

## Scientific knowledge and understanding of Materials

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Identifying and naming materials	C1	<p>I know that objects are items or things.</p> <p>I know that a material is what an object is made from.</p> <p>I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</p>		<p>I know that rocks can be grouped based on their appearance or properties, (e.g. colour, texture, hardness, permeability.)</p> <p>I know that rocks may contain grains, crystals or fossils.</p> <p>I know that grains and crystals appear differently and can be used to classify rocks.</p> <p>I know that soils are made from rocks and dead matter.</p>	<p>I know that all substances around us can exist as solids, liquids and gases.</p>		
	C2	<p>I know that property refers to how a material can be described.</p> <p>I know the physical properties of a variety of everyday materials.</p> <p>I know that materials can be grouped based on their physical properties.</p>	<p>I know why objects are made from particular materials and to give examples of their suitability.</p> <p>I know that one material can be used for a range of purposes (and to give examples.)</p> <p>I know that different materials can be used for the same purpose (and to give examples.)</p> <p>I know why certain materials are unsuitable for particular objects.</p>	<p>I understand the relationship between the properties of rocks and their uses.</p>	<p>I know that a property of a solid is that it keeps its shape unless a force is applied to it.</p> <p>I know that a property of a liquid can flow freely and take on the shape of a container.</p> <p>I know that a property of a gas does not have a fixed shape and can escape from an unsealed container.</p>	<p>I can describe a broader range of materials and their properties, including hardness, solubility, transparency, conductivity and response to magnets.</p>	

Change	C3		<p>I know that a force must be applied to change the shape of a solid object.</p> <p>I know that solid objects can be squashed, bent, twisted or stretched.</p> <p>I know that different solid objects may take a different amount of force to change shape.</p>	<p>I know that fossils can form from the remains of living things.</p> <p>I know that rocks can change over time (e.g. erosion, weathering).</p>	<p>I know that heating causes solids to turn into liquids (melting) and liquids to turn into gases (evaporating).</p> <p>I know that cooling causes gases to turn into liquids (condensing) and liquids to turn into solids (freezing).</p> <p>I know that water can exist as a solid, a liquid or a gas.</p> <p>I know that the melting point of water is zero degrees Celsius, and the boiling point of water is 100 degrees Celsius.</p> <p>I know that water flows around the world in a continuous process called the water cycle.</p> <p>I know that in the water cycle, evaporation is when bodies of water are heated and turn into water vapour.</p> <p>I know that in the water cycle, condensation is the process of water vapour cooling to form water droplets in clouds, which can result in precipitation.</p> <p>I know that the rate of evaporation increases as temperature rises.</p>	<p>I know that some substances will dissolve in a liquid to form a solution.</p> <p>I know the factors that affect the time taken to dissolve, including temperature, and stirring.</p> <p>I know that dissolving, mixing and changes of state are reversible changes.</p> <p>I know that some liquids and solids can be separated using sieving, filtering and evaporation and to describe these processes.</p> <p>I know that some changes result in the formation of new materials and that these are usually irreversible. (e.g. burning, rusting, the action of acid on bicarbonate of soda).</p>	