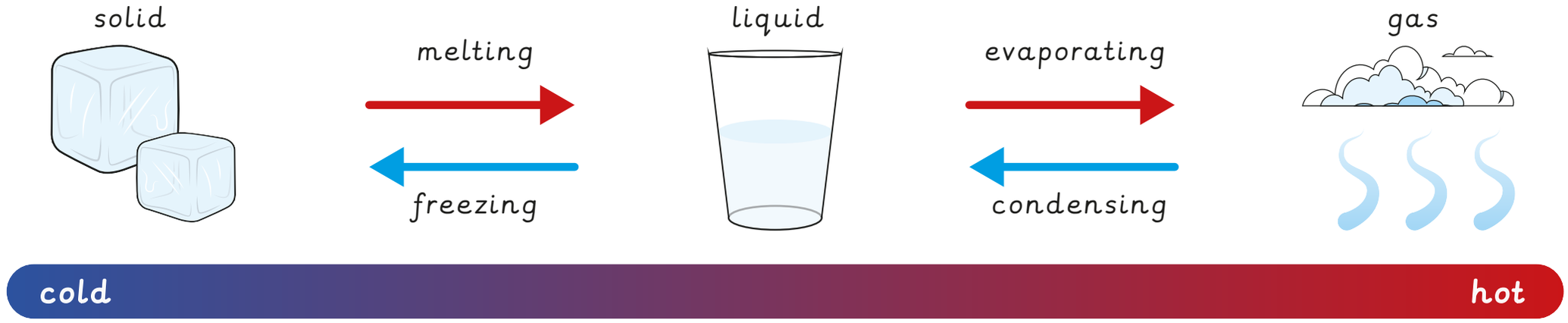
Science - States of matter

Matter takes up space and can be weighed. There are three states of matter: solid, liquid and gas.

Solids have a fixed shape and volume. The shape can be changed by applying a force.	Liquids have a fixed volume but not a fixed shape. They will flow when poured and take the shape of the container they are in.	Gases do not have a fixed shape or volume. They will spread out to fill a container.



Cooling a liquid below its **freezing point** will cause it to freeze. **Freezing** is a change of state from a liquid to a solid.	Heating a solid above its **melting point** will cause it to melt. **Melting** is a change of state from a solid to a liquid.	Cooling a gas below its **condensing point** will cause it to condense. **Condensing** is a change of state from a gas to a liquid.	Heating a liquid above its **boiling point** will cause it to evaporate. **Evaporating** is a change of state from a liquid to a gas.

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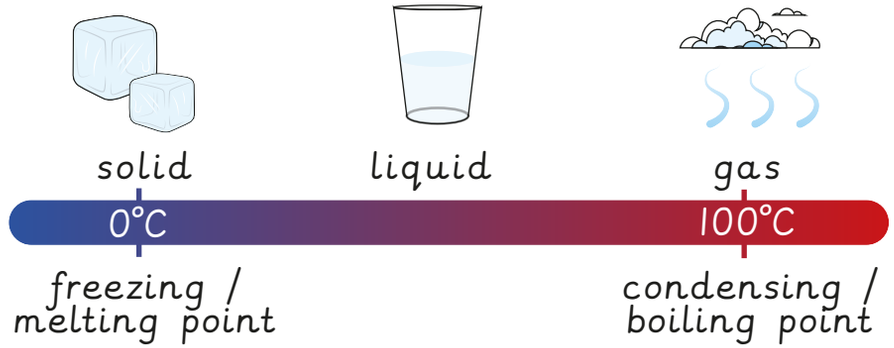
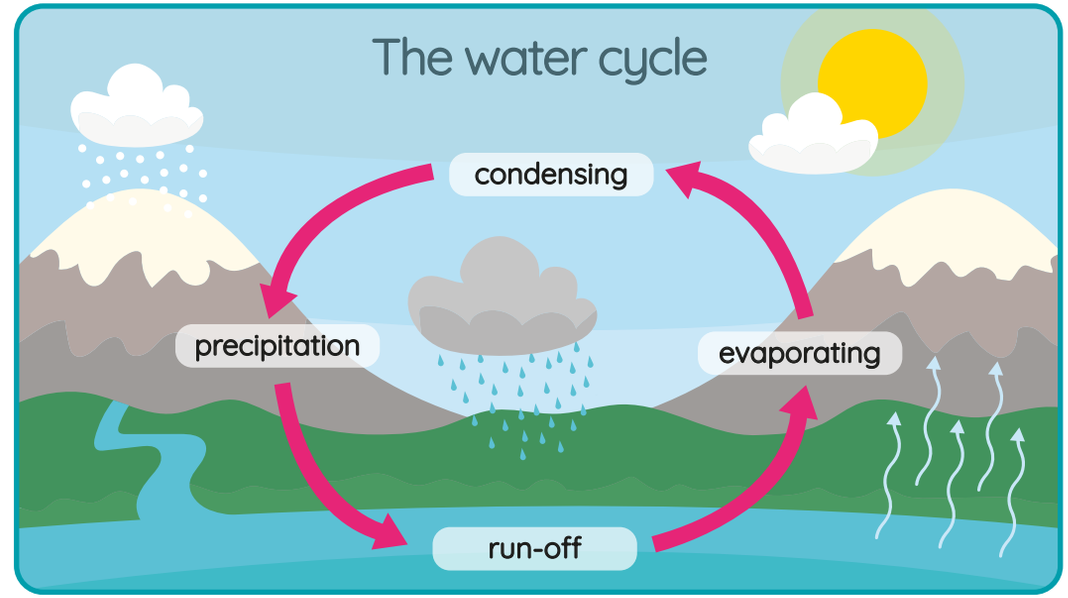
Temperature affects the **rate** (how quickly) at which **changes of state** happen. The windier and hotter the weather, the faster the **evaporation rate**.

Water is a material that can exist in all three states depending on the temperature.



The water cycle is being affected by **climate change**. Increasing temperatures are causing:

- Melting of ice and snow; leading to rising sea levels.
- Faster evaporation rates:
    - causing more rainfall in some areas, leading to **flooding**;
    - causing less rainfall in some areas, leading to **droughts**.



The water cycle is the constant movement of water from one place and state to another:

- **Evaporating**: water in water stores, such as seas and lakes, is heated by the Sun and evaporates into water vapour.
- **Condensing**: water vapour cools as it rises and condenses to form clouds; tiny liquid droplets of water.
- **Precipitation**: water falls from the clouds in a liquid state (e.g. rain) or a solid state (e.g. snow).
- **Run-off**: precipitation runs off the land into rivers and streams and back to water stores like the sea.

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