Types of Chemical Reactions

- Chemical Reactions can be placed into groups based on what happens to the atoms during the reaction
- These groups are:
    - Synthesis
    - Decomposition
    - Combustion
    - Single Replacement
    - Double Replacement
- Synthesis Reactions
    - ‘Synthesis’ means ‘to put together’ so these reactions put together smaller molecules to make bigger molecules
    - General Formula: A + B -> AB
- Decomposition Reactions
    - ‘Decomposition’ means ‘to take apart’ so these reactions take big molecules apart
    - General Formula: AB -> A + B
- Combustion Reactions
    - ‘Combustion’ means ‘to burn’ so these reactions involve burning
    - Because fire needs oxygen to burn, these reactions will ALWAYS have O_2 as a reactant
    - General Formula: A + O_2 -> H_2O + CO_2
- Single Replacement Reactions
    - These happen when one atom replaces another atom in a compound
    - Usually involve a single atom (A) and a 2 atom compound (BX)
    - General Formula: A + BX -> AX + B
- Double Replacement Reactions
    - These happen when 2 atoms switch partners in compounds
    - Usually involve 2 different 2 atom compounds (AB) and (BX)
    - General Formula: AB + XY -> AY + BX