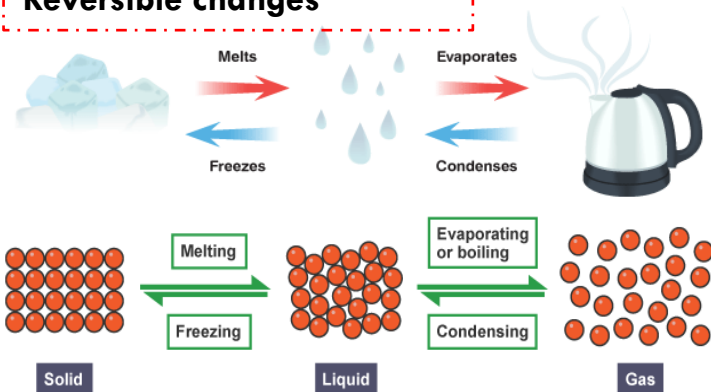




### Reversible changes

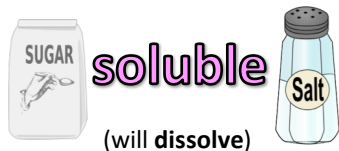


**Reversible** – A reaction that can be reversed, like boiling.

**Irreversible** – A reaction that means matter cannot be reversed to its original state. Often the reaction forms a new material. For example, burning wood to charcoal.

### Solubility

Some materials **dissolve** in **water**. This means they **break apart** into **tiny pieces, spread** out in the **water** and can no longer be seen. This **mixture** is called a **solution**



### Mixing

When two or more substances mix together, without a chemical change it's called a **mixture**. Mixing can help with the process of **dissolving**.

### Separating Mixtures

When **materials** have been **mixed** together, sometimes it is possible to **separate** them again



Use this **method** when there is a **mixture** of **different sized solids**. For example: **sand** and **pebbles**



Use this **method** when there is a **mixture** of **liquid** and an **insoluble solid**. For example: **water** and **sand**



Use this **method** when there is a **mixture** of **liquid** and a **soluble solid**. For example: **water** and **salt**

### Identify and classify

#### Pattern seeking

#### Fair testing

#### Research

**Mr Claridge, 1837.** A chemist who developed Mastic Asphalt.

**What was the Industrial Revolution's effect on burning fossil fuels?**

### Vocabulary Tier 2

Materials, mixture, heat, temperature, mixing, sieving, sieve, filter, filtering, processes, reaction.

### Vocabulary Tier 3

Change of state, state of matter, substance, particles, dissolve, solution, soluble, insoluble, filter, reversible, irreversible change, melting, burning, rusting, gas, liquid, solids, oxygen, helium, vapour, evaporating, freezing, condensing, transparent, insulator, conductor, conduct, reactants, variables.

### Identify and classify

All materials can be **grouped or compared** based on their **properties**

#### Opacity

The amount of light a material allows to pass through it

**opaque** **translucent** **transparent**

#### Magnetism

Some metals (those containing iron) are attracted to a magnet

#### Hardness

Materials that are hard to scratch and dent (durable)

#### Strength

Materials that are difficult to break or bend

#### Flexibility

Can be bent without breaking

#### Absorbency

A material's ability to soak up water (opposite: waterproof)

#### Conductivity (thermal)

A material that allows heat to travel through it easily is a **good conductor** of heat

Thermal insulators are **bad** conductors of heat

#### Conductivity (electrical)

A material's ability to allow electricity to flow through it (metals)

Electrical insulators do **not** allow electricity to flow through them

