

Skills Worksheet

Directed Reading A

Section: The Necessities of Life

1. What are four basic needs of every organism?

WATER

- _____ 2. Cells of most living things are made of approximately
- a. 10% water.
 - b. 33% water.
 - c. 50% water.
 - d. 70% water.
- _____ 3. Most of the chemical reactions involved in metabolism require
- a. air.
 - b. oxygen.
 - c. water.
 - d. carbon dioxide.
4. About how long can humans survive without water?

AIR

- _____ 5. Air is a mixture of gases, including oxygen and
- a. carbon monoxide.
 - b. carbon dioxide.
 - c. sulfur dioxide.
 - d. nitrogen dioxide.
- _____ 6. What is a chemical process in which most living things use oxygen?
- a. releasing energy from food
 - b. storing energy
 - c. transporting waste
 - d. breaking down cells
- _____ 7. Green plants, algae, and some bacteria need carbon dioxide gas in addition to
- a. carbohydrates.
 - b. lipids.
 - c. sugar.
 - d. oxygen.

Directed Reading A *continued*

- 8.** Green organisms convert the energy in sunlight to energy stored in food during _____.

A PLACE TO LIVE

- 9.** What do organisms need in the place where they live?

- 10.** How does the limited amount of space on Earth affect organisms?

FOOD

- 11.** What are two things food gives organisms?

- 12.** What are two ways organisms use nutrients from food?

Organisms are grouped by how they get their food. The three groups are producers, consumers, and decomposers. In the space provided, write P if the phrase describes a producer, C if the phrase describes a consumer, and D if the phrase describes a decomposer.

_____ **13.** eats other living organisms or organic matter

_____ **14.** a mushroom

_____ **15.** a frog

_____ **16.** uses energy from the sun or the chemicals in the environment to make food

_____ **17.** a plant

_____ **18.** gets energy by breaking down nutrients in dead organisms or animal wastes

Directed Reading A *continued*

PUTTING IT ALL TOGETHER

19. What do all organisms do to food in order to use the nutrients in it?

20. Nutrients are made up of _____, a substance created when two or more atoms combine.

21. Molecules made of different kinds of atoms are called _____.

22. Chemical elements within molecules combine to form building blocks of cells. Name the five chemical building blocks of cells.

PROTEINS

Match the correct definition with the correct term. Write the letter in the space provided.

- | | |
|---|-----------------------|
| _____ 23. compounds that make up proteins | a. enzymes |
| _____ 24. proteins that speed up chemical reactions | b. protein |
| _____ 25. a protein found in red blood cells that attaches to oxygen | c. amino acids |
| _____ 26. a nutrient involved in almost all life processes | d. hemoglobin |

CARBOHYDRATES

27. Energy-giving nutrients such as sugars, starches, and fiber are called _____.

28. How do cells use carbohydrates?

Directed Reading A *continued*

29. Carbohydrates made of one sugar molecule or a few linked sugar molecules are called _____.

30. What is an example of a simple carbohydrate?

31. A carbohydrate made of hundreds of molecules linked together is called a(n) _____.

32. In terms of carbohydrates, what are you eating when you eat mashed potatoes?

LIPIDS

_____ **33.** Which of the following is NOT true of lipids?

- a. Lipids mix with water.
- b. Lipids store energy.
- c. Lipids include fats and oils.
- d. Lipids make up cell membranes.

34. The molecules that form much of the cell membrane are _____.

35. Where can an organism get energy once it has used up most of its carbohydrates?

36. What is a difference between fats and oils?

Directed Reading A *continued*

ATP

37. The major energy-carrying molecule in the cell is _____.

38. How do cells get energy from carbohydrates and lipids?

NUCLEIC ACIDS

39. Molecules consisting of subunits called nucleotides are called _____.

40. Why are nucleic acids called the blueprints of life?

Section Review

The Necessities of Life

USING KEY TERMS

For each pair of terms, explain how the meanings of the terms differ.

1. *producer* and *consumer*

2. *lipid* and *phospholipid*

UNDERSTANDING KEY IDEAS

- _____ 3. Plants store extra sugar as

- a. proteins.
- b. starch.
- c. nucleic acids.
- d. phospholipids.

4. Explain why organisms need food, water, air, and living space.

5. Describe the chemical building blocks of cells.

6. Why are decomposers categorized as consumers? How do they differ from producers?

7. What are the subunits of proteins?

Section Review *continued*

MATH SKILLS

- 8.** Protein A is a chain of 660 amino acids. Protein B is a chain of 11 amino acids. How many times more amino acids does protein A have than protein B? Show your work below.

CRITICAL THINKING

- 9. Making Inferences** Could life as we know it exist on Earth if air contained only oxygen? Explain.

- 10. Identifying Relationships** How might a cave, an ant, and a lake each meet the needs of an organism?

- 11. Predicting Consequences** What would happen to the supply of ATP in your cells if you did not eat enough carbohydrates? How would this affect your cells?

- 12. Applying Concepts** Which resource do you think is most important to your survival: water, air, a place to live, or food? Explain your answer.
