

Year4				
<i>Topic</i>	<i>Prior Learning</i>	<i>Present learning</i>	<i>Misconceptions</i>	<i>Future learning</i>
<p>States of matter National Curriculum</p> <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"> Distinguish between an object and the material from which it is made. (Y1 - Everyday materials) Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials) Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials) Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials) Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials) Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials) 	<p>Knowledge and Understanding–</p> <ul style="list-style-type: none"> –compare materials according to whether they are solids, liquids and gases. - understand how heat and cold changes the state of matter –understand that we can change the melting and boiling point of substances <p>Investigations:–</p> <ul style="list-style-type: none"> –sort materials as liquid, gases and solids – observe how heat and cold affects the state of matter and research the temperature at which this happens in degree Celsius -plan a fair test to investigate factors that affect the rate of evaporation <p>Vocabulary: energy temperature solid liquid gas melt precipitate freeze</p>	<p>Some children may think:</p> <ul style="list-style-type: none"> 'solid' is another word for hard or opaque solids are hard and cannot break or change shape easily and are often in one piece substances made of very small particles like sugar or sand cannot be solids particles in liquids are further apart than in solids and they take up more space when air is pumped into balloons, they become lighter water in different forms – steam, water, ice – are all different substances all liquids boil at the same temperature as water (100 degrees) melting, as a change of state, is the same as dissolving steam is visible water vapour (only the condensing water droplets can be seen) clouds are made of water vapour or steam the substance on windows etc. is condensation rather than water the changing states of water (illustrated by the water cycle) are irreversible evaporating or boiling water makes it vanish evaporation is when the Sun sucks up the water, or when water is absorbed into a surface/material. 	<ul style="list-style-type: none"> Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. (Y5 - Properties and changes of materials) Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. (Y5 - Properties and changes of materials) Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. (Y5 - Properties and changes of materials) Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. (Y5 - Properties and changes of materials) Demonstrate that dissolving, mixing and changes of state are reversible changes. (Y5 - Properties and changes of materials) Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. (Y5 - Properties and changes of materials)

