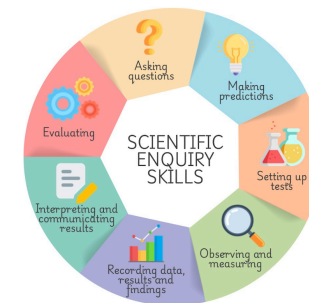




Science Knowledge Organiser - States of Matter

Potential Careers: Chemical Engineer, Pharmacologist, Pharmaceutical Pharmacist, Chemist

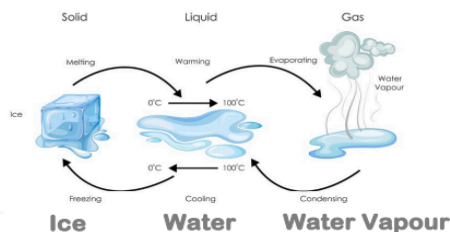


Lesson Sequence



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.

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.

Condensation



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

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.

Vocabulary

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

Careers connected to States of Matter:
Chemical Engineer, Pharmacologist,
Pharmaceutical pharmacist, Chemist.



Scientist Study

Anders Celsius

Anders Celsius is perhaps best known for his Celsius temperature scale, which is used in thermometers throughout the world and for establishing Sweden's first astronomical observatory in Uppsala in 1741.



Celsius is best known for his 100 degree Celsius temperature scale, which is used throughout the world (apart from is the US, where the Fahrenheit scale is used). During the 18th century, the thermometer was widely used, mostly to measure the outdoor temperature. The temperature of a healthy person and the freezing point of water were the reference points used.