**Types of Chemical Reactions**

**SYNTHESIS** (Combination)

Two or more substances forming one compound

**A + B → AB**

**Ex: Na2O + CO2 → Na2CO3**

**DECOMPOSITION**

**Breaking down** a compound into simpler substances

(often by using heat)

**AB → A + B**

**Ex: MgCO3 → MgO + CO2**

**SINGLE REPLACEMENT**

A **single element replaces** an ion of a compound

**A + XY → AY + X**

**Ex: 3 Mg + 2 FeCl3 → 2 Fe + 3 MgCl2**

**B + XY → XB + Y**

**Ex: Cl2 + 2 KI → 2 KCl + I2**

**DOUBLE REPLACEMENT**

**Two compounds** switch ions

**AX + BY → AY + BX**

**Ex: KBr + AgNO3 → AgBr + KNO3**

**COMBUSTION**

A **hydrocarbon reacts with oxygen** to form carbon dioxide and water

**CxHy + O2 → CO2 + H2O**

**Ex: C3H8 + 5O2 → 3CO2 + 4H2O**