

# IGCSE Coordinated Science: Chemical and Physical Changes

## 1. Identify physical and chemical changes, and understand the differences between them.

**Chemical Changes:** These occur when a substance combines with another to form a new substance

### Examples include:

- ❖ Rotting fruit
- ❖ Mixing chemicals
- ❖ Tarnishing silver.

**Physical changes:** These are changes that affect the **form** of an object, but ultimately doesn't have any effect on its **chemical composition**.

### Examples include:

- ❖ Tearing a piece of tin foil.
- ❖ Crumpling a piece of paper.

### Differences between the two:

1. A physical change is reversible, a chemical change is not. For example, the freezing of water would be a physical change because it can be reversed, whereas the burning of wood is a chemical change – you can't 'unburn' it

2. A physical change is a change in which no new substance is formed; a chemical change results in the formation of one or more new substances. Again, consider the previous examples: Freezing water into ice just results in water molecules which are 'stuck' together – it's still H<sub>2</sub>O. Whereas burning wood results in ash, carbon dioxide, etc, all new substances which weren't there when you started.

You're messing around with the physical structure object, but that's it.