



<b>Working Scientifically</b>	<b>Biology</b> Pupils should be taught to:	<b>Chemistry</b> Pupils should be taught to:	<b>Physics</b> Pupils should be taught to:
<p><b><u>Working scientifically</u></b></p> <p>During Years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> <li>▪ planning enquiries, including recognising and controlling variables where necessary</li> <li>▪ taking measurements, using a range of scientific equipment, with increasing accuracy and precision</li> <li>▪ recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models</li> <li>▪ reporting findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions</li> <li>▪ presenting findings in written form, displays and other presentations</li> <li>▪ using test results to make predictions to set up further comparative and fair tests</li> <li>▪ using simple models to describe scientific ideas</li> <li>▪ identifying scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>	<p><b><u>All living things</u></b></p> <ul style="list-style-type: none"> <li>▪ describe the life cycles common to a variety of animals, including humans (birth, growth, development, reproduction, death), and to a variety of plants (growth, reproduction and death).</li> <li>▪ explain the classification of living things into broad groups according to common observable characteristics and based on similarities and differences, including plants, animals and micro-organisms</li> <li>▪ describe the life process of reproduction in some plants and animals</li> <li>▪ describe the changes as humans develop from birth to old age</li> <li>▪ recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> </ul> <p><b><u>Animals, including humans</u></b></p> <ul style="list-style-type: none"> <li>▪ identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood (including the pulse and clotting).</li> </ul> <p><b><u>Evolution and inheritance</u></b></p> <ul style="list-style-type: none"> <li>▪ recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>▪ describe how adaptation leads to evolution</li> <li>▪ recognise how and why the human skeleton has changed over time, since we separated from other primates.</li> </ul>	<p><b><u>Properties of everyday materials</u></b></p> <ul style="list-style-type: none"> <li>▪ compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets</li> <li>▪ understand how 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> </ul> <p><b><u>Reversible change</u></b></p> <ul style="list-style-type: none"> <li>▪ demonstrate that dissolving, mixing and changes of state are reversible changes.</li> </ul> <p><b><u>Changes that form new materials</u></b></p> <ul style="list-style-type: none"> <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, oxidation, and the action of acid on bicarbonate of soda.</li> </ul>	<p><b><u>Electricity</u></b></p> <ul style="list-style-type: none"> <li>▪ identify and name the basic parts of a simple electrical circuit, including cells, wires, bulbs, switches and buzzers</li> <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> </ul> <p><b><u>Forces</u></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 effect of drag forces, such as air resistance, water resistance and friction, that act between moving surfaces</li> <li>▪ describe, in terms of drag forces, why moving objects that are not driven tend to slow down</li> <li>▪ understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.</li> </ul> <p><b><u>Magnetism</u></b></p> <ul style="list-style-type: none"> <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><b><u>Light</u></b></p> <ul style="list-style-type: none"> <li>▪ understand 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>▪ use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.</li> </ul> <p><b><u>Earth and space</u></b></p> <ul style="list-style-type: none"> <li>▪ describe the movement of the Earth 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.</li> </ul>