

Particle Theory

Everything is made of particles

Particles are always randomly moving(Brownian motion) and have kinetic energy

Diffusion in Biology

Cell membrane controls the movement of substances into and out of cell.

One way of **passive** transport is diffusion

Solutes and gases can diffuse in and out

Def

the net movement of particles from higher concentration to lower concentration due to random movement.

Net movement: average or overall movement

Osmosis

definition: the diffusion of **water** molecules from **high water potential** to **low water potential** across a *partially-permeable membrane*.

Active transport

definition: movement of molecules or ions **through a cell membrane** from a region of *lower* concentration *to higher concentration* (against the concentration gradient) **using energy from respiration**.

Protein Carrier: With the help of *ATP(Energy)*, it will change shape.

Used in plant absorbing the minerals.

During digestion, the *villi* in the small intestine absorb the soluble nutrients.