

# Reactions

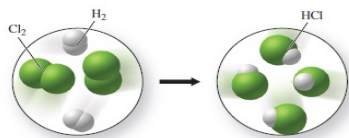
## 1. Chemical Reactions

- A chemical reaction results in a chemical change. The atoms of the reactants have either broken up or been combined to form a new product.
- Changes of state are a physical reaction because a new product has not been made.

Physical change	Chemical change
No new substance formed	New substance formed
Can be reversed	Hard to reverse
Temporary	Permanent

## 3. Conservation of Mass

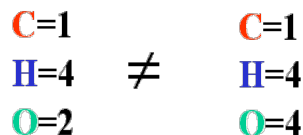
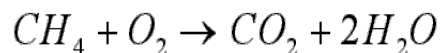
- When a reaction takes place the mass stays the same. The mass of the reactants (starting substances) equals the mass of the products (what you end up with).



## 4. Endothermic and Exothermic reactions

- Endothermic** reactions transfer energy into the reaction (takes in).
- The reaction decreases in temperature.
- Exothermic** reactions transfer energy out of the reaction (gives out).
- The reaction increases in temperature.

## 2. Equations



- The name of reactants and products in a reaction are known as a word equation.
- The periodic table letters of the reactants and products are known as a symbol equation.

- Elements are found in the periodic table represented by letters.
- Elements chemically combine together to form compounds.

Periodic Table of the Elements

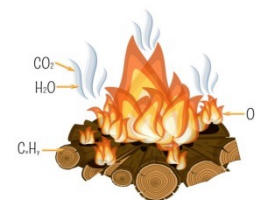
\* Lanthanide Series  
+ Actinide Series

## 5-6. Types of Reaction

### COMBUSTION

- Combustion is the chemical name for a fuel burning in oxygen.
- The products are carbon dioxide and water.

Combustion reaction



### OXIDATION

- This is the addition of oxygen to a substance.



### THERMAL DECOMPOSITION

- This is when a substance breaks down using heat only.