**Cell Processes**

**Transport**

* **Passive Transport**
	+ Movement without energy
	+ Moves from high concentration 🡪 low concentration
	+ **Diffusion** – movement of particles
	+ **Osmosis** – diffusion of water
		- **Types of osmosis** – hypertonic, isotonic, hypotonic
* **Active Transport**
	+ Movement with energy
	+ Utilizes carrier proteins to pull across membranes
	+ Moves from low concentration 🡪 high concentration

**Diagram of Cell Membrane**

**Energy Production and Usage**

**Photosynthesis**

* Conversion of solar energy (sunshine) to chemical energy (glucose)
* Takes place in the chloroplasts of plant (and other similar) cells
* Formula
	+ Sunlight + Carbon Dioxide + Water 🡪 Glucose + Oxygen

Sunlight + CO2 + H2O 🡪 C6H12O6 + O2

**Respiration**

* Creation of energy in the form of ATP
* ALWAYS starts with glucose
* ALWAYS ends with ATP, CO2, and a third product
* 2 types:
	+ **Aerobic respiration**
		- Uses oxygen to make energy
		- VERY efficient
		- Occurs in the mitochondria
		- Creates 26-28 ATP
		- Formula:
			* Glucose + Oxygen 🡪 ATP + Carbon Dioxide + Water

C6H12O6 + O2 🡪 ATP + CO2 + H2O

* + **Anaerobic Respiration**
		- Does not use oxygen
		- Occurs in the cytoplasm
		- Aka “fermentation”
		- Creates 2 ATP
		- Formula:
			* Glucose 🡪 ATP + Carbon Dioxide + \_\_\_\_\_\_\_\_\_\_\_\_\_\_

C6H12O6 🡪 ATP + CO2 + \_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + - 2 types:
			* Lactic acid fermentation: creates lactic acid in muscles
			* Alcoholic fermentation: creates ethanol