

Science – Chemistry (Substantive Knowledge)				
	EY & KS1	KS2	KS3	KS4
Green Pathway	<p>Know simple similarities and differences between materials encountered.</p> <p>Know materials may change as a result of own actions (mixing).</p> <p>Know materials may change over time and recognise these changes (melting).</p> <p>Know how to carry out a simple investigation to explore material changes.</p>	<p>Know an object is made from a material.</p> <p>Know the names of everyday materials – wood, plastic, glass, metal, water and rock.</p> <p>Know the simple physical properties of everyday materials.</p> <p>Know how to compare and group everyday materials on the basis of their simple physical properties.</p> <p>Know how to compare the suitability of everyday materials for particular uses.</p> <p>Know materials can be changed by squashing, bending, twisting and stretching.</p> <p>Know rocks can be grouped together on the basis of their appearance and simple physical properties and know how to compare them.</p> <p>Know how fossils are formed (when things that have lived are trapped within rock).</p> <p>Know soils are made from rocks and organic matter.</p>	<p>Know what a solid, liquid and gas is.</p> <p>Know how to compare and group materials together according to whether they are solids, liquids and gases.</p> <p>Know some materials change state when they are heated or cooled, measuring temperature at which this happens in degrees Celsius.</p> <p>Know the water cycle involves evaporation and condensation and know the rate of evaporation with temperature.</p> <p>Know how to compare and group together everyday materials on the basis of their properties (including hardness, solubility, transparency, conductivity and response to magnets).</p> <p>Know some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</p> <p>Know solids, liquids and gases can be separated (through filtering, sieving and evaporating).</p> <p>Know suitability of everyday materials for different purposes after comparative and fair tests (including metals, wood and plastic).</p> <p>Know that dissolving, mixing and changes in state are reversible changes.</p> <p>Know some material changes result in the formation of new materials which is not usually reversible.</p>	<p>AQA Entry Level Certificate <i>Chemistry Component 3 – Elements, mixtures & compounds:</i></p> <p>Know matter is composed of tiny particles called atoms and there are about 100 naturally occurring types of atoms called elements.</p> <p>Know elements are shown in the periodic table and are either metals or non-metals.</p> <p>Know atoms are the building blocks for all substances. When two or more elements combine chemically a compound is produced.</p> <p>Know different substances have different combinations of atoms joined together in different ways, which gives them different properties, such as whether they are solid, liquid or gaseous at room temperature.</p> <p>Know many materials we use are mixtures.</p> <p>Know mixtures can be separated by processes such as filtration.</p> <p>Know polymers have many useful applications.</p> <p><i>Chemistry Component 4 – Chemistry in our World:</i></p> <p>Know acids react with metals, alkalis and bases to produce compounds known as salts.</p> <p>Know many chemical reactions produce a change in temperature.</p> <p>Know chemical reactions can be made to go faster or slower by changing the conditions.</p> <p>Know the Earth’s atmosphere has changed over billions of years.</p> <p>Know Human activities increase the amounts of some substances in the atmosphere.</p> <p>Know water that is safe to drink is essential for human health.</p>
Purple Pathway	<p>Begin to know simple similarities and differences between materials encountered.</p> <p>Begin to know materials may change as a result of own actions (mixing).</p> <p>Begin to know materials may change over time and recognise these changes (melting).</p> <p>Begin to know how to carry out a simple investigation to explore material changes.</p>	<p>Begin to know an object is made from a material.</p> <p>Begin to know the names of everyday materials – wood, plastic, glass, metal, water and rock.</p> <p>Begin to know the simple physical properties of everyday materials.</p> <p>Begin to know how to compare and group everyday materials on the basis of their simple physical properties.</p> <p>Begin to know how to compare the suitability of everyday materials for particular uses.</p> <p>Begin to know materials can be changed by squashing, bending, twisting and stretching.</p> <p>Begin to know rocks can be grouped together on the basis of their appearance and simple physical properties and know how to compare them.</p> <p>Begin to know how fossils are formed (when things that have lived are trapped within rock).</p> <p>Begin to know soils are made from rocks and organic matter.</p>	<p>Begin to know what a solid, liquid and gas is.</p> <p>Begin to know how to compare and group materials together according to whether they are solids, liquids and gases.</p> <p>Begin to know some materials change state when they are heated or cooled, measuring temperature at which this happens in degrees Celsius.</p> <p>Begin to know the water cycle involves evaporation and condensation and know the rate of evaporation with temperature.</p> <p>Begin to know how to compare and group together everyday materials on the basis of their properties (including hardness, solubility, transparency, conductivity and response to magnets).</p> <p>Begin to know some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</p> <p>Begin to know solids, liquids and gases can be separated (through filtering, sieving and evaporating).</p> <p>Begin to know suitability of everyday materials for different purposes after comparative and fair tests (including metals, wood and plastic).</p> <p>Begin to know that dissolving, mixing and changes in state are reversible changes.</p> <p>Begin to know some material changes result in the formation of new materials which is not usually reversible.</p>	<p>AIM Entry Qualification in Science <i>Everyday Materials:</i></p> <p>Know how to classify materials.</p> <p>Know that the properties of materials determine their use.</p> <p>Know the shapes of objects can be changed.</p>
Orange Pathway	<p>Know materials have different textures.</p> <p>Be aware of material changes through exploration (mixing).</p> <p>Be aware of material changes over time (melting).</p>	<p>Be aware of a range of materials (wood, plastic, glass, metal, water and rock) and know their properties can be explored through sensory exploration.</p> <p>Know to match materials when they are the same.</p> <p>Be aware of materials changing through own actions - squashing, bending, twisting and stretching.</p> <p>Be aware of rocks and their different appearances.</p> <p>Be aware of fossils.</p> <p>Be aware of soil.</p>	<p>Be aware of solids, liquids and gases through sensory exploration.</p> <p>Be aware of changing material states when they are heated or cooled.</p> <p>Be aware of the water cycle (evaporation and condensation).</p> <p>Know simple material properties (hard, soft, transparent, opaque).</p> <p>Be aware of materials dissolving in liquid.</p> <p>Be aware of suitability of different materials to suit a purpose.</p>	<p>ASDAN Life Skills Challenge <i>Properties and Changes of Materials:</i></p> <p>Know how to recognise the differences between materials.</p> <p>Know how to use equipment to separate materials.</p> <p>Know how to explore the different ways materials can be changed.</p> <p><i>Have Fun with Sensory Changing Materials:</i></p> <p>Know how to respond to dry ingredients.</p> <p>Know how to respond to wet ingredients.</p> <p>Know how to make a sensory product within a group.</p>