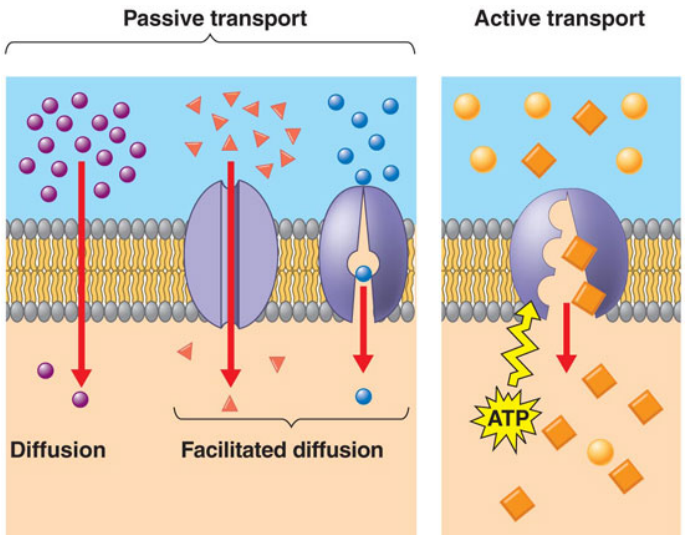
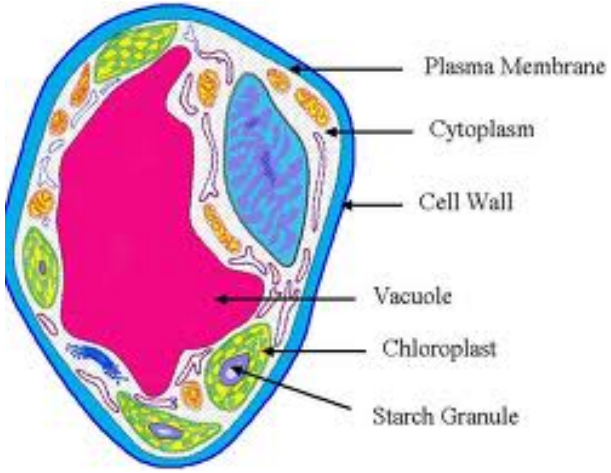
Active and Passive transport



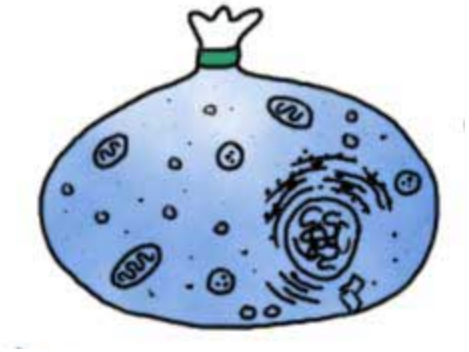
Cell Transport

- Cells are alive and need to take in oxygen, water, and food and get rid of waste, just like every other living organism.
- Everything passes in or out of a cell through the cell membrane using active or passive transport.



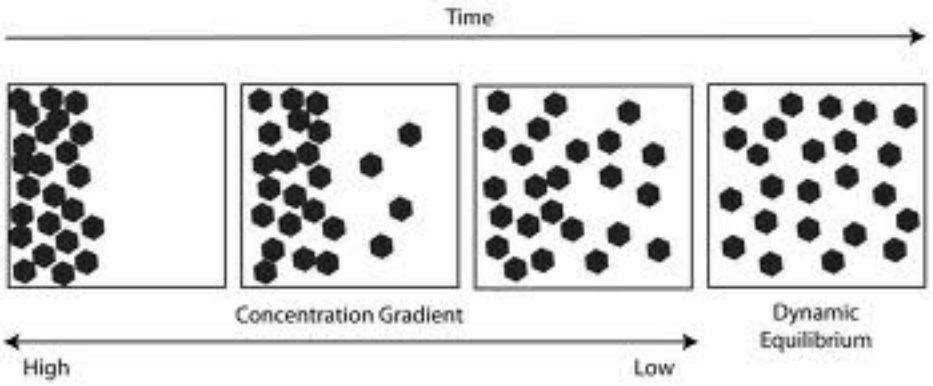
Passive transport

- In passive transport the cell does not need to use energy.
- Cell membranes have tiny holes in them that allow certain substances such as oxygen and carbon dioxide to pass through.



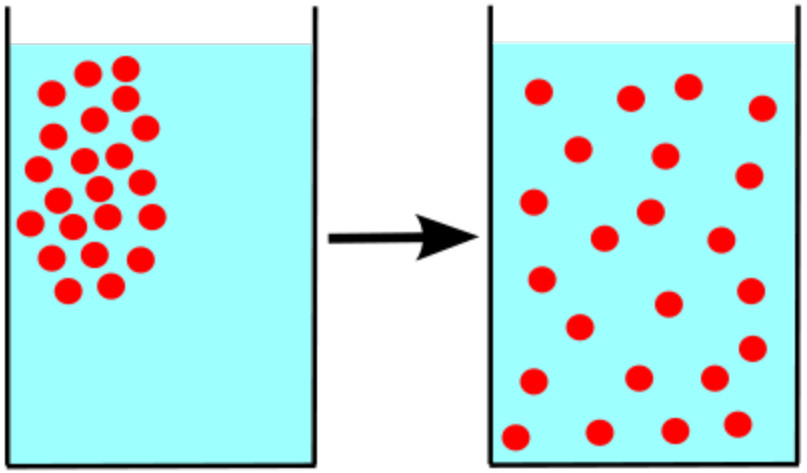
Diffusion

- When you have a high concentration of a substance and the substance spreads out to areas where there is a low concentration.
- The concentration of a substance is called the concentration gradient.



Equilibrium

- When a substance is equally diffused it is considered to be in equillibrium
- The faster atoms are moving, the faster equilibrium is reached.

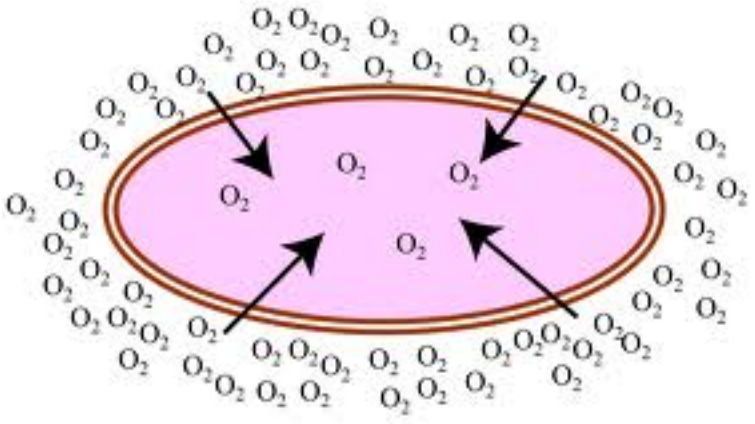


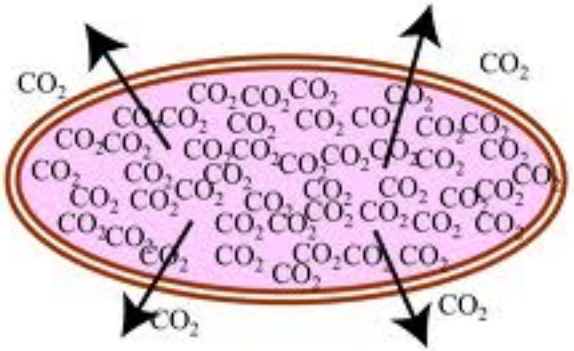
Diffusion

- Some typical examples of diffusion are heat perfume filling a room from one bottle, smoke from a fire filling a room, and ink slowing spreading out in jar of water.

Applications in Cells

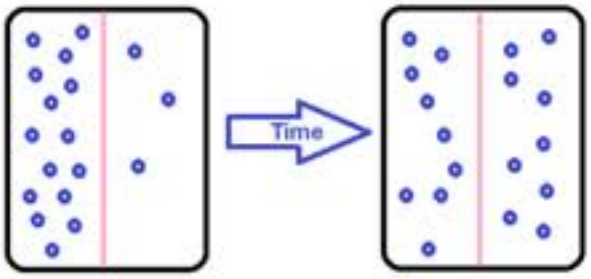
- Cells take in oxygen through diffusion.
- Cells get rid of carbon dioxide through diffusion.





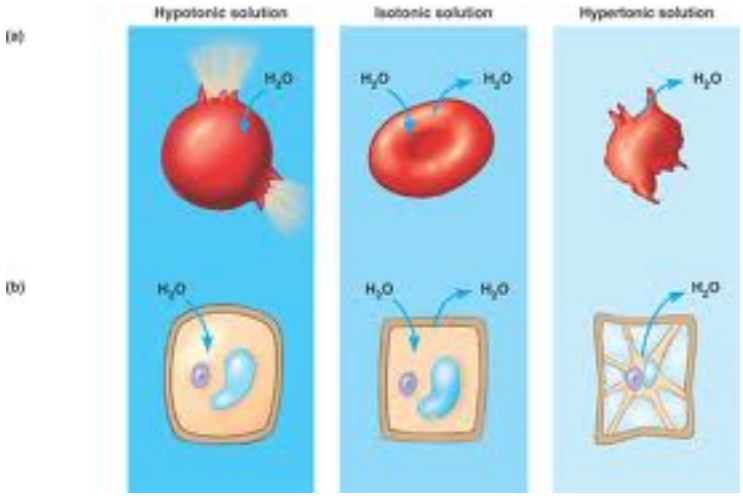
Osmosis

- A special type of diffusion called osmosis refers to the movement of water across a membrane.



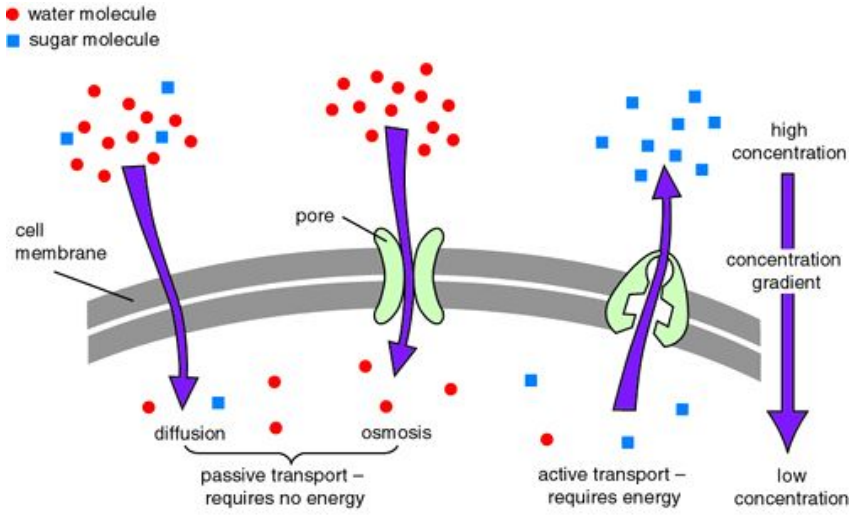
Osmosis and Cells

- Cells use osmosis to add or remove water from the cell as necessary. Usually this is done to balance out chemicals such as salts.



Active Transport

- Cells use energy to move nutrients and other chemicals in or out of the cell
- These nutrients and chemicals are too big to pass through the tiny holes that cells use for passive transport.



Transport proteins

- One way that cells move nutrients in to the cell is by using transport proteins