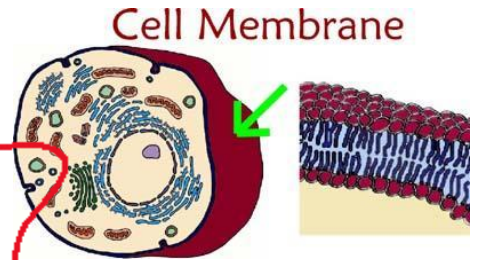


Plasma Membrane

- Also known as:

- Allows molecules to _____
- Found in _____

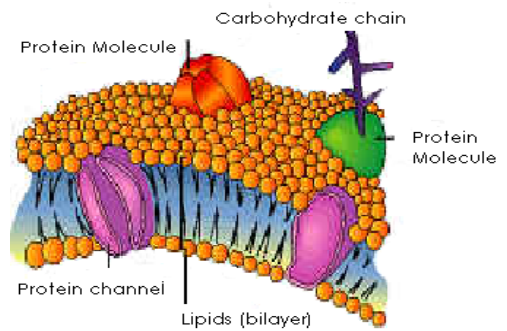


EDIT FOR NEXT YEAR

- **Selectively Permeable Membrane**

- Only certain molecules can pass through it freely
- _____ like water can pass through
- _____ like carbohydrates and proteins cannot pass through

- Made up of _____ and protein in an arrangement called a lipid bi-layer
 - Proteins are imbedded in the phospholipids
 - Phospholipids are arranged with the _____ toward the outside of the membrane and the _____ are orientated toward the interior of the membrane



- **Fluid Mosaic Model**

- All cells live at least partly in touch with a _____. In order to live, all cells must _____ and _____
- The proteins create a patterns or " _____ " on the membrane surface.
 - The proteins serve as _____ or as _____ to move substances _____ of the cell.

Parts of the Cell Membrane

- **Phospholipids**

- Made of a _____ and _____
- Functions to _____ the cell from the surroundings

- **Cholesterol**

- Special lipid/protein that provides _____
- **Cholesterol** helps with keeping the _____ and _____ the plasma membrane.

- Prevents _____
- **Proteins**
 - Located throughout the membrane to _____ materials across the membrane.
- **Carbohydrates**
 - _____ tags and receive chemical messages
 - They stick out _____ and are used for _____ and to _____

• **Functions of the Plasma Membrane**

- _____
- Cell _____
- _____
- Cell _____
- Attachment to _____

Cellular Transport

• **DIFFUSION**

- Random movement of molecules from area of _____ concentration to area of _____ concentration
- Like rolling a ball down hill – requires _____ on your part

• **OSMOSIS**

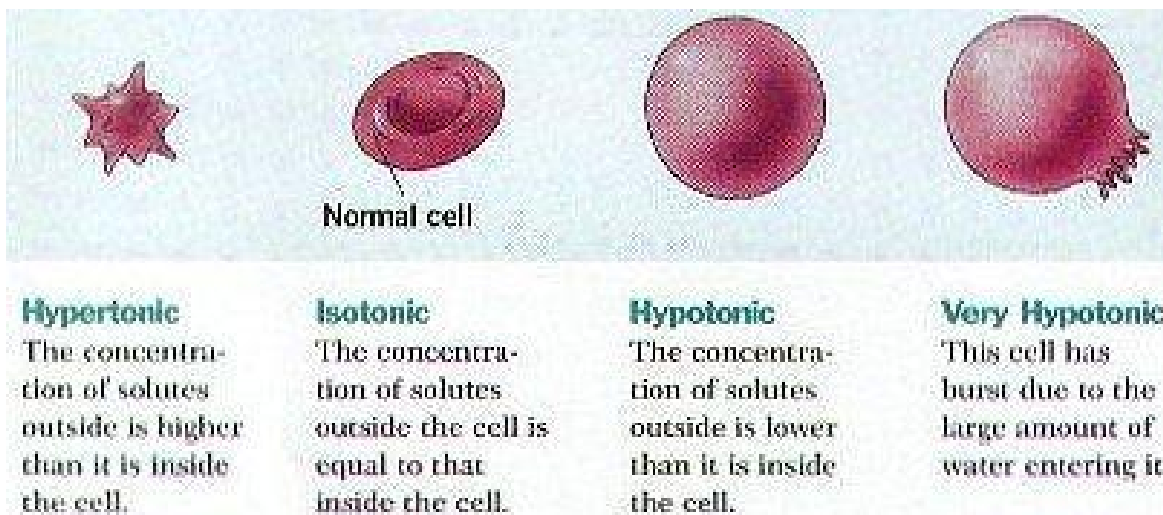
- _____
- Movement of water molecules from an area of high water concentration to area of low water concentration
- In a cell, water always moves to reach _____ on both sides (inside and out) of the cell membrane.

• **TYPES OF SOLUTIONS**

1. isotonic solution 2. hypotonic solution 3. hypertonic solution

- **Isotonic solutions** – from the Greek word iso meaning “_____”; contain the same concentration of solute as another solution (e.g. the cell's cytoplasm).
 - When a cell is placed in an isotonic solution, the water diffuses into and out of the cell at the same rate.
 - The fluid that surrounds the body cells is isotonic.
 - If the solution is **isotonic** relative to the cell, then the solute concentrations are the _____ of the membrane and water moves equally in both directions

- **Hypotonic solutions** - from the Greek word "hypo" meaning "_____"; contain a low concentration of solute relative to another solution (e.g. the cell's cytoplasm).
 - When a cell is placed in a hypotonic solution, _____, causing the cell to swell and possibly explode.
 - A **hypotonic** solution has decreased solute concentration, and a net movement of water inside the cell, causing swelling or breakage.
- **Hypertonic solution** - from the Greek word "hyper" meaning "_____"; contain a high concentration of solute relative to another solution (e.g. the cell's cytoplasm).
 - When a cell is placed in a hypertonic solution, _____, causing the cell to shrivel.
 - A **hypertonic** solution has increased solute, and a net movement of water outside causing the cell to shrink.



HYPOTONIC

- Concentration of solutes outside cell is _____ than inside
- Cell _____; animal cells _____

HYPERTONIC

- Concentration of solutes outside cell is _____ than inside
- Cell _____; usually _____

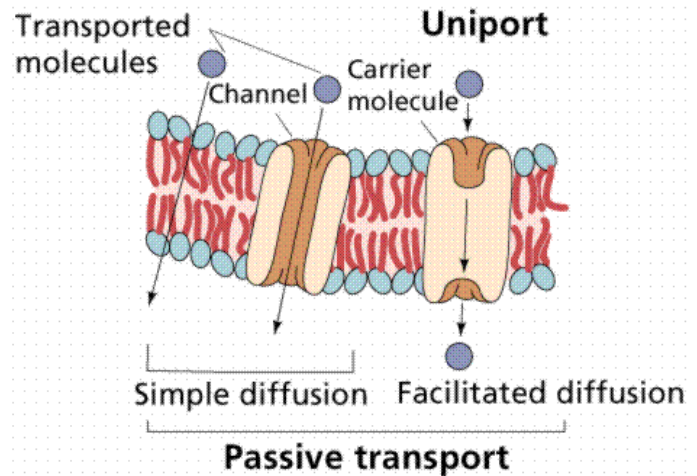
ISOTONIC

- Concentration of solutes outside is _____ to inside
- Cell remains the same

Where ever salt is, water will go to it.... So if the snails are salted, the water in their cells will leave and they will become dehydrated and die.

Passive Transport

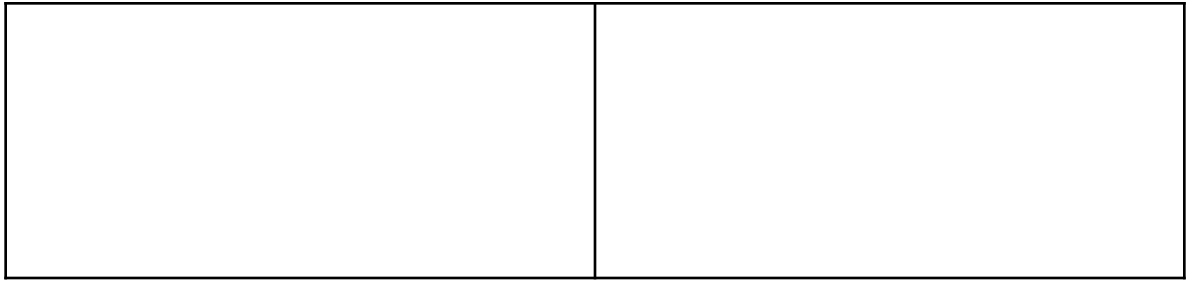
- **Passive Transport** - the movement of particles across a membrane without the use of energy.
 - Two Types:
 1. simple diffusion
 2. facilitated diffusion
- Both of these types diffuse WITH the concentration gradient.
- _____
 - no transport protein used
 - moves with concentration gradient
 - requires no energy input from the cell
- _____
 - channel or carrier protein used
 - moves with the concentration gradient
 - requires no energy input from the cell



Active Transport

- **Active Transport** - the movement of materials across a membrane, against the concentration gradient, _____
 - requires carrier protein
 - moves against the concentration gradient
 - **REQUIRES ENERGY** input from the cell
 - Substances move from areas of _____ concentration to areas of _____ concentration
 - Move up the concentration gradient
 - Ball will not roll up hill without you using energy to push it

Passive Transport	Active Transport



Transport of Large Particles aka, Bulk Packaging

- Some molecules are WAY too large for the previously mentioned transport methods. For example, some unicellular organisms will ingest entire cells! WOW!!! When this is the case, endocytosis and exocytosis are the preferred method of (bulk) transport. This comes with a price... ENERGY USE!!!

Movement of large Molecules

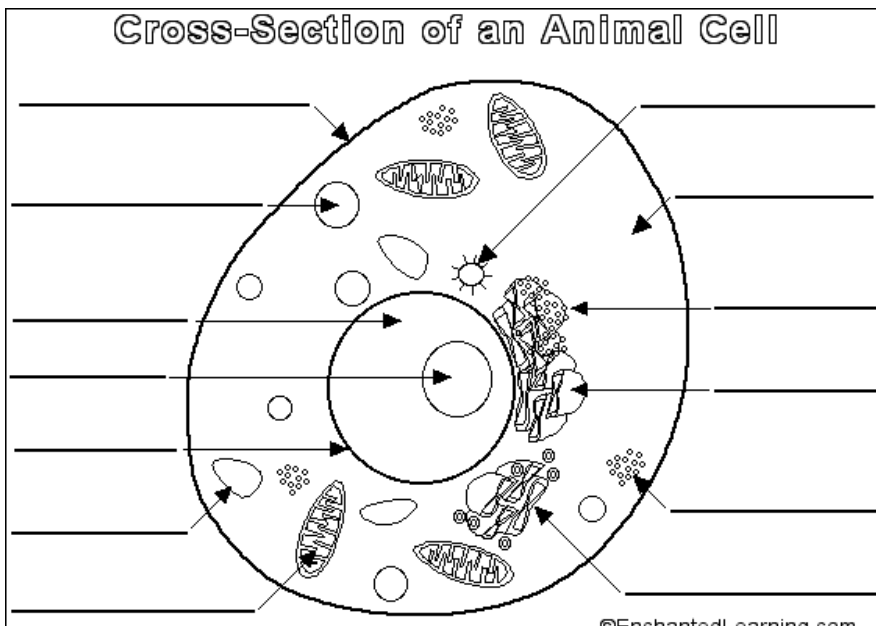
- **Bulk Flow**
 - Large molecules move across cell membrane in membrane-bound sacs
 - _____ – into the cell
 - _____ – out of the cell
- _____ – is a process by which a cell surrounds and takes in material from its environment. The basic steps are as follows:
 1. engulf
 2. enclose
 3. vacuole formation
- The reverse of this process is known as _____; removes wastes

Two Types of Endocytosis

- **Phagocytosis** – cell _____; solid particles move into the cell
- **Pinocytosis** – cell _____; liquids move into the cell

REVIEW:

LABEL the parts of each cell.



INCLUDEPICTURE "http://biologycorner.com/resource MERGEFORMATINET	Plant Cell

DRAW and LABEL a picture of the plasma membrane and explain the difference between passive transport, simple diffusion, facilitated diffusion, and active transport