

## Hagley Primary School Science Progression of skills and vocabulary 2024

		YR	Y1	Y2	Y3	Y4	Y5	Y6
Working scientifically	knowledge		<p><b><u>Working scientifically (focus on observation and classifying)</u></b></p> <ul style="list-style-type: none"> <li>Ask simple questions</li> <li>Observe closely using simple equipment</li> <li>Perform simple tests designed as a class</li> <li>Use observations and ideas to answer questions</li> <li>Gather and record sorting data to help answer questions</li> <li>Talk about what they have found out, using some scientific vocabulary</li> <li>Sort scientifically with given criteria and their own categories</li> </ul> <p><b><u>Types of enquiry</u></b> Classifying and grouping Observing over time Research using secondary sources</p>	<p><b><u>Working scientifically (focus on traditional experiment)</u></b></p> <ul style="list-style-type: none"> <li>Ask simple questions and recognise they can be answered in different ways</li> <li>Observe closely using simple equipment</li> <li>Perform simple tests designed as a class</li> <li>Use observations and ideas to answer questions</li> <li>Gather and record data to help answer questions</li> <li>Communicate they have found out, using some scientific vocabulary, through discussion and writing</li> </ul> <p><b><u>Types of enquiry</u></b> Observing over time Research using secondary sources Comparative fair testing Pattern seeking</p>	<p><b><u>Working scientifically - Scientific write-ups to focus on key question, prediction and method</u></b></p> <ul style="list-style-type: none"> <li>Ask relevant questions and use some scientific knowledge to answer them</li> <li>Set up simple practical enquiries, comparative and fair tests as a class – identify variables and measures</li> <li>Set up observational activities and record findings – identify similarities and differences</li> <li>Make systematic and careful observations and take measurements using standard units</li> <li>Record and report on findings using given scientific language. This could be orally or through drawings and diagrams</li> <li>Use results to discuss conclusions, answer questions posed and use scientific evidence</li> </ul> <p><b><u>Types of enquiry</u></b> Observing over time Comparative fair testing Pattern seeking</p>	<p><b><u>Working scientifically - Scientific write ups to focus on – key question, prediction, method (including fair testing) and results</u></b></p> <ul style="list-style-type: none"> <li>Ask relevant questions and use some scientific knowledge to answer them</li> <li>Set up simple practical enquiries, comparative and fair tests as a class – identify variables and measures</li> <li>Make systematic and careful observations, take accurate measurements and, where appropriate, use equipment including data loggers</li> <li>Gather, record and present data to help answer a question</li> <li>Record findings using given scientific language – this could be orally, written, through drawings, diagrams, charts and graphs</li> <li>Report on findings, including oral presentations and written explanations – use straightforward scientific language to support their findings</li> <li>Identify changes that are occurring using scientific idea</li> <li>Use results to suggest further ideas for investigation, raise questions and predict what might happen</li> </ul> <p><b><u>Types of enquiry</u></b> Comparative fair testing Research using secondary sources (teeth) Grouping and classifying</p>	<p><b><u>Working scientifically - Scientific write-ups focus on key question, fair test statement (where appropriate), results and conclusion</u></b></p> <ul style="list-style-type: none"> <li>With support and prompts, plan an experiment or enquiry to help answer a question, including the control of variables to ensure a fair test</li> <li>Take measurements with scientific equipment, increasing accuracy and repeat when necessary</li> <li>Record data and results using scientific diagrams, tables, bar and line graphs</li> <li>Use test results to make predictions and design a further test (This will draw on skills from previous years)</li> <li>Report and present findings from enquiries in oral and written form – use appropriate key scientific vocabulary from the topic studied.</li> <li>Identify causal relationships</li> <li>Identify evidence used to support or refute ideas or arguments for the topic studied</li> </ul> <p><b><u>Types of enquiry</u></b> Comparative fair testing Observing over time (changes in humans) Research using secondary sources (Earth and Space) Grouping and classifying</p>	<p><b><u>Working scientifically - Scientific write-ups focus on key question, fair test statement (where appropriate), results, conclusion and evaluation</u></b></p> <ul style="list-style-type: none"> <li>Plan an experiment or enquiry to help answer a question, including the control of variables</li> <li>Take measurements with a range of scientific equipment, with increasing accuracy and repeat readings when necessary</li> <li>Record data and results using scientific diagrams, tables, line graphs, scatter graphs and classification keys</li> <li>Use test results to make predictions and design a further test – when appropriate, conduct these tests and compare results orally</li> <li>Report and present findings from enquiries in oral and written form – use appropriate key scientific vocabulary from the topic studied.</li> <li>Evaluate a designed test, including a statement of trust in the results and how valid they are</li> <li>Identify evidence used to support or refute ideas or arguments for the topic studied</li> </ul> <p><b><u>Types of enquiry</u></b> Research using secondary sources (Evolution) Grouping and classifying Pattern spotting Comparative fair testing</p>

KS3 Objectives	<p><u>Scientific attitudes</u></p> <ul style="list-style-type: none"> <li>• pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility</li> <li>• understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review</li> <li>• evaluate risks.</li> </ul> <p><u>Experimental skills and investigations</u></p> <ul style="list-style-type: none"> <li>• ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience</li> <li>• make predictions using scientific knowledge and understanding</li> <li>• select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate</li> <li>• use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety</li> <li>• make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements</li> <li>• apply sampling techniques.</li> </ul> <p><u>Analysis and evaluation</u></p> <ul style="list-style-type: none"> <li>• apply mathematical concepts and calculate results</li> <li>• present observations and data using appropriate methods, including tables and graphs</li> <li>• interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions</li> <li>• present reasoned explanations, including explaining data in relation to predictions and hypotheses</li> <li>• evaluate data, showing awareness of potential sources of random and systematic error</li> <li>• identify further questions arising from their results.</li> </ul> <p><u>Measurement</u></p> <ul style="list-style-type: none"> <li>• understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature</li> <li>• use and derive simple equations and carry out appropriate calculations</li> <li>• undertake basic data analysis including simple statistical techniques.</li> </ul>
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			YR	Y1	Y2	Y3	Y4	Y5	Y6
Biology	Seasonal changes	Knowledge	<ul style="list-style-type: none"> <li>Explore the natural world around them.</li> <li>Describe what they see, hear and feel whilst outside.</li> <li>Understand the effect of changing seasons on the natural world around them.</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>observe changes across the four seasons;</li> <li>observe and describe weather associated with the seasons and how day length varies.</li> </ul>					
KS3 Objectives			<ul style="list-style-type: none"> <li>The seasons and the Earth's tilt, day length at different times of year, in different hemispheres.</li> </ul>						

Biology	Animals including humans	Knowledge	<ul style="list-style-type: none"> <li>• Talk about members of their immediate family and community.</li> <li>• Name and describe people who are familiar to them.</li> <li>• Recognise some environments that are different to the one in which they live.</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals;</li> <li>• identify and name a variety of common animals that are carnivores, herbivores and omnivores;</li> <li>• describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets);</li> <li>• identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• notice that animals, including humans, have offspring which grow into adults;</li> <li>• find out about and describe the basic needs of animals, including humans, for survival (water, food and air);</li> <li>• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat;</li> <li>• identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• describe the simple functions of the basic parts of the digestive system in humans;</li> <li>• identify the different types of teeth in humans and their simple functions;</li> <li>• construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• describe the changes as humans develop to old age</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood;</li> <li>• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function;</li> <li>• describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>
KS3 Objectives			<ul style="list-style-type: none"> <li>• Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta.</li> <li>• The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases.</li> <li>• The effects of recreational drugs (including substance misuse) on behaviour, health and life processes.</li> <li>• The structure and functions of the gas exchange system in humans, including adaptations to function.</li> <li>• The mechanism of breathing to move air in and out of the lungs.</li> <li>• The impact of exercise, asthma and smoking on the human gas exchange system.</li> </ul>						

Biology	Plants	Knowledge	<ul style="list-style-type: none"> <li>• Draw information from a simple map. (Reception – Living things and their habitats)</li> <li>• Explore the natural world around them. (Reception – Living things and their habitats)</li> <li>• Describe what they see, hear and feel whilst outside. (Reception – Living things and their habitats)</li> <li>• Recognise some environments that are different to the one in which they live. (Reception – Living things and their habitats)</li> <li>• Understand the effect of changing seasons on the natural world around them. (Reception – Seasonal changes)</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees;</li> <li>• identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• observe and describe how seeds and bulbs grow into mature plants;</li> <li>• find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul>	<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>• identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers;</li> <li>• explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant;</li> <li>• investigate the way in which water is transported within plants;</li> <li>• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>			
KS3 Objectives			Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.						

Biology	Living things and their habitats	Knowledge	<p>Draw information from a simple map.</p> <ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> <li>• Describe what they see, hear and feel whilst outside.</li> <li>• Recognise some environments that are different to the one in which they live.</li> </ul>		<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• explore and compare the differences between things that are living, dead, and things that have never been alive;</li> <li>• identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other;</li> <li>• identify and name a variety of plants and animals in their habitats, including microhabitats;</li> <li>• describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</li> </ul>		<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• recognise that living things can be grouped in a variety of ways;</li> <li>• explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment;</li> <li>• recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird;</li> <li>• describe the life process of reproduction in some plants and animals.</li> </ul>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals;</li> <li>• give reasons for classifying plants and animals based on specific characteristics.</li> </ul>
KS3 Objectives			<ul style="list-style-type: none"> <li>• Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta.</li> <li>• Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.</li> <li>• Differences between species.</li> </ul>						

Biology	Evolution and Inheritance	Knowledge	<ul style="list-style-type: none"> <li>Recognise some environments that are different to the one in which they live. (Reception – Living things and their habitats)</li> </ul>						<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago;</li> <li>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents;</li> <li>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>
KS3 Objectives			<ul style="list-style-type: none"> <li>Heredity as the process by which genetic information is transmitted from one generation to the next.</li> <li>A simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model.</li> <li>The variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection.</li> <li>Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction.</li> </ul>						

			YR	Y1	Y2	Y3	Y4	Y5	Y6
Physics	Forces	Knowledge	<ul style="list-style-type: none"> <li>Explore the natural world around them.</li> <li>Describe what they see, hear and feel whilst outside.</li> </ul>			<p>Forces and Magnets</p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>compare how things move on different surfaces;</li> <li>notice that some forces need contact between two objects, but magnetic forces can act at a distance;</li> <li>observe how magnets attract or repel each other and attract some materials and not others;</li> <li>compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials;</li> <li>describe magnets as having two poles;</li> <li>predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>		<p>Forces</p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object;</li> <li>identify the effects of air resistance, water resistance and friction, that act between moving surfaces;</li> <li>recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.</li> </ul>	
KS3 Objectives			<ul style="list-style-type: none"> <li>Magnetic fields by plotting with compass, representation by field lines.</li> <li>Earth's magnetism, compass and navigation.</li> <li>Forces as pushes or pulls, arising from the interaction between two objects.</li> <li>Using force arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces.</li> <li>Moment as the turning effect of a force.</li> <li>Forces: associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way; resistance to motion of air and water.</li> <li>Forces measured in Newtons, measurements of stretch or compression as force is changed.</li> </ul>						



Physics	Light	Knowledge	<ul style="list-style-type: none"> <li>Describe what they see, hear and feel whilst outside.</li> </ul>			<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>recognise that they need light in order to see things and that dark is the absence of light;</li> <li>notice that light is reflected from surfaces;</li> <li>recognise that light from the sun can be dangerous and that there are ways to protect their eyes;</li> <li>recognise that shadows are formed when the light from a light source is blocked by an opaque object;</li> <li>find patterns in the way that the size of shadows change</li> </ul>			<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>recognise that light appears to travel in straight lines;</li> <li>use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye;</li> <li>explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes;</li> <li>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>
KS3 Objectives			<ul style="list-style-type: none"> <li>The similarities and differences between light waves and waves in matter.</li> <li>Light waves travelling through a vacuum; speed of light.</li> <li>The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface.</li> <li>Use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye.</li> <li>Light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras.</li> <li>Colours and the different frequencies of light, white light and prisms (qualitative only); differential colour effects in absorption and diffuse reflection.</li> </ul>						

Physics	Sound	Knowledge	<ul style="list-style-type: none"> <li>Describe what they see, hear and feel whilst outside.</li> </ul>				<b>Pupils should be taught to:</b> <ul style="list-style-type: none"> <li>identify how sounds are made, associating some of them with something vibrating;</li> <li>recognise that vibrations from sounds travel through a medium to the ear;</li> <li>find patterns between the pitch of a sound and features of the object that produced it;</li> <li>find patterns between the volume of a sound and the strength of the vibrations that produced it;</li> <li>recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>		
KS3 Objectives			<ul style="list-style-type: none"> <li>Waves on water as undulations which travel through water with transverse motion; these waves can be reflected, and add or cancel – superposition.</li> <li>Frequencies of sound waves, measured in Hertz (Hz); echoes, reflection and absorption of sound.</li> <li>Sound needs a medium to travel, the speed of sound in air, in water, in solids.</li> <li>Sound produced by vibrations of objects, in loud speakers, detected by their effects on microphone diaphragm and the ear drum; sound waves are longitudinal.</li> <li>Auditory range of humans and animals.</li> <li>Pressure waves transferring energy; use for cleaning and physiotherapy by ultra-sound.</li> <li>Waves transferring information for conversion to electrical signals by microphone.</li> </ul>						

Physics	Earth and Space	Knowledge						<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"><li>• describe the movement of the Earth and other planets relative to the Sun in the solar system;</li><li>• describe the movement of the Moon relative to the Earth;</li><li>• describe the Sun, Earth and Moon as approximately spherical bodies;</li><li>• use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li></ul>	
KS3 Objectives			<ul style="list-style-type: none"><li>• Gravity force, weight = mass x gravitational field strength (g), on Earth g=10 N/kg, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only).</li><li>• Our Sun as a star, other stars in our galaxy, other galaxies.</li><li>• The seasons and the Earth's tilt, day length at different times of year, in different hemispheres.</li><li>• The light year as a unit of astronomical distance.</li></ul>						

Physics	Electricity	Knowledge					<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"><li>• identify common appliances that run on electricity;</li><li>• construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers;</li><li>• identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery;</li><li>• recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit;</li><li>• recognise some common conductors and insulators, and associate metals with being good conductors.</li></ul>		<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"><li>• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit;</li><li>• compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches;</li><li>• use recognised symbols when representing a simple circuit in a diagram.</li></ul>
KS3 Objectives			<ul style="list-style-type: none"><li>• Electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge.</li><li>• Potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current. Differences in resistance between conducting and insulating components (quantitative).</li><li>• Static electricity.</li></ul>						

Chemistry	Materials	Knowledge	<ul style="list-style-type: none"> <li>Explore the natural world around them.</li> <li>Describe what they see, hear and feel whilst outside.</li> </ul>	<p>Everyday Materials</p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>distinguish between an object and the material from which it is made;</li> <li>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock;</li> <li>describe the simple physical properties of a variety of everyday materials;</li> <li>compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul>	<p>Use of Everyday Materials</p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses;</li> <li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p>Rocks</p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties;</li> <li>describe in simple terms how fossils are formed when things that have lived are trapped within rock;</li> <li>recognise that soils are made from rocks and organic matter.</li> </ul>	<p>States of Matter</p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases;</li> <li>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);</li> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<p><b>YEAR 5 ONLY:</b></p> <p>Properties and Changes of Materials</p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>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;</li> <li>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution;</li> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating;</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic;</li> <li>demonstrate that dissolving, mixing and changes of state are reversible changes;</li> <li>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.</li> </ul>
KS3 Objectives			<ul style="list-style-type: none"> <li>Chemical reactions as the rearrangement of atoms.</li> <li>Representing chemical reactions using formulae and using equations.</li> <li>Combustion, thermal decomposition, oxidation and displacement reactions.</li> <li>Defining acids and alkalis in terms of neutralisation reactions.</li> <li>The pH scale for measuring acidity/alkalinity; and indicators</li> <li>The composition of the Earth.</li> <li>The structure of the Earth.</li> <li>The rock cycle and the formation of igneous, sedimentary and metamorphic rocks.</li> </ul>					