



Curriculum Progression Document

Science - Upper Key Stage 2 Years 5 and 6



Animals Including Humans

Skills Objectives		Knowledge Objectives	
<ul style="list-style-type: none"> Identify scientific evidence that has been used to support or refute ideas or arguments. Plan different types of scientific enquires to answer questions, including recognising and controlling variables where necessary. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. 		<ol style="list-style-type: none"> Identify and name the main parts of the human circulatory system Describe the functions of the heart Describe the functions of blood vessels and blood. Describe the ways in which nutrients and water are transported within animals, including humans. Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function. 	
Key Concepts and Vocabulary			
Evidence Research Support Refute	Variable Control Tables Line Graphs	Heart Rate Circulation System Vein Artery	Intestine Digestion Skeleton Muscle Stomach



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Living Things and Their Habitats

Skills Objectives		Knowledge Objectives	
<ul style="list-style-type: none"> Identify scientific evidence that has been used to support or refute ideas or arguments. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Report and present findings from enquires, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. 		<ol style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. Learn about the work of an inspiring scientist in this field Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life processes of reproduction in some plants and animals. 	
Key Concepts and Vocabulary			
Scientific illustrations Key Label Causal Degree of Trust Classification Key	Root cuttings Tuber Bulb Seed Stamen (male) : anther, filament Carpel(female) :stigma, style ovary	Reproduction Sexual and Asexual Classification Kingdom, class, species	Jane Goodall David Attenborough Naturalist Animal Behaviourist Carl Linnaeus (creator of the classification of living things)



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Evolution and Inheritance

Skills Objectives		Knowledge Objectives	
<ul style="list-style-type: none"> Identify scientific evidence that has been used to support or refute ideas or arguments. Report and present findings from enquires, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. 		<ol style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways Identify how adaptation may lead to evolution. 	
Key Concepts and Vocabulary			
Evidence Proof Enquiry	Evolve Vary Adapt Environment Evolution	Inheritance Natural selection Genetic mutation	Palaeontologist Mary Anning Charles Darwin Alfred Wallace



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Properties and Changes of Materials

Skills Objectives		Knowledge Objectives	
<ul style="list-style-type: none"> Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Report and present findings from enquires, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Use test results to make predictions to set up further comparative and fair tests. 		<ol style="list-style-type: none"> 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. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. 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. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. 	
Key Concepts and Vocabulary			
Measurement Repeated measurement for: Precision and Accuracy Casual Relationships	Conductivity Solubility Air Oxygen Water Condensation Humidity	Dissolve Solution Melt Freeze Boil Evaporate Condense Changing State	Solid Liquid Gas Substance Reversible Irreversible Separate



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Forces

Skills Objectives	Knowledge Objectives	
<ul style="list-style-type: none"> Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Use test results to make predictions to set up further comparative and fair tests. 	<ol style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of friction in the form of air resistance Identify the effects of friction in the form of water resistance Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 	
<h3>Key Concepts and Vocabulary</h3>		
Newtons Mass Weight	Gravity Friction	Push/Pull/Twist Forces Air/Water Resistance



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Earth and Space

Skills Objectives	Knowledge Objectives		
<ul style="list-style-type: none"> Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. 	<ol style="list-style-type: none"> Describe the Sun, Earth and Moon as approximately spherical bodies and describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. 		
Key Concepts and Vocabulary			
	Planet Satellite Moon	Orbit Escape Velocity Sphere	Heliocentricity Geocentricity



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Light

Skills Objectives	Knowledge Objectives		
<ul style="list-style-type: none"> Plan different types of scientific enquires to answer questions, including recognising and controlling variables where necessary. Identify scientific evidence that has been used to support or refute ideas or arguments. Report and present findings from enquires, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. 	<ol style="list-style-type: none"> 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. Recognise that light appears to travel in straight lines. 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. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 		
Key Concepts and Vocabulary			
	Absorb Refract	Light beam Reflect Transparent Opaque	Shadow Light Source Reflector



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Electricity

Skills Objectives	Knowledge Objectives		
<ul style="list-style-type: none"> Identify scientific evidence that has been used to support or refute ideas or arguments. Plan different types of scientific enquires to answer questions, including recognising and controlling variables where necessary. Report and present findings from enquires, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. 	<ol style="list-style-type: none"> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. 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. Recognise symbols when representing a simple circuit in a diagram. 		
Key Concepts and Vocabulary			
Circuit Switch	Buzzer Bulb	Battery Safety	Insulate Conduct