

Skills Worksheet

Reinforcement

Into and Out of the Cell

Complete this worksheet after you finish reading the section "Exchange with the Environment."

Each of the boxes below represents a different method cells use to bring small particles into the cell or to take small particles out of the cell. Add the notes at the bottom of the page to the appropriate box. Be careful—some notes can be used more than once.

Small Particle Transport

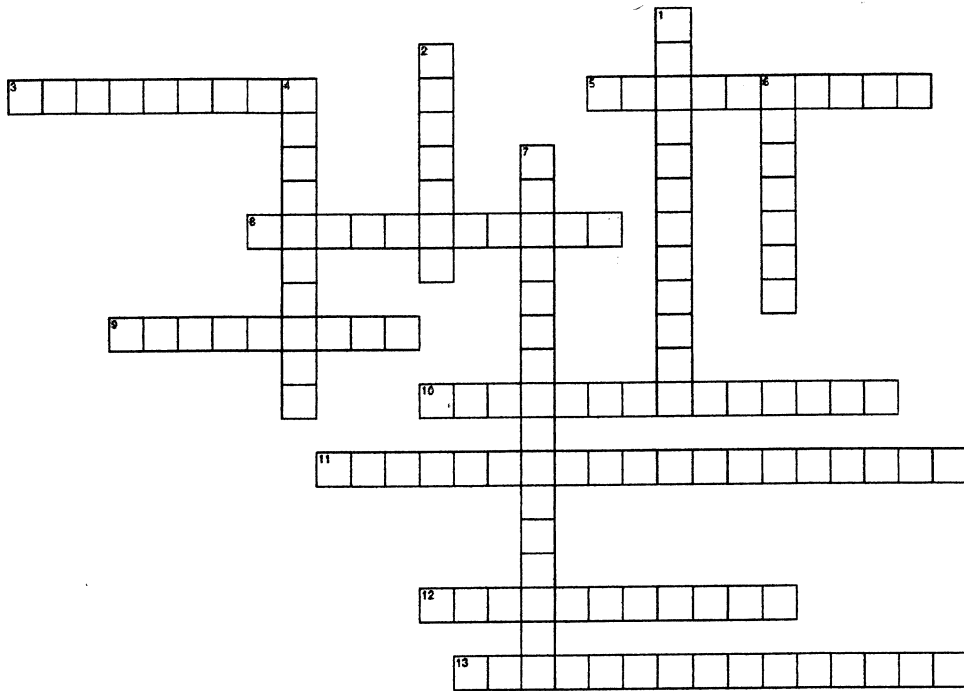
Osmosis	Passive Transport	Active Transport

NOTES

- particles move through proteins
- sugar
- requires ATP
- particles move from an area of high concentration to an area of low concentration
- does not require ATP
- particles move from an area of low concentration to an area of high concentration
- water

Cell in Action Crossword Puzzle

Name: _____ Date: _____ Per: _____



ACROSS

- 3 The life cycle of a cell
- 5 Genetic structure that is made of DNA
- 8 The division of the cytoplasm
- 9 The movement of particles from areas of high concentration to low concentration
- 10 When plants use light + water + carbon dioxide to make oxygen + glucose
- 11 Oxygen is used to break down glucose into ATP + carbon dioxide + water
- 12 The movement of large particles into a cell by Surrounding it in a membrane to make a vesicle
- 13 The movement of particles across a cell membrane from low concentration to high concentration by using energy

DOWN

- 1 Breaking down glucose without oxygen
- 2 Process in which eukaryotic cells create two nuclei with identical DNA
- 4 The movement of large particles out of a cell by surrounding it in a membrane to make a vesicle
- 6 The movement of water across a semipermeable membrane from high concentration to low concentration
- 7 The movement of particles across a cell membrane from high concentration to low concentration

Skills Worksheet

Reinforcement

Activities of the Cell

Complete this worksheet after you finish reading the section "Cell Energy."

1. Sketch and label a chloroplast and a mitochondrion in the space provided.

2. Chloroplasts use light energy during photosynthesis. Add to your drawing a light source and an arrow from the light source to the chloroplast.

3. Chloroplasts give off oxygen and glucose during photosynthesis. Mitochondria use oxygen and glucose during cellular respiration. Add this information to your diagram.

4. During cellular respiration, mitochondria produce ATP. Add this information to your diagram.

5. Besides light energy, what do chloroplasts use to make glucose?

6. Besides ATP, what do mitochondria give off during cellular respiration?

7. Add the information from questions 5 and 6 to your diagram.

USING KEY TERMS

- 1) Use the following terms in the same sentence: *diffusion* and *osmosis*.

- 2) In your own words, write a definition for each of the following terms:
exocytosis and *endocytosis*.

Complete each of the following sentences by choosing the correct term from the word bank.

cellular respiration photosynthesis fermentation

- 3) Plants use _____ to make glucose.
- 4) During _____, oxygen is used to break down food molecules releasing large amounts of energy.

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

- 5) *cytokinesis* and *mitosis*

- 6) *active transport* and *passive transport*

- 7) *cellular respiration* and *fermentation*

Multiple Choice

- _____ 8. The process in which particles move through a membrane from a region of low concentration to a region of high concentration is
- a. diffusion.
 - b. passive transport.
 - c. active transport.
 - d. fermentation.
- _____ 9. What is the result of mitosis and cytokinesis?
- a. two identical cells
 - b. two nuclei
 - c. chloroplasts
 - d. two different cells
- _____ 10. Before the energy in food can be used by a cell, the energy must first be transferred to molecules of
- a. proteins.
 - b. carbohydrates.
 - c. DNA.
 - d. ATP.
- _____ 11. Which of the following cells would form a cell plate during the cell cycle?
- a. a human cell
 - b. a prokaryotic cell
 - c. a plant cell
 - d. All of the above

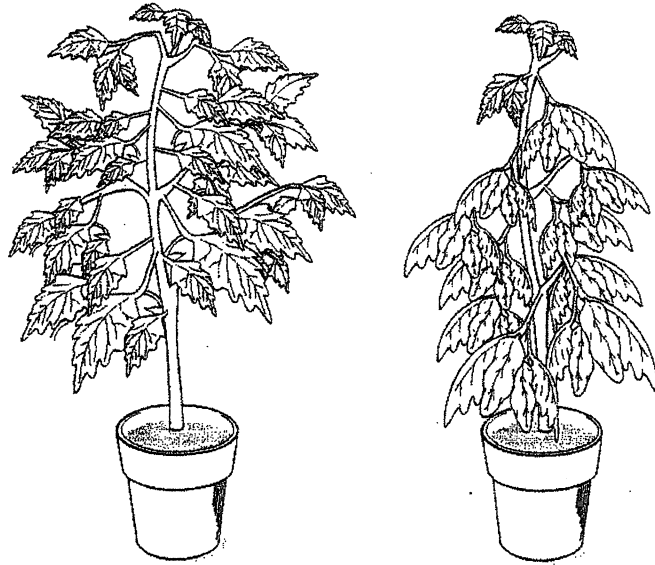
Short Answer

12. Are exocytosis and endocytosis examples of active or passive transport? Explain your answer.

13. Name the cell structures that are needed for photosynthesis and the cell structures that are needed for cellular respiration.

14. Describe the three stages of the cell cycle of a eukaryotic cell.

- 15) **Making Inferences** Which one of the plants pictured below was given water mixed with salt, and which one was given pure water? Explain how you know, and be sure to use the word *osmosis* in your answer.



- 16) **Identifying Relationships** Why would your muscle cells need to be supplied with more food when there is a lack of oxygen than when there is plenty of oxygen present?
