Comparison chart

| Diffusion versus Osmosis comparison chart |
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|  | Diffusion | Osmosis |
| **What is it?** | Diffusion is a spontaneous movement of particles from an area of high concentration to an area of low concentration. (ex. tea flavoring moving from an area of high to low concentration in hot water.) | Osmosis is the spontaneous net movement of water across a semipermeable membrane from a region of low solute concentration to a more concentrated solution, up a concentration gradient. This equalizes concentrations on both sides of the membrane. |
| **Process** | Diffusion mainly occurs in gaseous state or within gas molecules and liquid molecules.(e.g. The molecules of 2 gases are in constant motion and if the membrane separating them is removed the gases will mix because of random velocities.) | It occurs when the medium surrounding the cell has a higher water concentration than the cell. The cell gains water along with important molecules and particles for growth. It also occurs when water and particles move from one cell to another. |
| **Importance** | To [create energy](http://www.diffen.com/difference/Endothermic_vs_Exothermic); Helps in exchange of gases during respiration, [photosynthesis](http://www.diffen.com/difference/Photosynthesis_vs_Respiration), and transpiration. | In animals, osmosis influences the distribution of nutrients and the release of metabolic waste products. In plants, osmosis is partially responsible for the absorption of soil water and for the elevation of the liquid to the leaves of the plant. |
| **Concentration Gradient** | Goes from a high concentration gradient to a low concentration gradient | Moves down concentration gradient |
| **Water** | Doesn’t need water for movement | Needs water for movement |
| **Examples** | Perfume or Air Freshener where the gas molecules diffuse into the air spreading the aroma. | Movement of water into root hair cells. |