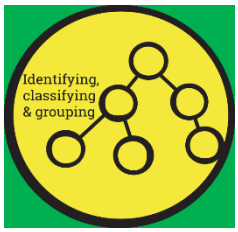
States of Matter

Scientific Enquiries



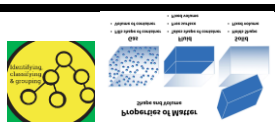
WHO?

Brand new topic

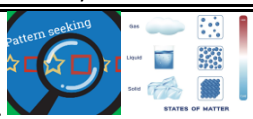
Chemistry

Vocabulary			
melting point	The point where a solid melts and forms a liquid when heated	**liquid**	A state of matter that flows and forms a pool
freezing point	The point where a liquid freezes and forms a solid when cooled	**gas**	A state of matter that flows, can spread out and can be squashed
boiling point	The point where liquid evaporates anf forms a gas when heated	**particles**	One very small part of matter
solid	A state of matter that holds its form and shape	**water cycle**	The process of water changing into different states of matter in nature

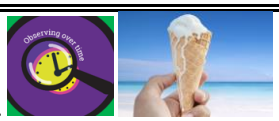
WHAT?

1. 

- There are 3 main **states of matter**: **solids**, **liquids** and **gases**.
- Solids **hold their shape** and are **easy to pick up**. The volume of a solid doesn't change unless we change it. **Water** in its **solid** form is **ice**.
- **Liquids** can flow and form a pool if poured. They can **change their shape** to fit their container.
- **Gases** will **change its volume** to fit a container. Gases can spread out easily.

2. 

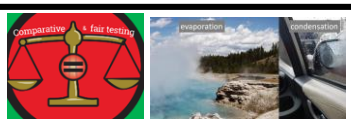
- The organisation of **particles** is different in solids, liquids and gases.
- **Solid particles** are packed closely together and only move when vibrating, which is why they have a fixed shape.
- **Liquid particles** move more freely and are randomly arranged.
- **Gas particles** are spaced widely apart, move quickly and have more energy.

3. 

- When a **solid** is **heated** to reach its **melting point**, it becomes a **liquid**.
- **Particles** in the solid **absorb energy** as they are heated which means they move around more, turning into **liquid particles**.
- The **melting point** of **water** is 0 degrees.
- The melting point is different for different substances and materials.

4. 

- When a **liquid** reaches its **freezing point** (cooled down), it becomes a **solid**. Liquid particles **lose energy** when they are cooled so they move around less, turning them into **solid particles**.
- When a **liquid** reaches its **boiling point** (heated up), it becomes a **gas**. Liquid particles **gain more energy** and move round more, turning them into gas particles.
- The freezing point of water is 0 degrees; the boiling point is 100.

5. 

- **Substances** are able to **change state** through **heating** and **cooling**.
- When a **gas is cooled**, it changes into a **liquid**. This process is **condensation**. As the gas cools, the **particles lose energy** and move around less.
- When a **liquid is heated** to turn into a **gas**, it is called **evaporation**.

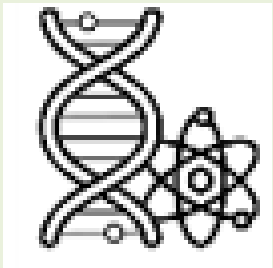
6. 

- **71%** of the **Earth's surface** is covered in **water**. Water doesn't stay in one place – it **flows around the Earth**. This is known as the **water cycle**.
- Water is **evaporated** from the **heat of the sun** and turns into a **gas (water vapour).** This rises into the **atmosphere**. It **cools** and forms **clouds**. Water **falls from the sky** to the ground **(precipitation).**

Helpful links

Learn the water cycle song!

What is chemistry?



Do you want to know more about states of matter?

Investigations to try at home