Back Print

Name _____ Class _____ Date _____

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.

Back Print

Name _____ Class _____ Date _____

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

Back Print

Name _____ Class _____ Date _____

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

_____**24.** proteins that speed up chemical reactions

_____**25.** a protein found in red blood cells that attaches to oxygen

_____**26.** a nutrient involved in almost all life processes

a. enzymes
b. protein
c. amino acids
d. hemoglobin

CARBOHYDRATES

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

28. How do cells use carbohydrates?

_____

_____

Back Print

Name _____ Class _____ Date _____

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?

_____

_____

_____

Back Print

Name _____ Class _____ Date _____

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?

_____

_____

_____

Answer Key

Directed Reading A

SECTION: CHARACTERISTICS OF LIVING THINGS

1. cell
2. cells
3. membrane
4. Answers may vary. Sample answer: A cell contains all of the materials necessary for life.
5. Answers may vary. Sample answer: The cell's membrane separates the contents of a cell from the surrounding environment.
6. Different kinds of cells perform specialized functions.
7. stimulus
8. Answers may vary. Answers should include three of the following: chemicals, gravity, light sounds, hunger, touch, anything that causes a response.
9. homeostasis
10. Answers may vary. Sample answer: Many chemical reactions that keep an organism alive can take place only when conditions are just right, so the organism's internal conditions must stay stable.
11. It's trying to return itself to its normal temperature.
12. Answers may vary. Sample answer: Some animals control their temperatures by changing their environments. When they get too hot, they move to the shade. When they get too cold, they move into the sunlight.
13. sexual
14. asexual
15. asexual
16. sexual
17. A
18. C
19. heredity
20. Answers may vary. Answers should include three of the following: making food, breaking down food, moving materials into and out of cells, building cells.
21. metabolism
22. The cell gets larger and divides, which makes other organisms.
23. The number of cells increases, and the organism gets bigger.
24. Answers may vary. Sample answer: As they grow, living things may develop and change, passing through different stages on their way to adulthood.

SECTION: THE NECESSITIES OF LIFE

1. water, air, a place to live, food
2. D
3. C
4. three days
5. B
6. A
7. D
8. photosynthesis
9. Answers may vary. Sample answer: All organisms need all the things they need to survive in the place where they live.
10. Answers may vary. Sample answer: They compete for food, water, and other necessities.
11. Answers may vary. Sample answer: Food gives organisms energy and the raw materials needed to perform life processes.
12. Answers may vary. Sample answer: Organisms use nutrients to replace cells and to build body parts.
13. C
14. D
15. C
16. P
17. P
18. D
19. Answers may vary. Sample answer: Organisms break down food in order to use the nutrients in it.
20. molecules
21. compounds
22. proteins, carbohydrates, lipids, ATP, nucleic acids
23. C
24. A
25. D
26. B

27. carbohydrates
28. Cells use carbohydrates as a source of energy and for energy storage.
29. simple carbohydrates
30. Answers may vary. Sample answer: table sugar or sugar in fruits
31. complex carbohydrate
32. Answers may vary. Sample answer: When I eat mashed potatoes, I am eating a potato's stored starch. Starch is a complex carbohydrate.
33. A
34. phospholipids
35. Answers may vary. Sample answer: An organism that has used up most of its carbohydrates can get energy from two lipids, fats and oils.
36. Answers may vary. Sample answer: At room temperature, most fats are solids and most oils are liquids. Most lipids stored in plants are oils. Most lipids stored in animals are fats.
37. ATP
38. Answers may vary. Sample answer: The energy in carbohydrates and lipids is transferred to ATP, which then provides fuel for cellular activities.
39. nucleic acids
40. Answers may vary. Sample answer: Nucleic acids contain all the information needed for a cell to make proteins. DNA is a nucleic acid.

Directed Reading B

SECTION: CHARACTERISTICS OF LIVING THINGS

1. C
2. B
3. C
4. A
5. D
6. A
7. B
8. stable
9. homeostasis
10. shiver
11. reproduce
12. sexual
13. asexual
14. single-celled
15. DNA
16. cells
17. offspring
18. heredity
19. D
20. C
21. A
22. A
23. B

SECTION: THE NECESSITIES OF LIFE

1. D
2. C
3. B
4. A
5. B
6. D
7. D
8. B
9. producers
10. plant
11. consumers
12. frog
13. decomposers
14. mushroom
15. nutrients
16. molecule
17. proteins
18. amino acids
19. hemoglobin
20. enzyme
21. carbohydrate
22. energy
23. simple
24. fruits
25. complex
26. starch
27. C
28. B
29. A
30. C
31. A
32. D
33. D

Vocabulary and Section Summary

SECTION: CHARACTERISTICS OF LIVING THINGS

1. cell: the smallest unit that can perform all life processes; cells are covered by a membrane and have DNA and cytoplasm
2. stimulus: anything that causes a reaction or change in an organism or any part of an organism
3. homeostasis: the maintenance of a constant internal state in a changing environment
4. sexual reproduction: reproduction in which the sex cells from two parents unite, producing offspring that share traits from both parents
5. asexual reproduction: reproduction that does not involve the union of sex cells and in which one parent produces offspring identical to itself
6. heredity: the passing of genetic traits from parent to offspring
7. metabolism: the sum of all chemical processes that occur in an organism