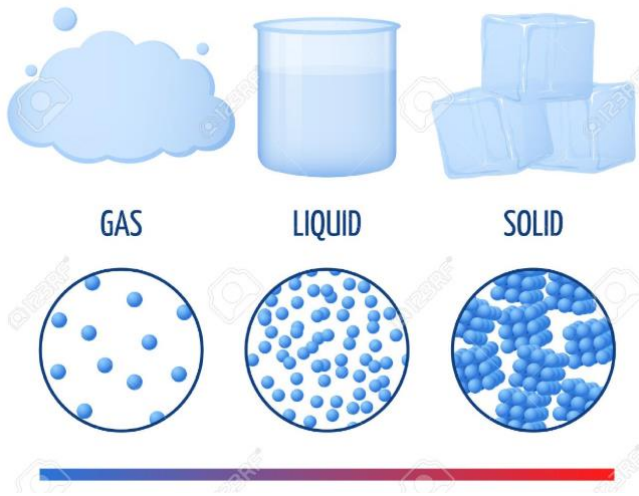




# STATES OF MATTER



## Overview



**Matter** makes up our planet and the whole Universe.

There are three main states of matter: **solids**, **liquids** and **gases**.

Matter can change state depending on its **temperature**.

Several processes describe the processes of **changing states**, e.g. **melting**, **evaporation**, **freezing** and **condensation**.

The **water cycle** depends upon some of these processes.

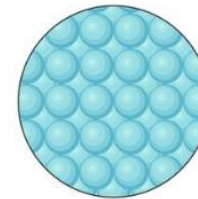
## Solids, Liquids & Gases

### SOLIDS

**Particles** hold their shape.  
Solids can be **rigid**, soft or even squashy.  
Solids have a fixed volume.



SOLID

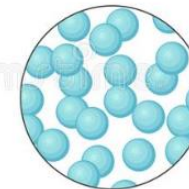


### LIQUIDS

**Particles** form a pool, not a pile and take the shape of their container.  
They can change shape but have a fixed volume.  
They can flow or be poured.



LIQUID

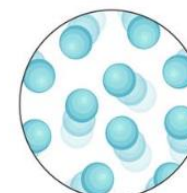


### GASES

**Particles** can spread out to completely fill an area.  
They have no fixed shape but they do have a mass.



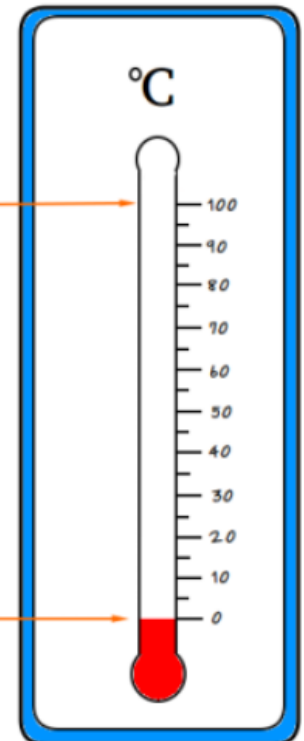
GAS



water **boils** 100 °C

*When water is boiled, it evaporates into a water vapour.*

water **freezes** 0 °C



**Thermometer: Degrees Celsius °C**

# Changing States of Matter

States of matter can change, depending upon the **temperature** of the matter.



**Melting** is the process of changing a solid into a liquid.



**Freezing** is the process of turning a liquid into a solid.



**Condensation** is the process of changing a gas into a liquid.



**Evaporation** is the process of changing a liquid into a gas.

## Role in the Water Cycle



Changing states of matter play an important part in the **water cycle**:

Water from lakes, puddles, rivers and seas is evaporated by the sun's heat, turning it into water vapour.

This water vapour (water in the form of gas) rises, then cools down to form water droplets in clouds (condensation).

When the droplets get too heavy, they fall back to the earth as rain, sleet, hail or snow (**precipitation**).

### Solids

Wood

Ice Cube

Glass

### Liquids

Coffee

Water

Shower Gel

Carbon Dioxide

### Gases

Air

Oxygen