

# Type of Reactions

Chemical reactions are classified into five general types

- **Combination/Synthesis**
- **Decomposition**
- **Single Replacement**
- **Double Replacement**
- **Combustion**

# Combination (Synthesis)

Two or more elements or simple compounds combine to form (synthesize) one product



# Decomposition

One substance is broken down (split) into two or more simpler substances.



# Decomposition Reactions

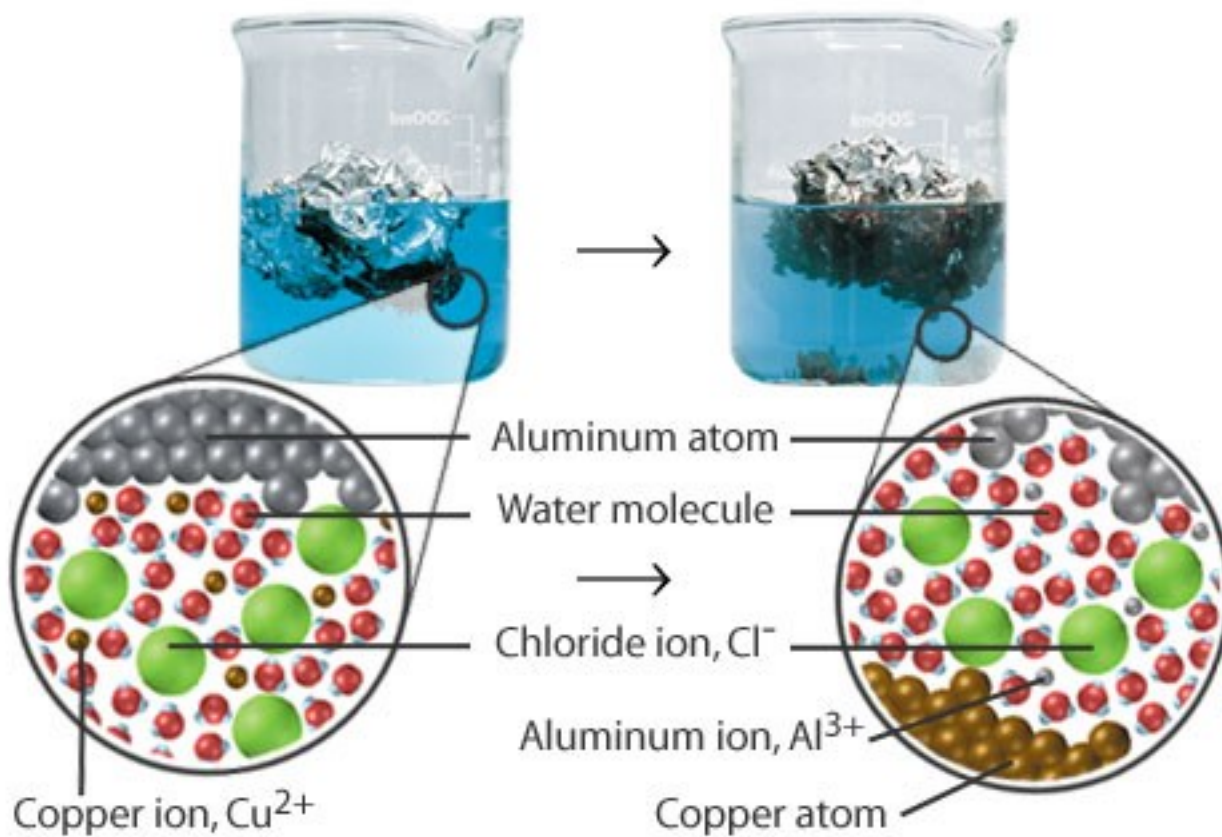
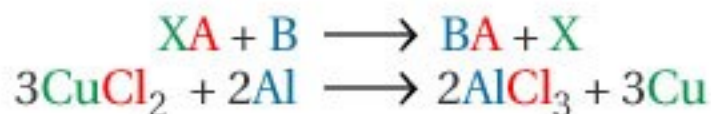
- Can predict the products if it is a binary compound
- Made up of only two elements
- Falls apart into its elements
- $\text{H}_2\text{O} \xrightarrow{\text{electricity}}$
- $\text{HgO} \xrightarrow{\Delta}$

# Single Replacement

One element takes the place of an element in a reacting compound.



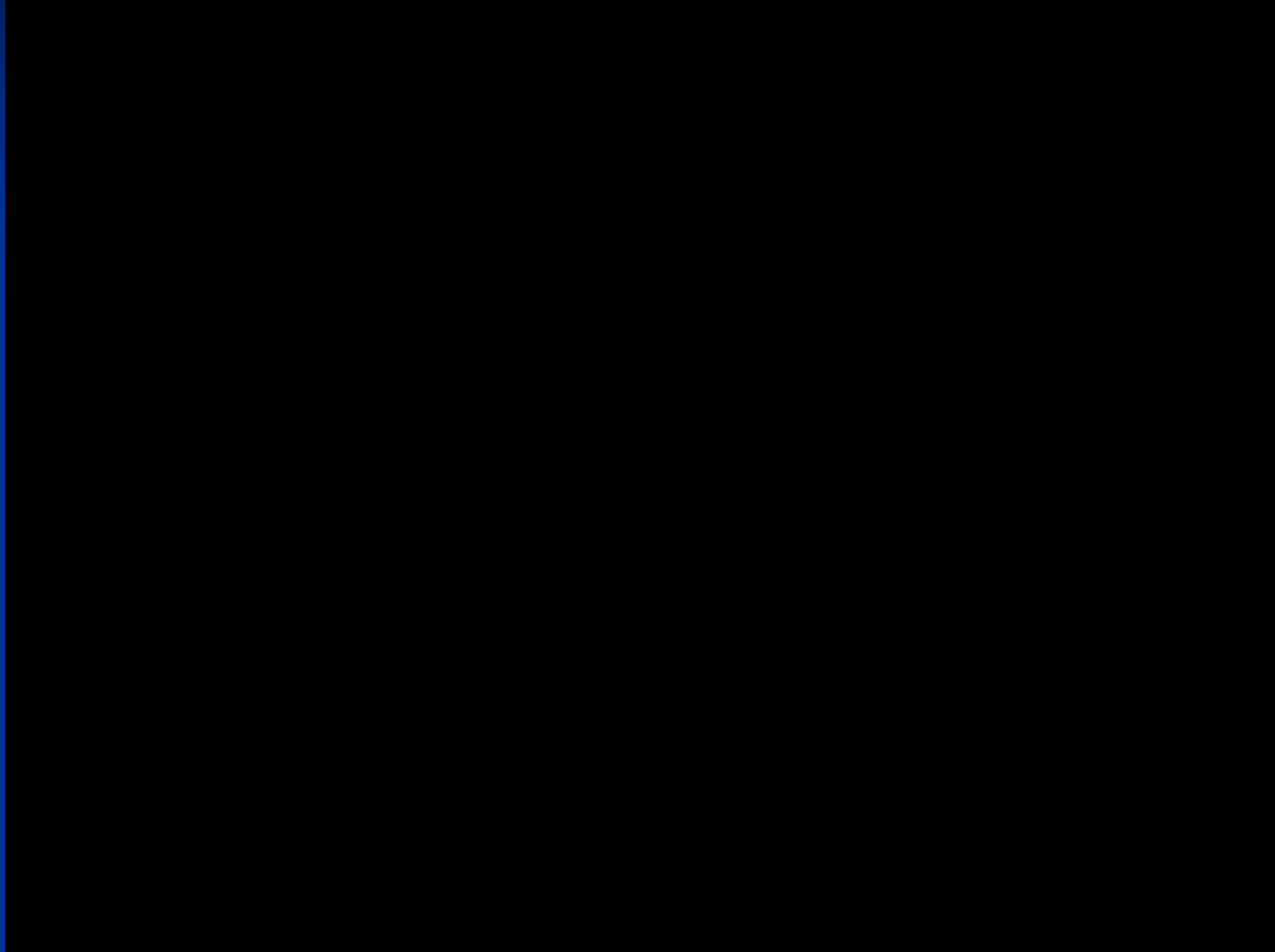
# Example of Single Replacement



# #3 Single Replacement

- We can tell whether a reaction will happen
- Some chemicals are more “active” than others
- More active replaces less active
- Higher on the list replaces lower.

# Activity of Metals





# Double Replacement

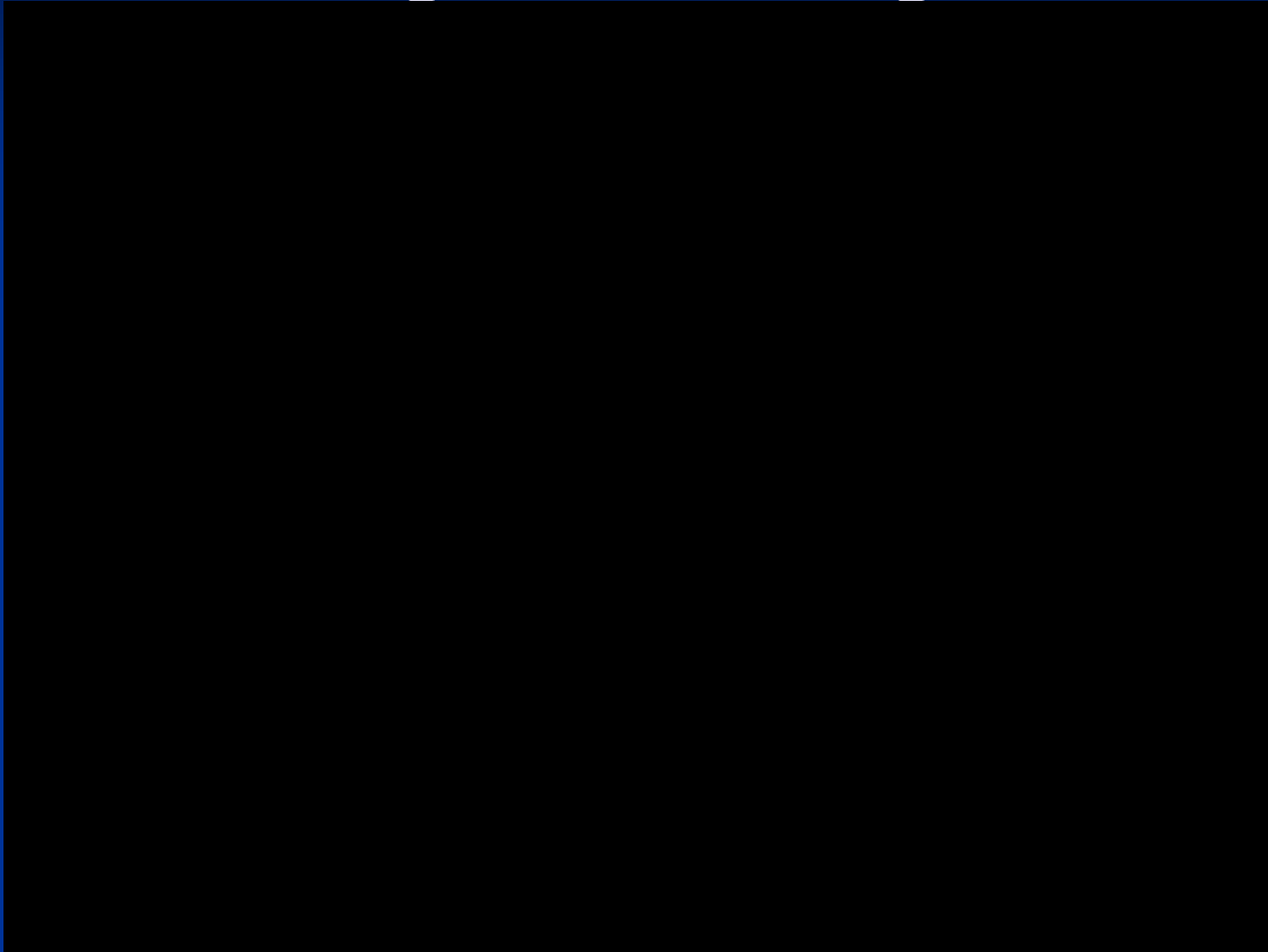
Two elements in reactants take the place of each other



# Example of Double Replacement

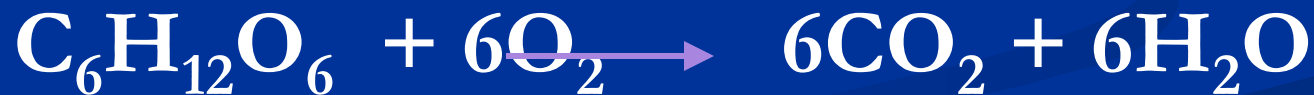
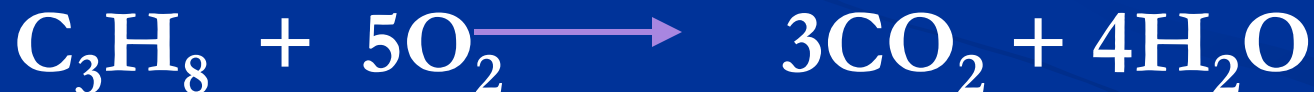


# Example of Precipitate

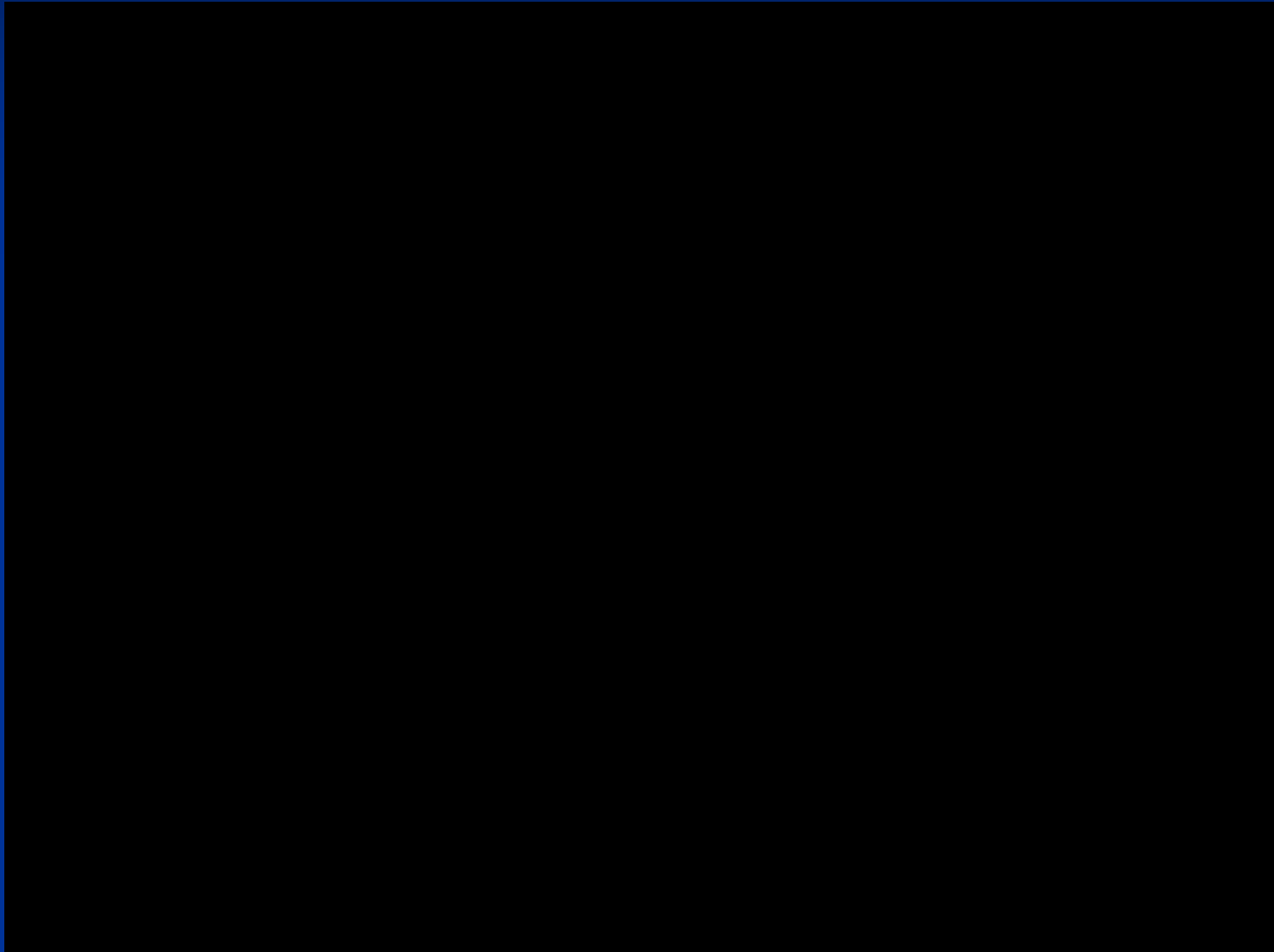


# Combustion

A reaction in which a compound  
(often carbon) reacts with oxygen



In other words . . .



# Reaction Type Worksheet