

Energy Changes

Endothermic Reaction

- 1. Involves breaking of bonds
- 2. Decrease in temp

Reaction of Ammonium Chloride and Water (endothermic)

https://www.youtube.com/watch?v=a-nfY5acelc

Visualisation of Endothermic Reaction (energy is absorbed from the surroundings):



Photosynthesis:



Photosynthesis is endothermic because, light energy is taken in by the leaves for it to occur

Thermal decomposition:

a chemical reaction where heat is THE reactant. (implies that it requires thermal energy to break the chemical bonds of the molecules)

Exothermic Reaction

- 1. Rise in Temp
- 2. Involve bond formation

Visualisation of an exothermic reaction (energy is released into the surrounding)



oxidation= any form of reaction with oxygen counts as exothermic reaction

rusting

freezing: heat is being 'removed' and released into the surroundings

ENDOTHERMIC VS EXOTHERMIC

Type of reaction	Endothermic	Exothermic
Temperature Change	Decrease (cooler temperature)	Increases (hotter temperature)

Energy Change	Net Absorption of energy FROM the surrounding	Net Release of energy INTO the surrounding
Changes in bonding	breaks bond	forms bonds
Change in enthalpy (ΔH)	+ve	-ve

ΔH (Δ =Delta H=enthalpy)

freezing and condensation= more orderly particles \rightarrow heat loss (exothermic)

melting, boiling and sublimation=more disorderly \rightarrow energy absorbed (endothermic)