

mineral salts. Water diffuses from a high potential in the soil to a low potential in the root. Mineral salts diffuse from the low potential in the soil to the high potential in the root.

Facilitated diffusion is a process of **passive transport** (as opposed to **active transport**), with this passive transport aided by integral membrane proteins. Facilitated diffusion is the diffusion of molecules or ions across a membrane using channel proteins from a region of higher concentration to lower concentration. It does not require energy. It is faster than diffusion but slower than active transport. The facilitated diffusion may occur either across **biological membranes** or through aqueous compartments of an organism. Glucose, sodium ions and chloride ions are just a few examples of molecules and ions that must efficiently get across the plasma membrane but the lipid bilayer of the membrane is virtually impermeable. Their transport must therefore be "facilitated" by proteins that span the membrane and provide an alternative route or bypass.

	Animal Cells	Plant Cells
Higher water potential solution (Hypotonic solution)	- The cell sap has lower water potential than solution. - Water moves into the cell by osmosis. - The cell swells and bursts as it has no cell wall to protect it.	- The cell sap has lower water potential than solution. - Water moves into the cell by osmosis through partially permeable membrane. - The cell will expand and press against the cellulose cell wall, becoming turgid. - The vacuole increase in size and pushes the cytoplasm against the cell wall. The cell does not burst due to its inelastic cell wall. The turgidity of the inelastic cell wall is known as turgor and the pressure exerted by the water is known as turgor pressure.
Lower water potential solution (Hypertonic solution)	- The cell sap has higher water potential than solution. - Water leaves the cell by osmosis. - The cell shrinks and little spikes appear on the cell membrane. The cell has crenated.	- The cell sap has higher water potential than solution. - Water from the vacuole and cytoplasm leaves the cell by osmosis through the partially permeable membrane. - The cell decreases in size and become flaccid. - As the cell loses water, the vacuole decreases in size. The cytoplasm shrinks away from the cell wall. The cell has been plasmolysed. A plasmolysed cell can be