

Chemistry				
	Use of everyday materials	Rocks	States of matter	Properties and changes of materials
<b>EYF S</b>	<p>Autumn 1: Know the names of simple everyday materials: wood, paper, plastic, glass, metal.</p> <p>Identify what familiar items are made of.</p>		<p>Autumn 2: Know that water can be frozen to make ice.</p> <p>Know that ice can be melted to make water.</p> <p>Know that increased heat will make ice melt faster.</p>	<p>Autumn 1: Describe simple properties of everyday materials.</p> <p>Autumn 2: Know that some things can be mixed to make new things (baking)</p> <p>Know that when ingredients have been mixed to make cakes, they cannot be separated again.</p>
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<b>Year 1</b>	<p>Identify a variety of different objects. <i>Y1 IM L2, L4, L6</i></p> <p>Understand that the same object can be made from different materials. <i>Y1 IM L4</i></p> <p><b>Distinguish between an object and the material from which it is made.</b> <i>Y1 IM L1, L4, L6</i></p> <p>Match objects made out of the same material. <i>Y1 IM L2</i></p> <p>List some common materials including solids and liquids. <i>Y1 IM L2, L3, L6</i></p> <p><b>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</b> <i>Y1 IM L1, L2, L3, L4, L5, L6</i></p> <p>Recall and understand the terms hard/soft, stretchy/stiff, shiny/dull, rough/smooth and bendy/not bendy. <i>Y1 CM L1, L2, L3, L6</i></p> <p>Identify materials that feel soft, hard, flexible, rough, smooth, cold, warm, brittle, blunt, sharp, stretchy, squashy, sticky and/or transparent. <i>Y1 CM L1, L3, L6</i></p> <p>Choose the correct material from a selection matching a description outlining its physical properties. <i>Y1 CM L1</i></p> <p><b>Describe the simple physical properties of a variety of everyday materials.</b> <i>Y1 CM L1, L2, L4, L5, L6</i></p> <p>Outline differences between two different materials. <i>Y1 CM L1, L3</i></p> <p>Outline similarities between two different materials. <i>Y1 CM L1, L3</i></p> <p>Sort materials into two groups using opposites or by whether something does or does not have a certain property. <i>Y1 CM L3</i></p> <p><b>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</b> <i>Y1 CM L1, L2, L3, L4, L5, L6</i></p>			
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<b>Year 2</b>	<p>Identify the properties of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard. <i>Y2 UOM L1, L2</i></p> <p>Identify and name a variety of different materials. <i>Y2 UOM L1</i></p>			

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	<p>Know that some objects are made from more than one material and identify the different materials. <i>Y2 UOM L1</i></p> <p>Understand that similarities in physical properties of different materials can make them suitable for use in the same type of object. <i>Y2 UOM L2, L6</i></p> <p>Explain why a certain material is suitable for an object. <i>Y2 UOM L2, L4, L5</i></p> <p>Explain why a certain material is unsuitable for an object. <i>Y2 UOM L2, L5</i></p> <p><b>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</b> <i>Y1 UOM L1, L2, L3, L4, L5, L6</i></p> <p>Understand that physical forces can make materials change shape. <i>Y2 CS L1, L2, L3, L4, L5, L6</i></p> <p>Identify materials that can be squashed and those which cannot. <i>Y2 CS L5</i></p> <p>Compare the stretchiness of different materials. <i>Y2 CS L2</i></p> <p>Understand that bending can change the shape of some materials. <i>Y2 CS L3</i></p> <p>Classify materials according to their ability to bend. <i>Y2 CS L3</i></p> <p>Recognise that some materials can be twisted together. <i>Y2 CS L4</i></p> <p>Recognise that twisting materials together can increase the strength of the material. <i>Y2 CS L4</i></p> <p>Compare materials that change their shape by squashing, bending, twisting or stretching. <i>Y2 CS L1, L6</i></p> <p><b>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</b> <i>Y2 CS L1, L2, L3, L4, L5, L6</i></p>			
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<b>Year 3</b>		<p>Know that there are different types of rocks. <i>Y3 RAS L1</i></p> <p>Understand that different rocks have different observable features, e.g. colour. <i>Y3 RAS L1</i></p> <p>Understand that different rocks have different physical properties. <i>Y3 RAS L2</i></p> <p>Be able to describe some properties of rocks, e.g. hardness. <i>Y3 RAS L2</i></p> <p>Be able to compare and contrast the properties of different rocks. <i>Y3 RAS L2</i></p> <p>Identify different rocks using research or by comparing to samples. <i>Y3 RAS L2</i></p> <p><b>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</b> <i>Y3 RAS L1, L2</i></p> <p>Know that rocks now cover the Earth but they haven't always been there. <i>Y3 RAS L3</i></p>		

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		<p>Know that different rocks were formed in different ways. Y3 RAS L3</p> <hr/> <p>Be able to describe how sedimentary rock is formed. Y3 RAS L3</p> <hr/> <p>Know that a fossil is the remains of a once living thing that has long since died and been preserved and changed in sedimentary rock as the rock formed. Y3 RAS L3, L4</p> <hr/> <p><b>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</b> Y3 RAS L3, L4</p> <hr/> <p>Know that over time rocks can be broken down into smaller pieces by processes such as weathering. Y3 RAS L6</p> <hr/> <p>Understand that soil contains small parts of rocks. Y3 RAS L5, L6</p> <hr/> <p>Understand that soil contains rotting organic matter. Y3 RAS L5, L6</p> <hr/> <p>Recognise that there are different types of soil. Y3 RAS L5</p> <hr/> <p>Know that different soils can have different characteristics, e.g. that they can be different colours and textures. Y3 RAS L5</p> <hr/> <p>Know that the type of soil depends on the balance of its constituent parts. Y3 RAS L5, L6</p> <hr/> <p><b>Recognise that soils are made from rocks and organic matter.</b> Y3 RAS L5, L6</p>		
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<b>Year 4</b>			<p>Understand that objects are made from materials. Y4 COS L1</p> <hr/> <p>Know that different materials have different properties. Y4 COS L1</p> <hr/> <p>Know that solids, liquids and gases are groups of materials with different general properties. Y4 COS L2</p> <hr/> <p>Be able to describe and name some solids, liquids and gases. Y4 COS L2</p> <hr/> <p>Know that collectively, solids, liquids and gases are called the states of matter. Y4 COS L2</p> <hr/> <p>Be able to identify the state of matter of a material by its physical properties. Y4 COS L1, L2</p> <hr/> <p><b>Compare and group materials together, according to whether they are solids, liquids or gases.</b> Y4 COS L1, L2</p> <hr/> <p>Know that materials can exist as solids, liquids or gases. Y4 COS L2, L3</p> <hr/> <p>Understand that the state of a material can be changed. Y4 COS L2, L3, L4</p> <hr/> <p>Know that heating or cooling materials can change their properties. Y4 COS L2, L3, L4</p> <hr/> <p>Know that heating a solid can change it to a liquid and that this process is called melting. Y4 COS L2, L3, L4</p>	

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			<p>Know that heating a liquid can change it to a gas and that this process is called evaporation. <i>Y4 COS L3, L4</i></p> <hr/> <p>Know that cooling a gas can change it to a liquid and that this process is called condensation. <i>Y4 COS L3, L4, L5</i></p> <hr/> <p>Know that cooling a liquid can change it to a solid and that this process can be called freezing (or solidification). <i>Y4 COS L3, L4</i></p> <hr/> <p>Understand that melting and freezing are processes that can be reversed. <i>Y4 COS L4, L5</i></p> <hr/> <p>Know that temperature is a measure of how hot or cold something is and is measured in degrees Celsius using a thermometer (°C). <i>Y4 COS L4</i></p> <hr/> <p>Know that water exists in three states and changes from one to another at different temperatures. <i>Y4 COS L3</i></p> <hr/> <p>Recognise that not every substance needs to be put in a cold place to become solid, e.g. melted wax, and that not every substance will become solid in a commercial freezer but that different substances change state at different temperatures. <i>Y4 COS L4</i></p> <hr/> <p><b>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).</b> <i>Y4 COS L3, L4</i></p> <hr/> <p>Know that evaporation and condensation are changes of state. <i>Y4 COS L5</i></p> <hr/> <p>Recognise that changes of state require changes of temperature. <i>Y4 COS L3, L4, L5, L6</i></p> <hr/> <p>Understand that evaporation is the process in which liquid water is changed to water vapour by heating. <i>Y4 COS L5</i></p> <hr/> <p>Understand that condensation is the reverse of evaporation and is the process in which water vapour in the air is cooled down to form liquid water. <i>Y4 COS L5</i></p> <hr/> <p>Be able to describe the changes of state in the water cycle. <i>Y4 COS L6</i></p> <hr/> <p><b>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</b> <i>Y4 COS L5, L6</i></p>	
	<b>Use of everyday materials</b>	<b>Rocks</b>	<b>States of matter</b>	<b>Properties and changes of materials</b>
<b>Year 5</b>				<p>Understand what is meant by a material's hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. <i>Y5 M L1</i></p> <hr/> <p>Describe materials and identify materials from their description. <i>Y5 M L1</i></p> <hr/> <p>Group materials with similar properties. <i>Y5 M L1, L2</i></p> <hr/> <p><b>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.</b> <i>Y5 M L1, L2, L3, L4, L6</i></p> <hr/> <p>Describe the observation of the apparent disappearance of a soluble solid when it dissolves in a liquid. <i>Y5 SM L2</i></p> <hr/> <p>Explain what a solution is. <i>Y5 SM L2</i></p>

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				<p>Explain that when a solution is left exposed to the air the liquid will evaporate into the air leaving the dissolved solid behind. <i>Y5 SM L2, L4</i></p> <hr/> <p><b>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</b> <i>Y5 SM L2, L3, L5, L6</i></p> <hr/> <p>Explain how sieving solids is possible because of the comparative size of the (pieces of) solid and the holes in the sieve. <i>Y5 SM L1</i></p> <hr/> <p>Explain how filtering separates a solid from a liquid because the solid is too large to pass through the holes in the filter but the liquid can pass through. <i>Y5 SM L5</i></p> <hr/> <p><b>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</b> <i>Y5 SM L1, L4, L5, L6</i></p> <hr/> <p>Know that a variety of materials may be suitable for an object based on the properties of the materials. <i>Y5 M L2</i></p> <hr/> <p>Raise questions about the properties of materials related to their suitability. <i>Y5 M L4</i></p> <hr/> <p>Test properties of a material to establish their suitability or not for a given purpose. <i>Y5 M L5</i></p> <hr/> <p><b>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</b> <i>Y5 M L2, L3, L4, L5, L6</i></p> <hr/> <p>Recall the terms 'dissolving', 'mixing', 'melting', 'freezing', 'evaporation' and 'condensation' from earlier work. <i>Y5 TOC L1</i></p> <hr/> <p>Define reversible change. <i>Y5 TOC L1</i></p> <hr/> <p>Understand that dissolving is a reversible change based on observations of a soluble solid dissolving in water and then being recovered by evaporating the water. <i>Y5 TOC L1, L2</i></p> <hr/> <p>Explain that mixtures can be separated using a sieve or filter meaning the mixtures are not permanently combined so the process is reversible. <i>Y5 TOC L2</i></p> <hr/> <p><b>Demonstrate that dissolving, mixing and changes of state are reversible changes.</b> <i>Y5 TOC L1, L2, L3, L6</i></p> <hr/> <p>Define irreversible change. <i>Y5 TOC L1</i></p> <hr/> <p>Describe observable changes when a substance is burnt, identifying that new substances are formed. <i>Y5 TOC L4</i></p> <hr/> <p>Describe observable changes when acid and bicarbonate of soda are mixed and explain that new substances are formed. <i>Y5 TOC L5</i></p> <hr/> <p>List some of the new substances formed through burning a familiar substance such as wax or wood and combining vinegar and bicarbonate of soda. <i>Y5 TOC L4, L5</i></p> <hr/> <p><b>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.</b> <i>Y5 TOC L4, L5, L6</i></p>
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Year 6				