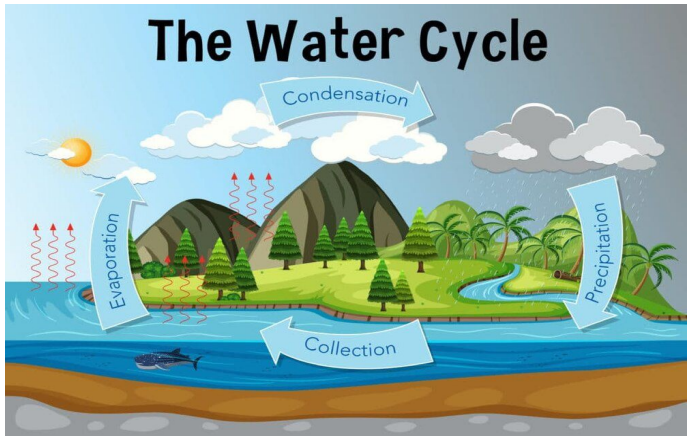
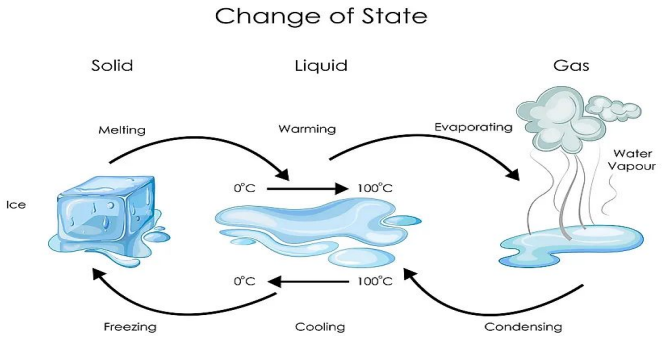
Grange Park Primary School Year 4 Autumn 1 Science

States of Matter

Significant Scientists

Robert Boyle 	An Anglo-Irish Chemist (1627-1691) who studied the behaviour of gases, thought all materials were made of particles and linked states of matter with the movement of particles.
Dorothy Hodgkin 	The only British woman (1910- 1994) to have won the Nobel Prize for Chemistry. It was for her work on the structure of molecules.





Key Knowledge

Solids: When materials hold their shape. Their particles are closely packed and form a regular pattern. Their shape is fixed and they will always take up the same amount of space. Examples: ice, wood, glass, diamond.

Liquids: When materials hold the shape of the containers they are in and so can change shape. Their particles are close together but can move over each other. Liquids can be poured. Examples: water, milk, washing-up liquid.

Gases: Gases can escape from open containers. They often cannot be seen. They have particles which can spread and move in all directions. Examples: steam, hydrogen, oxygen, carbon dioxide.

The Water Cycle: Water continually moves around the Earth in the water cycle. The Sun evaporates water into water vapour. When the water vapour cools down it turns into liquid water and it rains. In very cold places the water freezes into snow or ice.

Working Scientifically Skills

Oral and written explanations, conclusion, predictions, classify, changes, data, evidence, improve, secondary sources.

Interpret research.

Relevant questioning.

Use equipment – thermometer.

Data – gather, standard units, record, classify, present.

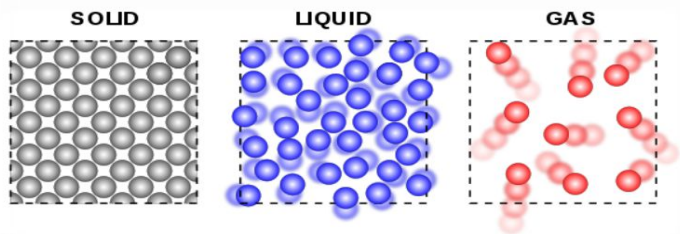
Record – drawings, labelled diagrams, keys, bar charts, tables

Enquiry Skills

Observing over time
Fair testing
Pattern seeking
Identifying and classifying
Research

Key Vocabulary

precipitation	Rain, snow, sleet, dew, etc, formed by condensation of water vapour in the atmosphere.
evaporation	The process of turning from a liquid into a vapour (a gas).
condensation	The process of turning from vapour (a gas) into liquid.
particle	A tiny amount or small piece.
temperature	A measure of how hot or cold something is.
freezing	Turning into ice or another solid as a result of cooling.
heating	Raising the temperature of something.
cooling	Lowering the temperature of something.
melting	Turning into a liquid as a result of heating.
freezing point	The temperature at which a liquid turns into a solid when cooled.
melting point	The temperature at which a solid will melt.



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