

## 30.2 Food and Nutrition

Class \_\_\_\_\_

Date \_\_\_\_\_

### Lesson Objectives

- ☐ Explain how food provides energy.
- ☐ Identify the essential nutrients your body needs and tell how each is important to the body.
- ☐ Explain how to plan a balanced diet.

### Lesson Summary

**Food and Energy** Molecules in food contain chemical energy that cells use to produce ATP. Food also supplies raw materials cells need to build and repair tissues.

- ▶ The energy in food is measured in dietary Calories. One **Calorie** is equal to 1000 calories. A calorie is the amount of heat needed to raise the temperature of 1 gram of water by 1 degree Celsius.
- ▶ A healthy diet provides the body with raw materials to build and repair body tissues and make enzymes, lipids, and DNA.

**Nutrients** Nutrients are substances in food that supply the body with energy and raw materials needed for growth, repair, and maintenance. The nutrients that the body needs are water, carbohydrates, fats, proteins, vitamins, and minerals.

- ▶ Many of the body's processes take place in water. Water makes up a large part of blood and other body fluids.
- ▶ Simple and complex **carbohydrates** are the body's main source of energy. Complex carbohydrates, such as starches, must be broken down into simple sugars to be used for energy.
- ▶ **Fats** are formed from fatty acids and glycerol. Fats help the body absorb fat-soluble vitamins and are a part of cell membranes, nerve cells, and certain hormones.
- ▶ **Proteins** supply raw materials for growth and repair of structures such as skin and muscle. Many enzymes and hormones are proteins.
- ▶ **Vitamins** are organic molecules that the body needs in very small amounts. They are needed to help the body perform chemical reactions.
- ▶ **Minerals** are inorganic nutrients the body needs in small amounts. Examples of minerals include calcium and iron.

**Nutrition and a Balanced Diet** The science of nutrition is the study of food and its effects on the body. A balanced diet provides nutrients in adequate amounts and enough energy for a person to maintain a healthful weight.

- ▶ Food labels provide general information about nutrition as well as specific information about a food.
- ▶ Exercising about 30 minutes a day, eating a balanced diet, and controlling fat intake can help maintain a healthful weight.

## Food and Energy

Write True if the statement is true. If the statement is false, change the underlined word or words to make the statement true.

- \_\_\_\_\_ 1. A calorie is the amount of heat needed to lower the temperature of 1 gram of water by 1 degree Celsius.
- \_\_\_\_\_ 2. One dietary Calorie is equal to 2000 calories.
- \_\_\_\_\_ 3. The energy stored in food molecules is used to produce ATP.
- \_\_\_\_\_ 4. The body needs raw materials from food to build body tissues and make enzymes, lipids and DNA.

## Nutrients

For Questions 5–16, match each description with the nutrient. Each nutrient may be used more than once.

### Description

- \_\_\_\_\_ 5. Provide the body with building materials for growth and repair
  - \_\_\_\_\_ 6. Needed to build cell membranes, produce certain hormones, and store energy
  - \_\_\_\_\_ 7. Major source of food energy
  - \_\_\_\_\_ 8. Makes up the bulk of most body fluids
  - \_\_\_\_\_ 9. Inorganic nutrients
  - \_\_\_\_\_ 10. Organic molecules used by the body to help regulate body processes
  - \_\_\_\_\_ 11. May be saturated or unsaturated
  - \_\_\_\_\_ 12. Required to produce the compound that makes up bones and teeth
  - \_\_\_\_\_ 13. May be fat-soluble or water-soluble
  - \_\_\_\_\_ 14. Polymers of amino acids
  - \_\_\_\_\_ 15. May be monosaccharides, disaccharides, or polysaccharides
  - \_\_\_\_\_ 16. The most important nutrient
17. What are three ways the body loses water?
- \_\_\_\_\_
- \_\_\_\_\_

### Nutrient

- A. water
- B. carbohydrates
- C. fats
- D. proteins
- E. vitamins
- F. minerals

# Nutrition and a Balanced Diet

18. What is the science of nutrition?

\_\_\_\_\_

\_\_\_\_\_

Complete each statement by writing the correct word or words.

19. A gram of fat has more Calories than a gram of carbohydrate because carbon atoms in fat have more carbon to \_\_\_\_\_ bonds than the carbon atoms in carbohydrates.

20. Nutrient needs are affected by age, \_\_\_\_\_, and lifestyle.

21. When a person stops growing or becomes less active, energy needs \_\_\_\_\_.

22. Percent Daily Values found on food labels are based on a \_\_\_\_\_ diet.

23. Eating a balanced diet and exercising \_\_\_\_\_ a day can help maintain a healthful weight.

24. Physical activity can \_\_\_\_\_ the heart, bones, and muscles.

25. Diets that are high in \_\_\_\_\_ and trans fat increase a person's risk of developing heart disease and Type II diabetes.

## Apply the Big Idea

26. How can poor food choices negatively affect a person's health?

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