

## Chemical Reactions

Types of Chemical Reactions

A compound containing carbon and hydrogen (and sometimes oxygen) combines with oxygen gas to produce carbon dioxide and water.

$$\text{CH}_4(g) + \text{O}_2(g) \rightarrow \text{CO}_2(g) + \text{H}_2\text{O}(g)$$
$$\text{C}_3\text{H}_8(g) + \text{O}_2(g) \rightarrow \text{CO}_2(g) + \text{H}_2\text{O}(g)$$

Help me make more videos!  
**PLEASE DONATE**  
on my YouTube channel page!

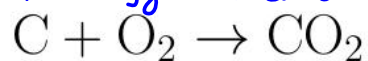
## Synthesis (Combining)



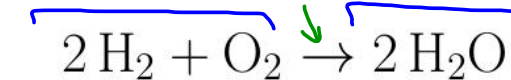
Two simpler substance combine to form a more complex substance.

Examples:

Carbon + oxygen  $\rightarrow$  Carbon dioxide



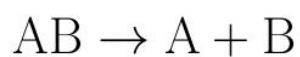
reactants  $\xrightarrow{\text{become}}$  products



} balanced equations

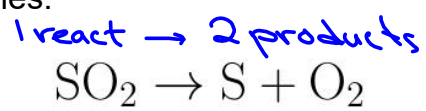
A balanced equation has the same number of every type of atom on both sides of the equation.

## Decomposition



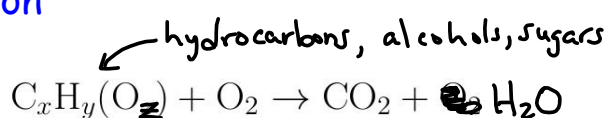
A compound is broken down into simpler compounds or to elements.

Examples:



*] balanced equations*

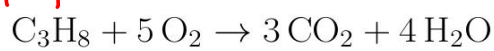
## Combustion



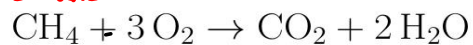
A compound with carbon and hydrogen (and sometimes oxygen) combines with oxygen to form carbon dioxide and water.

Examples:

propane



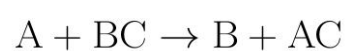
methane



} balanced

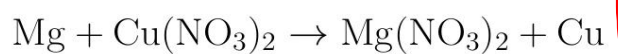
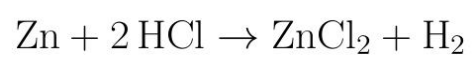
1 molecule of methane needs 3 molecules of oxygen to give 1 molecule of carbon dioxide and 2 mole. of water (in combustion)

## Single Replacement



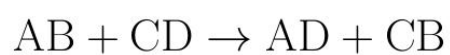
One element that starts by itself replaces another element in a compound.

Examples:

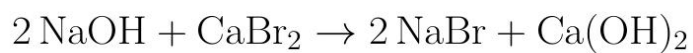
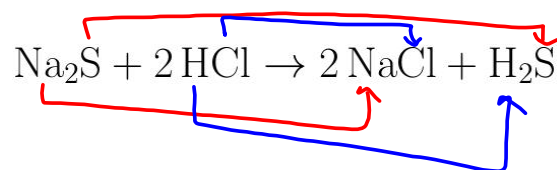


Balanced equation

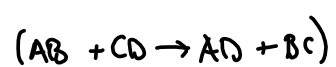
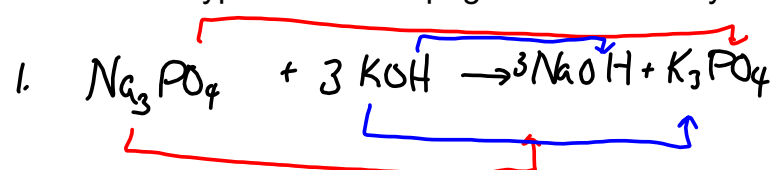
## Double Replacement



The positive and negative ions in two compounds switch places.  
Examples:



Reaction type worksheet page 1 for Thursday.



double replacement.