

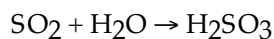
## CLASSES OF CHEMICAL REACTIONS

### Combination or Synthesis: $A + B \rightarrow AB$

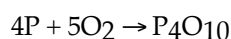
A) Metal oxides will react with water to form bases



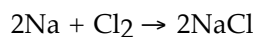
B) Some nonmetal oxides will react with water to form ternary acids



C) Many elements will react with oxygen to form oxides

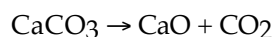


D) Metals can combine with nonmetals to form ionic compounds

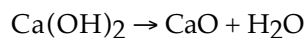


### Decomposition: $AB \rightarrow A + B$

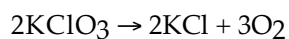
A) Metallic carbonates, when heated, form metal oxides, plus carbon dioxide



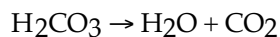
B) Many metallic hydroxides, when heated, decompose into metallic oxides and water



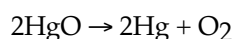
C) Metallic chlorates, when heated, decompose into metallic chlorides and oxygen



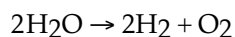
D) Some acids, when heated, decompose into non-metallic oxides and water



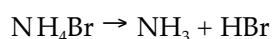
E) Some oxides, when heated decompose



F) Some Decomposition reactions are produced by electricity

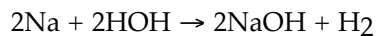


G) Ammonium Salts decompose to give off ammonia gas

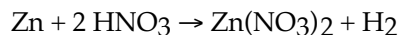


**Single Replacement:  $A + BC \rightarrow AC + B$  or  $D + BC \rightarrow C + BD$**

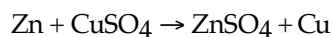
A) An active metal will replace hydrogen in water



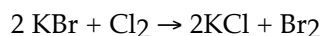
B) A metal may replace hydrogen in an acid



C) A metal in a compound may be replaced by a more active metal

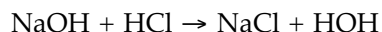


D) A halogen will replace a halogen below it in the Periodic Table

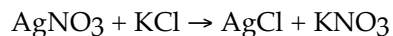


**Double Replacement:  $AB + CD \rightarrow AD + CB$**

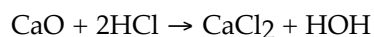
A) An acid and a base will react to form a salt and water



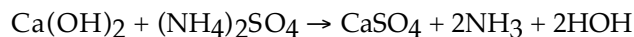
B) Two compounds may react to form a precipitate



C) A metal oxide may react with an acid to form a salt and water

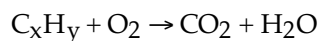


D) Two compounds may react to form a gas



**Combustion:  $X + \text{O}_2 \rightarrow \text{Oxides}$**

A) Hydrocarbons can combust in oxygen to make carbon dioxide and water



B) Metals can be burned in oxygen to produce oxides.

