



### Lesson Sequence



1. Compare and group the 3 states of matter



2. Explore how particles behave in solids, liquids and gases



3. Investigate melting points



4. Explore freezing and boiling points



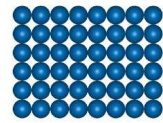
5. Explore evaporation and condensation



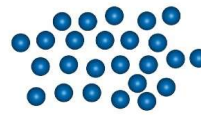
6. Understand the water cycle

### States of matter

Everything in our universe is made of **matter**. There are 3 states of matter:



**Solid**



**Liquid**

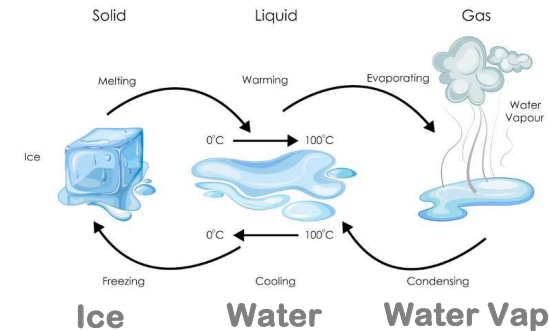


**Gas**

**Solid** particles have **strong** bonds so solids have a fixed shape. **Liquid** particles have **weaker** bonds and more energy so liquids can change shape. **Gas** particles have **really weak** bonds so gases can spread out and move freely.

### Changes of state

States of matter can change. Substances can be **heated** or **cooled** to change from one state to another.



In water, the **melting** and **freezing point** is **0°C** and the **boiling point** is **100°C**. Different substances have different melting, freezing and boiling points.

### Condensation



When **water vapour (gas)** touches a **cold** surface, the particles **lose energy** and the bonds become **stronger**, turning the gas into a **liquid**.













### Evaporation



**Heating liquid** water **increases** the particle's energy and the bonds become **weaker**, turning it into a **gas**. The **hotter** the temperature, the **faster** the rate of evaporation.



**Rocket Words**

	<b>thermometer</b>	an instrument that measures temperature in degrees Celsius (°C) or Fahrenheit (°F)
	<b>melting point</b>	the point where a solid melts and forms a liquid when heated
	<b>freezing point</b>	the point where a liquid freezes and forms a solid when cooled
	<b>boiling point</b>	the point where a liquid evaporates and forms a gas when heated
	<b>solid</b>	state of matter that holds its form and shape
	<b>liquid</b>	state of matter which flows and forms a pool
	<b>gas</b>	state of matter which flows, can spread out and can be squashed
	<b>evaporation</b>	the process where a liquid turns into a gas when heated
	<b>particles</b>	one very small part of matter
	<b>condensation</b>	the process where a gas forms a liquid when cooled
	<b>water vapour</b>	the name of water as a gas
	<b>substance</b>	the material, or matter, of which something is made