Enthalpy - What's Happening?

Enthalpy change of a chemical reaction or physical process involves the difference in potential energy of the products and the potential energy of the reactants.

During phase changes, intermolecular forces of attraction are either formed or broken. For example, evaporating water involves breaking various intermolecular forces of attraction between the water molecules. When water vapour condenses, intermolecular forces form. (You'll explore this more when we talk about heating and cooling curves.)

Condensation, freezing (solidification) and deposition are exothermic processes - energy is released as intermolecular forces form and strengthen.

Evaporation, melting and sublimation are endothermic processes are endothermic processes - energy is absorbed to weaken and break the forces of attraction.

Chemical bonds are sources of potential energy (stored energy)

During chemical changes, old bonds are broken and new bonds are formed. Breaking a bond requires (absorbs) energy, forming bonds releases energy

If the energy absorbed to break bonds is greater than the energy released when new bonds form, the reaction is endothermic.

If the energy absorbed to break bonds is less than the energy released when new bonds form, the reaction is exothermic.