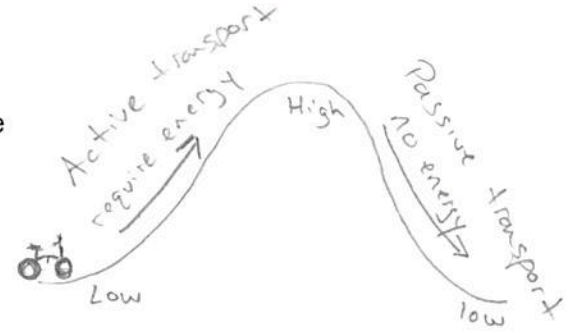


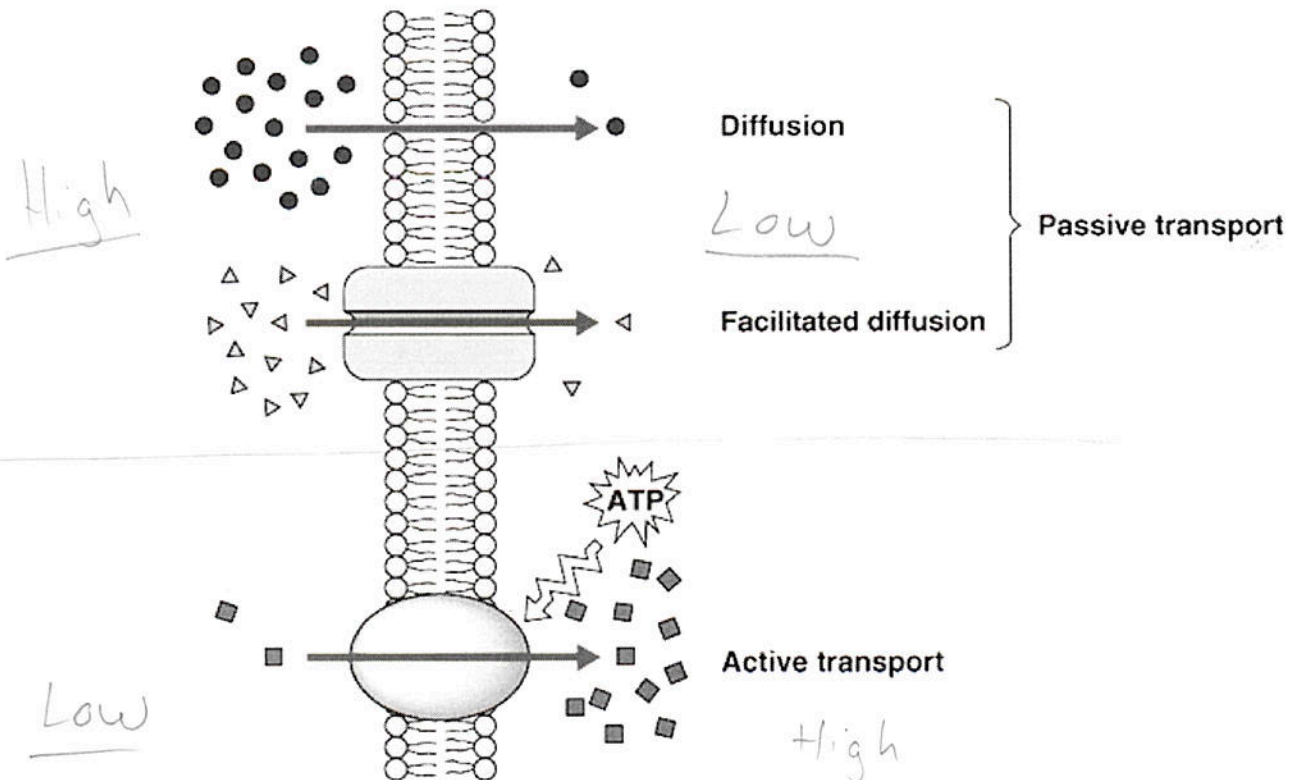
Cell Membrane Notes:

- The cell membrane is semi-permeable ^(selective) → decides what may pass into cell
- A membrane is permeable to substances such as Oxygen, Water, and carbon dioxide

- There are 3 ways a substance can move through a membrane
 - o Diffusion
 - o Osmosis
 - o active transport

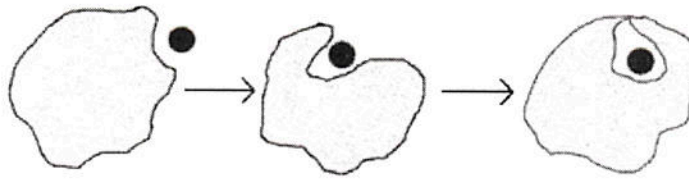


- **Diffusion:** when molecules from an area of HIGH concentration to an area of LOW concentration
 - o ($H_i \rightarrow L_o$)
- **Osmosis:** diffusion of water molecules through a membrane
- Diffusion and Osmosis are forms of **Passive Transport** – energy is/is not required to move materials through a membrane
- **Active Transport:** the movement of material through a membrane that requires energy.
 - o Goes from an area of LOW concentration to an are of HIGH concentration
 - o ($L_o \rightarrow H_i$)




- endocytosis is when the cell membrane will change shape and engulf the particle to move it across the cell membrane.

Endocytosis



	Type of Particles	Energy? Y/N	Direction of Flow
Diffusion	Any	No	Hi → lo
Osmosis	Water	No	Hi → lo
Active Transport	Any	Yes	lo → Hi

Organelle	Plant Animal Both	Nick Name	Function
Cell membrane	Both	Gate-keeper	Determines what may or may not pass into the cell
Cell wall	PLANT	Brick wall	Provides shape & structure
Cytoplasm	Both	"Jello"	Gel like fluid that fills the cell - keeps organelles in place
Nucleus	Both	control center (president)	Directs all cellular activity. contains DNA (chromosomes)
Nucleolus	Both		Where Ribosomes are made
Nuclear membrane	Both	Special service	Determines what may or may not enter the nucleus
Vacuole	Both	Storage bin/garbage	Stores food, water & waste
Mitochondria	Both	power-house	Converts food into energy (ATP)
Lysosomes	ANIMAL	Teeth & mouth	Breaks down big particles into small usable pieces - food & waste
Endoplasmic reticulum	Both	assembly line	Delivers materials to Ribosomes & takes away the proteins made
Ribosome	Both	assembly line worker	make Proteins
Golgi (body/apparatus)	Both	UPS	Transports materials throughout the cell
Chloroplast	PLANTS	solar panel	Turns sunlight into food (photosynthesis)

 → Important organelles to know for this Unit.