



Bradwell Village School

Science Framework



	Year Three	Year Four	Year Five	Year Six
Animals including humans	<p>To know the food groups</p> <p>To be aware of the nutritional value of food groups</p> <p>To know that animals, including humans need a balanced diet</p> <p>To understand that animals, including humans cannot produce their own food</p> <p>To explore what the skeleton does</p> <p>To explore what muscles do</p> <p>To know why we have muscles</p>	<p>To describe how the human digestive system works.</p> <p>To name the parts of the digestive system and explain the processes.</p> <p>To identify and explain the functions the different types of teeth.</p> <p>To understand the importance of maintaining teeth and explain what happens when teeth and gums are not maintained.</p> <p>To interpret and create food chains and webs.</p> <p>To identify producers, predators and prey in a food chain.</p>	<p>To understand how humans grow and develop as they get older</p> <p>To compare gestation periods of humans to other animals</p> <p>To understand how our bodies change as we get older and how this effects sporting performance</p>	<p>To identify and name the main parts of the human circulatory system.</p> <p>Describe the functions of the heart, blood vessels and blood.</p> <p>To know how and why blood travels around the body.</p> <p>To recognise the impact of diet on the way bodies function.</p> <p>To recognise the impact of exercise on the way bodies function.</p> <p>To recognise the impact of drugs on the way bodies function.</p> <p>To recognise the impact of lifestyle on the way bodies function.</p> <p>To describe the ways in which nutrients are transported in animals (including humans).</p>
Vocabulary	Movement, Muscles, Bones, Skull, Nutrition, Skeletons,	Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar	Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty	Circulatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration
Living things and their habitats		<p>To group living things into groups.</p> <p>To use simple classification keys.</p> <p>To create simple classification keys.</p>	<p>To know the life process of living things. (MRS NERG)</p> <p>To be able to identify a mammal, an amphibian, an insect and a bird.</p> <p>To know the life cycle of a mammal, an amphibian, an insect and a bird.</p>	<p>To describe the seven life processes.</p> <p>To make links between the processes of plants and animals.</p> <p>To classify plants and animals according to their observable characteristics including micro-organisms, plants and animals.</p>

		To explain the positive and negative impact of a changing environment.	To compare the life cycle of a mammal, an amphibian, an insect and a bird. To describe the life processes of reproduction in specific plants. To describe the life processes of reproduction in specific animals.	To use classification keys to identify different living things. To understand that changes in the environment have an effect on living things.
Vocabulary		Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats	Mammal, Reproduction, Insect, Amphibian, Bird, Offspring	Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects
Plants	To identify the different parts of a flowering plant. To know about the function of leaves. To know about the effects that light, air, water and temperature have on plants. To carry out a simple investigation. To know about the life cycle of plants.			
Vocabulary	Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower			
Light	To know that light is needed to be able to see To identify light sources To classify materials as transparent, translucent and opaque. To identify materials which reflect light To recognise that light from the sun can be dangerous			To show the direction which light travels and explain how objects are seen. To identify different light sources and their uses. To plan and carry out an investigation. To make predictions and be able to test these.

	<p>To know how to protect their eyes from the sun</p> <p>To know how shadows are formed</p> <p>To know how shadows can be changed.</p> <p>To carry out simple investigations.</p>			<p>To make observations and draw conclusions.</p> <p>To know that shadows are formed when light is blocked.</p> <p>To understand how we see.</p>
Vocabulary	Light, Shadows, Mirror, Reflective, Dark, Reflection			Refraction, Reflection, Light, Spectrum, Rainbow, Colour,
Forces (and magnets)	<p>To compare how things move on different surfaces</p> <p>To know what a force is</p> <p>To understand that some forces need contact between two objects</p> <p>To find out about magnetic forces</p> <p>To predict if magnets will attract or repel</p> <p>To understand that magnetic forces can act at a distance</p> <p>To learn how magnets can attract or repel each other</p> <p>To describe magnets as having two poles</p> <p>To test which materials are magnetic</p> <p>To compare and group materials</p> <p>To carry out a fair test</p>		<p>To explain that gravity exists</p> <p>To explore the effects of air resistance (experiment)</p> <p>To explore the effects of water resistance (experiment)</p> <p>To explore how friction effects the movement of objects</p> <p>To examine the effects that levers, pulleys and gears have on movement</p>	
Vocabulary	Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull		Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys	
Electricity		<p>To list appliances that run on electricity.</p> <p>To construct a simple series electrical circuit.</p> <p>To name the parts of a circuit.</p>		<p>To investigate how the voltage of cells in a circuit can affect the brightness of a lamp.</p>

		<p>To use symbols to represent a circuit.</p> <p>To understand the use of a switch in a circuit.</p> <p>To investigate how to light a lamp in a circuit.</p> <p>To investigate what makes a working circuit.</p> <p>To identify what a conductor is.</p> <p>To identify what an insulator is.</p> <p>To explain why some materials are good or bad conductors.</p> <p>To explain why some materials are good or bad insulators.</p> <p>To use appropriate scientific vocabulary.</p>		<p>To investigate how the voltage of cells in a circuit can affect the volume of a buzzer.</p> <p>Compare and give reasons for variations in brightness of bulbs.</p> <p>Compare and give reasons for variations in loudness of buzzers.</p> <p>Compare and give reasons for variations in the on/off position of switches.</p> <p>To use recognised symbols when representing a simple circuit in a diagram.</p>
Vocabulary		<p>Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators</p>		<p>Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell</p>
Sounds		<p>To know how sounds are made.</p> <p>To know how vibrations travel.</p> <p>To understand how pitch can be changed.</p> <p>To understand how pitch can be changed in a range of instruments.</p> <p>To understand the link between volume and the strength of vibrations.</p> <p>To understand the link between volume and distance from a sound source.</p>		
Challenge				

Rocks	<p>To investigate rocks</p> <p>To know some properties of rocks</p> <p>To compare and group different kinds of rocks</p> <p>To describe how fossils are made</p> <p>To know what fossils are made from</p> <p>To know what soil is made from</p>			
Vocabulary	Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent			
States of matter		<p>To compare different types of materials (from a range of solids, liquids and gases).</p> <p>To group a range of different materials.</p> <p>To describe the properties of solids, liquids and gases.</p> <p>To investigate what happens when different materials are heated, using the water cycle as a teaching point for evaporation/condensation.</p> <p>To investigate what happens when different materials are cooled.</p>		
Vocabulary		Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating		
Properties and changes of materials			<p>To understand a fair test</p> <p>To identify the properties of different materials.</p> <p>To know how to compare and group everyday materials.</p> <p>To know solubility, transparency, conductivity and response to magnets</p> <p>To understand dissolving. (Mixture and solution as SC)</p>	

			<p>To know how to describe the process of recovering a substance from a solution. (Evaporation SC)</p> <p>To revise the properties of solids, liquids and gases.</p> <p>To know how to separate different mixtures.</p> <p>To devise a fair test to compare everyday materials.</p> <p>To be able to identify reversible changes.</p> <p>To be able to identify irreversible changes.</p>	
Vocabulary			<p>Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing</p>	
Earth and space			<p>To understand that the Sun, Earth and Moon are approximately spherical bodies</p> <p>To describe how the Earth spins</p> <p>To explain the relationship between the Earth and the Moon</p> <p>To explain how we have night and day</p> <p>To understand why the Sun appears to move across the sky</p> <p>To compare the other planets' relationship to the Sun</p>	<p>To explain why we get different seasons.</p> <p>To order the planets of the Solar System according to size.</p> <p>To understand what gravity is and how it affects us.</p> <p>To explain how gravity affects everyday life.</p> <p>To understand that gravity exists outside of the Earth.</p>
Vocabulary			<p>Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation</p>	
Evolution and their inheritance				<p>To recognise that living things have evolved and changed over time</p>

Commented [GA1]: Could these be moved to History instead as this is a focus for the topic but not in the NC for Year 6?

				<p>To understand that fossils provide information about living things from the past</p> <p>To recognise that living things produce offspring of the same kind</p> <p>To understand that offspring vary and are not identical to their parents</p> <p>To identify how animals and plants are adapted to suit their environment in different ways</p> <p>To understand that adaptation can lead to evolution</p>
Vocabulary				Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics

Working Scientifically (ongoing throughout the year)				
	Year Three	Year Four	Year Five	Year Six
	Asking Questions		Asking Questions	
	<ul style="list-style-type: none"> ask relevant questions and use different types of scientific enquiries to answer them set up simple practical enquiries, comparative and fair tests 		<ul style="list-style-type: none"> plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary 	
	Measuring and Recording		Measuring and Recording	
	<ul style="list-style-type: none"> make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data logger record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables gather, record, classify and present data in a variety of ways to help in answering questions 		<ul style="list-style-type: none"> take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs 	
	Concluding		Concluding	

	<ul style="list-style-type: none"> • identify differences, similarities or changes related to simple scientific ideas and processes • report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • use straightforward scientific evidence to answer questions or to support their findings 	<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 enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
	Evaluating	Evaluating
	<ul style="list-style-type: none"> • use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions 	<ul style="list-style-type: none"> • use test results to make predictions to set up further comparative and fair tests