

Science Subject Knowledge Bank

Year 4: States of Matter

<u>Vocabulary</u>	<u>Definition</u>
Gas	Have particles that are spread out and can move.
Solid	Have particles that are packed closely together and take a fixed shape.
Liquid	Have particles that are close together but random, take the shape of the container it is in.
Evaporation	The process of turning from a liquid into a gas by heating.
Condensation	The conversion of a gas into a liquid.

What is the difference between a solid, a liquid and a gas?

- In the solid state, the material holds its shape.
- Solids have vibrating particles which are closely packed in and form a regular pattern.
- This explains the fixed shape of a solid and why it can't be poured. Solids always take up the same amount of space.
- In the liquid state, the material holds the shape of the container it is in.
- This means that liquids can change shape, depending on the container.
- Liquids have particles which are close together but random.
- Liquid particles can move over each other. Liquids can be poured
- In the gas state, particles can escape from open containers.
- Gases have particles, which are spread out and move in all directions.

What happens when states of matter are heated and cooled?

- When water (in its liquid form) is heated, the particles start to move faster and faster until they have enough energy to move about more freely. The water has evaporated into a water vapour.
- When water is cooled, the particles start to slow down until a solid structure (ice) is formed. The water has frozen. The temperature at which water turns to ice is called the freezing point. This happens at 0 C

