St John Fisher RC Primary School
Year 4 Knowledge Organiser – Autumn Term Two - Science

What we will be learning

States of Matter
Lesson 1 and 2
I know:
- A solid has a fix shape and a fixed volume.
- A liquid has no fixed shape but has a fixed volume.
- A gas has no fixed shape and no fixed volume.
- That volume is the amount of space a solid, liquid or gas takes up.
- Water can change shape.

Lesson 3
- Water changes to ice at 0 degrees.
- Water changes to gas at 100 degrees Celsius.
- Melting is when ice changes to water.
- When water changes from gas to liquid this is called condensation.

Lesson 4
- How to use equipment to measure.
- How to plan a melting experiment.

Lesson 5
- How to explain the water cycle.

Lesson 6 and 7
- How to plan evaporation experiments.

Key Knowledge:
Materials exist in three states: solid, liquid, and gas, and some can change between these states. For example, ice (a solid) can melt into water (a liquid) when heated, while water can evaporate into steam (a gas). Temperature plays a crucial role in these changes, as some materials change state at specific temperatures measured in degrees Celsius (°C). In the water cycle, evaporation is when water turns into vapor, and condensation is when vapor becomes liquid again. The rate of evaporation increases with higher temperatures, making it essential to observe these processes scientifically.

Key Facts to Remember

- Materials can be solids, liquids, or gases, and some can change between these states.
- You can compare and group materials based on whether they are solids, liquids, or gases.
- Some materials change state when heated or cooled. This can be measured in degrees Celsius (°C).
- Temperature affects how substances change state; for example, heating can melt solids into liquids.
- Evaporation (water turning into vapor) and condensation (vapor turning back into liquid) are key processes in the water cycle.
- The rate of evaporation increases with higher temperatures.

Key Vocabulary and Glossary

Condensation	The process where a gas cools and turns back into a liquid, such as water vapor becoming dew
Evaporation	The process by which a liquid turns into a gas, often occurring when the liquid is heated, like water turning into steam
Gas	A state of matter that has no fixed shape or volume and expands to fill its container, such as air
Liquid	A state of matter that has a definite volume but takes the shape of its container, like water or juice
Melting	The process of a solid changing into a liquid when heated, such as ice melting into water
Solid	A state of matter with a definite shape and volume, such as rocks or ice
State of Matter	The physical form of a substance, determined by its temperature and pressure, including solid, liquid, and gas
Temperature	A measure of how hot or cold something is, usually measured in degrees Celsius (°C), which affects the state of matter





