

Nutrition for Health

Chapter Preview

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▲ Working with the Photo

You can encourage your family to eat healthier by helping to prepare healthy meals. **What are some ways to make a meal healthier?**

Start-Up Activities

Before You Read

Do you make healthful choices when selecting the foods you eat? Take the short health inventory on this page. Keep a record of your answers.

HEALTH INVENTORY

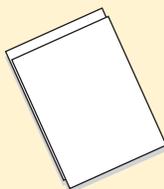
- I try to eat plenty of fruits and vegetables.
(a) always (b) sometimes (c) never
- I try to eat foods that are rich in fiber.
(a) always (b) sometimes (c) never
- I use MyPyramid as a guide when choosing foods.
(a) always (b) sometimes (c) never
- I choose healthful, low-fat snacks.
(a) always (b) sometimes (c) never

FOLDABLES® Study Organizer

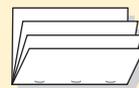
As You Read

Make this Foldable® to record what you learn about the body's need for nutrients in Lesson 1. Begin with two plain sheets of 8½" × 11" paper.

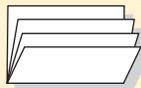
- 1** Place the two sheets of paper 1 inch apart.



- 3** Crease the paper to hold the tabs in place. Staple along the fold.



- 2** Fold up the bottom edges, stopping them 1 inch from the top edges. This makes all tabs the same size.



- 4** Turn and label the tabs as shown.

The Importance of Nutrition
Why You Need Nutritious Foods
Influences on Your Food Choices
Getting the Nutrients You Need

Under the appropriate tab of your Foldable®, define terms and record information on nutrients and influences on food choices.

Go Online

Visit glencoe.com and use the eFlashcards to preview Chapter 10 vocabulary terms.

Lesson 1

The Importance of Nutrition

Guide to Reading

● Building Vocabulary

Write the terms you think you know in your notebook. Add a definition in pencil. As you read the lesson, be prepared to correct your definitions.

- nutrients (p. 235)
- nutrition (p. 235)
- appetite (p. 236)
- hunger (p. 236)

● Focusing on the Main Ideas

In this lesson, you will learn to

- **explain** why the body needs nutrients.
- **identify** factors that influence which foods you choose.
- **describe** how your emotions can affect your food choices.

● Reading Strategy

Making Inferences Look briefly at the headings, figures, and captions in the lesson. Based on the words and images you see, what do you think you will learn in this lesson?

FOLDABLES Study Organizer Use the Foldable® on p. 233 as you read this lesson.

Quick Write

Create a menu that contains your favorite foods. Next to each food, write what nutrients you think it provides.

The Role of Food

Food, like water and air, is one of life's necessities. Your relationship to food affects all three sides of your health triangle. For example, if you do not eat breakfast before going to school, you might have a hard time focusing in class. Have you ever had days when you could not seem to concentrate because you were hungry?

That was your body's way of telling you that it was running low on fuel. Your body needs food to function properly. Choosing healthy foods is a positive behavior that can help you prevent certain health problems.

- ◀ Food affects all sides of your health triangle, including your ability to concentrate in school. **Describe other effects food has on your health triangle.**



Food, Nutrients, and Nutrition

Your body depends on nutrients in food to function properly throughout the day. **Nutrients** are *substances in food that your body needs*. They help the body build new tissue, repair damaged cells, and produce energy. The energy from food is measured in units called calories. Each calorie is equal to a certain amount of energy. Chocolate candy, for example, is typically high in calories but provides few nutrients. Fruit, on the other hand, has few calories but has more nutrients the body needs. Calories are further discussed in Lesson 3.

Nutrients nourish the body in two ways: they provide energy and help your body run smoothly. Proteins, carbohydrates, and fats are examples of nutrients that provide energy. Vitamins, minerals, and water are examples of nutrients that help the body run well.

Which nutrients does your body need the most? The best way to answer that question is to learn about **nutrition**—*the study of nutrients and how the body uses them*. Someone who eats plenty of fresh fruits and vegetables has good nutrition. Eating nutrient-rich meals is a good way to **promote** good health and prevent diseases.

Academic Vocabulary

promote (pruh MOHT) (verb) to encourage, to further. *Tony and Shana asked their school nurse how they and their classmates can promote good health at school.*



Reading Check

Define What are nutrients?



What Influences Your Food Choices?

Now you know why it is important to eat—but have you ever thought about how people decide *what* to eat?

Yoshi, who grew up in Japan, prefers miso soup and rice for breakfast, while his American friend Carl likes cereal and milk. Both Yoshi's and Carl's tastes in food are influenced by their cultural backgrounds.

Another factor that influences the foods many people choose to eat is availability. Melissa's family enjoys fresh fruits and vegetables from a local market. The meals they prepare depend on which foods are in season. **Figure 10.1** shows several other factors that influence which foods we choose to eat.

FIGURE 10.1

INFLUENCES ON FOOD CHOICES

Your family and culture influence the foods you eat. **Which factors in this figure play the biggest role in your personal food choices?**





Connect To... Science

Scientific Advancements and Eating Habits

The microwave oven and frozen foods are examples of advancements in science that have affected the eating habits of many people. Convenience is one benefit of using a microwave oven. Cooking frozen food takes less time than putting together a meal from scratch.

Can you think of other scientific advancements that have influenced eating habits?



Appetite and Hunger

Another factor that influences what you choose to eat is **appetite**, or *the psychological desire for food*. The aroma of fresh-baked bread, for example, might make you crave a piece of toast, even if you are not hungry. Psychological desires for food are often connected to memories and feelings. If the smell of fresh-baked bread reminds you of happy times with your family, you might feel like eating some even if your body does not really need fuel at the moment.

People sometimes confuse hunger with appetite. **Hunger** is *the body's physical need for food*. It is important to learn to tell the difference so that you will know why you eat. This will help you make healthful choices when it comes time to satisfy your body's physical need for food. You will learn more about how to make healthful choices later in this chapter.

Food and Emotions

In addition to appetite and hunger, emotions also influence your food choices. Foods bring up feelings connected to past experiences. For example, certain foods may remind you of loved ones or of fun times. If a food is associated with a pleasant or comforting memory, people often crave it even when they are not hungry. The craving can be especially strong when people feel sad, lonely, or discouraged. What they are really craving, however, is not the food, but the pleasant emotions associated with the food. Using food in this way is not a good idea because it can lead to unhealthy eating habits and weight problems. Healthier ways to cope with negative feelings include writing in a journal, listening to music, and talking to a friend.



Reading Check

Recall List four factors that influence what a person chooses to eat.



Meeting Nutrient Needs

All bodies need the same nutrients, but the amount a body needs depends upon the person's age, gender, general health, and level of activity. When you do not get enough of a particular nutrient, you could have a *nutrient deficiency*, a shortage of a nutrient.

As a growing teen on the go, your energy demands are greater than those of an older person who is less active. You also need calcium to build strong bones and teeth. A calcium deficiency could affect the strength of your bones as you get older. You also need iron to help your body make enough red blood cells as you grow. A shortage of iron can lead to a blood condition called anemia.

Go Online

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

In general, teens need more of most nutrients to support growth and satisfy energy needs.

Most people in the United States get plenty of food, yet many still do not get the nutrients they need. This is partly because of lifestyles that include too many foods that are high in fat and added sugar. Eating low-nutrient, high-fat foods, along with over-eating, can lead to long-term health problems such as obesity, diabetes, heart disease, and cancer. Developing healthful eating habits, which includes limiting high-fat and high-calorie foods, is your best defense against poor nutrition.



- ▲ Food labels can tell you which nutrients are in a product, as well as how much fat and calories it has. **Why is it important to provide your body with enough nutrients?**

Lesson 1 Review

After You Read

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

What I Learned

1. **Vocabulary** Define *appetite*, and explain how it can affect which foods you choose to eat.
2. **Recall** What do nutrients do for your body?
3. **Describe** What role do emotions play in your food choices?

Thinking Critically

4. **Apply** Which factors do you think influence a teen's food choices the most? Explain your answer.

5. **Analyze** How is it possible to have plenty of food and yet be poorly nourished?

Applying Health Skills

6. **Accessing Information** Using online or print resources, locate a country that has famine problems. Research the causes of the famine and what steps are being taken to solve the problem. Share your findings with your classmates.

Lesson 2

Nutrients for Wellness

Guide to Reading

Building Vocabulary

Write the terms below in your notebook. As you come across each one in your reading, write a definition beside it.

- carbohydrates (p. 238)
- fiber (p. 239)
- proteins (p. 240)
- saturated fats (p. 240)
- unsaturated fats (p. 240)
- vitamins (p. 240)
- minerals (p. 240)

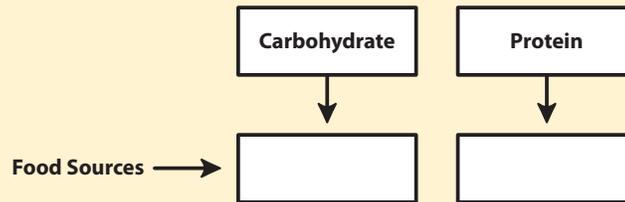
Focusing on the Main Ideas

In this lesson, you will learn to

- identify the six major classes of nutrients.
- explain specific ways your body uses nutrients.

Reading Strategy

Organizing Information Make a diagram similar to the one below. Include a box for each nutrient and foods that are sources of that nutrient.



Quick Write

Make a list of foods that you think are high in nutrients. After reading the lesson, check to see if you were right.

Nutrients and Nutrition

Scientists who study the nutrients in food have found more than 40 different kinds. These nutrients are divided into six classes: carbohydrates, proteins, fats, vitamins, minerals, and water. Choosing a variety of healthy foods can help you get enough nutrients from each of these important groups.

Carbohydrates

What does a steaming plate of spaghetti have in common with a ripe peach? Both foods contain carbohydrates, your body's main energy source. **Carbohydrates** are *sugars and starches that occur naturally in foods, mainly in plants*. There are two kinds of carbohydrates: simple and complex.

◀ An apple is a great source of carbohydrates. **What are some other sources of carbohydrates?**





Health Skills Activity

Practicing Healthy Behaviors

Nutrition from Nature

When carbohydrate-rich foods are processed, they can lose some of their nutrients. The process that turns wheat into refined white flour is a good example of how nutrients can be lost. In this process, the inner and outer parts of the wheat grain are separated, and only one inner portion is used to make the flour. All the nutrients in the grain's outer covering are lost. Cooking, freezing, dehydrating, and canning also remove nutrients from food.

When shopping for carbohydrate-rich foods, try to choose whole grains—such as oats, millet, and brown rice—or foods that contain them, such as whole wheat bread, popcorn, and oatmeal. Try to snack on fresh fruits and vegetables. They are naturally rich in nutrients and haven't been processed.

On Your Own

Make a list of carbohydrate-rich foods that you enjoy eating. Which of these foods contain whole grains? Develop a plan for including more whole grains in your food choices.

All carbohydrates are made of sugar molecules. When these molecules remain separate, they are called *simple carbohydrates*. Foods that contain simple carbohydrates include fruits, many vegetables, milk, and milk products.

Sugar molecules that join together to form long chains are called *starches*, or *complex carbohydrates*. Foods that contain complex carbohydrates include grains such as rice and pasta, dried beans, and starchy vegetables such as potatoes. Nutritionists say that about 45 to 65 percent of your daily energy should come from carbohydrates.

Reading Check

Identify What are complex carbohydrates? Name some foods that contain this nutrient.

Fiber

Fiber is the parts of fruits, vegetables, grains, and beans that your body cannot digest. It is a special type of complex carbohydrate, found in fruits, vegetables, and especially whole grains. As it passes through the digestive system, fiber pushes other food particles along. Choosing to eat high-fiber foods can help reduce your risk of certain types of cancer and heart disease.

- ▼ A great way to include fiber in your diet is by eating whole-grain cereals. **Why is it important to get enough fiber?**





Dietitian



A dietitian is an expert in food and nutrition.

They help promote good health through healthful eating. They may also supervise the preparation of food, modify diets, and educate individuals and groups on good nutritional habits. Dietitians will always be an important resource for people who want to learn how to make healthful eating part of their lives. If you would like to become a dietitian, you should study how the body uses food.

What are some other kinds of nutrition workers? Go to Career Corner at glencoe.com to find out.

Proteins

Proteins are nutrients your body uses to build, repair, and maintain cells and tissues. They are made up of chemical building blocks called *amino acids*. Anyone who has had a stiff muscle get better after a few days of rest has experienced “repair” proteins at work. Proteins also play an important role in fighting disease since parts of your immune system are made of proteins.

Foods that contain protein include beef, pork, veal, fish, poultry, eggs, and most dairy products. Notice that all these foods are animal-based products. These foods have *complete proteins* because they contain all nine of the essential amino acids. Most plant proteins—available from nuts, peas, and dried beans—lack sufficient amounts of one or more essential amino acids.



Reading Check

Define What are proteins?

Fats



Fats are an important part of good nutrition. They promote healthy skin and normal cell growth, and they carry vitamins A, D, E, and K to wherever they are needed in your body.

However, eating a large amount of **saturated fats**, *fats that are solid at room temperature*, is not good for your health. Foods like butter, cheese, and fatty meats are high in saturated fats. Eating too much of these foods can increase your risk of heart disease.

Most of the fats in your diet should be **unsaturated fats**. These are *fats that remain liquid at room temperature*. They come mainly from plant-based foods such as olive oil, nuts, and avocados.



Cholesterol

Cholesterol is really two things: a fatlike substance in food and a fatty substance in blood. Cholesterol in food comes only from animal-based foods, such as eggs, meat, poultry, fish, and dairy products. Your body also makes cholesterol. You need some cholesterol, but not too much. Although it can affect blood cholesterol levels, the cholesterol in food doesn’t turn into blood cholesterol. However, eating too much saturated fat can raise your blood cholesterol to unhealthy levels. High levels of blood cholesterol can lead to heart disease.

Vitamins and Minerals

Two other kinds of nutrients that the body needs are vitamins and minerals. Though only small quantities of each are needed, they are essential to your body’s health. **Vitamins** are substances that help your body fight infections and use other nutrients, among other jobs. **Minerals** are elements that help form healthy bones and teeth, and regulate certain body processes.



There are two kinds of vitamins: water-soluble and fat-soluble. Water-soluble vitamins, which include vitamins C and B complex, dissolve in water. Your body cannot store them, so you need to consume them regularly. Fat-soluble vitamins, including Vitamins A, D, E, and K, are stored in the body's fat until they are needed. **Figure 10.2** lists the functions and food sources of some vitamins and minerals. Most teens do not get enough vitamin E, calcium, or iron. The best way to get vitamins and minerals is to choose nutritious foods.

Go Online 

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

FIGURE 10.2

VITAMINS AND SELECTED MINERALS: FUNCTIONS AND SOURCES

Vitamins and minerals are essential to your body's health. **What are the benefits of consuming Vitamins A, E, and C, magnesium, calcium, iron, and folic acid?**

	Functions	Food Sources
Vitamins	Vitamin A Promotes healthy skin and normal vision	Dark-green leafy vegetables (such as spinach); dairy products; eggs; deep yellow-orange fruits and vegetables
	B Vitamins Needed for a healthy nervous system. Folate, or folic acid, helps produce and maintain new cells.	Poultry; eggs; meat; fish; whole-grain and enriched breads and cereals
	Vitamin C Needed for healthy teeth, gums, and bones; helps heal wounds and fight infection	Citrus fruits (such as oranges and grapefruit); cantaloupe; strawberries; mangoes; tomatoes; cabbage; broccoli and potatoes
	Vitamin D Promotes strong bones and teeth and the absorption of calcium	Fortified milk; fatty fish (such as salmon and mackerel); egg yolks; liver
	Vitamin E An antioxidant that helps protect cells	Fortified cereals; dark-green leafy vegetables (such as spinach); fish; nuts; seeds; vegetable oils
Minerals	Calcium Needed to build and maintain strong bones and teeth	Dairy products (such as milk, yogurt, cheese); dark-green leafy vegetables (such as spinach); canned fish with edible bones (such as sardines)
	Fluoride Promotes strong bones and teeth; prevents tooth decay	Fluoridated water; fish with edible bones
	Iron Needed for hemoglobin in red blood cells	Red meat; poultry; dry beans (legumes); fortified breakfast cereal; nuts; eggs; dried fruits; dark-green leafy vegetables
	Magnesium Helps build strong bones; releases energy for muscles	Dark-green leafy vegetables (such as spinach); beans and peas; whole-grain breads and cereals
	Potassium Helps regulate fluid balance in tissues; promotes proper nerve function	Fruits (such as bananas and oranges); dry beans and peas; dried fruits; tomato juice



Water

Water plays a role in many of the body's functions. It helps you digest and absorb food, it regulates body temperature and blood circulation, and it carries nutrients and oxygen to cells. It also removes toxins and other wastes, cushions joints, and protects tissues and organs from shock and damage.

Dehydration, or lack of water in the body, can cause problems like fatigue, confusion, and inability to focus. You need to replace the water your body loses by drinking at least six to eight 8-ounce cups of fluid a day. Even more water is needed during vigorous activity or hot weather. Choose water or milk most of the time and limit your intake of juice or soda.

- ▲ Water is all around us. The water that we drink comes from natural sources like the one in this picture.

What functions does water perform as a nutrient?



Reading Check

Explain Why does the body need plenty of water?



Lesson 2 Review



After You Read

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

What I Learned

1. **Vocabulary** What is *fiber*? What function does it have in the body?
2. **List** Name the six major classes of nutrients.
3. **Identify** Name some sources of complete proteins.

Thinking Critically

4. **Apply** Make a list of the foods you have eaten today. Identify which nutrients can be found in each food. Are there any nutrient groups that come up short?

5. **Hypothesize** How can the food you choose to eat today affect your health in the future?

Applying Health Skills

6. **Analyzing Influences** As you learned earlier in this chapter, the media play a role in people's food choices. Find an ad for a food or food product. What methods does the ad use to encourage you to buy the food? Share your findings with those of your classmates.

Lesson 3

Following Nutrition Guidelines

Guide to Reading

Building Vocabulary

As you read this lesson, write the four new highlighted terms and their definitions in your notebook.

- MyPyramid food guidance system (p. 243)
- calorie (p. 245)
- sodium (p. 246)
- foodborne illness (p. 247)

Focusing on the Main Ideas

In this lesson, you will learn to

- **explain** how to use the MyPyramid food guidance system.
- **identify** the names of the five main food groups in MyPyramid.
- **describe** recommendations from the *Dietary Guidelines for Americans*.

Reading Strategy

Identifying Problems and Solutions Many people, including teens, develop unhealthy eating habits. Can you suggest some solutions to this problem? After reading, come back to this question. See if your answers have changed.

Quick Write

Describe your current eating habits in a short paragraph. Include a list of the foods you eat the most and the kinds of snacks you enjoy.

Guidelines for Healthy Eating

Choosing foods that provide the right nutrients can be a challenge. To help you meet this challenge, the United States Department of Agriculture (USDA) has created a tool called the **MyPyramid food guidance system**. This is *a system designed to help Americans make healthful food choices*.

A Closer Look at MyPyramid

MyPyramid includes an illustration (see **Figure 10.3**) on page 244 that shows a pyramid with six colored sections, each representing a different food group. A well-balanced eating plan should contain a variety of foods from the five main food groups. These are grains, vegetables, fruits, milk, and meat and beans. The sixth group, oils and other fats, should only be eaten in very small amounts. MyPyramid can help you develop a personalized eating plan based on your age, gender, and activity level.

Look at Figure 10.3. Notice the figure walking up the steps of the pyramid. The figure is there to remind you to make physical activity a part of your daily routine.

Reading Check

Identify What do the colored bands in MyPyramid represent?

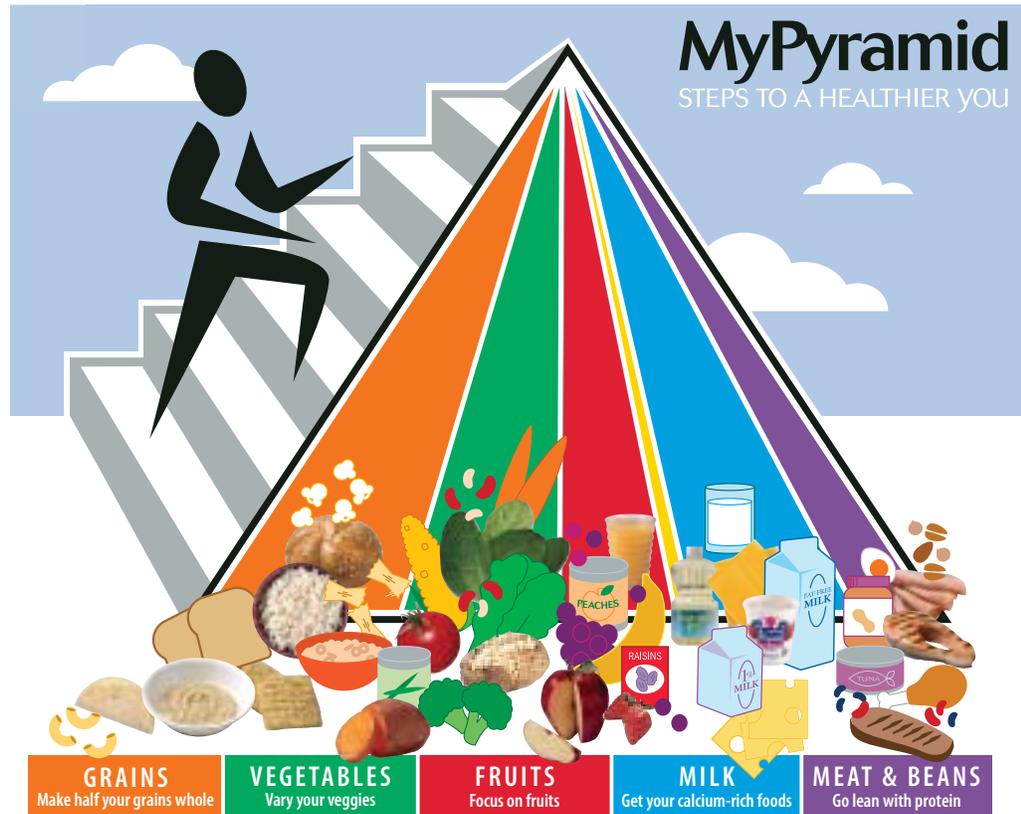


▶ FIGURE 10.3

MyPYRAMID

The goal of MyPyramid is to help you develop a healthy lifestyle.

What does the figure in the illustration remind you to do?



Connect To... Science

Dietary Supplements

Some people take dietary supplements because the foods they eat do not satisfy all of their nutritional needs. However, large doses of vitamins and minerals can be dangerous. It is important to take the recommended daily dose and no more.

Use the Internet to research nutritional supplements. Remember to stick to Web sites that end in .edu and .gov because they provide the most reliable information. Share your findings with your class.

Other Guidelines for Good Health

MyPyramid reflects science-based advice from the *2005 Dietary Guidelines for Americans*. These guidelines were released by the U.S. Department of Agriculture (USDA) and the U.S. Department of Health and Human Services (HHS). The guidelines help people who are two years of age and older to develop healthful eating habits and increase their level of activity. Doing both improves health and reduces the risk of certain diseases.

Eat a Variety of Foods

Have you ever heard the expression, “Variety is the spice of life”? That means life is better when things are not always the same. Healthy eating includes choosing a variety of foods so that your body gets all the nutrients it needs. Ask a parent or guardian to help you create some meals and snacks that include a variety of healthy foods.

Eat More Fruits, Vegetables, and Whole Grains

When it comes to eating enough fruits, vegetables, and whole grains, many teens fall short. The guidelines recommend making half the grains you eat each day whole grains. Including leafy greens and colorful vegetables and fruits in your meals will make your food more attractive as well as more nutritious.

Balance the Calories You Consume with Physical Activity

Consume only as many calories as your body needs. A **calorie** is a unit of heat that measures the energy available in food. It also measures how much energy your body uses. A moderately active teen needs around 2,000 calories a day. If you are involved in regular, strenuous exercise such as running on your school's track team, you may need more. If you eat more calories than your body needs, you could gain more weight than is healthy for your body.

Staying physically active will help you burn some of the calories you take in from food. **Figure 10.4** shows the relationship between calories consumed and calories burned.

Teens should be physically active for at least 60 minutes on most days. In addition to helping you maintain a healthy weight, physical activity builds strength, gives you energy, helps you make new friends, and helps you feel good about yourself.

Reading Check

Explain Why is physical activity important?



Go Online

Topic: MyPyramid

Visit glencoe.com for Student Web Activities that will help you develop a personal eating plan using MyPyramid.

Activity: Using the information from the link above, create a personal eating plan for one week based on your age, gender, and activity level. Include a few meals based on restaurant menu choices.



Limit Fats, Sugar, and Salt

Look at the MyPyramid illustration in Figure 10.3 again. Can you see the narrow yellow band? This category represents fats. A healthy choice for good nutrition is to limit your intake of oils, butter, salad dressing, and other high-fat foods. Many processed and prepared foods contain hidden fats. To find out how much fat a single serving of packaged food contains, read the Nutrition

FIGURE 10.4

THE ENERGY "EQUATION"

Physical activity helps you burn calories. The calories out listed below are for a 100-pound person. **What activities are you involved in that help your body burn calories?**

	Calories In		Calories Out Per Hour	
3-Ounce Lean Cooked Hamburger Patty	245	=	270	Bicycling (12 mph)
English Muffin with Egg, Cheese, and Ham	360		325	Swimming (50 yds/min)
Corn Muffin	510		500	Jumping Rope
Grilled Chicken Sandwich, Plain Baked Potato, and Bottled Water	640		610	Jogging (7 mph)

Source: American Heart Association, 2007.



Go Online

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

Facts label. A typical Nutrition Facts label appears in **Figure 10.5**. Notice that this product contains a total of 12 grams (g) of fat. How much of this fat is saturated fat?

The *Dietary Guidelines* recommend that you limit added sugars and salt. One way to cut back on added sugars is to limit foods such as cookies, cake, candy, and regular soft drinks. Enjoy these sweet treats occasionally, rather than every day. Be aware that added sugars may be present in unexpected foods, such as salad dressings and many breakfast cereals.

Salt contains **sodium**, a nutrient that helps control the amount of fluid in your body. Too much sodium can lead to high blood pressure in some people. Once again, you can find out how much sodium a food has by checking the Nutrition Facts panel.



Reading Check

Define What is sodium?

FIGURE 10.5

NUTRITION FACTS LABEL

Food labels provide important nutritional information that can help you make sensible food choices. **How many servings does this product contain? If you ate the whole product, how many calories would you consume?**

Nutrition Facts			
Serving Size 1 cup (226g)			
Servings Per Container 2			
Amount Per Serving			
Calories 250		Calories from Fat 110	
			% Daily Value*
Total Fat 12g			18%
Saturated Fat 3g			15%
Trans Fat 3g			
Cholesterol 30g			10%
Sodium 470mg			20%
Potassium 700mg			20%
Total Carbohydrate 31g			10%
Dietary Fiber 0g			0%
Sugar 10g			
Protein 5g			
Vitamin A			4%
Vitamin C			2%
Calcium			20%
Iron			4%
*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
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Keep Foods Safe to Eat

Foods must be handled and prepared properly in order to be safe to eat. If foods are improperly handled, they can become contaminated with bacteria that can cause illness. Also known as food poisoning, a **foodborne illness** is a sickness resulting from eating food that is not safe to eat. To maintain your health, it is important that you take steps to make sure your food is free from contamination.

The most important thing you can do to protect yourself against foodborne illness is to wash your hands with hot soapy water before handling food. Another way to keep foods safe to eat is by storing and preparing them at the right temperatures. In addition, use a separate cutting board and knife when cutting raw meat to avoid contaminating other foods.



- ▲ When food shopping, buy perishable foods last. Get them home and into the refrigerator promptly. **What are some other ways to prevent foodborne illness?**

Lesson 3 Review

After You Read

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

What I Learned

1. **Explain** Who created the MyPyramid food guidance system and what is its purpose?
2. **List** Name the five main food groups in MyPyramid. What does the sixth group represent?
3. **Identify** What are two things you can do to keep your foods safe from harmful bacteria?

Thinking Critically

4. **Synthesize** Explain what MyPyramid is designed to help you know about foods to eat.

5. **Apply** Tom had a peanut butter sandwich and a glass of milk for lunch. Which food groups do these foods represent in MyPyramid? What else could Tom eat to add more food groups to his lunch?

Applying Health Skills

6. **Accessing Information** Check the Nutrition Facts label of several snack foods you enjoy eating. Compare the nutrients in a single label serving of each food and decide which one provides the most nutrients. How do the calories compare?

Lesson 4

Planning Meals and Snacks

Guide to Reading

Building Vocabulary

As you read this lesson, write the two new highlighted terms and their definitions in your notebook.

- empty-calorie foods (p. 249)
- nutrient density (p. 250)

Focusing on the Main Ideas

In this lesson, you will learn to

- **explain** why breakfast is important.
- **describe** meal-planning tips.
- **identify** healthy ways to snack.

Reading Strategy

Finding the Main Idea For each of the main sections in this lesson, write one sentence that states the main idea in the section.

Quick Write

Write a short description of your favorite snack and when you tend to eat it.

- ▼ A healthful breakfast gives you energy that lasts throughout the morning. **Why is this important for teens in particular?**



Planning Healthy Meals

The advice in MyPyramid can be summed up by the three words *variety*, *moderation*, and *balance*. Variety, as you have seen, can make your meals and snacks more nutritious and interesting. Moderation, which includes eating reasonable portions and limiting fats, sugars, and salt, can lower your risk of developing certain diseases. Balance, which means being careful not to eat more calories than your body can burn, can help you maintain a healthy weight.

In this lesson, you will see how these ideas can be applied to planning healthful meals and snacks. You will learn ways to eat well, both at home and on the go.

Breakfast: Start the Day Out Right

Breakfast has been called the most important meal of the day, and for good reason. After a night of sleep, in which your body rests and renews itself, you need breakfast to aid your body's fuel-producing mechanism. Breakfast gets the body going and provides the fuel you will need later in the morning. This fuel helps you to stay alert so you can



concentrate in school. Research suggests that students who make time for breakfast tend to do better academically than teens who do not eat breakfast.

When planning breakfast, round out your meal with a cup of fruit and a glass of low-fat milk. Trail mixes and packaged breakfast bars can also be good as long as the sugar content is low. The ingredient list on the wrapper will tell you if the product contains added sugar. *Honey, sugar, molasses, and corn syrup* are a few names for added sugar.

Lunch and Dinner

For many Americans, lunch is a relatively small meal and dinner is large. In other cultures, the opposite is true: the largest meal is consumed at lunchtime. Instead of eating large meals, you can eat four or five small meals spread out over the whole day. Just make sure to watch your total calorie intake. Aim for variety, moderation, and balance in your food choices. Here are some suggestions:

- **Vary your proteins.** You need about five to seven 1-ounce servings of meat and beans daily. Try fish like salmon or a nut butter made from something other than peanuts.
- **Use limited amounts of fats, sugars, and salt.** Eat reduced-fat and nonfat dairy products like cheese, milk, and yogurt. Eat sweets and drink sodas once in a while. They are **empty-calorie foods**, or *foods that offer few, if any, nutrients but do supply calories*. Grab a piece of fruit if you have a taste for something sweet, or try some flavored water that is sweetened with fruit essence. Applesauce is a healthy alternative to baking sugar. You can also avoid excess salt by buying low-sodium or salt-free products. Use spices to flavor your foods.

Reading Check

Recall How can you prepare food that is low in fat and sugar?

- **Balance your eating plan.** Use a food diary to write down what and how much you eat. This will help you identify which food groups you are eating too little of or too much of. Keeping track of what you eat may also give you an idea of how many calories you are taking in.

What Teens THINK

Do you think you would be healthier if you ate less fast food?

Yes, I do think I would be healthier if I ate less fast food. Most fast-food restaurants offer you burgers, milk shakes, and fries, etc. Some give you fruits and vegetables, but not a lot. Plus, when you eat out, your parents don't nag you to eat healthy as much as they would at home.

Carolyn D.
Tulsa, OK



Go Online

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

If you are eating more calories than your body can burn during your daily activities, you may want to cut back on calories or increase your exercise. Your eating habits may show you ways you can balance your eating plan to maintain a healthy weight.

Snacking Smart

During adolescence, your body is growing rapidly. Snacking can help you meet your nutritional needs during this period of change, especially if you choose healthful snacks.

When you snack, pay attention to what and how much you are eating. Eating absentmindedly can lead to overeating. Also, avoid snacking just before mealtime so that you will be hungry for your regular meal.

As for *what* to eat, remember to choose healthful foods. Healthful snacks provide important nutrients. Foods that have more nutrients are likely to be nutrient-dense. **Nutrient density** is the amount of nutrients relative to the number of calories they provide. The more nutrients a food has in relation to calories, the more nutrient-dense it is. **Figure 10.6** provides some specific ideas for nutrient-dense snacks. You can probably add some snack ideas of your own.

Reading Check Define What is nutrient density?

Eating Out, Eating Right

Choosing nutritious foods and controlling your portion sizes are important strategies for maintaining your health and preventing future health problems. This can often be challenging when eating out. Portions of food tend to be larger at restaurants. Another challenge is not knowing what is in a dish.



FIGURE 10.6

SOME SMART SNACKS

Snacking can help you meet your nutritional needs during the teen years. **What other foods do you enjoy eating that would make healthful snacks?**

Food	Calories from Fat	Food Group Equivalent
Air-popped popcorn, plain, 1 cup	0	1 cup Grains
Applesauce, ½ cup	0	½ cup Fruits
Gelatin with ½ cup sliced banana	0	½ cup Fruits
Graham crackers, 2	2	1 ounce Grains
1½ ounces of low-fat cheese and 4 saltines	52	1 ounce Grains, 1 cup Milk



When it comes to portion control, try ordering an appetizer as your meal. These are usually smaller servings. Just make sure you choose a dish that is nutrient-dense. If you do decide to order a main course, eat only half and take the other half home for a later meal if the portion is large. Refrigerate your leftovers as soon as you get home so they do not spoil.

Here are some other tips to help you eat healthy in restaurants:

- Check the menu for heart-healthy selections. Many restaurant menus feature dishes approved by the American Heart Association. These items appear with a small red heart next to them.
- Select foods that are grilled, broiled, or roasted instead of fried. These foods usually contain less fat.
- Ask for salad dressing on the side. Use just enough to flavor the greens without smothering them. Do the same with sauces, gravies, and other toppings.



- ▲ Try to choose healthful foods when eating out. **What descriptions on a menu can tell you whether a food item is healthful?**



Lesson 4 Review

After You Read

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

What I Learned

1. **Vocabulary** What makes a food an *empty-calorie food*?
2. **Recall** Why is breakfast important?
3. **Identify** Give three meal-planning tips that allow variety, moderation, and balance to your eating plan.

Thinking Critically

4. **Explain** How can you avoid overeating when you eat at a restaurant?

5. **Apply** You are hungry, but dinner is still an hour away. Can you think of a snack that would help you feel less hungry but still leave you ready to eat dinner? How much of the snack food do you think you should eat?

Applying Health Skills

6. **Practicing Healthful Behaviors** Keep a food log for two days. Record every food you eat and the nutrients that each food contains. Identify ways to improve your eating habits.

Building Health Skills

Accessing Information
Practicing Healthful Behaviors
Stress Management
Analyzing Influences
Communication Skills
Refusal Skills
Conflict Resolution
Decision Making

Goal Setting

Advocacy

What Is Goal Setting?

Goal setting is a five-step plan for improving and maintaining your personal health. Some goals are easy to reach while others may be more challenging.

The 5 Steps of the Goal-Setting Plan

- Step 1** Choose a realistic goal and write it down.
- Step 2** List the steps that you need to take to reach the goal.
- Step 3** Find others, like family, friends, and teachers, who can help and support you.
- Step 4** Set checkpoints along the way to evaluate your progress.
- Step 5** Reward yourself once you have reached your goal.

Eating for Your Health

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

1 Model

Read how Don used goal setting to help him change his eating habits and include more foods that are healthful.

Don wanted to change his eating habits to include more healthful foods. He used the goal-setting process to develop a plan for himself.

- **Identify a specific goal.** Don's goal was to improve his eating habits.
- **List the steps to reach your goal.** Don wrote down the following ideas:
 - Choose more fruits and vegetables.
 - Eat smaller portions of food.
 - Limit how many french fries, chips, and other high-fat foods I eat.
- **Get help from others.** Don told his parents about his plan and asked for their support.
- **Evaluate your progress.** Don kept a food log to help him keep track of his food choices.
- **Reward yourself.** After two weeks, Don rewarded himself by buying a new DVD.



2 Practice

Read the passage below and apply what you have learned about goal setting to help Amy reach her goal of eating breakfast on a regular basis.

Amy decided she wants to change her habit of skipping breakfast. She usually gets up late every morning and does not have time to eat before she leaves for school. Amy knows that eating breakfast is an important part of a healthy eating plan. Use the goal-setting process to help Amy develop a plan to eat breakfast on a regular basis. Show how Amy can use each step in the goal-setting process to help her reach her goal.



3 Apply

Apply what you have learned about goal setting when completing the activity below.

Think about a food habit you would like to change. For example, maybe you tend to snack in front of the TV or maybe you like to eat two helpings of dessert. In a notebook, tell how accomplishing this goal will improve your health. Then, set a goal to change your habit and create a plan to help you reach your goal. Keep track of your progress in your notebook, and bring your results to class.

Self-Check

- Did my plan contain each step in the goal-setting process?
- Did I tell how this goal will improve my health?
- Did I track my progress?



Jars of Sugar

According to some estimates, the average American eats about 100 pounds of sugar each year. Some of the sources of this sugar are obvious. For example, it is clear that regular soft drinks contain a lot of sugar. However, some sources of sugar can be hidden. Sugar can also appear in foods under a variety of names. These include *corn sweetener*, *corn syrup*, *fructose*, *sucrose*, and others.

What You Will Need

- Seven empty baby food jars
- A container of sugar
- A set of measuring spoons

Wrapping It Up

Evaluate your findings. Which foods contain the most sugar? Which foods contain other nutrients? What are some ways to reduce your sugar intake?



What You Will Do

- 1 The table shown here lists the amount of sugar, in grams, found in several popular foods. Note that 5 grams of sugar is equivalent to 1 level teaspoon of sugar. 1 gram is just under $\frac{1}{4}$ teaspoon and 2 grams is a little under $\frac{1}{2}$ teaspoon.
- 2 Calculate how many teaspoons of sugar each product in the list contains.
- 3 Using the spoons, measure out the amount of sugar in each product and place it in a jar. Label the jar with the name of the product it corresponds to.

Food	Grams of Sugar
Cola (12 oz.)	42
Fat-free fruit yogurt (8 oz.)	35
Light popcorn (1 c.)	0
Fruit punch drink (8 oz.)	27
Sweetened breakfast cereal ($\frac{3}{4}$ c.)	15
Three reduced-fat chocolate sandwich cookies	14
Chocolate candy bar (1.55 oz.)	40



Visit glencoe.com to download quizzes and eFlashcards for Chapter 10.

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 1–4. Find a partner and quiz each other using these study aids.

Lesson 1 The Importance of Nutrition

Main Idea Good nutrition is important because it affects all sides of your health triangle.

- Nutrients in the body do many jobs.
- Emotions can cause you to like or dislike foods because of associations with past experiences.
- You can get the nutrients your body needs by eating a variety of healthful foods.

Lesson 2 Nutrients for Wellness

Main Idea Your body uses nutrients for energy, for building and repairing tissue, and for aiding in body processes such as digestion.

- Scientists have found more than 40 different kinds of nutrients in foods.
- The six types of nutrients are carbohydrates, proteins, fats, vitamins, minerals, and water.
- Your body uses nutrients for energy, for building and repairing tissue, and for aiding in body processes such as digestion.

Lesson 3 Following Nutrition Guidelines

Main Idea MyPyramid is designed to make it easy for you to choose healthful foods, and to encourage you to be physically active.

- The five main food groups in MyPyramid are grains, vegetables, fruits, milk, and meat and beans.
- The sixth food group, oils and other fats, should only be eaten in very small amounts.
- Balancing the calories you take in with the calories you burn off can help you maintain a healthy weight.
- Foods must be prepared and handled properly in order to be safe to eat. If foods are handled improperly, they can become contaminated with bacteria that can cause illness.

Lesson 4 Planning Meals and Snacks

Main Idea Effective meal and snack planning includes variety, moderation, and balance.

- Breakfast is the most important meal of the day.
- Instead of eating large meals, try eating four or five small meals throughout the day.
- Healthy snacking involves being aware of your snack habits and choosing to snack on mostly nutrient-dense foods.
- Try to choose healthful foods when eating out. You can order heart-healthy meals and request salad dressing on the side.

After You Read

HEALTH INVENTORY

Now that you have read the chapter, look back at your answers to the Health Inventory in the chapter opener. Is there anything that you should do differently?

Reviewing Vocabulary and Main Ideas

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

- nutrition
- appetite
- unsaturated fat
- carbohydrates
- fiber
- proteins
- nutrients
- saturated fat

Lesson 1 The Importance of Nutrition

1. Substances in food that your body needs are called _____.
2. The study of nutrients and how the body uses them is known as _____.
3. _____ is the psychological desire for food.

Lesson 2 Nutrients for Wellness

4. _____ are sugars and starches that naturally occur, mainly in plant sources of food.
5. Nutrients that your body uses to build, repair, and maintain cells and tissues are called _____.
6. Eating large amounts of _____ can increase a person's risk of heart disease.



On a sheet of paper, write the numbers 7–12. Write **True** or **False** for each statement below. If the statement is false, change the underlined word or phrase to make it true.

Lesson 3 Following Nutrition Guidelines

7. The MyPyramid food guidance system reflects advice from the Dietary Guidelines for Americans.
8. The yellow band in MyPyramid represents grains.
9. Teens should be physically active at least 30 minutes per day.

Lesson 4 Planning Meals and Snacks

10. Many health experts think dinner is the most important meal of the day.
11. One way to limit fats, sugars, and salt in your eating plan is to substitute nutrient-dense foods for empty-calorie foods.
12. One way to control portions when you eat out is to eat half of your meal and take the rest home.

Thinking Critically

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

13. **Explain** Why should calcium-rich foods be an important part of a teen's eating plan?
14. **Evaluate** Explain how the media influence food choices.



Applying Technology

Write About It

- 15. Expository Writing** Write an essay that explains clearly how teens can use MyPyramid to guide their food choices.
- 16. Personal Writing** Set a goal to change one of your eating habits. Develop a plan to reach this goal.

Teen Nutrition Brochure

Use Microsoft Word® to create a brochure that convinces teens to make healthful food choices.

- Open a new Microsoft Word® document with three columns and a landscape view.
- Import digital images that show teens making healthful food choices.
- Add text to your brochure. Write about the benefits of a nutrient-rich diet.
- Save your project

Standardized Test Practice

Math

Use the Nutrition Facts label to answer the questions.

Nutrition Facts	
Serving Size 3 pieces (314g)	
Servings Per Container 14	
Amount Per Serving	
Calories 359	Calories from Fat 219
% Daily Value*	
Total Fat 24g	36%
Saturated Fat 12g	60%
Trans Fat 4g	
Cholesterol 60g	20%
Sodium 235mg	10%
Potassium 0mg	0%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 10g	
Protein 5g	

- The total calories in two servings is
 - 36
 - 359
 - 718
 - None of the above
- Charlie ate three servings of this product in one day. How much of the Daily Value for sodium did he receive from just this one food?
 - 10 percent
 - 30 percent
 - 100 percent
 - 235 percent
- How much saturated fat would you be eating if you ate one piece of this product?
 - 6 g
 - 3 g
 - 12 g
 - 4 g