

Foods for Good Nutrition



Reading Skill

COMPARE AND CONTRAST When you compare things, you tell how they are alike. When you contrast things, you tell how they are different. Use the Reading in Health Handbook on pages 372–383 and this graphic organizer to help you read the health facts in this chapter.

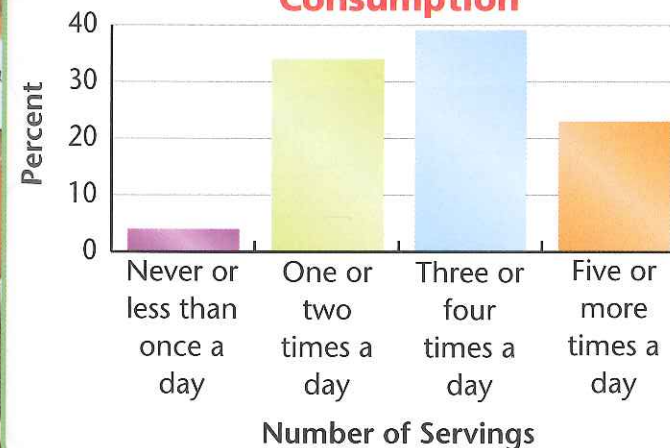
Compare and Contrast

Topic: Alike | Different

Health Graph

INTERPRET DATA Americans eat a lot of fruits and vegetables. At least five servings a day are recommended for good health. What is the difference in the percent of people who eat the least amount of fruits and vegetables and the people who eat the greatest amount?

Fruit and Vegetable Consumption



Daily Physical Activity

Eating the right foods in the right amounts is one way to stay healthy. Being physically active is another way.



Be Active!

Use the selection, Track 3, **Late for Supper**, to use some food energy.



Food—Fuel for the Body

Lesson Focus

Your digestive system breaks down food to give your body energy and building materials.

Why Learn This?

Eating the right foods in the right amounts can help keep you healthy.

Vocabulary

nutrients
enzymes
carbohydrates
fats
proteins
vitamins
minerals

Food As Fuel

Your body is a little like a car. A car needs fuel to run, and so do you. While most cars use gasoline as fuel, the human body uses food. Burning fuel releases energy the car uses to run. A car doesn't need to change gasoline into another form in order to release this energy. Your body is different. It must *digest*, or break down, food before it can use the nutrients food contains.

Nutrients (noo-tree-uhnts) are substances in food that provide your body with energy. Nutrients also provide building materials the body needs for growth, repair, and daily activities.

Breaking down food is your digestive system's main function. When your digestive system breaks down food, it releases several kinds of nutrients. These include carbohydrates, fats, and proteins.



COMPARE AND CONTRAST How are your body and a car alike? How are they different?



Your car needs fuel (gasoline) to run. Your body's fuel is food. ▶

Digestion

Let's follow a bite of a turkey sandwich to discover how your digestive system breaks down the sandwich into nutrients your body needs. Digestion begins in your mouth. Your teeth chew the bite into smaller pieces. Your saliva contains **enzymes** (EN-zymz), chemicals that help break down foods to release nutrients. Different enzymes are needed to digest different foods.

After you swallow, the food mass moves toward your stomach. There, the partly digested food is squeezed and churned. And more nutrients are released from your bite of sandwich.

Next, the food mass moves into the small intestine, where more enzymes finish the job of digestion. Now the nutrients are ready to move into your bloodstream and into your body cells. Anything that cannot be digested passes into your large intestine.

SEQUENCE List the parts of your digestive system in the order that food moves through them.

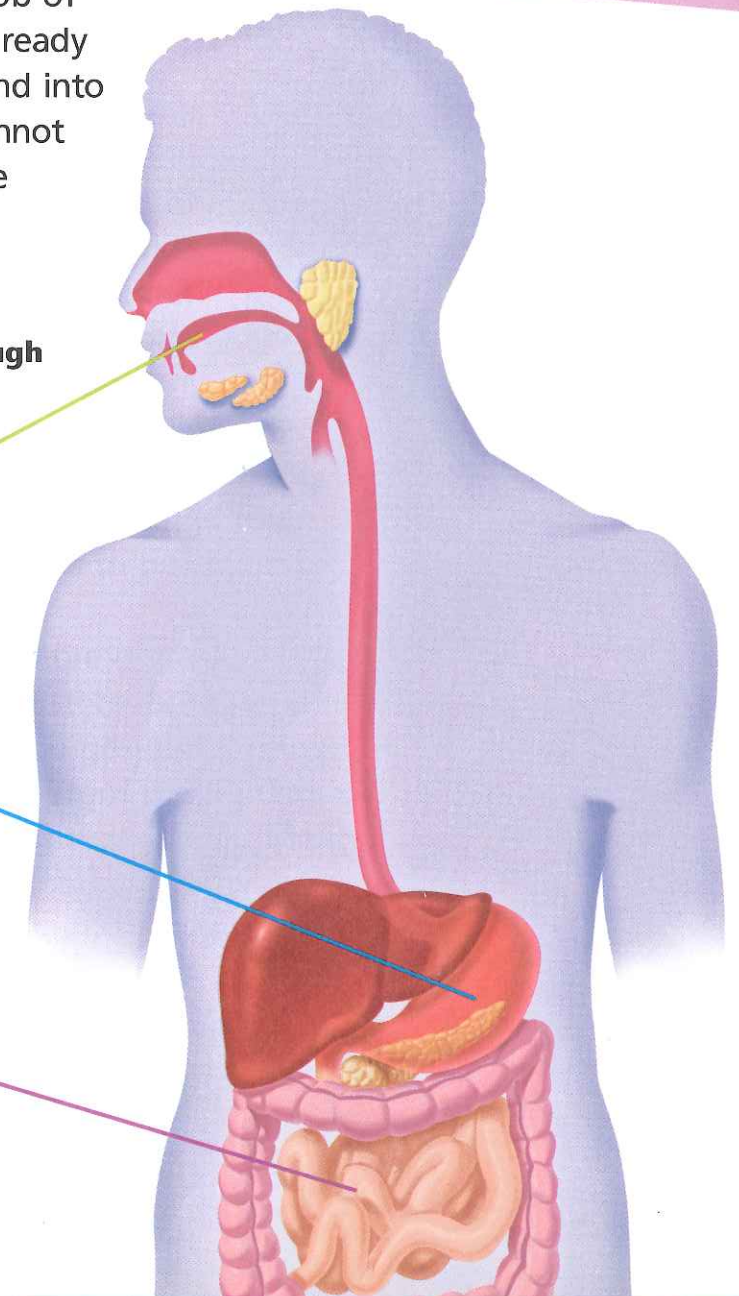
1 Enzymes in your saliva begin to break down starch in the bread.

2 In your stomach, acid begins to break down the meat in the sandwich.

3 Additional enzymes complete digestion in your small intestine. Then nutrients pass into your blood. You can review this process on page 8.

Did You Know?

The small and large intestines are like long hoses connected to each other. In an adult, the small intestine is about 23 feet long and 1 to 2 inches wide! The large intestine is about 5 feet long. It's called the large intestine because it is wider than the small intestine. It is about $2\frac{1}{2}$ inches across.





Carbohydrates and Fats

Most of the energy your body needs comes from nutrients called carbohydrates. The **carbohydrates** (kar•boh•HY•draytzs) we eat most are sugars and starches.

Some foods, such as syrup and hard candy, are nothing but sugar. Many other foods, including fruits, some vegetables, and milk, contain sugars along with other nutrients. Starches are made of many sugars linked together. Beans, breads, and pasta are all rich in starches. During digestion, your body breaks down starches into sugars.

The nutrients that contain the most energy are **fats**. Plants, animals, and people store excess energy as fats. Butter, margarine, and oils are mostly fats. Most *junk-food* snacks, such as chips, cookies, cakes, and chocolate, have lots of fat. Foods such as meats, nuts, and milk products also contain fats. But unlike junk food, these foods also contain other important nutrients.

DRAW CONCLUSIONS Which food would supply more energy—a handful of raisins or a handful of peanuts? Why?

◀ What nutrients give these kids the quick energy they need to play basketball?



▲ Which of these protein-rich foods do you like?

Proteins

You've certainly grown a lot since you were a baby. You can thank nutrients called proteins for most of this growth. **Proteins** (PROH•teenz) are the building blocks of your body. Your body uses proteins to build and repair cells.

Remember that your body can store extra energy in the form of fats. Your body cannot store extra protein. It needs a new supply every day. You get proteins just as you get carbohydrates and fats—from the foods you eat. Some foods have more proteins than others. Meat, fish, eggs, and milk products are all good protein sources. Dried beans and peas, nuts, and grains also contain proteins.

DRAW CONCLUSIONS Why do you think a child needs more protein than an adult?

Quick Activity

Research Fat Find out how the amount of fat in different kinds of milk is indicated on the milk bottle or carton. What do the numbers mean? Make a table comparing the number of fat grams in different kinds of milk.

Vitamins and Minerals

In addition to carbohydrates, fats, and proteins, there are other nutrients that your body needs in smaller amounts. **Vitamins** (vɪt·uh·minz) are nutrients that help your body perform specific functions. They are essential to life. Some vitamins help your body use other nutrients. Other vitamins help keep parts of your body strong and healthy. Your body cannot make most vitamins. It has to get them from foods you eat.

Minerals (MIN·uhr·uhlz) are another kind of nutrient, helping your body to grow and work. Minerals help keep your bones and teeth strong, help your body release energy from food, and keep your cells working well. The photographs below show foods that are rich in different vitamins and minerals.

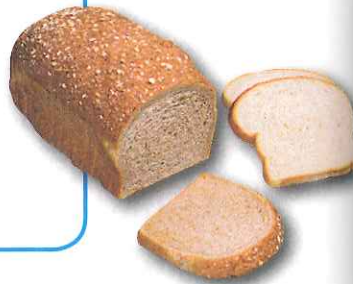


COMPARE AND CONTRAST Name two ways in which calcium is similar to vitamin A and two ways it is different.

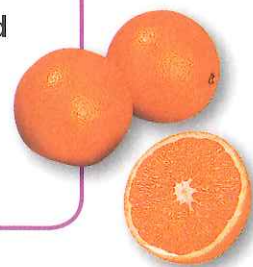
Vitamin A keeps your skin and eyes healthy. It is found in yellow and orange vegetables, tomatoes, and leafy green vegetables.



Vitamin B₁ is needed to release energy from nutrients. It is found in meats, fish, whole-grain breads, and some beans.



Vitamin C helps keep your blood, gums, and teeth healthy. It is found in citrus fruits, strawberries, and tomatoes.



Iron keeps oxygen moving throughout the body and protects against infection. It is found in meats, leafy green vegetables, beans, dried fruits, and nuts.



Calcium builds strong bones and teeth, helps muscles work, and helps blood clot. It can be found in milk, milk products, and broccoli.



Phosphorus builds strong bones and teeth and helps cells function. It is found in meat, poultry, dried beans, nuts, milk, and milk products.



Water and Fiber

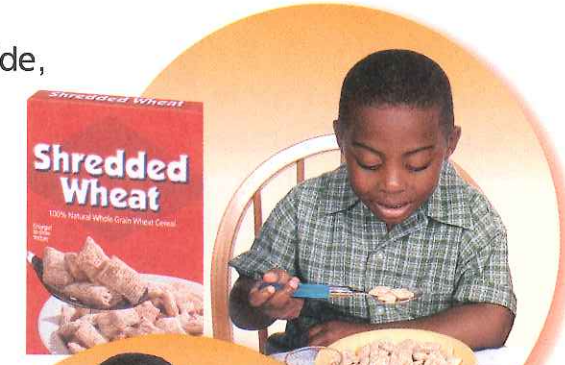
Water is the nutrient your body needs most. You need water to digest food, to transport nutrients to your cells, and to build new cells. Water helps keep your body temperature stable. It also helps remove carbon dioxide, salts, and other wastes from your body.

You get some water from the foods you eat, but you get most of the water you need from drinks like water, milk, and juice. To stay healthy, most people need six to eight glasses of water each day.

Fiber is another part of a healthful diet. Your body needs fiber to help move other foods through the digestive system. Fresh vegetables, fruits, and whole grains are all high in fiber.

MAIN IDEA AND DETAILS What are two important things water does for your body?

Whole-grain cereals, like shredded wheat, have more fiber than processed cereals. ▼



Lesson 1 Summary and Review

1 Summarize with Vocabulary

Use vocabulary from this lesson to complete the statements.

Nutrients with a lot of energy are _____ and _____. Nutrients called _____ are used to build and repair cells in your body. Your body cannot make most _____. Your blood needs iron, a _____, to carry oxygen throughout your body.

2 What are the main uses of nutrients in your body?

3 Critical Thinking

Why is water a nutrient, even though most of the water you take in doesn't come from food?

4 Focus Skill COMPARE AND CONTRAST

Draw and complete this graphic organizer to show how carbohydrates and proteins are alike and different.

Topic:	
Alike	Different

5 Write to Inform—How-To

Describe how a person could design a weekly menu that includes all the necessary nutrients every day.

The Food Guide Pyramid

Lesson Focus

The Food Guide Pyramid groups foods with similar nutrients and shows how many servings from each food group the average person should have each day.

Why Learn This?

You can use the Food Guide Pyramid to help you plan a balanced diet.

Vocabulary

nutritionist
Food Guide Pyramid
serving



Fats, Oils, and Sweets Group includes foods such as potato chips, doughnuts, mayonnaise, candy, butter, and oil.

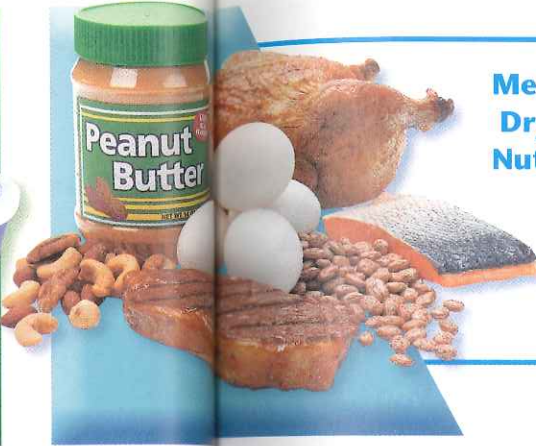
Milk, Yogurt, and Cheese Group

includes foods such as low-fat milk, yogurt, cottage cheese, and hard cheese.



Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts Group

includes foods such as salmon, eggs, mixed nuts, chicken, steak, and peanuts.



Vegetable Group

includes foods such as corn, carrots, broccoli, lettuce, and tomatoes.



Fruit Group

includes foods such as strawberries, apples, pineapple, cantaloupe, blueberries, and plums.



Bread, Cereal, Rice, and Pasta Group

includes foods such as rice, bread, tortillas, pasta, and cereals.



The USDA Food Guide Pyramid

People who work in supermarkets arrange similar foods together so they are easy to find. Nutritionists do something very similar but for a different reason. A **nutritionist** is a scientist who studies nutrition and healthful diets. Look at the **Food Guide Pyramid**, which is a tool to help you eat a balanced diet. It was prepared by nutritionists at the United States Department of Agriculture (USDA).

If you look carefully, you will see that the nutritionists grouped each food with other foods that have similar nutrients.

They arranged the groups in a pyramid form so that you can quickly see how many servings from each food group you should eat every day. A **serving** is the measured amount of food recommended for a meal or snack. Generally, you should eat more servings per day of foods near the base of the pyramid than foods near the top.

MAIN IDEA AND DETAILS What two kinds of information does the Food Guide Pyramid give you?

Information Alert!

Nutrition As scientists learn more about nutrition and health, the USDA Food Guide Pyramid may change.



For the most up-to-date information, visit The Learning Site. www.harcourtschool.com/health

Myth and Fact

Myth: Brown eggs are more nutritious than white eggs.

Fact: The color of an egg's shell has nothing to do with the nutrients it contains.

A Balanced Diet

Your body needs the right amounts of different nutrients each day to stay healthy. You get those nutrients by eating a balanced diet. The foods in each group of the USDA Food Guide Pyramid contain similar nutrients. That means you can substitute one food for another in the same group. For example, instead of meat, you could eat fish or eggs. You get many of the same nutrients in fish and eggs as you do in meat.

The number of servings from each food group are suggested for children ages 7–12.



Bread, Cereal, Rice, and Pasta Group

Foods in this group are made from grains, such as wheat and rice. Grains contain carbohydrates, protein, fiber, minerals, and vitamins. You should eat six to nine servings daily from this group. A serving is one slice of bread, 1 cup of dry cereal, or $\frac{1}{2}$ cup of cooked pasta.



Fruit Group

Fruits contain carbohydrates, including sugar, fiber, vitamins, and minerals. You should eat two to four servings daily from this group. A serving is one apple, one small banana, or fifteen grapes.

Vegetable Group

Vegetables contain many vitamins and minerals. Many vegetables also contain fiber and carbohydrates, such as starch. You should eat three to five servings daily from this group. A serving is $\frac{1}{2}$ cup cooked vegetables or 1 cup of salad or raw vegetables.



Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts Group

These foods contain protein, fats, vitamins, and minerals. You should eat two to three servings daily from this group. A serving is 3 ounces of cooked meat, poultry, or fish (about the size of a deck of cards), one egg, or a handful of nuts.

Milk, Yogurt, and Cheese Group

This group is sometimes called the dairy group because all of these foods are made from milk. Milk products contain a lot of carbohydrates, protein, fats, and minerals. You should eat three servings daily from this group. A serving is 8 ounces of low-fat milk, 8 ounces of yogurt, or $1\frac{1}{2}$ ounces of cheese.



Fats, Oils, and Sweets Group

These foods contain a lot of carbohydrates (sugars) and fats, but not many other nutrients. You should eat only small amounts of foods from this group, and not every day.

By eating a variety of foods from each food group every day, you will be eating a balanced diet. You will be giving yourself the nutrients you need for energy and for your body to grow and repair itself. Just be careful to limit the amount of fats and sweets you eat.

SUMMARIZE Name the six food groups, and give examples of at least two foods from each group.

Personal Health Plan

Real-Life Situation

You're going to a restaurant, and you want to make sure you choose healthful foods.

Real-Life Plan

List two things you can do to make sure you choose healthful foods from a menu.

ACTIVITY



Life Skills

Make Responsible Decisions

Using the USDA Food Guide Pyramid, review the types and amounts of foods people should eat each day. Use the guidelines to write a menu of meals for yourself for one day. Remember to include foods that you like, and leave out those that you are not allowed to eat.

Planning Meals

You can use the USDA Food Guide Pyramid to plan a healthful snack when you get home from school. A healthful snack would include foods from several of the food groups, except the Fats, Oils, and Sweets Group.

When planning your snack menu, think about what you ate for breakfast and lunch. Think about what you might eat for dinner. Check the number of servings recommended on each level of the pyramid. Design your snack so that it gives you more of the foods you might not get enough of during the rest of the day.

The menu below shows what Keya's mother has planned for dinner each night. Which food groups are represented in the menu? Which food groups are missing?



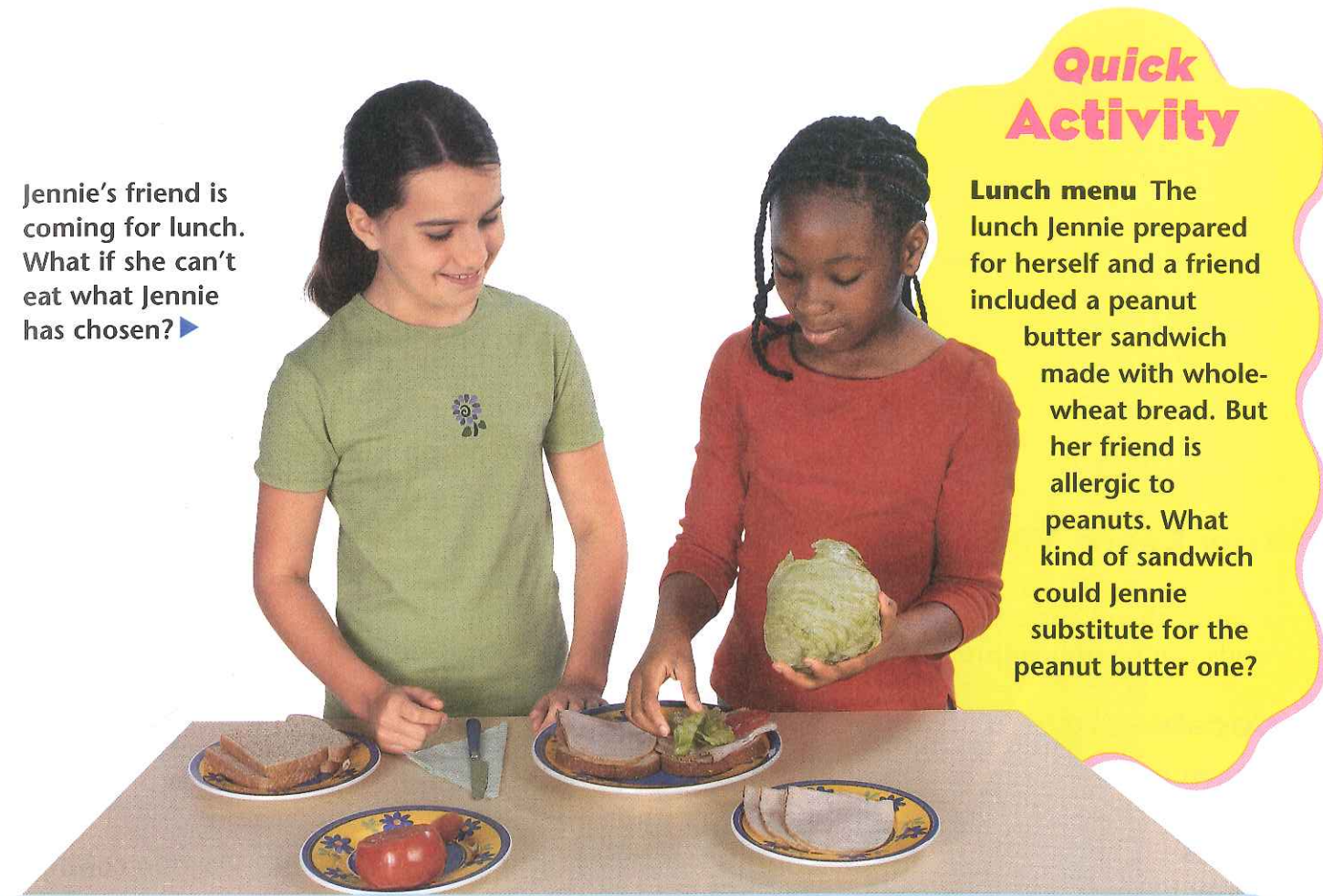
COMPARE AND CONTRAST Suppose you aren't allowed to eat the same foods for your after-school snack two days in a row. What menu could you make up so that your snack on Tuesday includes the same food groups as your snack on Monday?

Planning meals helps you eat a balanced diet. ▼

Weekly Menu	
Monday	baked chicken, green beans, mashed potato
Tuesday	fish, chips, corn, tomatoes
Wednesday	chicken salad, carrots, bread
Thursday	meatloaf, salad, peas, bread
Friday	soup and salad, lima beans
Saturday	pasta with meat sauce, spinach, bread
Sunday	turkey, mashed potatoes, beets



Jennie's friend is coming for lunch. What if she can't eat what Jennie has chosen? ▶



Quick Activity

Lunch menu The lunch Jennie prepared for herself and a friend included a peanut butter sandwich made with whole-wheat bread. But her friend is allergic to peanuts. What kind of sandwich could Jennie substitute for the peanut butter one?

Lesson 2 Summary and Review

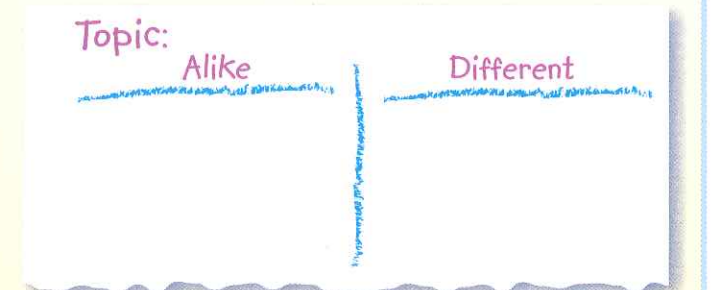
1 Summarize with Vocabulary

Use vocabulary and other terms from this lesson to complete the statements.
The _____ was prepared by USDA _____ to show how a person might plan a balanced _____. It tells how many _____ from each food group people should eat every day.

2 Which food group contains foods you should choose least often?

3 Critical Thinking What foods could you substitute for a friend who doesn't eat meat?

4 Focus Skill COMPARE AND CONTRAST Draw and complete this graphic organizer to show how the Vegetable Group and the Bread, Cereal, Rice, and Pasta Group are alike and different in terms of nutrients.



5 Write to Inform—Explanation
List the foods you like to eat, and explain whether they make a balanced diet or not.

LESSON
3

Eating Healthfully

Lesson Focus

To stay healthy, a person needs to eat only as many servings as his or her body needs each day.

Why Learn This?

Eating more or fewer servings than your body needs can be unhealthy.

Vocabulary

- portion control
- anorexia
- calories
- energy balance

Did You Know?

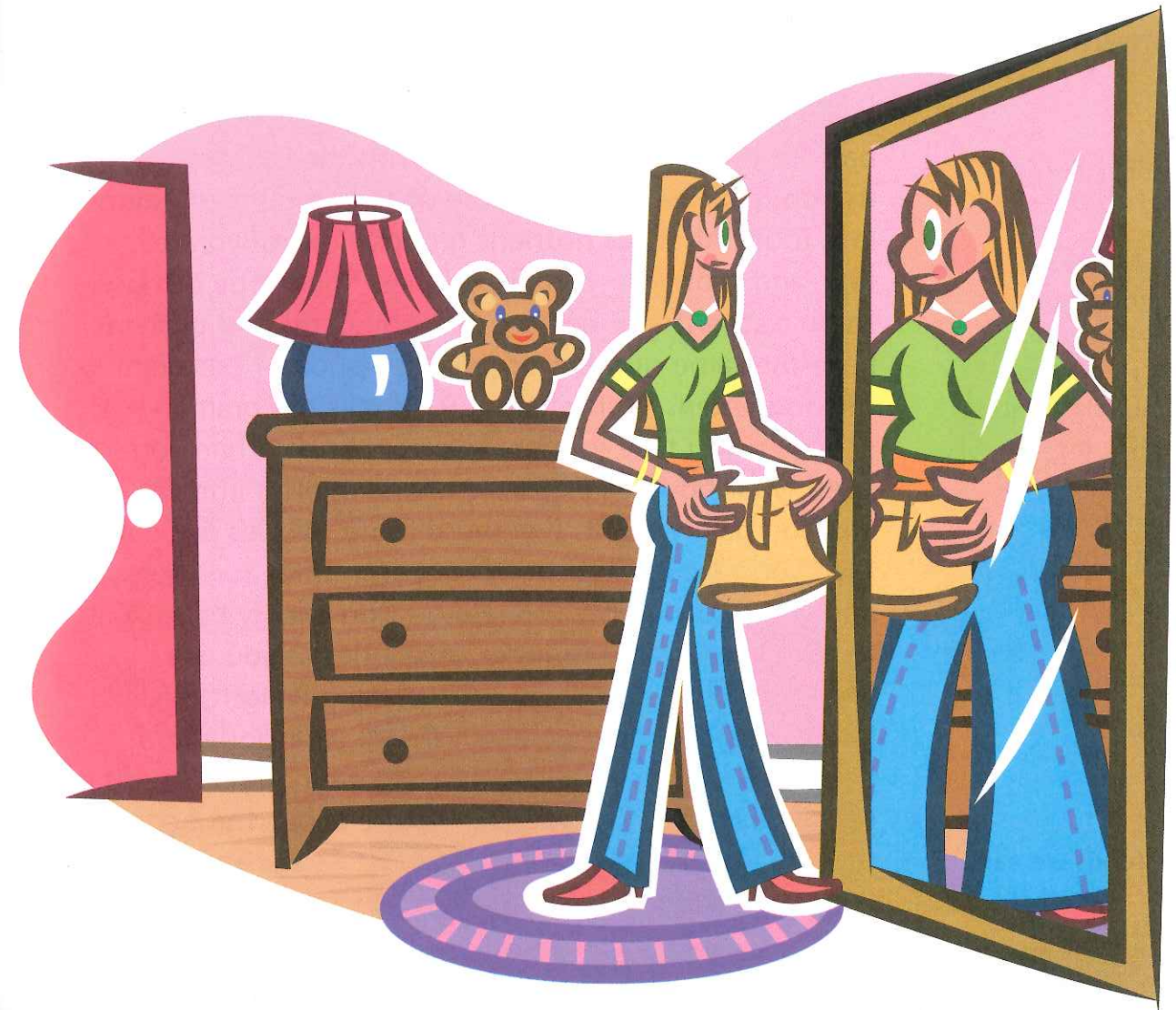
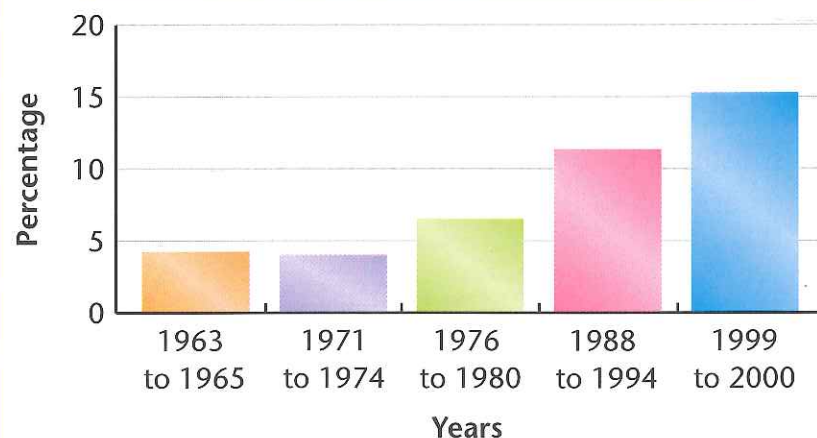
In the United States, about 15 percent of ten-year-olds are overweight. In Italy, about 30 percent are overweight.

Portion Control

Almost everyone who eats in a fast-food restaurant has been asked this question: “Do you want to supersize that?” Supersizing means adding more food—sometimes a lot more—for a little extra money. Every time you supersize a meal, you are eating two or three or more additional servings of food. The items that are most often supersized are those that you should be eating less of, such as fries, soft drinks, and shakes. These often lack important nutrients.

You need to eat a variety of foods to get all the nutrients your body needs. But you also need to control the size of the portions you eat. **Portion control** means limiting the number of servings you eat and the sizes of the servings. Without portion control, you may gain more weight than is healthy. In the United States, more than 15 percent of preteens are greatly overweight. Being greatly overweight as an adult is called *obesity*. Obesity can double the chances of getting diseases such as diabetes and heart disease.

Overweight 6–11 Year-Olds in the United States 1963 to 2000



Obesity isn't the only problem related to portion control. As they grow, many teenage girls think they are overweight, whether they really are or not. To avoid gaining weight, some eat smaller or fewer servings than their bodies need to stay healthy.

About 5 percent of young women develop a serious eating disorder called anorexia (an•uh•REKS•ee•uh).

Anorexia is excessive dieting and, at times, *self-starvation*. Starvation means not eating at all. Anorexia causes poor general health, low blood pressure, heart problems, bone weakness, and even death.



COMPARE AND CONTRAST How are serving size and portion control alike? How are they different?

▲ Low self-esteem sometimes causes young women to “see” themselves as overweight, even when they are not.

Consumer Activity

Analyze Media Messages

Do advertisements for supersize portions make people want to eat more? Ask ten of your classmates if they supersize meals when eating at fast-food restaurants, and why or why not. Write their responses in a table.

All the foods we eat provide calories for daily activities. ▼

Energy Balance

To keep your body at a healthy weight, you must balance the calories you take in with the calories you use up. **Calories** are a measure of the amount of energy in a food. All three nutrient groups—carbohydrates, fats, and proteins—contain calories. Your body can use these nutrients for energy. Carbohydrates and proteins have the same number of calories—about 4 per gram of food eaten. Fat has about 9 calories per gram.

When you take in more calories per day than you need, your body changes the excess calories into fat, and you gain weight. If you use more calories per day than you take in, your body uses stored fat for energy, and you lose weight. The ideal, called **energy balance**, is to take in the same number of calories as you use. Energy balance keeps you from gaining weight or losing weight. The best way to keep your body at a healthy weight is to combine good eating habits with regular exercise. You will learn more about the benefits of exercise in Chapter 4.

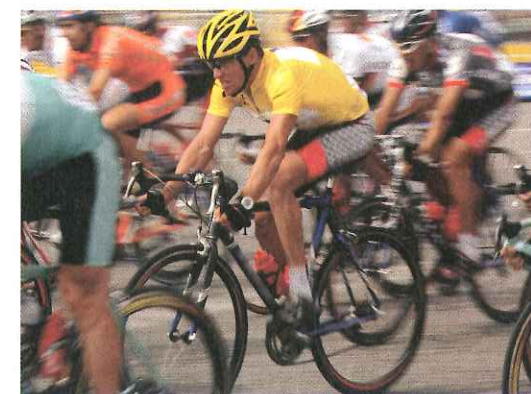


Calories Used per Hour

Activity	Calories Used
Walking	155
Swimming	345
Basketball	430
Running	455

SUMMARIZE What is the best way to keep your weight the same as it is now?

Athletes can usually eat a lot because they use more calories than the average person. ▶



Quick Activity

Calorie Intake and Energy Use Your body burns calories all the time, but some activities use more calories than others. The table shows how many calories a 100-pound person uses doing a variety of activities. Suppose you eat a 750-calorie dessert. Calculate how long you would have to walk or swim to use up those extra calories.

Lesson 3 Summary and Review

1 Summarize with Vocabulary

Use vocabulary from this lesson to complete the statements.

The amount of energy in food is measured in _____. Taking in and using the same amount of food energy is called _____. Gaining or losing weight is often the result of poor _____. Supersizing meals can cause weight gain, which can lead to health problems. Excessive dieting, or _____, is also unhealthy.

2 Why is portion control important?

3 Critical Thinking What might happen to your muscles if you exercise a lot but don't take in enough calories?

4 **Focus Skill** COMPARE AND CONTRAST

Draw and complete this graphic organizer to show how obesity and anorexia are alike and different.

Topic:	Alike	Different

5 Write to Inform—Explanation

Research, then explain why someone shouldn't gain or lose weight too quickly.

LESSON
4

Influences on Food Choices

Lesson Focus

Factors such as family, culture, the seasons, and your health can influence what foods you choose to eat.

Why Learn This?

You can use what you learn to make wise choices about what you eat.

Vocabulary

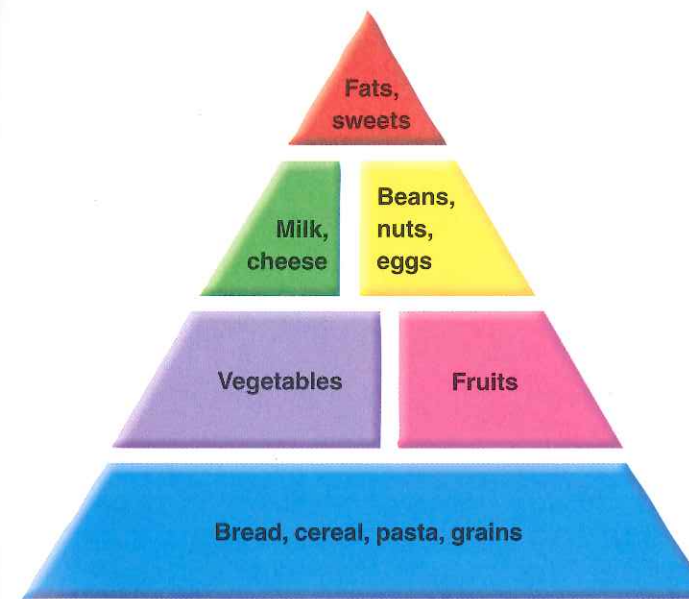
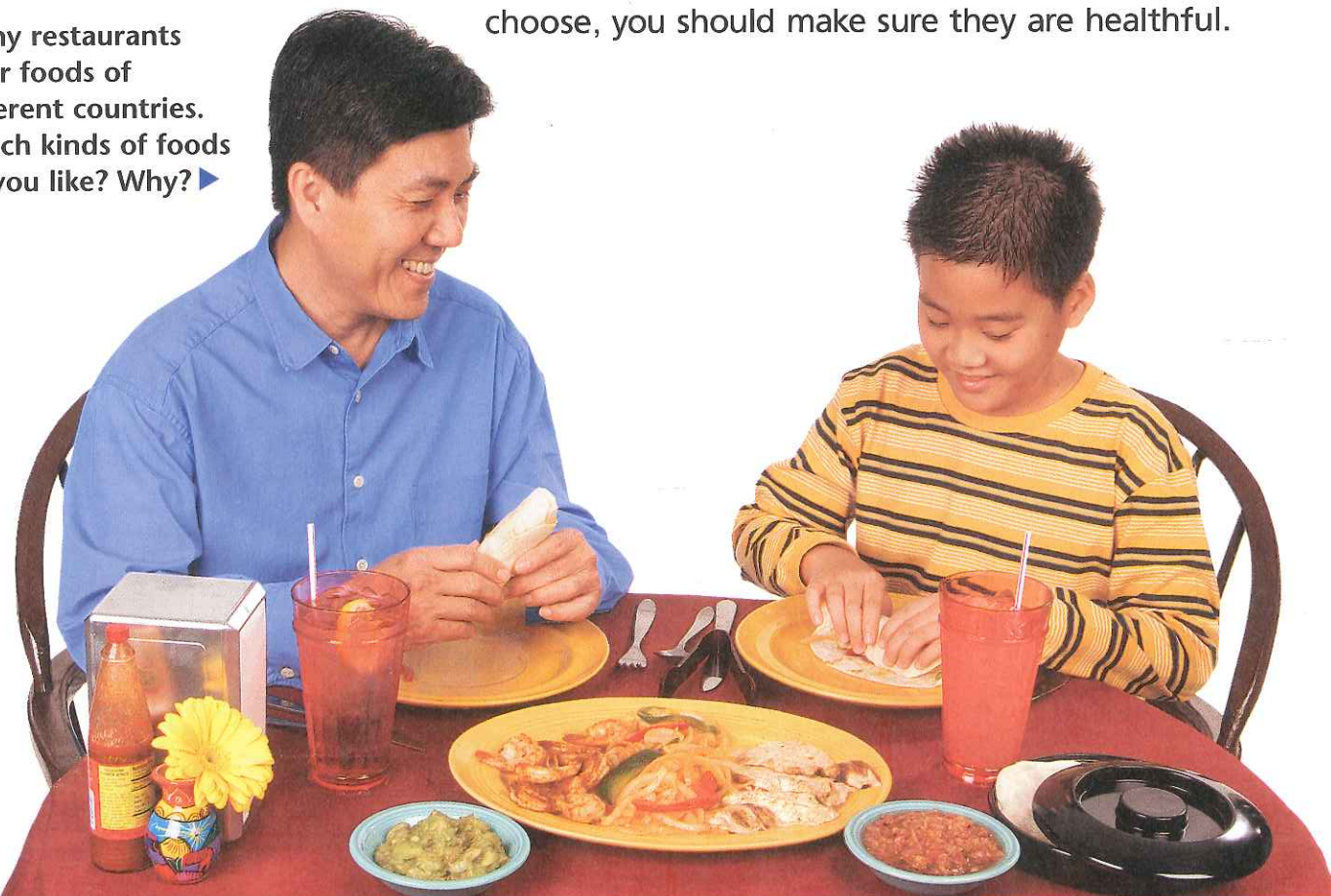
food allergy

Family, Friends, and Culture Affect Food Choices

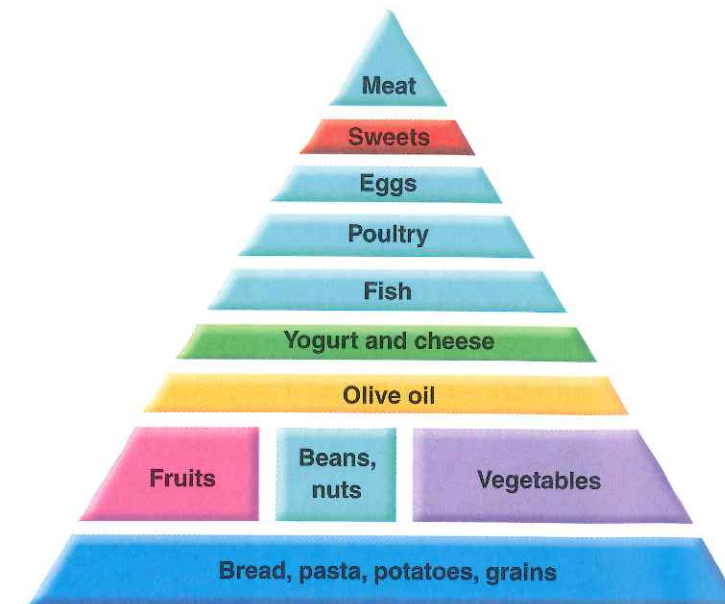
The United States is full of people who came here from other countries and brought their foods with them. The cultures of your parents and grandparents influence your food choices the most. How can the country where your family came from influence what you eat?

Family members can influence the foods you eat, too. Suppose you have an older brother whom you admire. You might want to imitate his food choices. Or, if you don't get along with him, you might choose foods that are different from those he chooses. The same is true of your classmates. The way you feel about them might make you go along with or reject their food choices. No matter what kinds of foods you choose, you should make sure they are healthful.

Many restaurants offer foods of different countries. Which kinds of foods do you like? Why? ▶



▲ People who don't eat meat can still have a healthful diet. A *vegetarian food pyramid* includes foods such as beans that replace meats, poultry, and fish.



▲ The *Mediterranean food pyramid* reflects foods eaten in countries like Spain, Italy, and Greece. It has more fish than meat.



People's diets are also influenced by their environments. In some places, people eat the wild plants and animals that live in the area. Some people eat the crops they grow and the meat of the animals they raise. People who live in coastal areas tend to eat more seafood than people who live far from the sea. How does the place where you live influence what you eat?

A person's values can also influence what he or she eats. For example, vegetarians choose not to eat meat. Some people don't eat meat because they are against the killing of animals or because of their religious beliefs. How do your personal values affect what you eat?

MAIN IDEA AND DETAILS Give two reasons why one person's diet might be different from another's.

Quick Activity

Compare Pyramids
Compare sources of protein and serving sizes in the USDA Food Guide Pyramid and one of the pyramids above. Colors show similar food groupings. Then make a table of any differences.

Seasons Affect Food Choices

Do you like a hot bowl of soup or maybe a cup of hot chocolate on a cold winter day? A cool salad and an ice-cold glass of milk might be better if the weather is hot and humid. People often eat different foods depending on the weather. What foods do you like in different kinds of weather?

People used to eat different things during different seasons, too. Your parents and grandparents had to wait for late summer to find fresh corn in the market. They could buy canned or frozen corn in the winter, but not fresh. Some foods, like apples and potatoes, are easy to keep fresh. But strawberries, blueberries, tomatoes, and peppers spoil easily. So why can we find all these fruits and vegetables in most supermarkets all year? Look carefully at the labels on these foods and you will find the answer.

Many of these foods are grown in countries like Mexico, Panama, and Brazil, where it's warm all year.

SUMMARIZE Why don't seasons influence a person's choice of foods much anymore?

When the weather is cold, you probably choose hot foods, like soup. ▼



When the weather is hot, you might eat fresh fruits and vegetables that don't need to be heated. ►



Freezing, drying, canning, vacuum-packing, smoking, and salting are methods of preserving food. ▼



Cost and Unit Price Affect Food Choices

Foods imported from other parts of the world usually cost more than those produced locally. This may influence what people eat. For example, peaches grown in Chile may be available in February, but they may be too expensive for most families. So, they may buy frozen or canned peaches instead.

Unit price, or the cost of a certain amount of a food, may also influence choice. Suppose a 10-oz can of Brand A peas costs \$0.60, while a 12-oz can of Brand B costs \$0.66. Which is the better buy? The unit price of Brand A is \$0.06/oz, while the unit price of Brand B is \$0.055/oz. Brand B is more economical and may be the choice of many shoppers.

Unit pricing also allows shoppers to choose the most economically sized package of the same brand. Buying a half-gallon of juice, for example, is usually less expensive per ounce than buying two quarts.

DRAW CONCLUSIONS Which is more economical—a 6-oz box of cereal for \$2.49 or a 12-oz bag of the same cereal for \$4.89?

Health & Technology

Food Packaging We can eat certain foods all year because of preservation methods such as canning and freezing. Food irradiation is a method of preserving food and killing germs that cause spoilage and disease. This helps some fresh fruits, meats, and vegetables last longer and be safer to eat. The technology for this process was developed to treat foods eaten by astronauts on early space missions.

Unit pricing enables shoppers to choose foods and other products that are more economical. ▼

41.5¢ per ounce Unit price	Retail Price
	\$2.49 pint of Strawberries
096253	6 ounces net weight

Personal Health Plan

Real-Life Situation

Suppose you're feeling upset about something and don't feel like eating.

Real-Life Plan

Make a menu of well-balanced meals for days when you aren't feeling well. Use your plan when you need it.

Emotions Affect Food Choices

Often, people who feel stress or who are upset are likely to eat unhealthful foods. Some people eat large amounts of food or they eat junk food, like chips, cookies, and ice cream when they are upset. These kinds of foods are sometimes called *comfort foods*, because people think eating them makes them feel better. Other people stop eating altogether when they are upset or stressed.

Unfortunately, it won't help your feelings to eat lots of food, to eat junk food, or to eat nothing at all. Eating a balanced diet is more likely to make you feel better. The nutrients provided by the right amounts of healthful foods help you deal with stressful situations.

Even when you're feeling fine, you might choose foods because of some emotion. For example, if your grandma always makes pizza when you visit, you might enjoy having pizza with your friends because it reminds you of the fun you have at your grandma's.



COMPARE AND CONTRAST What two opposite changes in eating habits can occur when a person is upset?

▼ What foods do you eat when you're having fun?



Did You Know?

If you drink a 12-ounce can of caffeinated cola, you will get almost as much caffeine as there is in a cup of instant coffee. Cola has about 45 milligrams of caffeine, and coffee has about 60 milligrams. A cup of decaffeinated coffee has only 3 milligrams.

Health Concerns Affect Food Choices

Your food choices can be affected by how your body reacts to certain foods. If you have a food allergy, you probably become ill if you eat the food you are allergic to. A **food allergy** (AL-er-jee) is a bad reaction to a food that most other people can eat. Food allergies can give people rashes, upset stomachs, and headaches. Sometimes food allergies interfere with breathing. People who have severe allergic reactions to certain foods can even die.

Some foods contain chemicals that change the way the body functions. For example, caffeine is a chemical that speeds up body activity. It can make you jittery and keep you awake at night. Caffeine is found in coffee, tea, chocolate, and many soft drinks. You should either avoid foods that have caffeine or limit the amount you eat or drink.

Illnesses can also influence people's food choices. For example, people with diabetes must keep track of the carbohydrates they eat. People with heart disease should limit the amount of fats they eat. And people with high blood pressure should avoid salty foods.



▲ Strawberries and peanuts can cause food allergies.

A number of different foods, including peanuts, strawberries, shellfish, and milk, may cause allergies. If you discover that you are allergic to certain foods, you should avoid those foods.

If you are already healthy and want to stay that way, you should eat a healthful diet. Eat a wide variety of foods so you get all the nutrients you need. Avoid foods high in sugar, fat, and salt. Be aware of the amounts of food you eat, too. Too much of a good thing can still be bad for you. Follow portion size guidelines. However, don't cut out something altogether unless you are allergic to it. You still need carbohydrates, fats, and proteins—just not in large amounts.

CAUSE AND EFFECT Identify three possible effects of caffeine on a person's body.

Lesson 4 Summary and Review

1 Summarize with Vocabulary

Use vocabulary and other terms from this lesson to complete the statements.

If you break out in a rash after eating a certain food, you may have a _____. _____ is a chemical found in some foods and drinks that can make you jittery. People who have _____ should limit the amount of carbohydrates they eat.

2 Give an example that shows how unit price can influence a person's choice of foods.

3 **Critical Thinking** Why is it a bad idea to eat large amounts of healthful foods?

4 **FOCUS SKILL** COMPARE AND CONTRAST

Choose two countries whose foods you eat. Draw and complete this graphic organizer to show how the foods of these countries are alike and different.

Topic:	
Alike	Different

5 **Write to Inform—Explanation**

Describe how your family influences your food choices.

Responsibility

Building Good
Character

Self-Control

As you grow older, you must take more and more responsibility for your health. This includes choosing healthful foods. It also includes practicing self-control. With self-control you can choose portion sizes that are right for you.

When you look at three popcorn containers at a theater refreshment stand, you might be tempted to get the biggest one. Even if you aren't very hungry, the smell may be tempting you. Or maybe it's the price—the biggest one might cost only a little more than the medium size.

But is the biggest container the most healthful for you? Popcorn is made mostly of carbohydrate. On its own, popcorn is a healthful snack. But at most theaters, popcorn is cooked in fatty oil and covered with butter and salt. Too much carbohydrate, oil, butter, and salt are not good for you.

Activity

Suppose you are the person at the theater refreshment stand. What should you do? You can ask for the popcorn without butter and salt, or you can have just a little of each. You can buy the small container or you can share the larger one with a friend. Write about and explain a healthful choice.



LESSON
5

Food Labels and Advertising

Lesson Focus

Food labels and advertising can influence the choices you make when you are selecting foods.

Why Learn This?

Reading food labels and analyzing advertisements can help you make healthful food choices.

Vocabulary

ingredients
additives
preservatives

Quick Activity

Analyze Food Labels
Study the food labels on the boxes of two different dry cereals. Make a table comparing the nutritional values of the two cereals. Which cereal gives you more fiber? Less sugar? More calories? More protein?

Food Labels Provide Information About Nutrition

What's in a box of macaroni and cheese? You might think it's just macaroni and cheese. In fact, even something as simple as macaroni and cheese is made up of many different ingredients. **Ingredients** (in•GREE•dee•uhnts) are all the things that make up a food. What are the ingredients in macaroni and cheese? Look at the label on the following page to find out.

On every box of macaroni and cheese—and on every packaged food—there is a Nutrition Facts label. It tells you how big a serving size is and how many servings are in each package. It also tells you how many calories a serving contains and the nutrients that are in every serving. The label even tells you how much of each day's recommended nutrients one serving provides.

You can learn a lot about what you are eating by reading the Nutrition Facts labels on packaged foods. ▶



Nutrition Facts

Serving Size 2.5 oz
(70g/about 1/3 Box)
(Makes about 1 cup)

Servings Per Container about 3

Amount Per Serving	In Box	Prep*
Calories	260	410
Calories from Fat	25	170

%Daily Value***

Total Fat 2.5g** 4% 28%

Saturated Fat 1.5g 8% 23%

Cholesterol 10mg 3% 3%

Sodium 560mg 23% 31%

Total Carbohydrate 48g 16% 16%

Dietary Fiber 1g 4% 4%

Sugars 7g

Protein 7g

Vitamin A 0% 15%

Vitamin C 0% 0%

Calcium 10% 15%

Iron 15% 15%

*Prepared with Margarine and 2% Reduced Fat Milk.

**Amount in Box. When prepared, one serving (about 1 cup) contains an additional 16g total fat (3.5g sat. fat), 190mg sodium, and 1g total carbohydrate (1g sugars).

***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
Sat Fat	Less than 20g	25g
Cholest	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carb	300g	375g
Dietary Fiber	25g	30g

Ingredients: ENRICHED MACARONI PRODUCT (WHEAT FLOUR, NIACIN, FERROUS SULFATE (IRON), THIAMIN MONONITRATE (VITAMIN B1), RIBOFLAVIN (VITAMIN B2), FOLIC ACID), CHEESE SAUCE MIX (WHEY, WHEY PROTEIN CONCENTRATE, MILKFAT, MILK PROTEIN CONCENTRATE, SALT, SODIUM TRIPOLYPHOSPHATE, CITRIC ACID, SODIUM PHOSPHATE, LACTIC ACID, CALCIUM PHOSPHATE, YELLOW 5, YELLOW 6, ENZYMES, CHEESE CULTURE)

Serving Size tells you how much to eat to get the calories and nutrients listed.

Servings per Container is equal to the total amount of food in the package, divided by the serving size.

Calories tells you how much energy you get from eating one serving.

Lists amounts of protein, fats, carbohydrates, sodium, sugar, cholesterol, and fiber per serving.

Percent Daily Value shows how much of an adult's daily need for a nutrient is met by one serving.

The Nutrition Facts label also tells you what nutrients are in the food. Many of the ingredients in the macaroni and cheese, such as wheat and milk, are on the Food Guide Pyramid. Some, like calcium and vitamin D, are also nutrients. Other ingredients are additives and preservatives.

Additives (AD•uh•tivz) are things food manufacturers add to foods. Some additives, such as sugar, are nutrients. Other additives, such as salt and food coloring, change the way a food tastes or looks. Manufacturers sometimes add vitamins and minerals to restore the nutritional value of a processed food.

Preservatives (pree•ZERV•uh•tivz) are chemicals added to foods to keep them from spoiling. By law, additives and preservatives must be listed as ingredients on food labels.

You can use the information on food labels to compare different foods or to compare different brands of the same food. You can also use it to decide how much of a food you should eat at one time.

It is important to read the label if you are on a special diet or are allergic to any foods. Nutrition Facts and ingredients lists can help you choose foods that are good for you.

SUMMARIZE What kinds of information are shown on food labels?

Ingredients includes the main ingredients as well as any additives and preservatives.



▲ Ads make you more aware of products. However, they may not give you much information about the products.

Advertisements Influence Food Choices

Do you watch television, read magazines, or look at billboards along the highways? If so, you've probably seen ads for foods. Have you ever seen a food ad and then really wanted that food? If so, the ad did its job.

Many ads appeal to your emotions. They try to make you think that eating certain foods will make you feel good. An ad could show a group of children having fun while eating pizza. A movie star might tell you how good a hamburger tastes. Or a sports star might suggest that drinking a certain juice will make you more like him or her. Some food products have prizes inside the packages. People may buy the product just to get the prize. Advertisers use these "tricks" to get you to buy.

Some ads make claims about the healthfulness of a food. An ad might say the food is low in fat, high in fiber, or sugar-free. While it is against the law to lie in an advertisement, ads can still be misleading. For example, many foods labeled "low-fat" are still high in

calories if they contain extra sugar in place of some of the fat. Food packages can also claim to offer health benefits that have not been proved.

If you prefer to eat foods without additives or preservatives, you might choose products labeled "all natural." But be careful. Having no additives or preservatives doesn't mean that a food is good for you. For example, some potato chips are labeled "100 percent natural." But the potatoes are still fried in oil and contain a lot of fat and salt. It's true that salt and oil are natural. But too much salt in your diet can increase your blood pressure, and too much fat can lead to heart disease.

Just remember that food ads and food packages are designed to make you want to buy the foods. If you look carefully at the Nutrition Facts labels, you can decide for yourself what foods are healthful if eaten in the proper amounts.

MAIN IDEA AND DETAILS What is an ad designed to do, and how does it do it?

ACTIVITY



Building Good Character

Respect Not everyone can eat the same foods. Some people avoid certain foods for health reasons. Others avoid foods for personal reasons. If you went to a friend's house and couldn't eat what was being served, how would you tell your friend politely? Write down two things you could say.

Consumer Activity

Make Buying Decisions

Think back to the last time you asked your parents to buy a certain food because of an ad you saw. What was it about the ad that made you want the food? Write how you could use ads to help you make good decisions about buying foods.

Lesson 5 Summary and Review

1 Summarize with Vocabulary

Use vocabulary and other terms from this lesson to complete the statements.

The _____ in a package of food are written on the _____ label. Sometimes, manufacturers put things in foods to improve how the foods look or taste. These things are called _____. To keep a food from spoiling, a food manufacturer might add one or more _____.

2 On a Nutrition Facts label, what does the information under Percent Daily Value tell you?

3 **Critical Thinking** Why might the label "100 percent natural" on a packaged food be misleading?

4 **FOCUS SKILL** **COMPARE AND CONTRAST** Draw and complete this graphic organizer to show how the food labels of two cereals can be alike and different.

Topic: Alike	Different

5 Write to Inform—Description

Describe an ad that might persuade your classmates or friends to buy a particular food product.

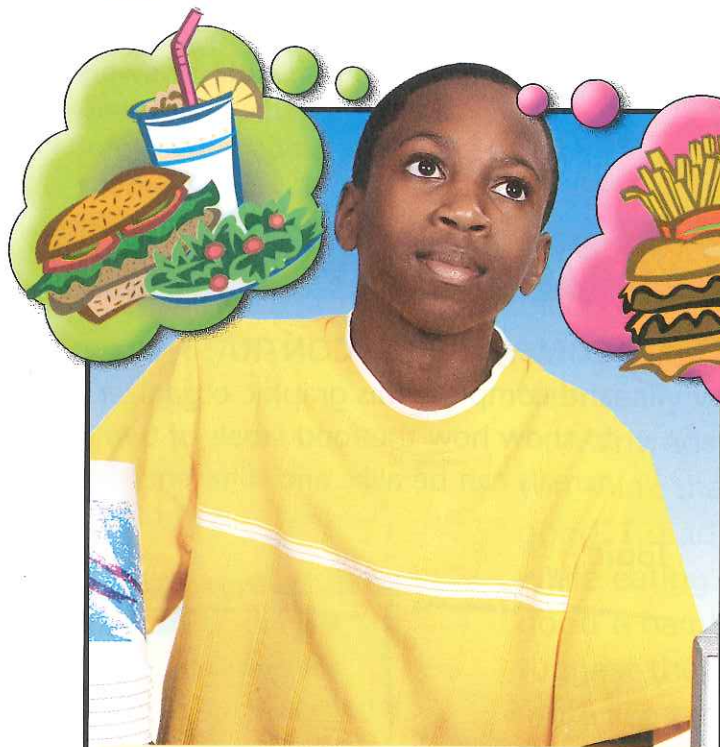


Make Responsible Decisions

About Fast Food

Suppose you're at a fast-food restaurant for dinner. You got up too late to eat breakfast this morning. Then you had pizza and a cola for lunch. Now you want to order the supersized double cheeseburger special. Follow the steps for **Making Responsible Decisions** about eating a more healthful dinner.

1 Find out about the choices you could make.



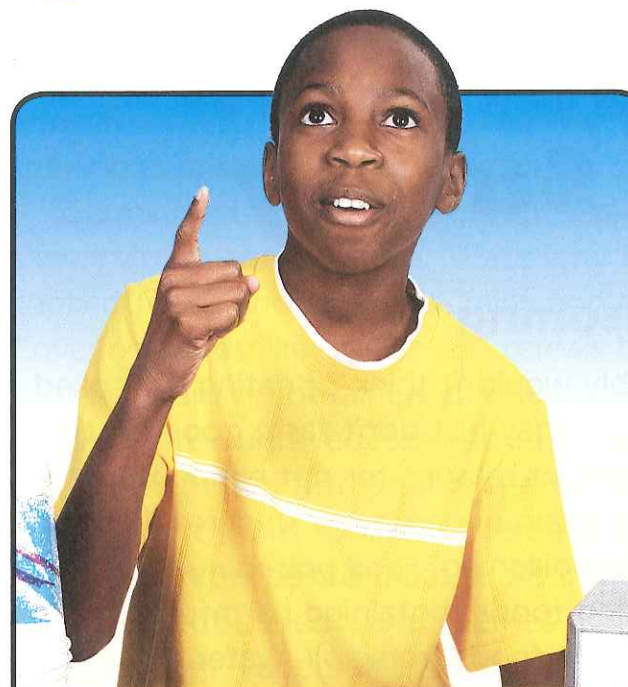
You could order the special—double cheeseburger, fries, and large cola. Or, you could order a grilled chicken sandwich, a green salad, and a banana smoothie.

2 Eliminate any choices that will make you sick or are against your family rules.



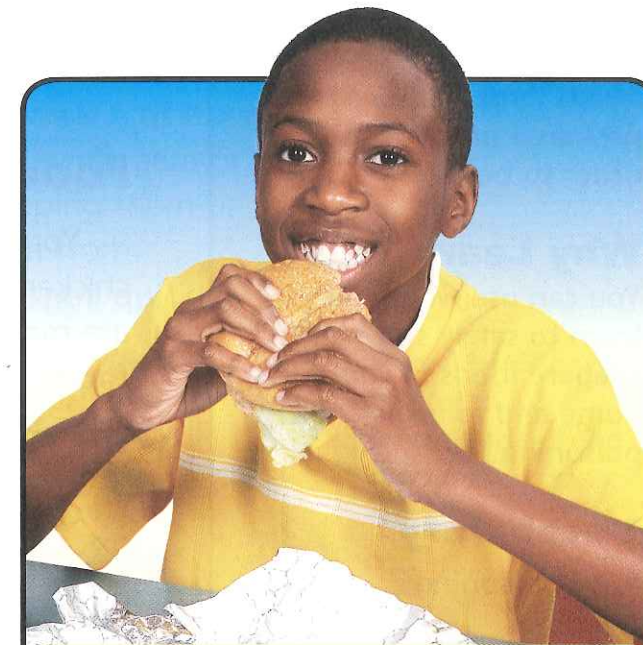
You like cola, but you have already had one today. Fries are your favorite, but your parents allow you to have only one serving per week.

3 Imagine the possible results of each choice.



The cheeseburger and fries are high in fat and the cola contains sugar. The chicken has less fat, there are vegetables in the salad, and fruit in the smoothie.

4 Make the decision that is right for you.



You order the grilled chicken sandwich, salad, and smoothie.

Problem Solving

- A. Joanna needs a lot of energy for track practice, but she isn't sure what she should eat at the coffee shop.
- Use what you know about the steps for **Making Responsible Decisions** to help her choose healthful foods.
- B. Jerry's mom prepares three healthful meals every day. She gives him fruits and raw vegetables for snacks. This afternoon Jerry wants to go to the Burger House with his friends.
- What should Jerry order to show that he is trustworthy when eating away from home?

Food Preparation and Safety

Lesson Focus

Foods must be stored and prepared properly in order to be safe.

Why Learn This?

You can use what you learn to safely store and prepare foods in your home and to avoid food poisoning.

Vocabulary

food poisoning

Food Poisoning

You probably wouldn't think of eating uncooked chicken or eggs. They just don't taste good. But there are more important reasons for not eating uncooked foods. Eating certain uncooked or undercooked foods can cause food poisoning. **Food poisoning** is an illness caused by eating foods containing harmful germs.

Germs get into foods from soil, water, air, and people who haven't washed their hands. Germs also spread from one food to another. Suppose you use a knife to cut some uncooked chicken. Then you use the same knife to cut a sandwich. You could transfer germs from the chicken to the sandwich.

Food poisoning can cause stomach cramps, nausea, and diarrhea. Some forms of food poisoning are very dangerous and can even cause death.

CAUSE AND EFFECT How can someone working in a kitchen spread germs to the food?

◀ Uncooked chicken should never be cut on the same board or with the same knife as other foods.

Proper Storage Keeps Foods Safe

Germs are everywhere. You can't get rid of them all. The important thing is not to let germs multiply. When germs in food multiply, the food starts to look odd, smell unusual, and taste bad. It has spoiled. The way to keep foods from spoiling is to store them correctly.

Germs multiply rapidly at room temperature but more slowly at low temperature. That's why it's important to store cooked foods and all meats, milk, and eggs in a refrigerator. Covering foods like breads and cereals by wrapping them or putting them in containers can help keep them from spoiling. Although vegetables and fruits don't spoil quickly, storing them in a refrigerator keeps them fresh.

Different foods spoil at different rates. Even in a refrigerator, uncooked meat spoils in a few days. Milk will last for about a week, and cheeses and eggs last for several weeks. Juices, vegetables, and most fruits will last much longer. Freezing foods keeps them safe much longer. See also page 391.



COMPARE AND CONTRAST What foods spoil the fastest in the refrigerator? The slowest?

▼ Different foods need to be stored in different parts of the refrigerator.

Store cooked foods in plastic containers or wrapped in plastic.

Keep meat, poultry, and fish in the coldest part of the refrigerator. Store them wrapped.

Store eggs and milk in their original cartons. Throw away any cracked eggs. Don't keep eggs or milk on the refrigerator door.

Store fruits and vegetables in a vegetable crisper or in unsealed plastic bags.



Myth and Fact

Myth: Mayonnaise causes food poisoning.

Fact: Mayonnaise doesn't cause food poisoning—germs do. The vinegar and lemon juice in mayonnaise actually slow the growth of germs. However, when mayonnaise is mixed with other foods, like chicken or eggs, the vinegar and lemon juice don't work as well, and the germs multiply.



Prepare a Safe Meal

Think about everything you've touched today. Think about all the other hands that have touched those things. There are hundreds of places you could have picked up germs. To prevent food poisoning when you prepare food, remember these four rules:

- Clean, clean, clean!
- Separate—don't contaminate!
- Refrigerate properly!
- Cook thoroughly!

Clean, clean, clean!

The first and most important thing to do before you prepare a meal is to wash your hands. Do this before you touch anything. Use warm water and plenty of soap, and scrub for twenty seconds. Make sure to clean under your fingernails and between your fingers. After you wash your hands, dry them with a clean towel. Make sure countertops are clean and dry.

Preparing foods carefully makes it less likely that they will have germs that make you or your family ill. ▼



Before preparing or eating fresh fruits or vegetables, wash them thoroughly. This will help get rid of germs as well as any chemicals that were used to kill insect pests. After eating, wash dishes and set them out to dry. If you use towels to dry dishes, always use clean ones.

Separate—don't contaminate!

Raw meat, poultry, seafood, and eggs are the foods most likely to carry harmful germs. After you handle these foods, wash your cutting board and utensils thoroughly with hot water and soap. *Never* cut fruits or vegetables on a surface where you have had raw meat, poultry, seafood, or eggs.

Refrigerate properly!

Keep cold foods cold until you use them. If you are going to cook a food that is frozen, thaw the food in a refrigerator or in a microwave, not on a countertop.

Never leave food that needs to be refrigerated sitting at room temperature for more than two hours.



◀ Why is it important to wash your hands and anything used with raw meat?

ACTIVITIES



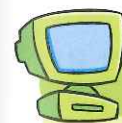
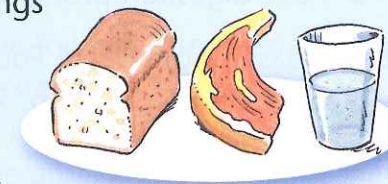
Physical Education

Carbo-Loading Athletes prepare in many ways for long-distance races called *marathons*. The winner will run for more than two hours without stopping. In addition to training, a marathon runner may do something before a race called carbo-loading. Find out what carbo-loading is, and write a paragraph explaining it.



Science

In the Body Use a sheet of poster board to make an outline of a body. Then cut out photos or drawings from magazines and newspapers of foods that represent the six nutrient groups. Paste these on the poster board, and write a short caption explaining the ways in which each nutrient helps the body.



Technology Project

Compare Nutrients Different foods contain different amounts of nutrients. Nutrients and their amounts are listed on the nutrition labels. Using a computer, make a table that compares the nutrients of three similar foods. If a computer is not available, make a poster.



For more activities, visit
The Learning Site.
www.harcourtschool.com/health

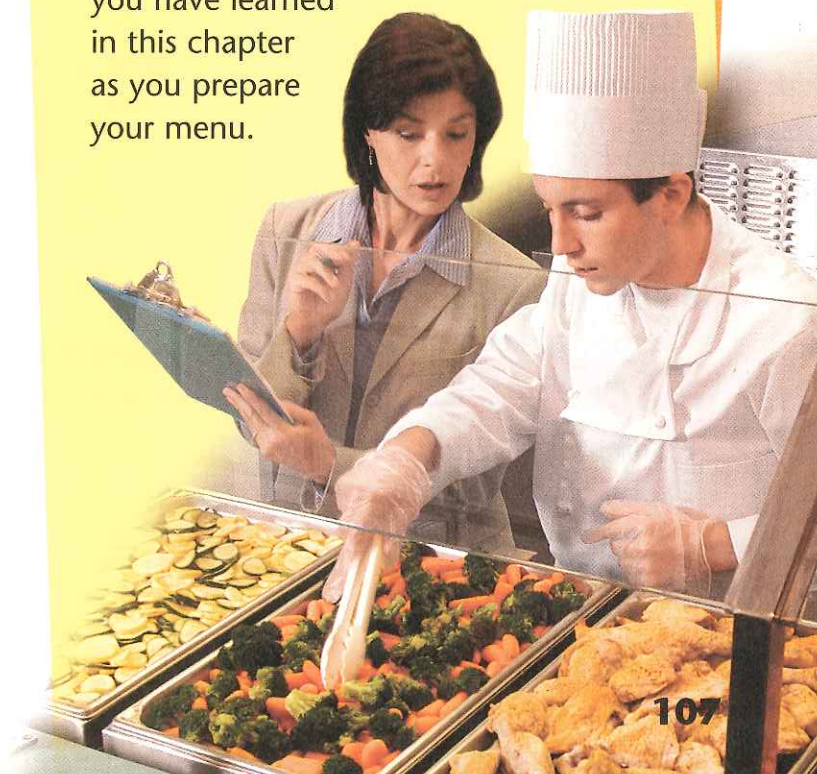


Home & Community

At School Many school cafeterias provide menus in advance. Study next week's menu for your school cafeteria. If a menu isn't available, keep a journal of what is served each day for one week. Look at the USDA Food Guide Pyramid on pages 78–79. Add up the number of lunch foods that fit into each group. Then describe ways the foods can be used as part of a balanced diet.

Career Link

School Dietitian School dietitians plan meals for school lunches. They prepare nutritious menus for schoolchildren, making sure students get a balance of the nutrients they need. Suppose you are the dietitian for your school. Prepare a series of menus for one week of school lunches. Be sure to use the information you have learned in this chapter as you prepare your menu.



Cook thoroughly!

Cooking kills most harmful germs in food. But foods that are not cooked all the way through can still cause food poisoning. To be safe, cook eggs until the yolks are hard. Cook meat and poultry until they are no longer pink inside.

Finally, remember that your eyes, nose, and taste buds are there to protect you. If something looks odd, smells unusual, or tastes bad, throw it out. If you follow these guidelines, you will reduce the chances of getting or causing food poisoning. You can review more tips for kitchen safety in the Health and Safety Handbook, pp. 392–393.



COMPARE AND CONTRAST How do high and low temperatures fight food poisoning in different ways?



▲ Cooking foods completely will reduce the risk of getting food poisoning. Most germs are killed by heat.

Lesson 6 Summary and Review

1 Summarize with Vocabulary

Use vocabulary and other terms from this lesson to complete the statements.

Pains in your stomach with cramps, _____, and _____ might be signs that you have _____. Refrigeration and freezing slow the growth of _____ that can make foods spoil, while sitting out at room temperature speeds up their growth.

2 Critical Thinking What is the worst thing that can happen to a person who gets food poisoning?

3 At what kind of temperature do germs multiply fastest?



4 COMPARE AND CONTRAST

Complete this graphic organizer to show how high and low temperatures affect the growth of germs in ways that are alike and different.

Topic:	
Alike	Different

5 Write to Inform—How-To

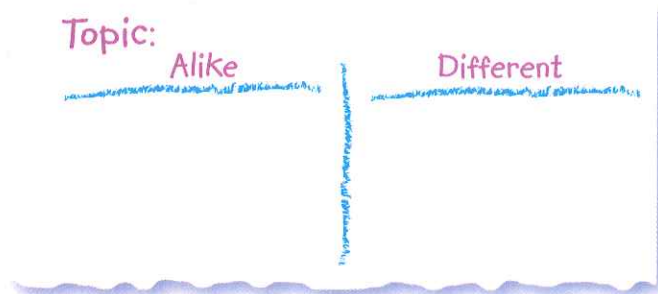
Describe a method to prevent germs from spreading from a piece of uncooked chicken to a piece of cooked chicken.

Chapter Review and Test Preparation

Focus Skill Reading Skill

COMPARE AND CONTRAST

Draw and then use this graphic organizer to answer questions 1 and 2.



- Write at least two ways in which a piece of whole-wheat bread and a lump of sugar are alike.
- Write at least two ways in which a piece of bread and a lump of sugar are different.

Use Vocabulary

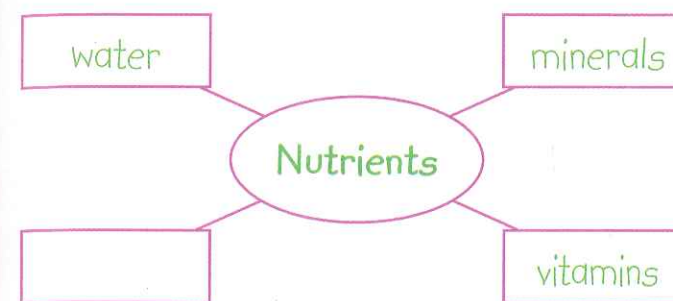
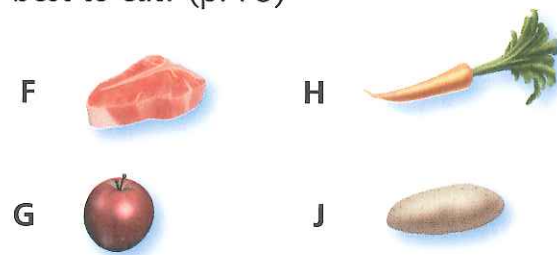
Match each term in Column B with its description in Column A.

Column A	Column B
3 A nutrient such as calcium or iron	A calorie
4 A measure of the energy in food	B preservative
5 A condition resulting from extreme dieting	C additive
6 Something added to a food to keep it from spoiling	D mineral
7 Something put in food to make it more nutritious	E fat
8 Nutrient at top of Food Guide Pyramid	F anorexia

Check Understanding

Choose the letter of the correct answer.

- An enzyme _____. (p. 73)
 - A holds energy needed by your body
 - B is a carbohydrate
 - C helps release energy from food
 - D causes food poisoning
- Digestion begins in the _____. (p. 73)
 - F stomach
 - H small intestine
 - G esophagus
 - J mouth
- If calcium is missing in a person's diet, the person might _____. (p. 76)
 - A have difficulty seeing at night
 - B have soft bones
 - C have swollen gums
 - D have digestion problems
- The base of the USDA Food Guide Pyramid is made up of _____. (pp. 78–79)
 - F fats, oils, and sweets
 - G fruits and vegetables
 - H bread, cereal, rice, and pasta
 - J meat, poultry, and fish
- Which of these foods would your grandparents **NOT** have found in a supermarket in winter? (p. 90)
 - A apples
 - C steak
 - B fresh corn on the cob
 - D fish
- If you were trying to add protein to your diet, which of these foods would be the best to eat? (p. 75)



- Which nutrient is missing from the graphic organizer? (pp. 74–77)
 - A fats
 - C carbohydrates
 - B proteins
 - D all of these
- Which of the following will you **NOT** find on a Nutrition Facts label? (pp. 96–97)
 - F protein content
 - H carbohydrate content
 - G fat content
 - J water content
- At which of the following temperatures will germs grow fastest? (p. 103)
 - A 5°F (freezer)
 - C 68°F (room)
 - B 40°F (refrigerator)
 - D 150°F (dishwasher)
- Eat chicken only if it is cooked so thoroughly that the inside is no longer _____. (p. 106)
 - F red
 - H white
 - G pink
 - J orange
- In a refrigerator, which of the following foods spoils fastest? (p. 103)
 - A uncooked meat
 - C milk
 - B hard cheese
 - D pasteurized juice

Think Critically

- You slice a peach, a piece of chicken, and a tomato, in that order, with the same knife without washing it. Only the people who eat the chicken, the tomato, or both get food poisoning. Explain how this could happen.

- Your doctor says your bones are too soft. What question about your diet might your doctor ask? Why? What might he or she suggest you do to make your bones stronger?
- You see a TV commercial advertising a breakfast cereal. Your favorite basketball player is shown in the background dunking the ball into the basket. How would this affect the way you think about the cereal? Would you be more tempted to buy it? Why or why not?

Apply Skills

- BUILDING GOOD CHARACTER**
Respect You are invited to dinner at a friend's home. You and your friend have the chore of cleaning up after dinner. You notice that a plate of leftover meat is sitting on the countertop. Your friend suggests you play some games now and leave the meat where it is. How can you show good self-control in this situation?
- LIFE SKILLS**
Make Responsible Decisions You learn from some friends about a new diet. It's supposed to make you lose 10 pounds in a week. Do you decide to try it? Why or why not?

Write About Health

- Write to Inform—Explanation** Explain why reading Nutrition Facts labels is important to your health.