

Key for Passive Transport Packet

Passive Transport = The movement of molecules from high concentration to low, along the concentration gradient without the use of energy (ATP)

Types of Passive Transport:

1. Diffusion- movement of molecules from high to low concentration across the lipid bilayer portion of the cell membrane

a. molecules capable of diffusing are: carbon dioxide, oxygen, water, alcohol

b. concentration gradient: difference in concentration from one area to another

c. diffusion appears to stop when the molecules are evenly distributed (equilibrium)

Examples of diffusion:

1. The carbon dioxide molecules will move out of the cell, from high to low.
2. The triangles will move out of the cell from high to low, while the circles will move in, in the same fashion.
3. Diffusion of the molecules will stop when they reach an equilibrium. This occurs when the amount of molecules moving in is equivalent to that moving out.

Questions to Test Your Understanding:

1. The following solution would be considered hypertonic as it contains more salt than water (95% salt, 5% water).
2. The following solution would be considered hypotonic as it contains more water than salt (95% water, 5% salt).
3. The cell would be hypotonic in comparison to the solution as it contains more water than the solution does.
4. After osmosis has occurred, the cell would shrivel/dehydrate as water would move by osmosis out of the cell. The plant cell would not be as affected due to the presence of the cell wall.
5. The water would not move as the two solutions are isotonic (particle and water concentration are equal on both sides).

6. The water would flow into the cell as the solution is hypotonic to the cell.
7. The cell will swell and possibly burst due to the fact that water is entering. *Plant cells would be less affected because of the cell wall (turgor pressure- cell membrane presses up against cell wall *think of celery put into water, it gets crunchy)

Facilitated Diffusion: the movement of molecules from high to low concentration across a protein channel in the cell membrane

- Glucose is a molecule that moves by facilitated diffusion.
- The arrows should show the molecules still moving from high to low, but through the protein channel.