

Directed Reading A

Section: Cell Energy

1. Why do cells need energy?

2. Where do plant cells get their energy? _____

3. Where do many animal cells get the energy they need?

FROM SUN TO CELL

_____ 4. Where does almost all of the energy that fuels life come from?

- | | |
|--------------|------------|
| a. the Earth | c. plants |
| b. gasoline | d. the sun |

5. Plants are able to change the sun's energy into food through the process of _____.

6. The molecules in plant cells that absorb light energy are called _____.

_____.

7. Plants get their green color from _____.

8. What is glucose?

9. Explain why glucose is important to a plant cell.

10. Photosynthesis produces _____ and

_____.

Directed Reading A *continued*

GETTING ENERGY FROM FOOD

- 11. Cells use _____ to break down food.
- 12. Many cells are able to get energy without using oxygen through a process called _____.
- 13. Why is breathing important to many organisms?

- 14. Describe what takes place during cellular respiration in complex organisms.

- 15. What does your body do with the energy released during cellular respiration?

- 16. Adenosine triphosphate, also called ATP, supplies _____ that fuels cell activities.

- 17. Cellular respiration in the cells of eukaryotes takes place in _____ inside the cell.

- 18. During photosynthesis, plant cells use carbon dioxide to make glucose and release oxygen. How is this different from cellular respiration?

- 19. Why do you get a burning sensation in your muscles during strenuous exercise?

Directed Reading A *continued*

20. What is another kind of fermentation?

21. How does the process of fermentation help bread rise?

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

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|---|---|
| _____ 22. This occurs when cells use oxygen to produce energy from food. | a. oxygen |
| _____ 23. This is the breakdown of food without using oxygen. | b. yeast |
| _____ 24. This forms carbon dioxide, CO ₂ , during fermentation and is used to help bread rise. | c. the sun's energy |
| _____ 25. This is converted into food by the process of photosynthesis. | d. cellular respiration |
| _____ 26. This is released during photosynthesis, when cells take in CO ₂ . | e. water, carbon dioxide, and energy |
| _____ 27. This is released by cells during cellular respiration. | f. fermentation |

Answer Key

Directed Reading A

SECTION: EXCHANGE WITH THE ENVIRONMENT

- This movement of materials helps keep cells healthy so they can divide. Cell division then allows organisms to grow and repair injuries.
- diffusion
- water
- molecules
- osmosis
- Water particles move to where they are less concentrated.
- because it helps maintain a balance within the cell of all the concentrated particles
- The water will move out of the cells to where water molecules are less concentrated in the salty solution. The cells will shrivel up.
- Through the process of osmosis, water moves into the plant cells, which makes the plant firm again.
- C
- A
- B
- D
- E
- proteins
- endocytosis
- The cell surrounds a large particle and encloses it in a vesicle to bring the particle into the cell.
- exocytosis
- The cell forms a vesicle around the large particle and carries the particle to the cell membrane. The vesicle fuses with the membrane and releases the particle outside the cell.
- C, A, B
- B, A, C
- photosynthesis
- pigments
- chlorophyll
- a simple sugar or carbohydrate
- Glucose is a plant's "food."
- glucose, oxygen
- cellular respiration
- fermentation
- Breathing allows many organisms to take in oxygen and get rid of CO₂. The oxygen supplied to the cells helps them perform cellular respiration.
- Food, such as glucose, is broken down into CO₂ and H₂O, and energy is released.
- My body uses the energy released during cellular respiration to maintain my temperature. ATP, which supplies energy to fuel all cell activities, is also formed.
- energy
- mitochondria
- In cellular respiration, cells use oxygen to break down glucose and release CO₂, H₂O, and energy.
- When I exercise strenuously, my muscles don't receive enough oxygen for cellular respiration. The muscle cells then use the process of fermentation to get energy. Fermentation produces lactic acid, which contributes to muscle fatigue.
- Another type of fermentation occurs in some types of bacteria and in yeasts.
- Yeast forms carbon dioxide (CO₂) during fermentation. The bubbles of carbon dioxide gas cause the dough to rise.
- D
- F
- B
- C
- A
- E

SECTION: CELL ENERGY

- so that organisms and their cells can live, grow, and reproduce
- the sun
- by breaking down food
- D

SECTION: THE CELL CYCLE

- It is important for your body to produce millions of new cells because this allows you to grow and replace cells that have died.