Purpose

- Explain the difference between

Physical Change

and

Chemical Change

Physical Change

A **change** in a substance that **does not change** the **identity** of the substance.

Physical Change

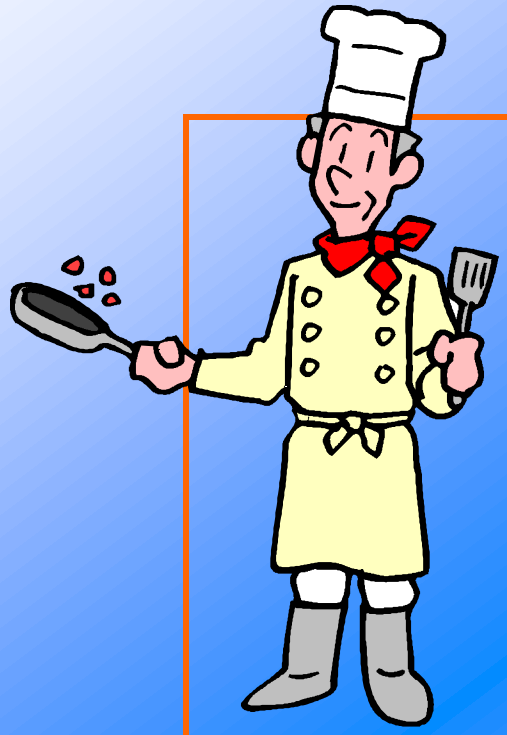
Examples:

- Ice melting
- Ripping paper in half
- Mixing ice tea mix in water
- Chewing your food

Chemical Change

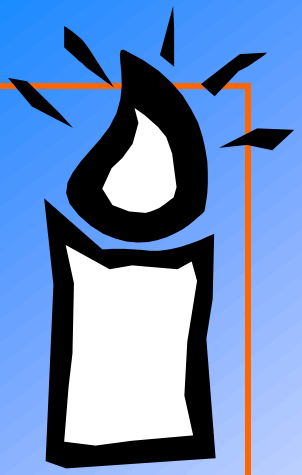
A **change** in a substance that results in a **new substance** being formed.

Chemical Change



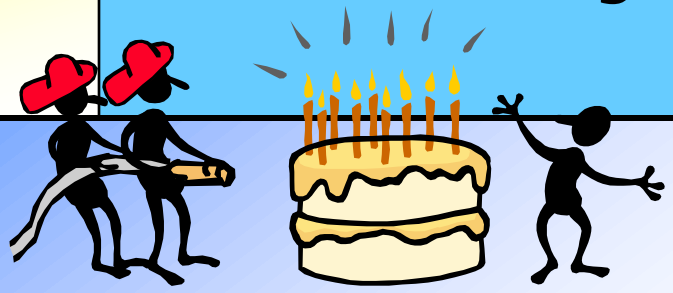
Examples:

- Burning a match
- Cooking food
- Rust forming
- Digesting food



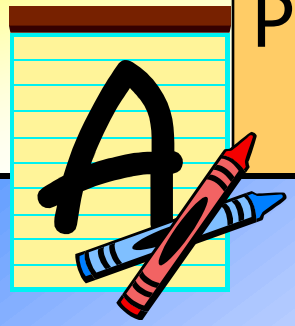
Physical Change or Chemical Change ?
You decide..

Baking a cake	Chemical change
The melting wax on a candle	Physical change
Putting salt on the water	Physical change
Burning the wick of a birthday candle	Chemical change



Physical Change or Chemical Change ?
You decide..

Sawing a piece of wood	Physical change
Cutting your hair	Physical change
Bleaching your hair	Chemical change
Coloring in a coloring book	Physical change



Chemical changes create **new substances**.

New substances are the result of a **chemical reaction**.

For example :

A Demo chemical reaction

Magnesium metal added to Hydrochloric Acid produces a new substance known as

Hydrogen gas

(H_2)

$$Mg_{(s)} + 2\ HCl_{(aq)} \rightarrow MgCl_{2(aq)} + H_{2(g)}$$

Another example :

Electrolysis of water produces new substances known as

Hydrogen and Oxygen gas

(H_2) (O_2)

$$2H_2O_{(l)} \text{ --> } 2H_{2(g)} + O_{2(g)}$$