

TOPIC	NATIONAL CURRICULUM	KEY VOCABULARY	POSSIBLE TRIP
STATES OF MATTER	- Compare and group materials together, according to whether they are solids, liquids or gases. - Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). - Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	TIER 2 (Academic): Measure, observe, compare, state, process, rate, cycle, investigate. TIER 3 (Topic Specific): Solid, liquid, gas, evaporation, condensation, particle, temperature, freezing, heating, melt, degree Celsius, boil, freeze, solidify, semisolids, materials, water cycle, rain, water, precipitation, heat, cool, collection, water vapour.	Explorer Dome
PRIOR LEARNING	Y2: Everyday materials, testing physical properties, changing shapes through forces.		

	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6
ENQUIRY QUESTION	How can we sort materials into solids, liquids, and gases?	What happens to materials when they are heated or cooled?	At what temperature do different materials change state?	What factors affect how fast liquid water evaporates into gas?	How does gas turn back into liquid through condensation?	How does water cycle continuously around planet Earth?
LEARNING OBJECTIVES	To compare and classify materials by solid, liquid, and gas state properties.	To observe phase changes (melting, freezing, solidifying) under temperature changes.	To measure melting points of different materials accurately in °C.	To investigate how temperature affects the rate of evaporation.	To investigate condensation on cold surfaces.	To model and describe the stages of the water cycle.
ACTIVITY WORKING SCIENTIFICALLY SKILLS	CLASSIFYING: Test items (wood, oil, water, air, sand, foam); classify by shape-holding, pooling, or escaping container behavior.	OBSERVING OVER TIME: Heat ice blocks, chocolate, and butter; observe solid to liquid melting, then cool to observe solidifying.	COMPARATIVE TESTING: Use digital thermometers to record exact temperatures (°C) at which ice melts (0°C) and water boils (100°C).	COMPARATIVE TESTING: Track puddle/wet cloth drying rates at warm vs cold room temperatures; record water volume loss over time.	OBSERVING: Place ice traps over hot water beakers; observe water vapor rising, cooling on metal lids, and dripping as condensed liquid.	MODELLING: Construct sealed "water cycle in a bag" window models; map precipitation, evaporation, condensation, and collection.

ASSESSMENT	Define solid (holds shape), liquid (forms pool), gas (escapes container).	State that heating melts solids to liquids and cooling freezes liquids to solids.	Record temperature accurately in °C using standard thermometers.	Explain that higher temperatures increase the rate of evaporation.	Explain condensation as cooling gas turning into liquid water.	Diagram and label all 3 main stages of the water cycle correctly.
END POINT ASSESSMENT	Pupils can classify materials as solids, liquids, or gases based on state behaviour, measure melting/freezing temperatures accurately in °C, explain evaporation/condensation, and detail every phase of the water cycle.					
HIGHER ORDER QUESTIONS	Why does sand take the shape of its container if it is classified as a solid?	Is melting a reversible or irreversible state change?	Why do different metals have completely different melting points than water?	Why does laundry dry much faster on a windy, warm summer day?	Why do bathroom mirrors fog up during a hot shower?	What would happen to global weather if ocean evaporation stopped?
FURTHER OPTIONAL QUESTIONS/BIG QUESTIONS FOR DISPLAY	Where does a puddle go when it disappears on a sunny day? Is sand a liquid because it can be poured from a cup? Why does water form on the outside of a cold drink bottle on a hot day?					
INCLUSION & ADAPTATION	Tactile sorting bins with clear visual state icons (Cube=Solid, Drop=Liquid, Cloud=Gas).	Visual thermal cards showing flame (Heated/Melts) vs snowflake (Cooled/Freezes).	Thermometer visual templates with pre-marked colour bands for 0°C and 100°C.	Measuring water loss on wet paper towels using simplified balance scales.	Hands-on steam glass demonstration with direct touch feeling of outside water drops.	Pre-labelled water cycle diagram template with sticky cut-out arrow tags.
GREATER DEPTH	Research non-Newtonian fluids (oobleck, cornstarch) and evaluate state anomalies.	Explain particle motion and arrangement changes during solid-liquid-gas transitions.	Research industrial melting points of metals (gold, iron) used in manufacturing.	Plot evaporation rates across varied surface area containers on multi-line graphs.	Investigate dew point atmospheric conditions and fog formation.	Calculate global water distribution percentages (oceans vs ice caps vs atmospheric water).