Energy in Cells
Study Guide

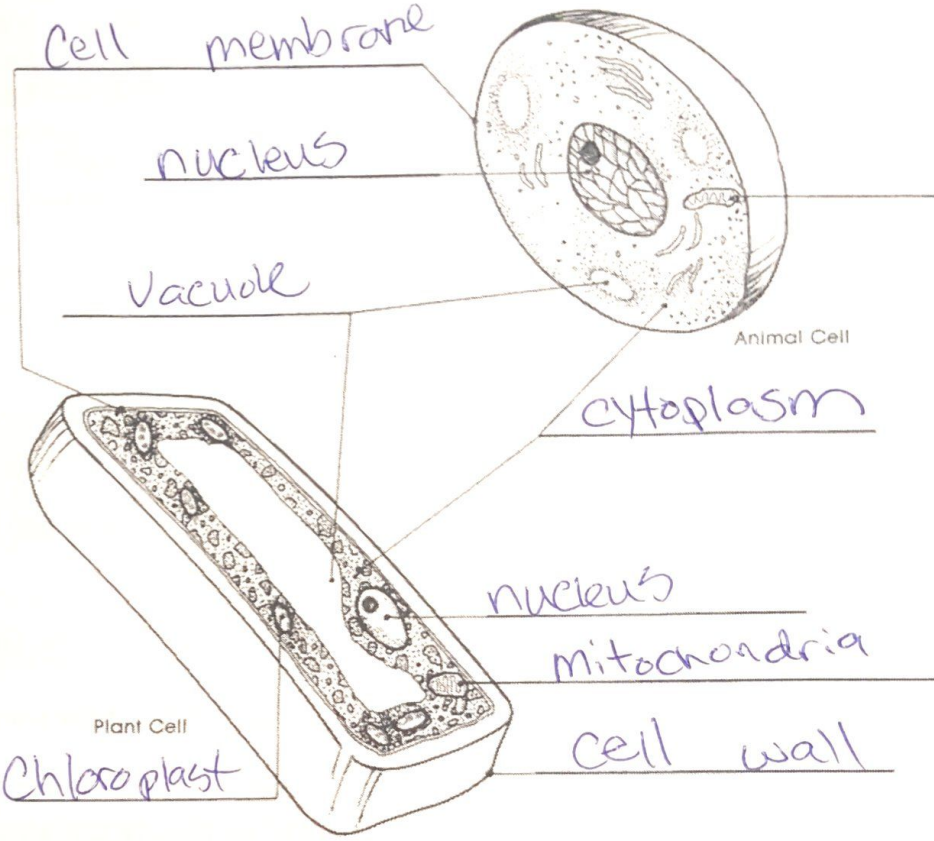
Key

Name _____

Plant and Animal Cells

Date_____ Per._____

Plant and animal cells are alike in many ways. But there are also ways in which they differ. Label the parts of the plant and animal cells.



WORD BANK

cell wall	chloroplast	cell membrane	Mitochondria
vacuole	nucleus	cytoplasm	

1. List the 7 characteristics of living things?
   - made of cells
   - reproduce
   - grow & develop
   - have DNA
   - respond to stimuli
   - need energy
   - Homeostasis
2. What are the two ways cells get the materials they need for living?
   active & passive transport
3. What characteristic of the cell membrane allows materials to pass in and out of the cell?
   semi peremable
4. The process by which a cell captures energy in sunlight and uses it to make food is called...
   a. cellular respiration b. photosynthesis c. fermentation d. breathing

5. The process that releases energy but does NOT require oxygen is called...
   a. cellular respiration b. photosynthesis c. fermentation d. breathing

6. An organism that cannot make its own food is called a(n)....
   a. heterotroph b. autotroph c. prokaryote d. eukaryote

7. An organism that makes its own food is called a(n) ...
   a. heterotroph b. autotroph c. prokaryote d. eukaryote

8. In plants, these are colored chemical compounds that absorb light.
   a. chloroplast b. chlorophyll c. stomata d. pigment

9. The process by which cells obtain energy from glucose is called...
   a. cellular respiration b. photosynthesis c. fermentation d. breathing

10. How do plants obtain energy?
   a. Indirectly from the sun
   b. Through the process of photosynthesis
   c. Through the process of respiration
   d. Through the process of fermentation

11. An insect eats a leaf. Which statement explains how insects get energy from the sun?
   a. Insects get energy directly from the sun by tanning.
   b. Insect do not get energy from the sun.
   c. Insects indirectly get energy from the sun because they eat the plant that gets energy directly from the sun.
   d. Insects get energy directly from the sun because they eat the plant that gets energy indirectly from the sun.

12. In the process of photosynthesis, plants take in carbon dioxide and water and use light energy to convert these substance to...
   a. Carbon and sugar b. oxygen and sugar c. water and sugar d. dihydrogen oxide and sugar

13. During the winter and at night, plants...
   a. use photosynthesis to produce the food they need.
   b. use cellular respiration to produce the energy they need.
   c. use fermentation to produce the food they need.
   d. use chlorophyll to produce the energy they need.

14. During respiration...
   a. cells break down oxygen molecules and release the energy it contains.
   b. cells break down carbon dioxide and release the energy it contains.
   c. cells break down sunlight and release the energy it contains.
   d. cells break down food molecules (sugar) and release the energy it contains.

15. In the process of cellular respiration, plant and animal cells take in what two raw materials to produce the food they need to survive?
a. sugar and carbon dioxide b. sugar and water c. sugar and oxygen d. sugar and energ

16. What is the main difference between plants and animals?
a. Plants photosynthesize and animals use cellular respiration.
b. Plants use cellular respiration and animals photosynthesize.
c. Plants photosynthesize and use cellular respiration while animals only breathe.
d. Plants photosynthesize and use cellular respiration while animals just use cellular respiration.

Use the table below to answer question 1.

Cell	Cell A	Cell B	Cell C
has nucleus	yes	yes	no
has chloroplasts	no	yes	no
has cell wall	no	yes	yes
has lysosomes	yes	no	no

17. Which of the following statements is true?
A. Cell A is a plant cell.
B. Cell B can perform photosynthesis.
C. Cell C does not have DNA.
D. Cell B is a prokaryotic cell.

18. Mitochondria are important organelles within a cell. What would most likely happen if a cell's mitochondri were not functioning properly?
A. The cells would use lysosomes to release energy.
B. The cell's level of ATP would decrease.
C. The cell would create new mitochondria by cell division.
D. The cell's level of sugar would decrease.

19. What is the function of chloroplasts?
A. to convert sunlight, carbon dioxide, and water into ATP
B. to release the energy stored in sugar
C. to convert sunlight, sugar, and oxygen into carbon dioxide and water
D. to convert sunlight, carbon dioxide, and water into sugar and oxygen

20. Why are photosynthesis and respiration together called "the energy cycle"?

The start of photosynthesis is the end of cellular respiration and the start of cellular respiration is the end of photosynthesis.