

CHAP 8.3 – Cell Transport

Essential Question(s):

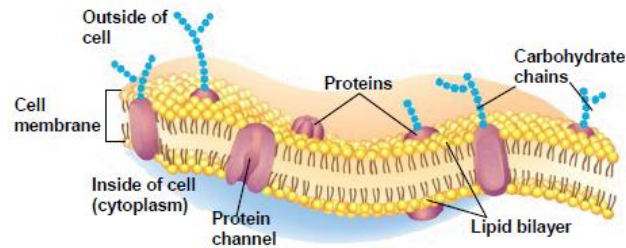
Questions:

All cells are surrounded by a _____, flexible barrier known as the **cell membrane**.

Many cells also produce a _____ supporting layer around the membrane known as the **cell wall**.

Cell Membrane: Regulates what _____ and _____ the cell also provides protection and support.

- The composition of nearly all cell membranes is a _____-layered sheet called a **lipid bilayer**.
- In addition to lipids, most cell membranes contain _____ molecules that are embedded in the lipid bilayer.



Cell Wall: Are found in _____, algae, _____, and many prokaryotes.

- The main function of the cell wall is to provide _____ and _____.
- Plant cell walls are mostly composed of _____.

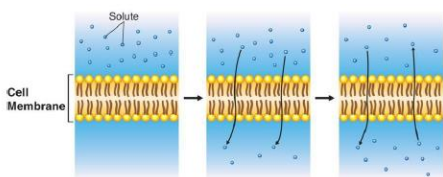
****One of the most important functions of the cell membrane is to regulate the movement of dissolved molecules from the liquid on one side of the membrane to the liquid on the other side. ****

Measuring Concentration:

- A solution is a _____ of two or more substances.
- The substances dissolved in the solution are called _____.
- The **concentration** of a solution is the _____ of solute in a given _____ of solution, or mass/volume.

Diffusion: Particles in a solution tend to move from an area where they are _____ concentrated to an area where they are _____ concentrated.

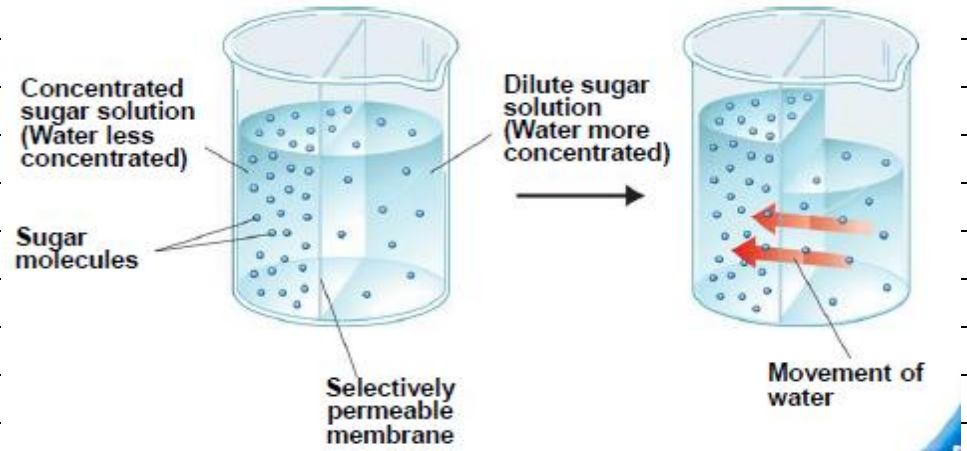
- This process is called **diffusion**.
- When the concentration of the solute is the _____ throughout a system, the system has reached **equilibrium**.



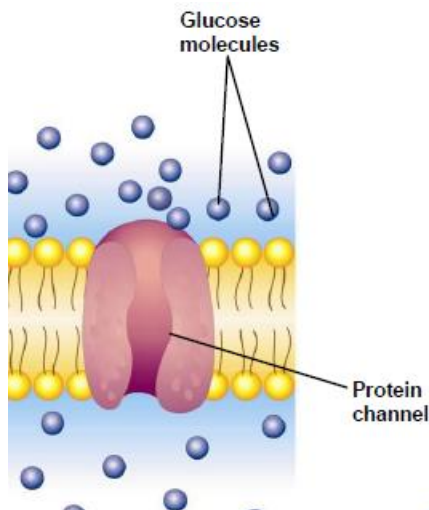
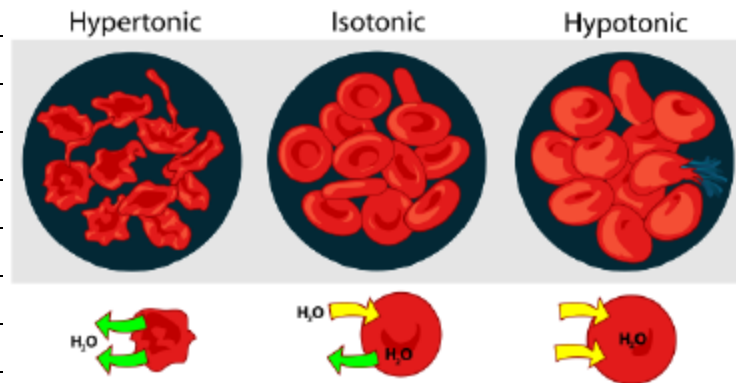
Questions:

- Because diffusion depends upon _____ particle movements, substances diffuse _____ membranes **WITHOUT** requiring the cell to use _____.

Osmosis: The diffusion of _____ through a selectively permeable membrane.

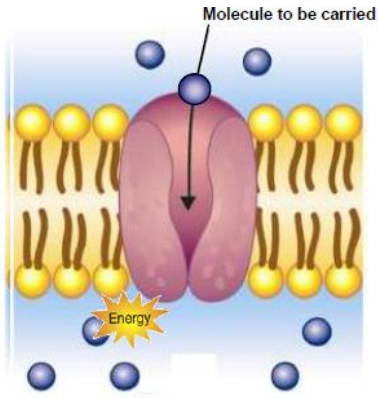


- Water tends to diffuse from a highly concentrated region to a less concentrated region.
- If you compare two solutions, _____ terms can be used to describe concentrations:
 - **Hypertonic** ("above strength") – _____ solutes
 - **Hypotonic** ("below strength") – _____ solutes
 - **Isotonic** ("same strength") – _____ solutes
- **Osmotic Pressure:** Osmosis exerts a pressure on the hypertonic _____ of a selectively permeable _____.



Facilitated Diffusion: the movement of _____ molecules across cell membranes through _____ channels.

- This is still diffusion and therefore will only happen with a difference in concentrations and requires no energy use.



Active Transport: Sometimes cells move materials in the _____ direction from which the materials would normally move – that is _____ a concentration difference. This process is called **active transport**.

- Active transport **REQUIRES** energy.

- Molecular Transport:** In active transport small molecules and _____ are carried across membranes by _____ in the membrane.
 - Energy use in these systems enables _____ to concentrate substances in a particular location, even when diffusion might move them in the _____ direction.
- Endocytosis:** is the process of _____ material into the cell.
 - Phagocytosis:** extensions of cytoplasm surround a particle and package it within a _____ vacuole. The cell then _____ it.
 - Pinocytosis:** tiny _____ form along the cell membrane, fill with _____, and pinch off to form vacuoles within the _____.
- Exocytosis:** when materials are forced _____ of the cell.
 - the membrane of the vacuole surrounding the material _____ with the cell membrane, _____ the contents out of the cell.

Summary:
