Endothermic vs. Exothermic Changes

Exothermic Change = a change in which energy is given off (released).

EXO = Exit THERMIC = Thermal Energy (heat)

- Excess energy is released into the surrounding environment
- The surrounding area increases in temperature

Example: Dehydration of Sugar

$C_{12}H_{22}O_{11}$ (sugar) + H_2SO_4 (sulfuric acid) → 12 C (carbon) + 11 H_2O (water) + mixture water and acid + ENERGY

More chemical energy is released from bonds of reactants than is needed for bonds of products. Excess is given off.

Endothermic Change = a change in which energy is taken in (absorbed).

ENDO = Enter, In THERMIC = Thermal Energy (heat)

- Energy is removed form the surrounding environment
- The surrounding area decreases in temperature

Example: Photosynthesis

6 CO_2 (Carbon Dioxide) + 6 H_2O (water) + ENERGY → 6CH2O (sugar) + 6 O_2 (oxygen)

Less chemical energy is released from bonds of reactants than is needed for bonds of products. Energy is absorbed from environment to make up the difference, causing cooling of the surround area.