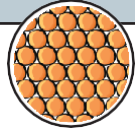
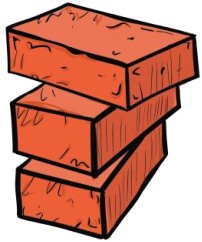


# Materials Knowledge Organiser

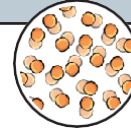
## Solid



- stay in one place
- keep their shape
- do not flow
- always take up the same amount of space
- do not spread out
- can be cut or shaped



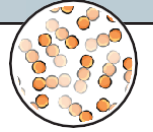
## Liquid



- can flow or be poured
- not easy to hold
- change their shape to fit the container they are in
- take up the same amount of space
- volume stays the same



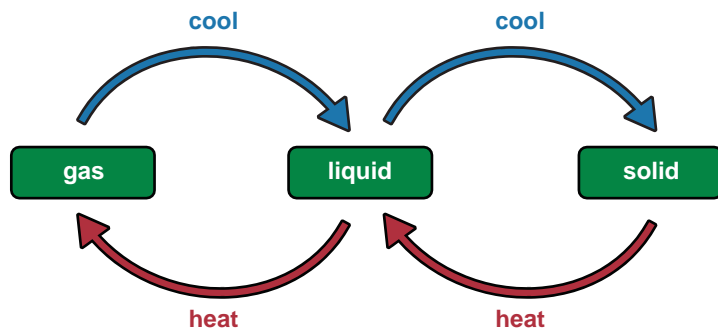
## Gas



- often invisible
- do not keep shape
- do not take up the same amount of space
- can change shape and volume
- can be squashed



States of matter can change when they are heated or cooled.



Words to describe materials:

- hard
- flexible
- waterproof
- opaque
- soft
- transparent
- magnetic
- durable
- absorbent
- translucent

Different materials are suitable for different jobs because of their qualities and properties.

For example, rubber is a good material for tyres because it is **durable**.



## Reversible changes

Reversible changes are when you can get the original materials back. Materials can be separated in different ways.



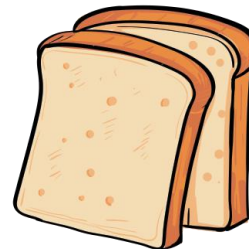
making ice cubes



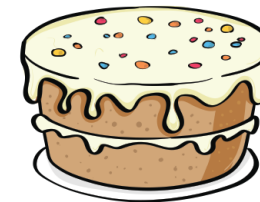
mixing sugar in tea

## Irreversible changes

Irreversible changes are when you cannot get the original materials back again. Heating and chemical reactions can both cause irreversible changes.



making toast



baking a cake

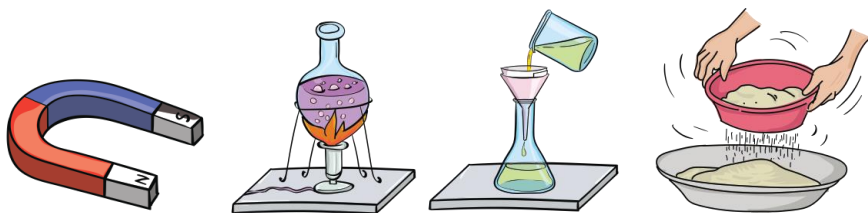
## Separating materials

**evaporation** – used for separating a soluble solid and a liquid

**sieving** – used for separating two solids

**magnets** – used for separating magnetic and non-magnetic materials

**filtration** – used for separating a liquid and a solid



## Solutions

A **solution** is made when a material dissolves in a liquid. Sugar and water are **soluble** materials. An **insoluble** material does not dissolve in liquid, such as sand. Materials in a solution can be separated by **evaporation**.

