholesterol because it protects against heart disease. LDL cholesterol is known as the “bad” cholesterol because it sticks to the walls of blood vessels, which can lead to heart disease. Eating a lot of saturated fats can raise blood levels of LDL cholesterol. Dietary sources of cholesterol include meat, some seafood, whole or reduced-fat milk, many cheeses, and butter. The body also makes some cholesterol.

Blood levels of LDL cholesterol can also rise if you eat too much trans fat, or trans fatty acids. **Trans fatty acids** are *a kind of fat formed when hydrogen is added to vegetable oil during processing*. This process turns the oil into a solid so that it can be used for such food products as stick margarine. It also keeps oils fresh longer. Trans fats were often found in snack foods, such as potato chips and crackers. However, many snack foods are now being made without trans fat.

▼ Some fats remain solid at room temperature. Others are liquid at room temperature.

Which type of fat is solid at room temperature?



Vitamins

Most of the foods you eat contain vitamins. **Vitamins** are *compounds that help to regulate body processes*. Some vitamins help your body fight disease, while others help your body produce energy.

Vitamins are either fat-soluble or water-soluble. Fat-soluble vitamins, such as A, D, E, and K, dissolve in fat and can be stored in the body. Water-soluble vitamins, such as vitamin C and the B vitamins, dissolve in water. Since your body can store only small amounts of them, it needs a fresh supply of water-soluble vitamins each day.

How can you be sure that you are getting enough vitamins? Eating a variety of foods helps. For example, you get vitamin D from fortified milk and eggs. Vitamins A and C are found in fruits and vegetables. Vitamins are often added to some processed foods, such as breakfast cereal.

Minerals

Minerals are also very important to your health. **Minerals** are *substances the body uses to form healthy bones and teeth, keep blood healthy, and keep the heart and other organs working properly*. Iron is a mineral that helps make red blood cells. You can get iron from meat, poultry, and beans. Calcium, magnesium, and phosphorus are minerals that help build your teeth and bones and keep





Jose Carrillo/PhotoEdit

them strong. Dairy products such as milk and cheese are good sources of these minerals. Potassium and sodium help maintain your body's fluid balance. Potassium is found in fruits such as bananas and cantaloupe, in fish, in many vegetables, and in meats such as chicken and turkey. Sodium is found in table salt and in many processed foods.

Water

Water is essential to every body function you have. In fact, a person can live for only about a week without it. Water carries nutrients to your cells, helps **regulate** your body temperature, and helps your body digest food and remove wastes. When you perspire heavily, you need to increase the amount of water you drink. Most foods contain water, but the best sources are plain water, milk, and juice. Sweetened iced tea, soda, and certain sports drinks are not good choices because they often contain a lot of added sugars and few, if any, other nutrients. Many also contain caffeine.



Reading Check

Explain What are minerals?



- ▲ The Dietary Guidelines give clear advice: balance your food choices with enough physical activity. **In what ways can you fit more physical activity into your life?**



Guidelines for Good Nutrition

The U.S. Department of Agriculture (USDA) and the Department of Health and Human Services have developed the Dietary Guidelines for Americans to provide scientifically valid information about healthy eating and active living. These recommendations are meant for people ages two and up.

Make Smart Food Choices

What can you do to give your body the balanced nutrition it needs? You can start by eating a variety of nutritious foods every day. Eat more fruits; choose mostly whole fruit rather than drinking a lot of fruit juices. Whole fruit has more fiber. Vary your vegetables and eat more of them. Eat more leafy, dark-green vegetables, like broccoli and spinach. Orange vegetables, like carrots and sweet potatoes, are also high in nutrients. The more colorful your overall vegetable choices are, the greater the variety of nutrients they provide. At least half of the grains you eat should be whole grains. Try adding oatmeal, whole-wheat bread, and brown rice to your eating plan. Also, be sure to eat enough calcium-rich foods such as low-fat or fat-free milk, yogurt, or cheese. Eat a variety of protein-rich foods, such as fish, chicken, lean meats, eggs, nuts, seeds, and beans. Go easy on foods that are high in saturated fats, such as fatty meat and butter, and in trans fats, such as stick margarine. Eating too much of these foods can increase the risk

Academic Vocabulary

regulate (reg u LAYT) (verb) to govern or direct according to rule; to fix the time, amount, degree, or rate of. *The doctor had to operate to regulate Mike's heartbeat after his heart attack.*



Connect To... Language Arts

Reading Ingredient Lists

The terms on a food product's list of ingredients can be unfamiliar. Keep the following in mind, though: corn syrup, dextrose, and sucrose are all types of sugar. If they are among the first three items in a product's ingredient list, the amount of added sugar in it is likely to be high. Look at the ingredient list on one of your favorite snacks. If it has a lot of added sugar, consider choosing a more healthful snack.



of heart disease and stroke. When you eat meat, choose lean cuts and dishes that are baked, broiled, or grilled rather than fried.

Avoid Too Much Added Sugars and Salt

Some foods are high in added sugars. These foods are often low in other nutrients. They can fill you up, making you less likely to eat more healthful foods. They can also promote tooth decay. Calories from sugars that are not used by the body for energy are stored as body fat. This can lead to unhealthy weight gain. Foods that contain large amounts of added sugars include candy, non-diet soft drinks, and sugary desserts.

Eating too much salt and sodium can also cause problems for some people. Table salt contains sodium, a mineral that helps regulate blood pressure. Too much sodium can increase the risk of high blood pressure. You can avoid eating too much salt by cutting down on salty snacks and not sprinkling salt on your food at mealtimes. You can also use the information on food labels to choose foods lower in sodium.

Balance Food and Physical Activity

In Chapter 3 you learned that being physically fit is important to your health. Try to match how physically active you are with the amount of food you eat. To stay at a healthy weight, you need to eat just what your body requires for energy. To balance your weight with how much you eat, be sure to fit physical activity into your life. Aim for the recommended 60 minutes of moderate



► Foods like these are not only tasty, they can provide your body with many of the nutrients it needs.

Which of these healthful snacks do you enjoy?



physical activity each day. You can break it up into 15-minute bursts of activity if you need to. You can participate in sports, ride a bike, or go inline skating with your friends. Walk up the stairs instead of using the elevator. Take a brisk walk instead of playing video games or watching television.

Reading Check

Explain Why is it a good idea to limit your consumption of foods that are high in added sugars?

Getting the Nutrition Facts

Almost all packaged foods have a Nutrition Facts panel, which contains facts about the nutritional value of one label serving of the product. You can use these facts to help you make good choices about what foods to include in your eating plan.

Look at the Nutrition Facts panel in **Figure 4.1** below. It shows how large one label serving is and the number of calories

FIGURE 4.1

GETTING THE FACTS

The Nutrition Facts panel on a food package label gives you important information about a food's nutritional value. **How many calories does a label serving of this food contain?**

Nutrition Facts
Serving Size: 2 bars (42g)
Servings Per Package: 1

Amount Per Serving	% Daily Value*
Total Fat 6g	10%
Saturated Fat 0.5g	3%
Trans Fat 1.5g	2%
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 29g	10%
Dietary Fiber 2g	9%
Sugars 11g	
Protein 4g	

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:
Calories: 2,000 2,500
Less than 65g 80g
Less than 20g 25g
Less than 300mg 300mg
Less than 2,400mg 2,400mg
Less than 300g 375g
Less than 25g 30g

Calories 180
Calories from Fat 60
Vitamin A 40% • Vitamin C 0%
Calcium 0% • Iron 6%

Callout Boxes:

- Top Left:** What is the total amount of fat in the product? How much of that fat is saturated? How much of that fat is trans fat?
- Top Middle:** The % Daily Value column helps you judge the amounts of the listed nutrients in one label serving of the product. The general guideline is that 20 percent or more is a lot and 5 percent or less isn't very much.
- Top Right:** This section shows the suggested amounts of nutrients and food substances the average person should aim for each day. Your individual needs may be higher or lower.
- Bottom Left:** The serving size is a reference amount. The amounts listed for calories, nutrients, and food substances are based on one label serving of the package's contents.
- Bottom Middle:** How many calories does one label serving contain? How many of those calories come from fat?
- Bottom Right:** This shows the percentage of Daily Values for selected vitamins and minerals in one serving of the food.



it contains. Keep in mind that a package may contain more than one serving. If a package has two or more label servings and you eat the whole package, you're taking in twice the calories than are stated in the Nutrition Facts.

The label also shows percentages of Daily Value (DV) for key nutrients. These show how much one label serving of the food contributes in nutrient amounts to a 2000-calorie diet. Look for foods containing 20 percent or more of the vitamins, minerals, and fiber you need; 20 percent or more DV is high. Foods with 5 percent or less DV are low. Foods containing 5 percent or less of fat, cholesterol, and sodium are often healthy choices.

Finally, pay attention to food label claims on many packaged foods. Food labels often make health claims about food, such as “fat free” or “reduces your risk of heart disease.” Do you ever wonder if you can trust those claims to be true? Actually, the Food and Drug Administration (FDA), a government agency, requires food companies to provide scientific evidence in order to print those claims on food labels. Even so, you should still read the claims carefully. Look on the Internet or ask an adult if you have trouble understanding what a claim means.

Go Online

Visit glencoe.com and complete the Interactive Study Guide for Lesson 1.



Lesson 1 Review

After You Read

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

What I Learned

1. **Vocabulary** What is *fiber*?
2. **Identify** Which nutrient group is preferred by the body as a source of energy?
3. **Explain** How do vitamins help your body?
4. **List** Name the six nutrient groups that your body needs to be healthy.

Thinking Critically

5. **Apply** Your friend eats a lot of snacks that are high in fat and added sugars. She

also says she doesn't like fruits or vegetables. How could you influence your peer to make more healthful food choices?

6. **Infer** Why do you think the U.S. government requires a Nutrition Facts panel on packaged foods?

Applying Health Skills

7. **Practicing Healthful Behaviors** Study your school's weekly lunch menu. Find the most healthful food choices. Then make a plan to include these healthful choices in your daily eating plan.

Lesson 2

Creating a Healthy Eating Plan

Guide to Reading

Building Vocabulary

Write a sentence for each of the terms below. Trade papers with a classmate. Write the possible meanings of the terms based on the sentences.

- nutrition (p. 111)
- MyPyramid food guidance system (p. 112)
- calorie (p. 112)

Focusing on the Main Ideas

In this lesson you will be able to

- **use** the USDA's MyPyramid to make healthful food choices.
- **discuss** the factors that determine a person's nutrient needs.
- **identify** influences on food choices.

Reading Strategy

Organizing Information As you read the lesson, make a list of the five food groups. Next to each group, write down foods from that group that you might want to try.

Quick Write

Write a short paragraph explaining why variety is important in meals and snacks.

The USDA's MyPyramid

Nutrition (noo-TRIH-shuhn) is *the process of taking in food and using it for energy, growth, and good health*. Good nutrition allows your body to grow, have energy, and function in a healthy way. Eating the right amount of healthful food provides for the body's physical needs. Food is also used to satisfy your emotional and social needs. Eating healthful meals and snacks with friends and family can be fun.



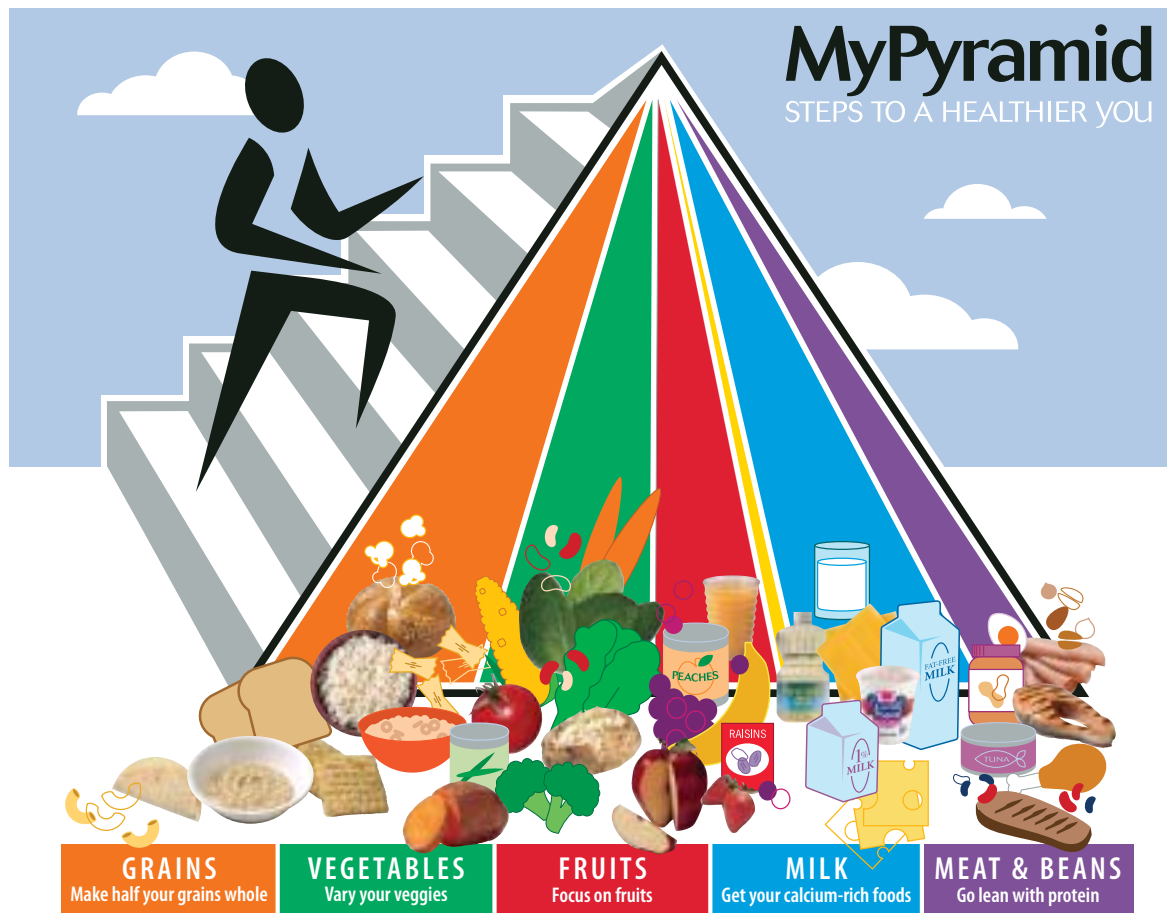
- ◀ Trying new foods can help you find more foods to enjoy. **What food groups were represented in the lunch you ate yesterday?**

▼ FIGURE 4.2

MyPyramid—STEPS TO A HEALTHIER YOU

MyPyramid suggests eating more whole grains, vegetables, and fruits.

Name at least one of your favorite foods from each of those categories.



The USDA has created a useful tool to help you make healthful food choices. The **MyPyramid food guidance system** (Figure 4.2) is a guide for developing a healthful eating plan. The foods in its five groups can be combined in many different ways.

Reading Check Define What is nutrition?

How to Meet Your Nutrient Needs

MyPyramid reminds you to be physically active every day, and to make healthy food choices. It groups foods into five food groups and a sixth group for oils. It also provides recommendations for how much to eat daily from each food group, based on how many calories you need each day. A **calorie** (KA-luh-ree) is a unit of heat that measures the energy available in foods. MyPyramid advice is based on your age, gender, and level of physical activity. For example,



if you're very active, you may need more calories each day than someone who is less active. The two charts in **Figure 4.3** show how you can use the MyPyramid guidelines. First, determine your level of activity and find the suggested calorie needs. Then find the amount of food from each group needed to meet your nutrient needs. Meeting your nutrient needs promotes good health and helps prevent disease.

FIGURE 4.3A **HOW MANY CALORIES DO YOU NEED?**

Your Calorie Level	Sedentary Lifestyle	Moderately Active Lifestyle	Active Lifestyle
Females age 9–13	1600 calories per day	2000 calories per day	2200 calories per day
Males age 9–13	1800 calories per day	2000 calories per day	2600 calories per day

FIGURE 4.3B **WHAT ARE YOUR FOOD GROUP NEEDS BASED ON CALORIES?**


Your Calorie Level	1600	1800	2000	2200	2400	2600
Fruits	1.5 cups	1.5 cups	2 cups	2 cups	2 cups	2 cups
Vegetables	2 cups	2.5 cups	2.5 cups	3 cups	3 cups	3.5 cups
Grains	5 ounces	6 ounces	6 ounces	7 ounces	8 ounces	9 ounces
Meat and Beans	5 ounces	5 ounces	5.5 ounces	6 ounces	6.5 ounces	6.5 ounces
Milk	3 cups	3 cups	3 cups	3 cups	3 cups	3 cups
Oils	5 tsp.	5 tsp.	6 tsp.	6 tsp.	7 tsp.	8 tsp.
Extra Calories	132	195	267	290	362	410

Figure 4.3A Sedentary means that, in general, you just do the activities of daily life. A moderately active lifestyle means that you get at least 30 minutes per day of moderate physical activity, such as walking. An active lifestyle includes activity equivalent to walking three miles per day in addition to everyday activities. **What is the difference in calories needed between active and sedentary females?**

Figure 4.3B Depending on the foods you choose, you may have a small amount of extra calories to spend that are not needed to get your nutrient requirements. You can spend them on more foods from the food groups or on extras, such as beverages or candy. **How do you earn extra calories?**



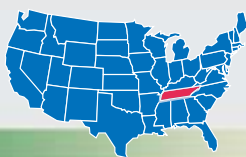
What **Teens** THINK



Can fast food be part of a healthy diet?

Maybe, because there are some good fast foods at fast-food restaurants, such as salads, fruit, and some dairy products. In some cases no, because eating hamburgers or cheeseburgers with fries can make you gain weight and be more likely to have a heart attack.

Vince E.
Portland, TN



Eat a Variety of Foods

You can't get all the nutrients your body needs from just one food group. That's why it's important to eat a variety of foods from each group. Remember, many foods are combinations of ingredients from two or more food groups. A bowl of chicken vegetable soup, for example, has meat, vegetables, and sometimes grains.

Did you notice that some of the color stripes in MyPyramid are wider than others? The different sizes remind you to choose more foods from the food groups with the widest stripes. The colored stripes are also wider at the bottom of the pyramid than at the top. This is because every food group has foods that you should eat more often than others. These foods are at the bottom of the pyramid. For example,

a baked sweet potato is an orange vegetable full of vitamins and minerals and would be at the bottom of the green stripe. French fries are also potatoes, but because they are fried and have a lot of fat, they would be near the top of the green stripe.



Reading Check

Identify Why are the colored stripes wider at the bottom of the pyramid than at the top?

- ▶ Messages from the media can influence your food choices. **How can messages from other sources influence your food choices?**



Influences on Food Choices

Your personal preferences affect the food choices you make. Most people like some foods more than others. The way a food looks, feels, smells, and tastes usually affects what you choose to eat. Other factors also play a part in your food choices. Your family's cultural traditions or ethnic background may influence what foods are served at your home. Peers also influence food choices. Have you ever decided to try a food because a friend liked it?

The agricultural products grown near where you live also affect which foods you eat. For example, many citrus fruits, such as oranges and grapefruits, are grown in Florida and Texas. Farmers' markets and farm stands during harvest season may offer these products. What kinds of food are grown in your area?

Messages from the media can influence which foods you eat. If you see a commercial for a new kind of pizza, does it make you want to try it? The cost and convenience of food are also factors. People short on time often select foods that are easy to prepare. The limited food choices available from many fast-food restaurants and vending machines can also affect what you choose to eat.



Visit glencoe.com and complete the Interactive Study Guide for Lesson 2.

Lesson 2 Review

After You Read

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

What I Learned

1. **Vocabulary** Define *calorie*.
2. **Identify** List the five main food groups shown in MyPyramid.
3. **Explain** How much from the milk group does MyPyramid recommend for people ages 9 to 13?
4. **List** Name three factors that can influence your food choices.

Thinking Critically

5. **Hypothesize** What role might family, community, and cultural attitudes play in a teen's food choices?

6. **Analyze** How does choosing healthful foods show that you are taking responsibility for personal health behavior?

Applying Health Skills

7. **Advocacy** Using what you have learned so far, create an advertisement that influences peers to eat more fruits and vegetables. Think about your own likes and dislikes. What would convince you to make a change?

Lesson 3

Planning Healthful Meals

Guide to Reading

● Building Vocabulary

Look up the meaning of the word *dense* in a dictionary. Then write a definition of the term *nutrient-dense* in your own words.

- nutrient dense (p. 119)

● Focusing on the Main Ideas

In this lesson, you will learn to

- **plan** nutritious meals.
- **describe** why eating a healthy breakfast is important.
- **choose** healthful snacks.
- **apply** accessing information skills to choosing healthful meals.

● Reading Strategy

Finding the Main Idea Take a look at the major headings in this lesson. For each heading, write one sentence that states the main idea.

Quick Write

In a short paragraph, describe your favorite breakfast. Do you think it's nutritious? Explain your answer.

Healthful Eating Habits

Healthful eating is a positive health behavior that can promote health and prevent disease. You'll get the proper amount of nutrients you need by eating a variety of foods from all of the food groups in the recommended amounts. **Figure 4.4** has some tips for healthful eating from the USDA. Each box lists a group of foods and suggestions for making healthful food choices.

Pay attention to the size of your portions whether you are eating at home or in a restaurant. You can use everyday objects to estimate portion sizes. For example, three ounces of meat is about the size of a deck of cards. One tablespoon of peanut butter is about the size of one nine-volt battery. One cup of raw vegetables is about the size of a baseball.

The best way to get the vitamins and minerals you need is with food. However, sometimes dietary restrictions can prevent you from getting the nutrients you need. In this situation, you may need to take a vitamin and mineral **supplement**. Always talk to your doctor before taking any supplements to make sure you really need them, and that you don't take too much. If you have food allergies be cautious! Supplements could contain ingredients that you could be allergic to. If you take a basic multivitamin,



▼ FIGURE 4.4

TIPS ON HEALTHFUL EATING FROM THE USDA

The USDA has suggestions for healthful eating. **Which groups of foods are included in a bowl of oatmeal made with low-fat milk and almonds on top?**

<p style="text-align: center;">Focus on fruits and vegetables.</p> <ul style="list-style-type: none"> ■ Make fruits and veggies half of what you eat at each meal. ■ Eat more dark-green and yellow-orange veggies. ■ Always have some fruit at breakfast. ■ Keep baby carrots or other cut-up veggies on hand for snacks.
<p style="text-align: center;">Make half your grains whole grains.</p> <ul style="list-style-type: none"> ■ Breakfast is a good time for eating whole grains. Have a bowl of hot oatmeal or ready-to-eat whole-grains cereal. ■ Make sandwiches using whole-grain bread. ■ Eat brown rice instead of white rice.
<p style="text-align: center;">Get your calcium-rich foods.</p> <ul style="list-style-type: none"> ■ Drink your milk. ■ For variety, include yogurt, smoothies, or cheeses. ■ Make low-fat or fat-free milk part of your breakfast.
<p style="text-align: center;">Choose healthful fats.</p> <ul style="list-style-type: none"> ■ Choose low-fat proteins. ■ Eat foods such as nuts, walnuts, and almonds. ■ Eat fish such as salmon or tuna twice a week.
<p style="text-align: center;">Limit salt and added sugar.</p> <ul style="list-style-type: none"> ■ Check product labels for added salt and added sugar.

avoid brands that have higher than 100% of the Daily Value of any vitamin or mineral. Large doses of certain vitamins and minerals can cause serious health problems.

Begin the Day with a Healthful Breakfast

Your body continues to use energy while you sleep. By the time you wake up, you may have gone 10 to 12 hours without eating. Your body needs fuel. If you start your day with a healthful breakfast, you will have energy for later in the day. People who eat a healthful breakfast tend to feel less tired later in the day and find it easier to concentrate. It's also easier to maintain a healthy weight when you eat breakfast because you are less likely to overeat later.



Dietary Supplements

Some people take large doses of vitamin and mineral supplements to be sure they're getting enough nutrients. However, large doses of some vitamins and minerals can be dangerous. For example, large doses of vitamin A can cause hair loss and turn the skin yellow.

Use school and community resources to find valid health information about a specific dietary supplement. Share your findings with the class.

Academic Vocabulary

supplement (SUHP luh ment) (*noun*) something that supplies what is needed or makes an addition. *Sarah can't eat dairy products so she takes a calcium supplement to make sure she gets enough calcium.*



Richard Anderson

What should you eat for breakfast? Choose foods that are high in complex carbohydrates and protein, such as a bowl of oatmeal with fruit and milk, or eggs with whole-wheat toast. However, you don't have to limit your choices to traditional breakfast foods. Why not try something different? Consider eating a bean burrito for breakfast. Beans are high in protein and fiber. Adding a glass of orange juice or a glass of low-fat milk will give you a good start for the day, too. Orange juice has vitamin C, and milk contains protein and calcium.

If you're running short on time in the morning, you can still eat a healthful breakfast. Just take it with you. Foods such as string cheese, a slice of whole-wheat bread, raisins, and a box of orange juice travel well and provide the fuel you need. Other good choices include a yogurt drink, an apple, and a whole-grain bagel.

Packing a Healthful Lunch

Each day when the lunch bell rings, you can have a nutritious and flavorful lunch. All it takes is a little planning. If you don't buy the school lunch, you can always pack your own. Should your lunch always contain a sandwich? No. There are many ways to add variety as well as nutrients to a packed lunch.

If you do want a sandwich, use whole-grain breads. These will give you more flavor and fiber. Consider a salad, too. You will boost

the salad's vitamin and mineral content if you add raw spinach, tomatoes, cucumber, or even nuts or cheese. Many stores sell single-serving containers of low-fat or fat-free dressing that you can pack. Cheese sticks or yogurt add variety along with protein and calcium. A roll or cereal bar gives you some complex carbohydrates. Choose fresh fruit such as apples, grapes, or bananas for dessert. These fruits are delicious as well as easy to carry. Pack bottled water or unsweetened fruit juice instead of sugary soft drinks, or buy milk at school.

Finally, make sure you pack your lunch correctly so that your food doesn't spoil, which could make you ill. Read the food safety guidelines on pages 120–121 to learn more.

▲ Breakfast on the go can still be healthful. **Which foods would you choose for breakfast on the go?**





Smart Snacking

Snack foods such as potato chips and cookies may be tasty but they aren't the healthiest choices. These and many other snack foods are low in nutrients and high in added fat, sugar, or salt. There are better choices: snacks that are **nutrient dense**. This term refers to foods *having a high amount of nutrients relative to the number of calories*. How can you tell if a snack is nutrient dense? Use the Nutrition Facts on the package label to compare the nutrients and calories. Then you can find the most nutrient-dense snacks. Choose foods such as whole grains, nuts, yogurt, vegetables, and fruits.

For example, enjoy a fruit smoothie made with yogurt, bananas, and strawberries. Another good choice is a peanut butter sandwich with bananas on whole-wheat bread. A glass of tomato or vegetable juice along with baked tortilla chips also makes a healthful snack. Remember, if your school vending machines don't offer healthful snacks, pack your own.



Reading Check

Describe Why are snack foods such as potato chips and cookies not the healthiest choices?



Go Online

Topic: Healthy Snacks

Visit glencoe.com for Student Web Activities to help you learn about the importance of eating healthy snacks and how to shop for them.

Activity: Using the information provided at the link above, compare three different brands of your favorite kind of snack and decide which is the most nutritious.



▲ Convenience foods can be healthful as well as portable.

Which healthful convenience foods do you enjoy?



Health Skills Activity

Accessing Information

Eating Right When Eating Out

Many people eat some of their meals at restaurants. Part of eating right is making nutrient-rich food choices when eating out. When ordering food, keep the Dietary Guidelines and MyPyramid in mind. Follow these strategies: **Pay attention to portion sizes.** Many restaurants serve huge portions of food. You may want to eat only part of the meal and take the rest home to eat the next day.

Strive for balance. If you choose to eat the larger portion, eat a smaller meal later.

Think about what you order. Be aware that many restaurants add high-fat sauces or toppings to foods that may already be high in fat.

Order fewer foods with fats. Choose foods that are baked, grilled, or broiled rather than fried. You can also ask that sauces be served on the side.

Stay informed. Some restaurants make nutritional information available for items on their menus. Ask to see the information before you order.

On Your Own

Use reliable online or print resources to find nutritional information from a fast-food restaurant. Look for items that you might choose for a meal. Using the nutritional information, rate your choices based on what you have learned in this lesson. Note any changes you might make in your choices in the future. Present your ideas to the class.

Keeping Food Safe

When food is not handled, stored, or prepared properly, bacteria or other organisms can grow rapidly in the food. For example, food left out at a picnic on a warm day can be the source of a foodborne illness after an hour or so. To keep food safe, follow these steps.

Keep your hands, utensils, and surfaces clean. Always wash hands and utensils before handling food. Be especially careful after preparing raw meats, poultry, fish, and eggs. Use warm, soapy water to wash your hands and to clean utensils, cutting boards, and kitchen surfaces.

Separate raw, cooked, and ready-to-eat foods. Keep raw, cooked, and ready-to-eat products separate when you are preparing or storing them. If prepared or stored with raw foods, cooked and ready-to-eat foods can pick up harmful organisms. Use separate cutting boards for vegetables and meats and for cooked and

uncooked foods, or wash the cutting board with hot soapy water in between.

Cook foods thoroughly. Use a food thermometer to make sure that foods are cooked to the proper temperature. Fish and meats such as beef and lamb should be cooked to at least 145 degrees. Ground beef should be cooked to 160 degrees. Poultry should be cooked to between 170 and 180 degrees. Be sure to reheat leftovers to at least 165 degrees.

Chill when necessary. Refrigerate foods that spoil easily such as meat, fish, chicken, and eggs. Frozen foods should be thawed out in the refrigerator rather than on a countertop. Put leftovers in the refrigerator right after a meal.

Serve safely. Keep hot foods hot and cold foods cold.

Follow directions. Read food labels and follow suggestions for cooking or refrigeration.

When in doubt, throw it out. Do not eat any food that you suspect has not been handled, cooked, or stored properly.

Reading Check

Explain What's the proper way to clean up after preparing raw meat for cooking?

Go Online

Visit glencoe.com and complete the Interactive Study Guide for Lesson 3.

Lesson 3 Review

After You Read

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

What I Learned

1. **List** What are two foods that contain healthful fats?
2. **Vocabulary** Define *nutrient dense*. Give an example of a nutrient-dense snack.
3. **Give Examples** Suggest two nontraditional yet healthful breakfast foods.
4. **Explain.** Why is it important to keep raw, cooked, and ready-to-eat foods separate?

Thinking Critically

5. **Analyze** Why do you think it is often said that breakfast is the most important meal of the day?

6. **Apply** Yolanda packed a tuna sandwich and a carton of milk for lunch. Her lunch is in a paper bag, and she plans to store it in her school locker until she eats it. Do you think this is a safe practice? Explain why or why not.

Applying Health Skills

7. **Practicing Healthful Behaviors** Make a list of healthful breakfasts you could prepare when you're in a hurry. Include some foods that can be eaten on the way to school. Also, think of foods that you could prepare the night before so they're ready in the morning. Refer to your list each week for ideas.

Lesson 4

Digestion and Excretion

Guide to Reading

Building Vocabulary

As you read this lesson, write down each term below, along with its definition.

- digestion (p. 122)
- digestive system (p. 122)
- saliva (p. 122)
- enzyme (p. 122)
- small intestine (p. 123)
- colon (p. 124)
- pancreas (p. 124)
- liver (p. 124)
- excretion (p. 125)
- excretory system (p. 125)
- kidneys (p. 125)

Focusing on the Main Ideas

In this lesson you will be able to

- **explain** the process of digestion.
- **discuss** how your body eliminates waste products.
- **explain** how to care for your digestive and excretory systems.

Reading Strategy

Sequencing Take a look at Figures 4.5 and 4.6 in this lesson. Using these figures, briefly summarize the steps of digestion.

Quick Write

Write a paragraph describing what you know about the digestive system.

How Your Body Digests Food

Digestion (di·JES·chuhn) is the process by which the body breaks down food into smaller pieces that can be absorbed by the blood and sent to each cell in your body. It takes the body from 16 to 24 hours to digest food and remove waste products. Your **digestive system** is the group of organs that work together to break down foods into substances that your cells can use. As food is digested, chemical energy in the food is released.

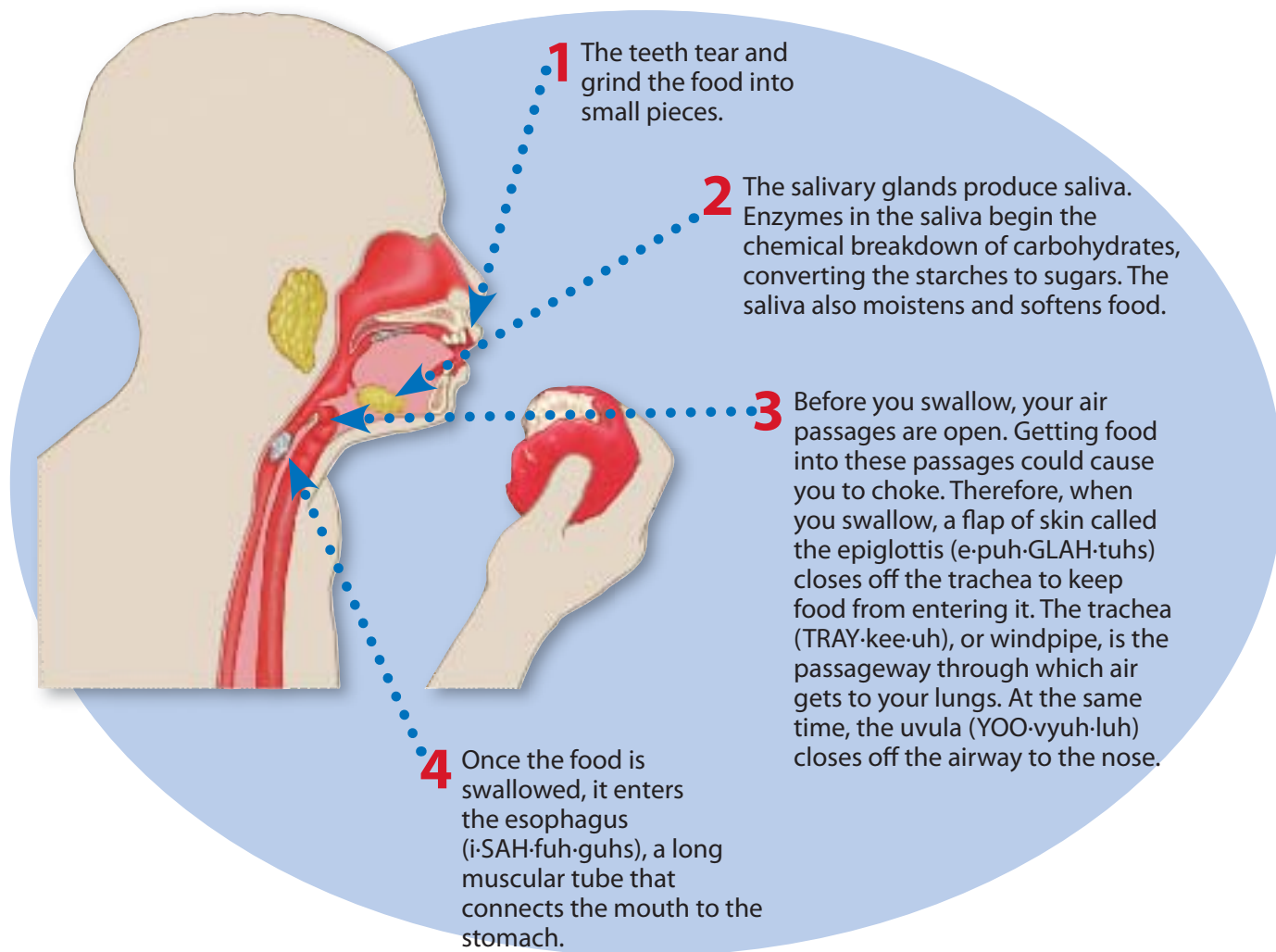
Where Does Digestion Begin?

Digestion begins in your mouth. As you crush food with your teeth, saliva mixes with the food, as shown in **Figure 4.5**. **Saliva** (suh·LI·vah) is a digestive juice produced by the salivary glands in your mouth. Amylase (A·mih·laze), an enzyme in saliva, begins breaking down the carbohydrates in the food. It changes the starches into sugars. An **enzyme** (EN·zime) is a substance that aids in the body's chemical reactions. Saliva also moistens and softens the food, making it easier to swallow.

FIGURE 4.5

CHEWING AND SWALLOWING

The digestive process starts in your mouth. **What role does saliva play in digestion?**



Your Digestive Organs

After you swallow food, it moves into your esophagus. The esophagus contracts and relaxes repeatedly to move the food along to the stomach (**Figure 4.6**). The strong muscles of the stomach churn, or mix, the food. The food then gets mixed with gastric juice, which is made up of acid and other enzymes. The food slowly gets turned into a thick, creamy mixture, and may remain in the stomach for up to four hours while this is happening. This mixture then passes into the small intestine.

The **small intestine** is a coiled tube from 20 to 23 feet long, in which about 90 percent of digestion takes place. Here, enzymes from the liver, the pancreas, and glands in the small intestine itself combine with the food mixture. Then villi (VILL-eye), finger-like projections in the wall of the small intestine, take in nutrients from



Connect To... Language Arts

The Meanings of Digest

The word *digest* comes from a Latin word meaning “to separate.”

Look up the word *digest* in a dictionary. What other meanings do you find? How are they related?

the food. Inside the villi are capillaries, which draw the nutrients into the bloodstream. The blood then carries them throughout the body.

Food that the body cannot digest then goes to the **colon** (KOH-luhn), *a tube five to six feet in length that plays a part in both digestion and excretion*. Any water, vitamins, minerals, and salts left in the food mixture are absorbed in the colon. Most of the water is returned to the body. The rest is waste material.



Reading Check

Identify What is the small intestine?

▼ FIGURE 4.6

THE DIGESTIVE SYSTEM

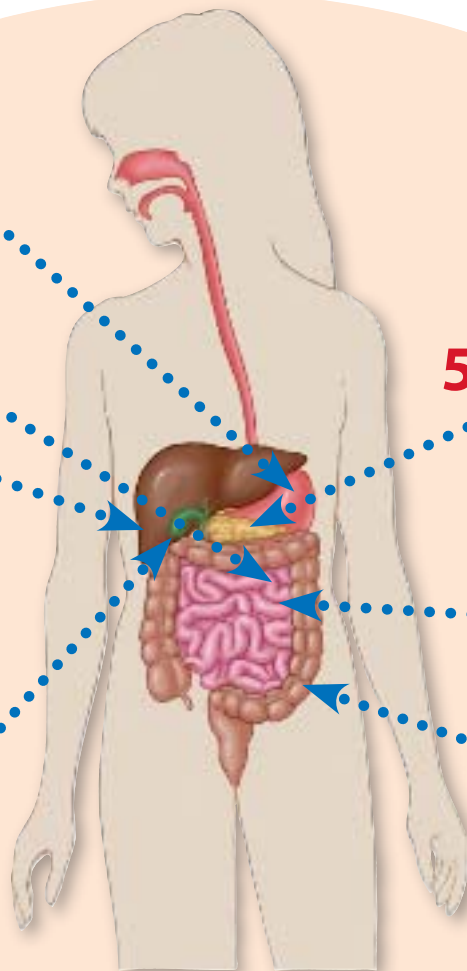
Your body gets nutrients from the food that travels through the digestive system. **What does the pancreas do?**

1 Acid and enzymes in the stomach break down food until it looks like a thin soup, a mixture called chyme (KIME).

2 The food moves to the small intestine, where most digestion takes place.

3 The **liver** is a digestive gland that secretes a substance called bile, which helps to digest fats. In addition, the liver helps control the level of sugar in the blood, breaks down harmful substances such as alcohol, and stores some vitamins.

4 After the liver produces bile, it sends it to the gallbladder (GAWL·bla·duhr). The gallbladder stores the bile until it is needed in the small intestine.



5 The **pancreas** (PAN·kree·uhs) is a gland that helps the small intestine by producing pancreatic juice, a blend of enzymes that breaks down proteins, carbohydrates, and fats.

6 The walls of the small intestine are covered with villi, which absorb nutrients.

7 The colon absorbs any remaining water, vitamins, or salts contained in the food and stores the wastes until they are eliminated.



Removing Wastes

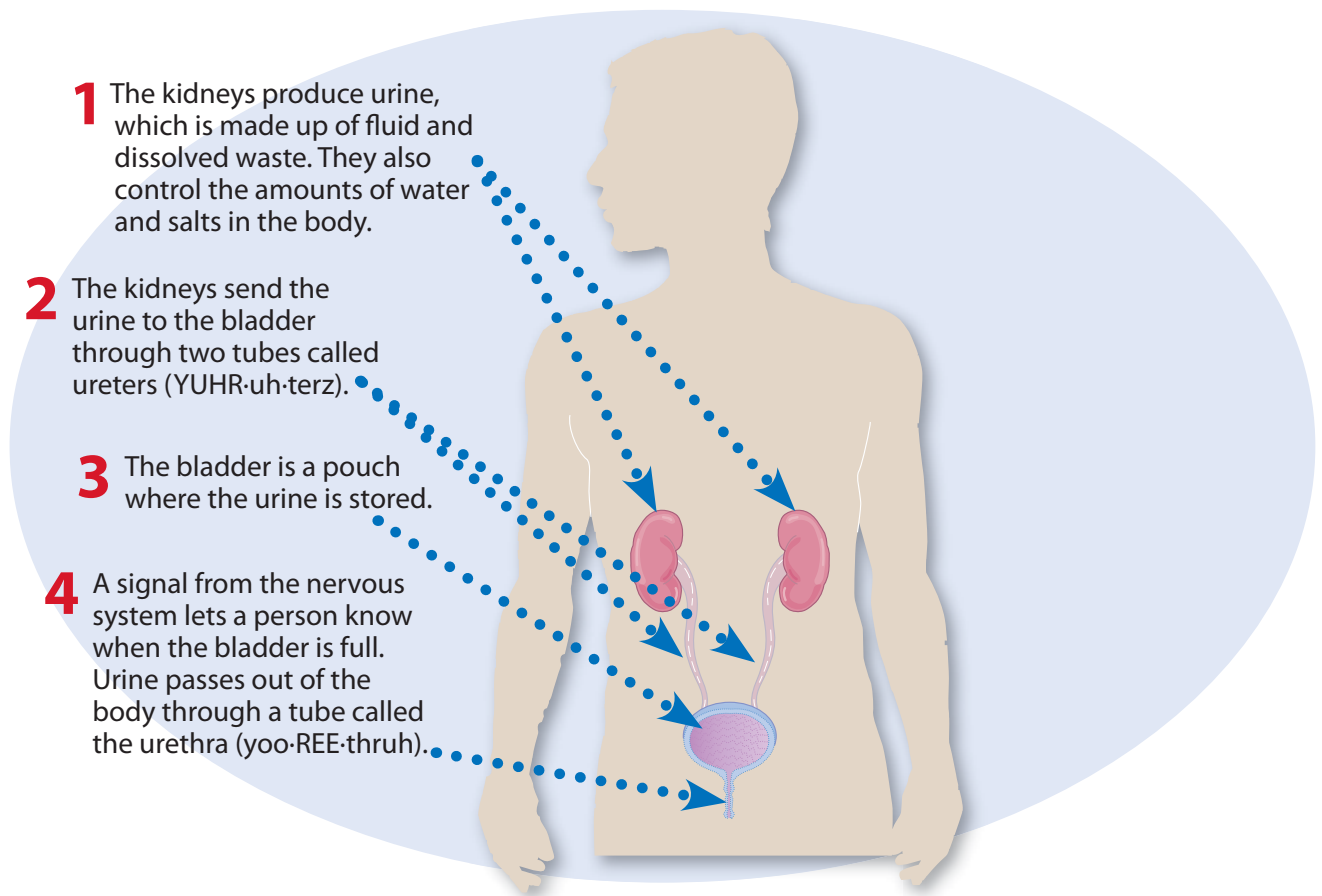
Materials from food that your body can't use need to be removed. **Excretion** (eks-KREE-shun) is *the process the body uses to get rid of waste*. The **excretory** (EKS-kru-toe-ree) **system** is *the group of organs that work together to remove wastes*. This system also controls the body's water levels. The main organs of the excretory system are the kidneys, bladder, and colon. Your skin and lungs also remove waste from your body. Your skin gets rid of some wastes when you sweat, and your lungs get rid of carbon dioxide when you breathe.

Study **Figure 4.7** below. It shows how liquid wastes are removed from the body in the form of urine, which contains mostly water and salts. Cell activity makes liquid waste. The **kidneys** are *organs that remove waste material, including salts, from the blood*. The kidneys also help in the production of red blood cells and the regulation of blood pressure. The bladder stores the urine until it is ready to be passed out of the body.

▼ **FIGURE 4.7**

ELIMINATING LIQUID WASTES

Many wastes are dissolved in liquid and excreted through the kidneys and bladder. **What does urine contain?**





Your body's solid wastes are called feces (FEE-sees). They are stored in the colon until that organ becomes full. Then strong muscles in the wall of the colon begin to contract. This signal lets you know that the colon must be emptied. The feces are pushed out of the body through an opening called the anus. This completes the digestive and excretory processes. These two systems work together and influence each other to keep the body functioning properly.

Reading Check

Identify What is the process the body uses to get rid of waste?



Caring for Your Digestive and Excretory Systems

What are some strategies for caring for your digestive and excretory systems? One way is to eat a balanced diet with low-fat, high-fiber foods. Eating a wide variety of fruits, vegetables, and whole grains will provide your body with the nutrients and fiber it needs. Fiber helps your digestive and excretory systems work properly. It's also a good idea to eat meals on a consistent schedule. This helps food move through your body at a steady pace.

Drinking enough water is another key to healthy digestive and excretory systems. Depending on age, gender, and other factors, 45 to 70 percent of your body weight is from water. This percentage shows how important water is to your health. Plain water and beverages such as unsweetened fruit juice and low-fat milk are good sources of this important nutrient. Soup and many fruits and vegetables also contain water.

Your teeth are important to the digestive process. To keep them healthy, brush them at least twice a day with a fluoride toothpaste and floss daily. Have dental checkups twice a year.

As with other body systems, your digestive and excretory systems work best when you get regular physical activity. Try to be active most days of the week. However, wait a while after eating a heavy meal before participating in physical activity. Your body needs a little time to digest some of your food.

Reading Check

List What are two strategies for caring for your digestive and excretory systems?

▼ Enjoying these foods will provide your body with some of the water it needs. **Why is water important to the body?**





Richard Anderson



◀ This sandwich is made from whole-grain bread. Whole grains have more fiber, which benefits the digestive system. **Why is fiber important for good digestion?**

Go Online

Visit glencoe.com and complete the Interactive Study Guide for Lesson 4.

Lesson 4 Review

After You Read

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

What I Learned

1. **Vocabulary** Define *digestion*.
2. **List** Identify the major parts of the digestive system.
3. **Explain** What is the function of the kidneys?
4. **Describe** How can you take responsibility for caring for your digestive and excretory systems?

Critical Thinking

5. **Apply** Your friend Sherry doesn't like the taste of plain water. However, you know that drinking enough water is important for the digestive and excretory systems.

What might you say to Sherry to influence her to make a healthy choice to consume more water?

6. **Hypothesize** How do the digestive and excretory systems work together and influence each other?

Applying Health Skills

7. **Goal Setting** Make a list of actions you could take that would improve and maintain the health of your digestive and excretory systems. Choose one behavior from your list and develop goal-setting strategies to make this behavior part of your life.

Lesson 5

Body Image and Healthy Weight

Guide to Reading

Building Vocabulary

Look up the word *image* in the dictionary. In a brief paragraph, discuss how you think this definition relates to the term *body image*.

- body image (p. 128)
- Body Mass Index (p. 129)

Focusing on the Main Ideas

In this lesson, you will be able to

- **explain** the concept of body image.
- **determine** your Body Mass Index.
- **state** the benefits of having a positive body image.

Reading Strategy

Predicting Look over the headings in this lesson. Then write a question that you think the lesson will answer. After reading, check to see if your question was answered.

Quick Write

Books on weight management are very popular. Why do you think this is so? Explain your ideas in a short paragraph.

Body Image

Your **body image** is *the way you see your body*. Body image can be influenced by many things. The attitudes of family and friends, as well as images from the media, affect how people see themselves.

Am I too thin? Do I need to lose weight? Many people ask themselves questions like these. Weight strongly affects a person's body image. Some people think they are too thin, while others believe they are too fat. Some wish they were more muscular or that their body had a different shape. People who are unhappy with their body may have a poor body image.

◀ Sometimes we wish we looked like someone else. **What effect might the popular media have on this teen's body image?**



People who have a poor body image may try to change their weight in extreme ways. This can damage their health and may even be life threatening.



Reading Check

Explain What can influence a person's body image?

How to Develop a Positive Body Image

The key to having a positive body image is to accept yourself and your body. How your body looks depends on your gender and the traits that you inherited from your parents. These factors are out of your control. Keep in mind, also, that very few people look like the people you see on television, in the movies, or in magazines. Don't compare yourself to these people. There is no one correct body shape or size.

Your growth stage affects your body shape, too. Many teens grow in spurts, and often they'll carry a few extra pounds for a while to prepare for the next spurt. They may suddenly grow taller and the extra body fat seems to disappear. Other teens may seem underweight because their bodies are using so much energy to grow.

If you need to lose or gain some weight in order to be healthier, set reasonable goals and do it slowly. Meet with a health care professional before you begin. Slowly add physical activity to your daily routine to help you maintain a healthy weight.



Reading Check

Describe What is the key to having a positive body image?

Finding Your Healthy Weight Range

You feel better when you maintain a healthy weight. A healthy weight can also help you avoid many serious health problems during all stages of life. What determines your healthy weight? Many factors, such as gender, age, height, inherited body type, and growth pattern, play a part. Your healthy weight is not a single weight on the scale but a range.

Body Mass Index

Is your weight within a healthy range? You can check by determining your Body Mass Index. The **Body Mass Index** (BMI) is a method for assessing your body size by taking your height and weight into account. **Figure 4.8** shows the BMI ranges for teen males and females. Checking the BMI chart for teens from time to time can help you track your growth pattern to determine if your weight is within a healthy range for your age.



Connect To... Math



Calculating BMI

You can use this formula to calculate your Body Mass Index.

1. Multiply your weight in pounds by 0.45.
2. Then multiply your height in inches by 0.025. Square the result.
3. Divide your answer in step 1 by the answer in step 2.

Calculate the BMI of a person who is 5'1" (61 inches) tall and weighs 95 pounds.



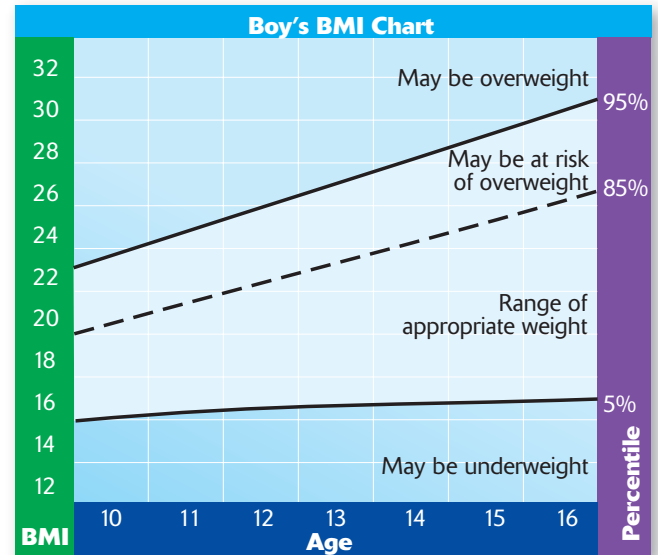
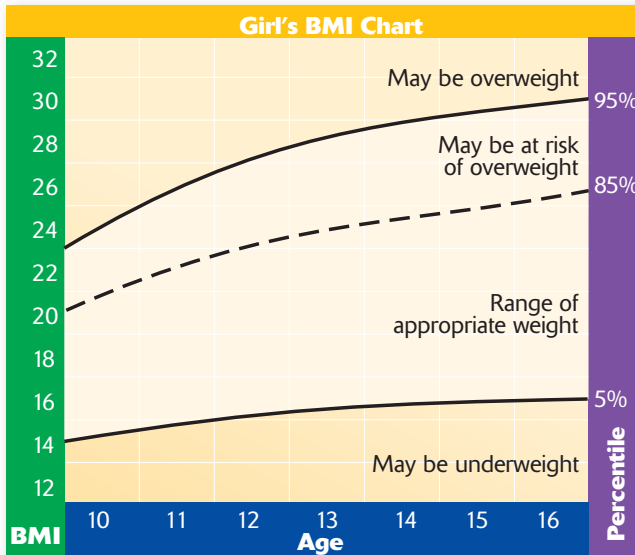
Visit glencoe.com and complete the Interactive Study Guide for Lesson 5.



FIGURE 4.8

BODY MASS INDEX RANGE

First calculate your Body Mass Index using the formula described in the Connect to Math on page 129. Then find your age on the graph. Trace an imaginary line from your age to your body mass index. See which range it falls into. **Why are age and height important factors in determining BMI?**



Lesson 5 Review

After You Read

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

What I Learned

- Vocabulary** Define *Body Mass Index*.
- Explain** How might growth spurts affect a teen's weight?
- Identify** List the factors that help determine your healthy weight.

Thinking Critically

- Analyze** How can a positive body image contribute to mental/emotional health?

- Apply** Glenn has grown several inches this year, but hasn't gained weight. Now he feels self-conscious about being too thin. What would you tell Glenn to positively influence his body image?

Applying Health Skills

- Communication Skills** Write a short dialogue between you and a friend who has just been teased for being overweight. How would you help the friend manage his or her feelings and make healthful choices?

Lesson 6

Maintaining a Healthy Weight

Guide to Reading

Building Vocabulary

Many words in English have their roots in other languages. Look up the root language for *anorexia nervosa* and *bulimia nervosa*.

- eating disorders (p. 132)
- anorexia nervosa (p. 132)
- bulimia nervosa (p. 133)
- binge eating (p. 133)

Focusing on the Main Ideas

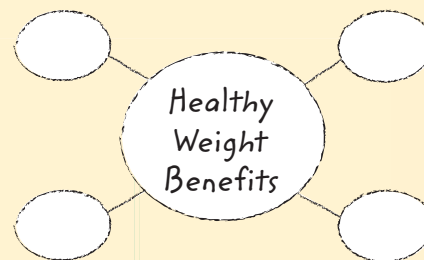
In this lesson, you will be able to

- **state** the benefits of a healthy weight.
- **identify** common health risks related to weight.
- **discuss** the dangers of eating disorders.
- **list** tips for maintaining a healthy weight.

Reading Strategy

Organizing Information

Using the diagram below as a guide, create a concept map that shows the benefits of a healthy weight.



Quick Write

Has a friend ever talked to you about his or her weight? Write a sentence or two that describes the concerns your friend expressed.

The Benefits of a Healthy Weight

Being within a healthy weight range is important for wellness. It can also help you have a positive body image. People who are overweight have a greater chance of developing serious health problems. Being overweight increases the risk of high blood pressure, cardiovascular disease, type 2 diabetes, and cancer later in life, but also in the teen years. Also, too much weight strains bones and muscles.

Being significantly underweight is also unhealthy. Teens who don't consume enough nutrients may grow and develop more slowly than they should. People who are underweight might not have enough stored body fat. This fat serves as a source of energy when the body doesn't get enough calories from food. Also, people who are underweight may feel tired and irritable and be unable to fight illness.

Your growth patterns may make you seem overweight or underweight for a period of time. This is usually normal. However, if you're not sure if your weight is within a healthy range, speak with a health care provider. Don't try to lose or gain weight unless the provider recommends it and helps you develop you a specific nutrition and physical activity plan.



Nutritionist



Nutritionists plan healthy food programs for all kinds of people. They show people what foods to eat and how much of each type of food to eat. Nutritionists are important because eating healthy plays such an important role in your total health. If you want to become a nutritionist, you should take classes that teach you about the human body and about health.

What kind of training does a nutritionist need? Go to Career Corner at glencoe.com to find out.



Eating Disorders

Sometimes a person becomes so concerned about weight and body image that he or she develops an eating disorder. **Eating disorders** are *extreme eating behaviors that can lead to serious illness or even death*. It is not known what causes eating disorders. However, people who feel bad about themselves or are depressed are more likely to develop an eating disorder. About 90 percent of the teens with eating disorders are female.

Eating disorders are serious and can adversely affect health. Often, people with eating disorders may deny that they have a problem. If you think that someone you know has an eating disorder, discuss this with an adult whom you trust. You can also help by being a friend and encouraging the person to ask for help. Eating disorders are situations requiring professional health services.

Anorexia Nervosa

Anorexia nervosa (a-nuh-REK-see-ah ner-VOH-sah) is *an eating disorder in which a person strongly fears gaining weight and starves herself or himself*. People with anorexia may feel as though they have to be very successful or be accepted by all people. Even if they are very slim, they believe they are overweight. To lose more weight, they eat very little and may exercise so much that it is unhealthy.

Eating very little prevents the body from getting enough nutrients. Bones may not develop properly, blood pressure may drop, and the heart may be damaged. People with anorexia may need to stay at a hospital or clinic to get treatment. They also need counseling.

- ▶ When you're healthy, you have the energy to do the things you enjoy. **Why might being underweight lead to a loss of energy?**





- ◀ Clinics and counselors may offer support groups for teens with eating disorders. **Why might support groups be helpful to someone with an eating disorder?**

Bulimia Nervosa

Bulimia (boo·LEE·mee·ah) **nervosa** is an eating disorder in which a person repeatedly eats large amounts of food and then purges. There are several ways that people purge. One way is to throw up. Another way is to use laxatives. People with this disorder may be at a normal weight but still feel the need to go on an extreme diet. When they can't stay on the diet, they eat large amounts of food. Then, after eating, they purge. They may also try to burn the calories with constant exercise.

Bulimia not only robs the body of nutrients, but it can also harm many parts of the body. The colon, liver, heart, and kidneys may be damaged. Tooth enamel may wear off, because frequent vomiting exposes the teeth to stomach acids. The linings of the stomach and esophagus can also be damaged. The body may become dehydrated, meaning it does not have enough water to function properly. Bulimia is very serious. People with this disorder need help from a health care professional.

Binge Eating

Binge eating is a disorder in which a person repeatedly eats too much food at one time. It is also called compulsive overeating. Binge eaters often fast or diet to lose weight, but they do not purge. To fast means to not eat. Sometimes people will binge as a way to deal with depression or stress. As you might guess, binge eating can lead to serious weight gain. It can also lead to heart disease, diabetes, and some types of cancer. As with other eating disorders, people who are binge eaters usually need help from a counselor or other health care professional.



Reading Check

Restate What is an eating disorder?



Connect To...
Social Studies

Food as a Symbol

In some cultures, being overweight can be a sign of success. It means that you have plenty of food to eat and that your family or group is probably well-off. Even when the hosts have little or no food to spare, important members of the community give food to their guests.

Are these two ideas popular in our culture? Give reasons for your opinion.



Michael A. Keller/Zefa/CORBIS

Calories and Weight

You know that taking extreme measures to lose weight can damage your health. So, what is a healthy way to manage your weight? The key is calories. You need to make sure that you don't take in more calories than you burn. Remember, as you digest food, your body converts food calories into energy. When you take in *more* calories than your body uses, it stores the extra calories as body fat. This makes you gain weight. If you eat *fewer* calories than you need, though, your body converts stored body fat into energy. This makes you lose weight.

Study **Figure 4.9**. It shows that if you eat 250 fewer calories than your body burns each day, you can lose one pound over two weeks. The same thing happens if, by exercising, you burn 250 more calories per day than your body uses. While 250 calories may not seem like very much, over time it can make a big difference in your weight.

Reading Check

Explain What happens when you take in more calories than your body uses?

▲ To maintain a healthy weight, eat regular meals, choose snacks wisely, and be more physically active. **In what ways could planning ahead help with weight management?**

Tips for Maintaining a Healthy Weight

What can you do to stay at a healthy weight? In general, you need to balance the calories you eat with the calories your body uses. Choose healthful foods and stay physically active. If you need to gain weight, eat larger servings of nutrient-rich foods, and drink more milk or juice. If you need to lose weight, eat smaller

▼ **FIGURE 4.9**

THE WEIGHT-LOSS ENERGY EQUATION

To lose weight, you need to burn more calories than you take in by watching what you eat, exercising, or both. **How many calories are equal to a pound of body fat?**


1 pound = 3,500 calories
To lose 1 pound in two weeks:

- Eat 250 fewer calories a day.

OR

- Burn 250 extra calories a day through physical activity.


$$\frac{250 \text{ calories}}{\text{day}} \times 14 \text{ days} = 3,500 \text{ calories}$$



servings. Also, take your time when you eat. Chew your food thoroughly. When you do these things, you give your stomach time to signal your brain that you are full.

Most teens should not diet to lose weight. Just because you are a little overweight does not mean you need to go on a diet. Instead, just let your body grow into your healthy weight. Boost your level of physical activity. Drink a lot of water and make time for regular meals. Rather than snacking a lot, try to eat only when you're hungry. It's easier to keep track of calories at set times. When you eat out choose foods that are broiled or baked rather than fried.

Also, avoid fad diets. Many of these diets allow you to eat only a few kinds of foods, such as grapefruit or high-protein foods. When you lose weight on a diet like this, you often gain it back as soon as you start eating other foods again. You also miss out on important nutrients. Instead, eat a variety of healthful foods, using MyPyramid as your guide. You may need to reduce the portion sizes or pick lower-calorie foods from the food groups. These are good strategies for maintaining a healthy weight.



Visit glencoe.com and complete the Interactive Study Guide for Lesson 6.



Reading Check **Explain** Why is it best to eat slowly?



Lesson 6 Review



After You Read

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

What I Learned

1. **Vocabulary** Define *anorexia nervosa*.
2. **Restate** Describe the symptoms of binge eating and how it can adversely affect health.
3. **Describe** What is a healthy way to manage your weight over time?
4. **Explain** Why is it better to avoid fad diets?

Thinking Critically

5. **Apply** How might family and friends help someone with an eating disorder?
6. **Infer** How can a teen “grow into” a healthy weight?

Applying Health Skills

7. **Communication Skills** Suppose you think a friend might have an eating disorder. Write that friend a letter giving her or him facts about the problem and suggesting that he or she get professional help.

Building Health Skills

Accessing Information
Practicing Healthful Behaviors
Stress Management

Analyzing Influences

Communication Skills
Refusal Skills
Conflict Resolution
Decision Making
Goal Setting
Advocacy

What Does Analyzing Influences Involve?

Analyzing Influences involves recognizing the factors that affect your health choices. These factors include:

- family and culture
- friends and peers
- messages from the media
- your likes, dislikes, values, and beliefs

Media Messages About Food

Follow the Model, Practice, and Apply steps to help you master this important health skill.

1 Model

Read how Caitlin helps her younger sister, Jenny, recognize how the media influences her decision to try a new breakfast cereal.

Caitlin was watching television with her younger sister, Jenny. Suddenly, Jenny pointed to an ad for a new breakfast cereal. “I want Mom to get that for us!” she said. The ad was for a sugar-coated cereal shaped like cartoon characters. The characters bounced around to a song that made Jenny laugh. The ad made it look like eating the cereal would be really fun.

When the ad was over, Caitlin said, “Jenny, just because you like the ad doesn’t mean the cereal is good for you.” She explained to her that the cereal company just used the cartoon and music to make children want the food product. She also said, “Even though the cereal may taste good, it has a lot of added sugar that isn’t good for you.” Caitlin told Jenny that she should stick with the whole-grain cereal their mom always bought. Jenny realized that the sugar-coated cereal wasn’t as appealing as the ad made it seem.



2 Practice

Emily needs to use the skill of analyzing influences to make a decision at the grocery store. Read the passage and then practice analyzing influences by answering the questions that follow.

Emily and her mom were food shopping. In the store, a woman was offering free samples of breakfast bars. There was a TV on the table that ran an ad for the bars. In the ad, a man in a white doctor's coat talked about how nutritious the bars were. The ad also showed teens eating the bars while they laughed with their friends.

1. What influences might the ad appeal to?
2. What benefits did the ad seem to promise about the breakfast bars?
3. How could Emily use the food label to make a smart decision about the breakfast bars?



3 Apply

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

Find an ad about a fast food item or a fast-food restaurant. Write a report describing the ad and the message it sends. Explain the internal and external influences the ad uses to persuade you to buy the food or to eat at the restaurant. Then give your opinion about whether eating the food would be part of a healthful diet. Support your opinion with facts about good nutrition.

Self-Check

- Did I explain the overall message of the ad?
- Did I describe the influences the commercial uses?
- Did I give my opinion and support it with facts?

Food Diary

Foods Eaten	Amount	Food Group
Monday		
Whole-grain cereal	2 cups	Grains
Carton of milk	1 cup	Milk
Turkey sandwich	2 ounces turkey	Meat and beans
on wheat bread	2 slices of bread	Grains
Baby carrots	1/2 cup	Vegetables
Orange juice	1/2 cup	Fruits

Keeping a Food Diary

In this chapter, you learned about making healthful food choices using MyPyramid. You can begin to make more healthful food choices by taking a look at what foods you typically eat each day. In this activity, you will keep a food diary for one week. This will help you compare your food choices to the recommendations provided by MyPyramid for a teen your age. That way you can see what changes, if any, you need to make.

What You Will Need

- pencil or pen
- ruler
- paper



What You Will Do

- 1 Make three vertical columns on your paper.
- 2 In the first column, list all the foods you eat for the next seven days. Be sure to include any snacks you have. Draw a horizontal line to show the end of each day. Use extra pages for your food diary as needed.
- 3 In the second column, write down the amount of each food you eat. Record the amount as a weight (such as ounces) or volume (such as cups).

- 4 In the third column, write down the name of the food group each food eaten belongs to. For example, a peanut butter sandwich would belong to the grains group, and the meat and beans group.
- 5 For each day, total up the amount eaten in each food group.

Wrapping It Up

- 1 How well does your list for each day match the recommendations for you from MyPyramid?
- 2 Did you eat foods from each food group? If not, which group is missing?
- 3 Was there too much from any food group? If so, which group?
- 4 How could you improve your food choices?



Visit glencoe.com and visit the health page for Chapter 4.

FOLDABLES® Study Organizer

Foldables® and Other Study Aids Take out the Foldable® that you created for Lesson 1 and any graphic organizers that you created for Lessons 1–6. Find a partner and quiz each other using these study aids.

Lesson 1 Nutrients for Good Health

Main Idea Good nutrition helps the body stay healthy and function well.

- Carbohydrates, proteins, fats, vitamins, minerals, and water are the six major nutrients.
- The Nutrition Facts panel on a food package gives you important information about the nutrients in that product.

Lesson 2 Creating a Healthy Eating Plan

Main Idea The Dietary Guidelines for Americans and MyPyramid can help you develop a healthy and active lifestyle.

- Your age, gender, and activity level affect your nutrient and calorie needs.
- The following factors can influence your food choices: personal preferences, family traditions and culture, friends, geography, cost, convenience, and media messages.

Lesson 3 Planning Healthful Meals

Main Idea Healthful eating habits can help your body get the nutrients it needs.

- It's important to start the day with a healthful breakfast.
- Foods that are nutrient-dense have a high amount of nutrients relative to the number of calories.

Lesson 4 Digestion and Excretion

Main Idea Through the process of digestion, your body breaks food down into energy.

- Waste products produced by digestion are removed by your excretory system.
- Drinking plenty of water will help keep the digestive and excretory systems healthy.

Lesson 5 Body Image and Healthy Weight

Main Idea Your body image is the way you see your body.

- Body image can be influenced by family, friends, the media, and how people see themselves.
- Someone with a positive body image accepts the body type that he or she has.
- The Body Mass Index (BMI) can tell you if your weight is within an appropriate range.

Lesson 6 Maintaining a Healthy Weight

Main Idea Maintaining a healthy weight will help prevent serious health problems.

- A person who is overly concerned about weight and body image may develop an eating disorder.
- Eating disorders threaten a person's health. They include anorexia nervosa, bulimia nervosa, and binge eating.
- You can maintain a healthy weight by choosing healthy foods and staying physically active.

After You Read

Health eSpotlight

VIDEO

Now that you have read the chapter, look back at your answer to the Health eSpotlight question on the chapter opener. Have your ideas changed? What would your answer be now?

Reviewing Vocabulary and Main Ideas

On a sheet of paper, write the numbers 1–7. After each number, write the term from the list that best completes each statement.

- proteins
- trans fatty acids
- MyPyramid
- nutrient dense
- calories
- nutrition
- carbohydrates

Lesson 1 Nutrients for Good Health

1. Starches and sugars used by the body for energy are called _____.
2. _____ are made up of amino acids.
3. When oils are turned from a liquid to a solid during processing, _____ are formed.

Lesson 2 Creating a Healthy Eating Plan

4. An eating plan that has more _____ than your body can use results in weight gain.
5. _____ is the process of taking in food and using it for energy, growth, and good health.
6. _____ is a tool provided by the USDA to help you build a healthy eating plan.

Lesson 3 Planning Healthful Meals

7. Foods that are _____ have a high amount of nutrients relative to the number of calories.

On a sheet of paper, write the numbers 8–15. Write **True** or **False** for each statement below. If the statement is false, change the underlined word or phrase to make it true.

Lesson 4 Digestion and Excretion

8. Saliva is a digestive juice produced by the liver.
9. Liquid wastes are stored in the colon.
10. Dietary fiber helps food move through the digestive system.

Lesson 5 Body Image and Healthy Weight

11. The Body Mass Index is a way to assess your level of physical activity.
12. Your healthy weight is not a single weight but a range of weights.
13. A healthy body size is not the same for everyone.

Lesson 6 Maintaining a Healthy Weight

14. People with anorexia nervosa purge after eating.
15. Binge eating can lead to heart disease and diabetes.



Applying Technology

Thinking Critically

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

- 16. Hypothesize** Why do you think weight lost on fad diets is usually regained?
- 17. Predict** Describe the possible consequences for the rest of the body if the digestive system is not working properly.

Write About It

- 18. Persuasive Writing** A local newspaper just printed an article about how the media do not have any influence on a person's body image. Decide whether you agree or disagree with the opinion in the article. Write a letter to the editor of the newspaper and state your reasons for agreeing or disagreeing with the article.

Healthy Hunts

Use PowerPoint® and the Internet to develop a WebQuest that shows how good nutrition is part of a healthy lifestyle.

- Use the following categories to make 30 PowerPoint® slides (5 slides per category): Nutrients, My Pyramid, Human Digestive System, Meal Planning, Body Image, and Healthy Weight.
- Create short, open-ended questions from the textbook and add to individual slides. Research additional information on each category, using Web sites that end in .gov or .edu, and insert a hyperlink onto each slide.
- Include brief background information in the *notes* section of each slide.
- Edit and save your work.

Standardized Test Practice

Reading

Read the paragraphs below and then answer the questions.

Most Americans consume too much fat. The Dietary Guidelines suggest that healthy people consume only 20 to 35 percent of their calories from fats. Most of these fats should be unsaturated. Many people, however, eat much more than that. If you look at the Nutrition Facts panel on a food package label, you will see what percentage of fat one label serving contributes to a 2000-calorie-a-day diet.

People lead busy lives and often depend on fast food when they are away from home or don't have time to prepare a meal. Unfortunately, many fast foods are very high in fat. One burger, for example, may contain more fat than a person should consume in an entire day. However, many fast-food restaurants offer more healthful options, such as salads. Just go easy on the dressing.

1. From the information in the first paragraph, the reader can conclude that the writer thinks Americans
 - A. consume too little fat.
 - B. consume too much fat.
 - C. are poor cooks.
 - D. care little about health.
2. Which of the following best describes the purpose of the second paragraph?
 - A. To explain reasons why the body needs fats
 - B. To rate fats according to health needs
 - C. To suggest seeking alternatives to high-fat foods in fast-food restaurants
 - D. To rate types of fast-food restaurants