

Skills Worksheet

# Directed Reading

## Section: Active Transport

Complete each statement by writing the correct term or phrase in the space provided.

1. The transport of a substance across the cell membrane against its concentration gradient is called \_\_\_\_\_.
2. Active transport requires the cell to use \_\_\_\_\_.
3. The energy needed for active transport is usually supplied by \_\_\_\_\_.
4. The sodium-potassium pump is a(n) \_\_\_\_\_ protein.
5. The concentration of sodium ions inside the cell is usually \_\_\_\_\_ than the concentration of sodium ions outside the cell.
6. The concentration of potassium ions inside the cell is usually \_\_\_\_\_ than the concentration of potassium ions outside the cell.
7. The sodium-potassium pump picks up \_\_\_\_\_ ions outside the cell.
8. The sodium-potassium pump releases \_\_\_\_\_ ions inside the cell.

Read each question, and write your answer in the space provided.

9. Explain why proteins and polysaccharides cannot diffuse through the membrane like water does.

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Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

**Directed Reading** *continued*

10. What is the difference between endocytosis and exocytosis?

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11. How is a vesicle formed in endocytosis?

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12. What happens to a vesicle in exocytosis?

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13. How do sodium-potassium pumps support the efficient functioning of cells?

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**In the space provided, write the letter of the description that best matches the term or phrase.**

\_\_\_\_\_ 14. signal molecule

\_\_\_\_\_ 15. receptor protein

\_\_\_\_\_ 16. ion channel

\_\_\_\_\_ 17. second messenger

\_\_\_\_\_ 18. enzyme action

\_\_\_\_\_ 19. beta blocker

\_\_\_\_\_ 20. changes in permeability

a. a large protein in the cell membrane that transports a specific ion

b. acts as a signal molecule in the cytoplasm

c. a protein that binds to a specific signal molecule

d. speeds up chemical reactions in the cell

e. a drug that interferes with the binding of signal molecules to receptor proteins in heart muscles

f. carries information throughout the body and to other cells

g. occur when a receptor protein is coupled with an ion channel