

Passive Transport

MAIN IDEA: Diffusion and osmosis are types of passive transport.

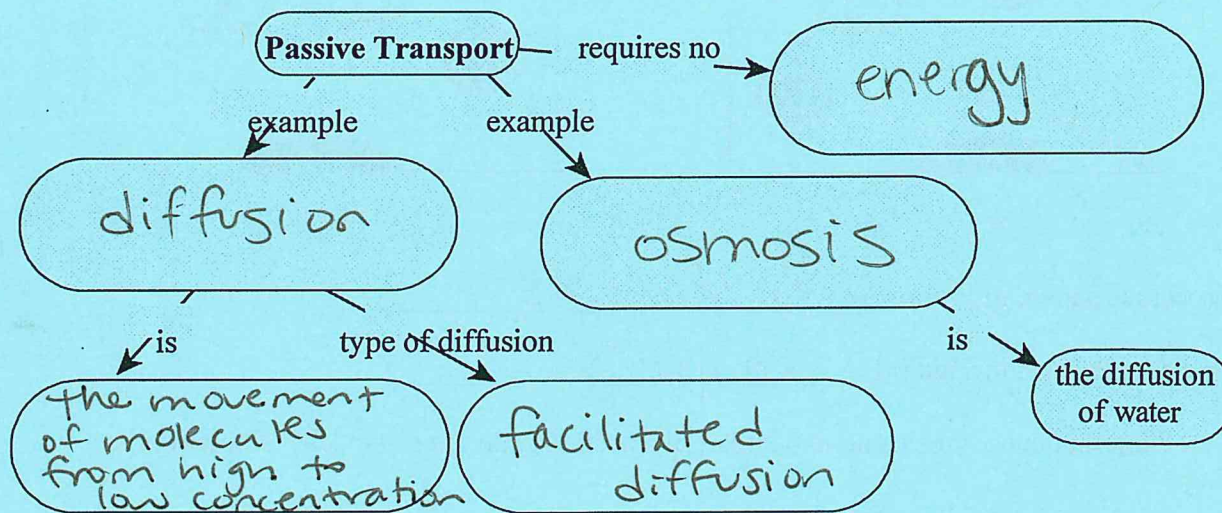
1. What is a concentration gradient?

A difference in concentration across a distance

2. What does it mean for a molecule to diffuse down a concentration gradient?

It's going from a high concentration to a low concentration

3. Complete the concept map below about passive transport using the following words or phrases: osmosis, energy, facilitated diffusion, the movement of molecules from high to low concentration, diffusion



4. How does facilitated diffusion differ from simple diffusion?

Simple diffusion occurs through the phospholipid bilayer, and facilitated diffusion uses transport proteins.

5. What will happen to a houseplant if you water it with salt water (a hypertonic solution)?

Water will leave the cells and lose turgor pressure and the plant will wilt. plasmolysis at the cellular level

Active Transport

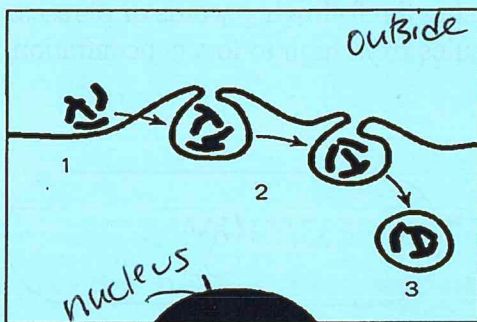
1. How is active transport different than simple diffusion and facilitated diffusion?

Requires added energy and low \rightarrow high concentration

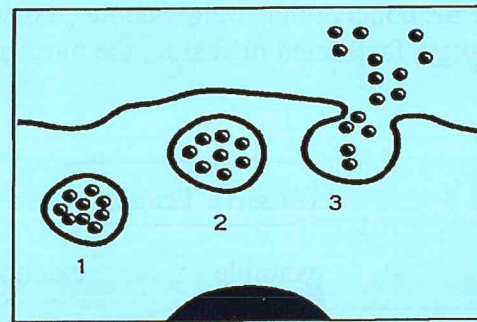
2. The prefix *exo-* means "out of" and the prefix *endo-* means "taking in". How do these meanings relate to the meaning of exocytosis and endocytosis?

exocytosis \rightarrow cell moves materials out
endocytosis \rightarrow moves materials into the cell

3.



A



B

What process is shown in Figure A? endocytosis

What process is shown in Figure B? exocytosis

4. Do you think that endocytosis and exocytosis can occur within the same cell? Explain your reasoning.

Yes, because the cell can take something in on one side and pushing something out on the other.

5. Membrane pumps move molecules against the concentration gradient. What does this mean?

going from low to high concentration which needs energy

6. Your brain uses membrane pumps to move Na^+ and K^+ ions against the concentration gradient in each nerve cell. It has to do this every time a nerve cell "fires" and sends information. Do you think your brain uses up a relatively large, or small amount of energy in your body? Why?

20% of your body's energy goes to your brain.
Because Na^+/K^+ pumps need ATP