**TYPES OF CHEMICAL REACTIONS**

1. **Combination reactions**

Two or more substances react to produce one substance.

E.g. Metal + Oxygen

2Mg+02 (s) 🡪 2MgO

1. **Decomposition reactions**

One substance forms two or more substances.

E.g. the action of heat on carbonates, hydrogen carbonates, nitrates, etc.

2H2O2 (l) catalyst 🡪 2H2O (l) + O2 (g)

heat

CaCO3 (s) heat 🡪 CaO (s) + CO2 (s)

1. **Substitution/Displacement reactions**

One element or group in a compound is replaced by another element or group.

Note: The more reactive element or group will displace the less reacting element or group from its compound.

Zn (s) + CuSO4 (aq) 🡪 ZnSO4 (aq) + Cu (s)

2NaBr (aq) + Cl2 (g) 🡪 2NaCl (aq) + Br2 (l)

1. **Double-Decomposition Reactions**

Two compounds exchange radicals and most of the time, a precipitate forms as one of the compounds (is insoluble or sparingly soluble).

2AgNO3 (aq) + K2CO3 (aq) 🡪 2KNO3 (aq) + Ag2CO3 (s)

1. **Neutralization Reactions**

All acid-base reactions are neutralization reactions where water is produced as well as heat.

6HCl (aq) + Fe2O3 (s) 🡪 2FeCl3 (s) + 3H2O (l)