

National Curriculum Objectives	Sticky Knowledge	Vocabulary
<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● On Earth all matter exists in one of three different states: solid, liquid or gas. ● Particles are tiny bits of matter that make up everything in the universe. ● A solid is a substance that stays the same shape, whether it is in a container or not. ● A liquid is a substance that can flow and take on the shape of the container. ● A gas is a substance that has no fixed shaped and which will escape from an unsealed container. ● States change when matter is heated or cooled. ● Temperature can be measured in degrees Celsius. Boiling point is 100 degrees Celsius and freezing point is 0 degrees Celsius. ● Melting is the process of a solid heating and changing into a liquid. ● Freezing is the process of a liquid cooling and changing into a solid. ● Evaporation is the process of a liquid heating and changing into a gas. ● Condensation is the process of a gas cooling and changing into a liquid. ● Water on Earth is constantly moving, it is recycled over and over again. This is called The Water Cycle. 	<p>Particle, matter, solid, liquid, gas, melting, freezing, condensation, evaporation, water vapour, precipitation, substance, temperature, Celsius</p>
<p>Links to NHFS core curriculum themes</p>		<p>Key Scientists</p>
<p>Sustainability – preservation of water Aspirations – e.g. Meteorologist, weather presenter Equality – access to water (Water Aid), Fair Trade</p>		<p>Daniel Gabriel Fahrenheit (Physicist) Antoine Lavoisier (Chemist)</p>
<p>Prior/Future Learning</p>		<p>Key Questions</p>
<p><u>In KS1 children should:</u></p> <ul style="list-style-type: none"> ● Distinguish between an object and the material from which it is made. ● Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. ● Describe the simple physical properties of a variety of everyday materials. ● Compare and group together a variety of everyday materials on the basis of their simple physical properties. ● Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. ● Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <p><u>In Year 5 children will:</u></p> <ul style="list-style-type: none"> ● Compare and group together everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. ● Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. ● Decide how mixtures might be separated, including through filtering, sieving and evaporating. ● Give reasons based on evidence from comparative and fair tests, for the particular uses of everyday materials, including wood, metals and plastic. ● Demonstrate that dissolving, mixing and changes of state are reversible changes. ● Explain that some changes result in the formation of new materials, and this kind of change is usually not reversible, including changes associated with burning and the action of acid on bicarbonate of soda. 		<p>How does the amount of water added to flour affect its state? Are all liquids the same? Are all solids hard? How does the type of chocolate affect its melting temperature? What is the melting temperature of ice and how does it compare with the freezing temperature of water?</p> <p>Big Question How can water change?</p>
<p>How does the mass  of a block of ice affect how long it takes to melt? How does the surface area of water affect how long it takes to evaporate?</p>	<p>Can you group these  materials and objects into solids, liquids, and these objects/materials based on their temperature?</p>	<p>How  does the level of water in a glass change when left on the windowsill?</p> <p>Is there  a pattern in how long it takes different sized ice lollies to melt?</p>
<p> What are hurricanes, and why do they happen?</p>		

