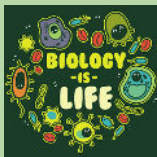
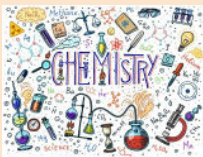



Dundry Primary School Science Curriculum Progression

Purpose and Aims of our Science Curriculum:

At Dundry School we recognise the importance of Science in every aspect of daily life. Our Science curriculum aims to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of Science, today and for the future. As one of the core subjects taught in Primary Schools, we give the teaching and learning of Science the prominence it requires. The children are exposed to a wide variety of topics which fall under the three main disciplines of biology, chemistry and physics. The biological thread of plants, animals and humans runs across all year groups; building and developing children’s understanding as they move through the school. This begins with identification of animals and their habitats, and progresses to food chains, life cycles and environmental impacts upon the natural world. Children are also taught in detail about the human body, its processes and how it functions. The chemistry and physics units cover a broad spectrum of topics including space, forces, state of matter, light and electricity among others. As with our whole school curriculum, we will make meaningful links where appropriate. For science these links may be with the study of our local area, geography, design technology or PSHE.

Within the disciplines of science we have identified the ‘big ideas’ (or threshold concepts) that help children to link old learning to new learning. These big ideas are:

BIOLOGY	CHEMISTRY	PHYSICS
 <p align="center">Plants Animals and humans Living things Evolution and inheritance</p>	 <p align="center">Materials Rocks</p>	 <p align="center">Movement, forces and magnets Light and seeing Sound and hearing Electricity Seasons, Earth and Space</p>


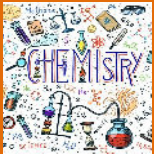

Our science lessons aim to be practical and interactive, teaching knowledge through using and applying the skills of scientific enquiry, enabling children to ask and answer scientific questions with confidence and accuracy. Specialist vocabulary for topics is taught and built up, and effective questioning to communicate ideas is encouraged. We have identified the ‘big ideas’ of scientific enquiry as:

Working scientifically	<p>Enquiry Skills:</p> <ul style="list-style-type: none"> ● Asking Questions ● Making predictions ● Setting up tests ● Observing and measuring ● Recording Data ● Interpreting and communicating results ● Evaluating 	<p>We explore the methods of science through different types of enquiry:</p> <ul style="list-style-type: none"> ● Comparative and fair testing ● Observing over time ● Pattern seeking ● Identifying, classifying and grouping ● Research using secondary sources
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To ensure children ‘catch up’ following the disruption of the Coronavirus pandemic our 2-year cycle has been revised to revisit any missed content. Units will start with recap and revision to ensure that children are secure in essential prior knowledge before moving on.

Dundry Primary School Science Curriculum Progression

Subject Knowledge Big Ideas Coverage Across Our School



		EYFS: Reception	KS1: Year 1 / Year 2		Lower KS2: Year 3 / Year 4		Upper KS2: Year 5 / Year 6	
Biology 	Plants	The building blocks of scientific knowledge are started in EYFS through the specific area of learning, Understanding our World.	Plants	Plants	Plants	<i>Plants in Living things and their habitat</i>	<i>Plants in Living things and their habitat</i>	<i>Plants in Living things and their habitat</i>
	Animals, including humans		Animals, including humans	Animals, including humans	Animals, including humans	Animals, including humans	Animals, including humans	Animals, including humans
	Living things and their habitats		<i>Lt&tH in Plants, Animals inc. humans and Seasonal Change</i>	Living things and their habitats	<i>Lt&tH in Plants</i>	Living things and their habitats	Living things and their habitats	Living things and their habitats
	Evolution and Inheritance		<i>Evolution and Inheritance in Living things and their habitat</i>	<i>Evolution and Inheritance in Rocks</i>	<i>Evolution and Inheritance in Living things and their habitat</i>		Evolution and Inheritance	
Chemistry 	Materials		Everyday materials	Uses of everyday materials	<i>Materials in Rocks and in Forces and Magnets</i>	States of Matter	Properties and Changes of Materials	
	Rocks		<i>Rocks in Everyday materials</i>	<i>Rocks in uses of everyday materials</i>	Rocks		<i>Rocks in Evolution and Inheritance</i>	
Physics 	Seasons, Earth and Space		Seasonal Changes		<i>Seasons, Earth and Space in Light</i>		Earth and Space	
	Forces and Magnets			<i>Forces in Uses of everyday materials</i>	Forces and Magnets		Forces	
	Electricity					Electricity	Electricity	

Dundry Primary School Science Curriculum Progression



	Light		<i>Light in Animals including Humans</i>		Light			Light
	Sound			<i>Sound in Animals including humans</i>		Sound		

Working Scientifically: Enquiry Skills Big Ideas Coverage and Progression Across Our School:


Black is statutory from NC. Blue is non-statutory from NC. Purple writing is additional guidance for teachers. Green writing from Statutory framework 2021 & Development Matters 2020 (bold green text indicates Early Learning Goal)

Skills		EYFS: Reception	KS1: Year 1 / Year 2	Lower KS2: Year 3 / Year 4	Upper KS2: Year 5 / Year 6
A s k i n g Q u e s t i o n s		<p>Explore the natural world around them (Understanding the World: reception) Notice and ask questions about differences (Personal, Social & Emotional Dev: birth-3). Understanding simple questions about 'who', 'what' and 'where' (Communication & Language: 2 years/ understanding 'why' questions (3-4 years)/ask questions to find out more (reception)</p> <p>Listen attentively and respond to what they hear with relevant questions (ELG: Listening, Attention & Understanding)</p>	<p>Asking simple questions and recognising that they can be answered in different ways. <i>These questions could be stimulated by observations and exploration of their world.</i></p>	<p>Asking relevant questions and using different types of scientific enquiry to answer them.</p>	<p>Explore ideas and raise different kinds of questions</p>
M a k i n g P r e d i c t i o n s			<p>Making predictions with some reasoning based on everyday life experiences and observations. E.g. The blue car will roll further than the red car because it has bigger wheels.</p>	<p>Making more generalised, powerful predictions of patterns or trends. E.g. The higher the ramp, the further the toy car will roll.</p>	<p>Encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. Use basic scientific knowledge to justify predictions. E.g. The higher the ramp the further a car will roll because it is moving faster so when it gets to the end of the ramp it has more force behind it.</p>
S e t t i n g U p t e s t s		<p>Make choices and explore different resources and materials (Playing & Exploring) Be confident to try new activities and show independence, resilience and perseverance in the face of challenge (ELG: Managing Self)</p>	<p><i>Plan a simple enquiry. (e.g. I will test cotton, tin foil and plastic to see what protects a cuddly toy from rain)</i></p>	<p>Setting up simple practical enquiries, comparative and fair tests. <i>Make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions.</i></p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>




Dundry Primary School Science Curriculum Progression

O b s e r v i n g a n d M e a s u r i n g		<p>Use all their sense in hands-on exploration of natural materials (Understanding the World: 3-4 years). Sort materials (Creating & Thinking Critically) Explore different materials and tools (Physical dev: birth-3)</p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG: The natural World)</p> <p>Make comparisons between objects relating to size, length, weight and capacity (Mathematics: 3-4 years)/ compare length weight and capacity (Reception)</p>	<p>Observing closely, using simple equipment and take measurements (for example hand lenses, egg timers).</p> <p>Performing simple tests.</p> <p>Identifying and Classifying.</p>	<p>Making systematic and careful observations and where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <p>Learn how to use new equipment, such as data loggers, appropriately.</p>	<p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.</p> <p>Make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them.</p> <p>Choose appropriate equipment to make measurements and explain how to use it accurately.</p>
R e c o r d i n g D a t a		<p>Use drawing to represent ideas (Expressive Arts & Design: 3-4 years)/ return to and build on their previous learning, refining ideas and developing their ability to represent them (Reception).</p> <p>Use a range of tools, including scissors, paint brushes and cutlery (ELG: Fine Motor Skills)</p>	<p>Gathering and recording data to help in answering questions.</p> <p>Present evidence in templates provided for them.</p>	<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Children create their own simple tables and notes.</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p>	<p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. (They should decide how to record data from these familiar approaches).</p>
I n t e r p r e t i n g a n d c o m m u n i c a t i n g r e s u l t s		<p>Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate (ELG: Speaking)</p>	<p>Using their observations and ideas to suggest answers to questions.</p> <p>Use evidence and draw on their everyday experience to help answer questions.</p>	<p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Using straightforward scientific evidence to answer questions or to support their findings.</p>	<p>Reporting and presenting 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.</p> <p>Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.</p> <p>Talk about how scientific ideas have developed over time.</p>



Dundry Primary School Science Curriculum Progression

E v a l u a t i o n				Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Make predictions for new values within or beyond the data they have collected.	Using test results to make predictions to set up further comparative and fair tests. Identifying scientific evidence that has been used to support or refute ideas or arguments.

Working Scientifically: Types of Enquiry Progression Across Our School:

	EYFS: Reception	KS1: Year 1 / Year 2	Lower KS2: Year 3 / Year 4	Upper KS2: Year 5 / Year 6
<p>Comparative and Fair Testing</p> 	<p>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge (ELG: Managing Self)</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG: The Natural World)</p>	<p>Use simple features to compare objects, materials and living things.</p>	<p>Recognise when a simple fair test is necessary and help to decide how to set it up.</p>	<p>Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.</p>
<p>Research</p> 	<p>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge (ELG: Managing Self)</p> <p>Listen attentively and respond to what they hear with relevant questions (ELG: Listening, Attention & Understanding)</p>	<p>Ask people questions and use simple secondary sources to find answers.</p>	<p>Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.</p>	<p>Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.</p>
<p>Observation Over Time</p> 	<p>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge (ELG: Managing Self)</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter (ELG: The Natural World)</p>	<p>With help, observe changes over time.</p>	<p>Make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.</p>	<p>Make their own decisions about what observations to make, what measurements to take and how long to take them for.</p>

Dundry Primary School Science Curriculum Progression

<p>Pattern-seeking</p> 	<p>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge (ELG: Managing Self)</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG: The Natural World)</p>	<p>With guidance, begin to notice patterns and relationships.</p>	<p>Look for naturally occurring patterns and relationships and decide what data to collect to identify them.</p>	<p>Identify patterns that might be found in the natural environment.</p>
<p>Identifying, Classifying and Grouping</p> 	<p>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge (ELG: Managing Self)</p> <p>Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class (ELG: The Natural World)</p>	<p>With help, decide how to sort and group objects, materials and living things.</p>	<p>Talk about criteria for grouping, sorting and classifying.</p> <p>Use simple keys.</p>	<p>Develop keys and information records to identify, classify and describe living things and materials.</p>

Our 2-year Cycle Long Term Overview in Science (How we have organised the N.C. Breadth of Study)

Cycle A 2021 - 2022

EYFS Breadth of Study	Theme	Me and my home / local history	Seasons	tbc	tbc	Plants and growing things	Under the sea
Year 1/2 Breadth of Study		Everyday Materials (Y1)	Seasonal changes part 1 (Y1)	Animals including humans (from 2023-24)	Seasonal changes part 2 (Y1)	Plants (Y2)	Living things and their habitats (Y2)
Year 3&4 Breadth of Study		Rocks (Y3)	Light (Y3)	Living things and their habitats - Grouping living things (Y4)	Animals including humans (Y3) Nutrition, Skeletons and muscles	Sound (Y4)	
Year 5&6 Breadth of Study		Properties and changes of Materials (Y5)	Electricity (Y6)	Light (Y6)	Sound (revision from Y4)	Living things and their habitats (Y5) Life cycles	Animals including humans (Y5) Human development

Dundry Primary School Science Curriculum Progression

Cycle B 2022 - 2023

EYFS Breadth of Study	Theme	Autumn weather and harvest	Toys	tbc	tbc	tbc	Explorers and Pirates	
Year 1 & 2 Breadth of Study	Animals including humans (Y1&2)	Seasons	Animals including humans (Y1&2)	Seasons	Use of everyday materials (Y2)	Seasons	Plants (Y1 & Y2)	Seasons
Year 3&4 Breadth of Study	Electricity (Y4)	Forces and magnets (Y3)	Living things and their habitats (Y4) - Changing habitats	Animals including humans. (Y4) Digestion, teeth and food webs	Plants (Y3)	States of matter (Y4)		
Year 5&6 Breadth of Study	Forces (Y5)	Earth and space (Y5)	Living things and their habitats (Y6) Classification	Animals including humans (Y6) Circulation	Evolution and inheritance (Y6)			

Dundry Primary School Science Curriculum Progression

Meaningful links in our Science curriculum:

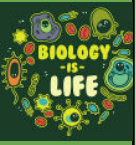


	<i>KS1 1 - Year 1 and Year 2</i>					<i>LKS2 - Year 3 and Year 4</i>						<i>UKS2 - Year 5 and Year 6</i>					
Cycle A	T1: Everyday Materials (Y1)	T2: Seasonal changes part 1 (Y1)	T4: Seasonal changes part 2 (Y1)	T5: Plants (Y2)	T6: Living things and their habitats (Y2)	T1: Rocks (Y3)	T2: Light (Y3)	T3: Living things and their habitats - Grouping living things (Y4)	T4: Animals including humans (Y3) Nutrition, Skeletons and muscles	T5: Sound (Y4)			T1: Properties and changes of Materials (Y5)	T2: Electricity (Y6)	T3: Light (Y6)	T5: Living things and their habitats (Y5) Life cycles	T6: Animals including humans (Y5) Human development
Suggested texts	The three little pigs.	Percy the Park Keeper Seasons come, seasons go Tree	Percy the Park Keeper Season poems	Eddie's garden and how to make it grow It starts with a seed	Pond circle Wild world	Street beneath my feet The pebble in my pocket	The dark The owl who was afraid of the dark	creature features Encyclopedia of animals The variety of life	Human body odyssey Life on earth - Human body	Sonam and the silence Peace at last Sound			Once Upon an Atom: Questions of Science by James Carter & William Santiago	Electricity for Young Makers - Marc De Vinck Cool Circuits and Wicked Wires	LIGHT WAVES - daVID a adLER Edison by Torben Kuhlmann	Wild animals of the North (and South) Dieter Brown	Grow: Secrets of our DNA - Nicola Davies and Emily Sutton
school drivers	locally sourced natural materials			planting and growing in school grounds	Habitats we find in the school and village	Understand rock formations in Dundry / Bristol Link back to KS1 history		Dreams and Goals - how can we protect threatened habitats?	Staying Healthy (PSHE)								Changing me (PSHE)
Cycle B	T1: Animals including humans (Y1)	T2: Use of everyday materials (Y2)		T5: Plants (Y1)	T6: Animals including humans (Y2)	T1: Electricity (Y4)	T2: Forces and magnets (Y3)	T3: Living things and their habitats (Y4) - Changing habitats	T4: Animals including humans. (Y4) Digestion, teeth and food webs	T5: Plants (Y3)	T6: States of matter (Y4)	T1: Forces (Y5)	T2: Earth and space (Y5)	T4: Living things and their habitats (Y6) Classification	T5: Animals including humans (Y6) Circulation	T6: Evolution and inheritance (Y6)	
suggested texts	Healthy Mr Wolf Lots Diversity of life on earth	A planet full of plastic The most magnificent thing		Jack and the beanstalk The tiny seed	Monkey puzzle Fussy Freda	Oscar and the bird Charging about	Magnet Max What makes a magnet?	Greta and the giants How to help a hedgehog and protect a polar bear	Who eats what? food chains. Where does your food go?	The night flower A seed is sleepy The story of Frog Belly Rat Bone	The rhythm of the rain. What is the world made of?	Gravity - Jason Chin	George's Secret Key to the Universe - S and LHawing Here We Are - Oliver Jeffers Hidden Figures: The Story of 4 Black Women and the Space Race	Plantopedia	DK Findout: Human Body	Darwin - An exceptional Voyage Moth - Isabel Thomas When the Whales Walked - Dougal Dixon	
school drivers									Staying Healthy (PSHE)								Changing me (PSHE)

Dundry Primary School Science Curriculum Progression



Our Progression Model in Science (summary of key knowledge and possible enquiries linked to our Big Ideas)

NB bulleted points are directly from National Curriculum; **highlighted** knowledge is identified as prerequisite essential or linked knowledge that is built into our progression model



In EYFS, our teacher bases planning on the EYFS Development Matters document. Detailed below are the 'building blocks' of learning that children will experience in the EYFS year that support progression into Year 1 and beyond linked to our Big Ideas.

Big Idea		EYFS- R	KS1 1 - Year 1 and Year 2	LKS2 - Year 3 and Year 4	UKS2 - Year 5 and Year 6
Biology 	Plants	<p>Explore the natural world around them.</p> <p>Describe what they see, hear and feel whilst outside.</p>	<ul style="list-style-type: none"> identify and name a variety of common wild and garden plants, including deciduous and evergreen trees identify and describe the basic structure of a variety of common flowering plants, including trees observe and describe how seeds and bulbs grow into mature plants find out and describe how plants need water, light and a suitable temperature to grow and stay healthy 	<ul style="list-style-type: none"> identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 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 investigate the way in which water is transported within plants explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal 	<ul style="list-style-type: none"> Relate knowledge of plants to studies of evolution and inheritance. Relate knowledge of plants to studies of all living things.
	key conceptual vocabulary	<p><i>Experience vocabulary such as..</i></p> <p>Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem, Bulbs, Water, Light, Temperature, Growth</p> 	<p><i>Know, understand and use vocabulary such as...</i></p> <p>Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem, Bulbs, Water, Light, Temperature, Growth</p>	<p>Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, fertilisation, Flower</p>	<p><i>Recap and revisit all previously learned vocabulary within other biology units</i></p>
	Possible enquiries	<p><i>Examples of activities could include:</i></p> <p>Encourage interactions with the outdoors to foster curiosity and give children freedom to touch, smell and hear the natural world around them during hands-on experiences.</p> <p>After close observation, draw pictures of the natural world, including animals and plants.</p> <p>Name and describe some plants and animals children are likely to see, encouraging children to recognise familiar plants and animals whilst outside.</p> <p>Listen to children describing and commenting on things they have seen whilst outside, including plants and animals.</p> 	<p>Observing over time: How does a plant change as it grows?</p> <p>Pattern seeking: Explore the relationship between a seed/bulb size and the grown plant</p> <p>Comparative and fair test: Do cress seeds grow better inside or outside?</p> <p>Identify, classify and group: How can we sort these plants?</p> <p>Research using Secondary Sources: which trees grow in our local area?</p>	<p>Observing over time: How does water travel up a plant stem? What does cress need in order to grow well?</p> <p>Pattern Seeking: How do growing conditions affect seed germination?</p> <p>Comparative and fair test: Investigate the effect of temperature/light/moisture on how well a plant grows.</p> <p>Identify, classify and group: Identify and label the different parts of a plant Research using Secondary Sources: investigate pollination and the part bees and other insect play</p>	



Dundry Primary School Science Curriculum Progression

<p>Animals and Humans</p>	<p>Explore the natural world around them.</p> <p>Describe what they see, hear and feel whilst outside.</p>	<ul style="list-style-type: none"> • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense • notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene 	<ul style="list-style-type: none"> • 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 • identify that humans and some other animals have skeletons and muscles for support, protection and movement • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey 	<ul style="list-style-type: none"> • describe the changes as humans develop to old age • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • describe the ways in which nutrients and water are transported within animals, including humans
<p>key conceptual vocabulary</p> 	<p><i>Experience vocabulary such as..</i></p> <p>Fish, Reptiles, Mammals, Birds Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak, Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene</p>	<p><i>Know, understand and use vocabulary such as...</i></p> <p>Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each) Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak, Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene</p>	<p>Movement, Muscles, Bones, Skull, Nutrition, Skeletons, Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar, producer, predator, prey, food chain</p>	<p>Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty, Circulatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration</p>
<p>Possible enquiries</p> 	<p><i>Examples of activities could include:</i></p> <p>After close observation, draw pictures of the natural world, including animals and plants.</p> <p>Name and describe some plants and animals children are likely to see, encouraging children to recognise familiar plants and animals whilst outside.</p>	<p>Observing over time: How do our bodies change over time?</p> <p>Pattern Seeking: Just because we are older are we taller/bigger? Do our different body parts grow as we get older?</p>	<p>Observing over time: Which liquid is the least healthy for our teeth?</p> <p>Pattern Seeking: How are the teeth of an animal related to the type of food they eat?</p> <p>Identify, classify and group: Use a classification key to group and sort these animals. Group food into different food groups.</p>	<p>Observing over time: How are nutrients and water transported in the body?</p> <p>Pattern Seeking: How does exercise affect your heart rate?</p> <p>Research using Secondary Sources: find out about the circulation system using simulation programmes</p>


Dundry Primary School Science Curriculum Progression

	<p>Listen to children describing and commenting on things they have seen whilst outside, including plants and animals.</p>	<p>Identify, classify and group: Group and classify animals by what they eat or their type of animal</p> <p>Research using Secondary Sources: Which part of the body uses taste/hearing etc? Research using Secondary Sources: Why do we need exercise?</p>	<p>Research using Secondary Sources: What job do our muscles do? What food group does XXX belong to?</p>	
<p>Living things</p>	<p>Explore the natural world around them.</p> <p>Describe what they see, hear and feel whilst outside.</p>	<ul style="list-style-type: none"> ● explore and compare the differences between things that are living, dead, and things that have never been alive ● 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 ● identify and name a variety of plants and animals in their habitats, including microhabitats ● 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 	<ul style="list-style-type: none"> ● recognise that living things can be grouped in a variety of ways ● explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment ● recognise that environments can change and that this can sometimes pose dangers to living things / specific habitats 	<ul style="list-style-type: none"> ● describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird ● describe the life process of reproduction in some plants and animals ● 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
<p>key conceptual vocabulary</p> 	<p><i>Experience vocabulary such as..</i></p> <p>Living, Dead, Woodland, Pond</p>	<p><i>Know, understand and use vocabulary such as...</i></p> <p>Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert</p>	<p>Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats</p>	<p>Mammal, Reproduction, Insect, Amphibian, Bird, Offspring, Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects</p>
<p>Possible enquiries</p> 	<p><i>Examples of activities could include:</i></p> <p>Create opportunities to discuss how we care for the natural world around us.</p> <p>Encourage focused observation of the natural world</p>	<p>Observing over time: Observe a minibeast habitat over time eg a wormery</p> <p>Pattern Seeking: How is an animal's body suited to its habitat? (could link to using secondary sources too as a starting point) Do all animals with webbed feet live on or in water?</p>	<p>Observing over time: Use secondary sources to notice how a specific habitat has changed over time eg arctic ice, rainforests</p> <p>Pattern Seeking: Why have I grouped the animals in this way?</p> <p>Identify, classify and group: explore and use a classification key in order to name living things.</p>	<p>Observing over time: What conditions are needed for bread to go mouldy?</p> <p>Pattern Seeking: Can you find a plant or animal that has characteristics for more than one classification group?</p>




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			<p>Identify, classify and group: Group living things by their habitat</p> <p>Research using Secondary Sources: Who lives in the Arctic/Antarctic? Make a food chain using the animals in the Gruffalo. What animals live in an oak tree? What does a XXX need to survive?</p>	<p>Research using Secondary Sources: What do animals in the African grasslands eat?</p>	<p>Identify, classify and group: classify living things and describe how they have been grouped</p> <p>Research using Secondary Sources: find out which microorganisms are helpful in our daily lives and why</p>
Evolution and inheritance	<p>Explore the natural world around them.</p> <p>Talk about members of their immediate family and community.</p>	<ul style="list-style-type: none"> Identify how humans resemble their parents in many features. <p><i>We teach this building block in: PSHE CHanging Me unit</i></p>	<ul style="list-style-type: none"> Identify how plants and animals, including humans, resemble their parents in many features. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Identify how animals and plants are suited to and adapt to their environment in different ways. <p><i>We teach this building block in: Science Living things and Plants</i></p>		<ul 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 and that adaptation may lead to evolution
<p>key conceptual vocabulary</p> 	<p><i>Experience vocabulary such as..</i></p> <p>humans, animal, parent, child</p>	<p><i>Know, understand and use vocabulary such as...</i></p> <p>humans, animal, parent, child, off-spring</p>	likeness, features, habitats, environment	Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics	
<p>Possible enquiries</p> 	<p><i>Examples of activities could include:</i></p> <p>Create opportunities to discuss how we care for the natural world around us.</p> <p>Encourage focused observation of the natural world</p> <p>Encourage positive interaction with the outside world, offering children a chance to take supported risks, appropriate to themselves and the environment within which they are in.</p> <p>During dedicated talk time, listen to what</p>			<p>Pattern Seeking: Are all animals / plants adapted to the environment in which they live?</p> <p>Research using Secondary Sources: What contribution did ... Mary Anning make to how we understand the importance of fossils? What impact has Charles Darwin had on how we think about evolution? How have animals adapted to live in the XXX habitat? Which bird beak has adapted best for which type of bird food?</p>	



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		<p>children say about their family.</p> <p>Share information about your own family, giving children time to ask questions or make comments.</p> <p>Encourage children to share pictures of their family and listen to what they say about the pictures.</p>			
<p>Chemistry</p> 	<p>Materials</p>	<p>Explore the natural world around them.</p> <p>Sort materials. For example, at tidy-up time, children know how to put different construction materials in separate baskets.</p>	<ul style="list-style-type: none"> distinguish between an object and the material from which it is made identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock describe the simple physical properties of a variety of everyday materials compare and group together a variety of everyday materials on the basis of their simple physical properties identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching 	<ul style="list-style-type: none"> compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Relate the simple physical properties of some rocks to their formation (igneous or sedimentary) describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock recognise that soils are made from rocks and organic matter compare and group materials together, according to whether they are solids, liquids or gases 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) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 	<ul 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 know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating 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 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



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	<p>key conceptual vocabulary</p> 	<p><i>Experience vocabulary such as..</i></p> <p>Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth, Stretchy, Stiff, Shiny, Dull, Rough, Waterproof, Absorbent, Opaque, Transparent, Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching, Elastic, Foil</p>	<p><i>Know, understand and use vocabulary such as...</i></p> <p>Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth, Stretchy, Stiff, Shiny, Dull, Rough, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching, Elastic, Foil</p>	<p>Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent, igneous, sedimentary, metamorphic, form, minerals, permeable</p> <p>Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating</p>	<p>Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing, soluble, insoluble</p>
	<p>Possible enquiries</p> 	<p><i>Examples of activities could include:</i></p> <p>Observe and interact with natural processes, such as ice melting</p>	<p>Patterns seeking: Is metal always rigid? Are rocks always hard? Are shiny materials always waterproof?</p> <p>Comparative & Fair testing: What material is best to build a dragon house from? (comparative). Which material mops up the 'wee' best (school dog)? (comparative)</p> <p>Identify, classify and group: sort and group materials according their properties</p> <p>Research using Secondary Sources: use photos to discover how different materials are used in our world.</p>	<p>Observing over time: How does the temperature of water change over time?</p> <p>Pattern Seeking: How does the temperature of an environment affect the temperature of water? What do the patterns in rocks tell about how they were formed? What are different soils made from?</p> <p>Comparative & Fair testing: Which type of soil absorbs the most water? Which rock is more permeable?</p> <p>Identify, classify and group: Classify rocks by their type. Compare the boiling point of different liquids.</p> <p>Research using Secondary Sources: How are fossils formed?</p>	<p>Observing over time: How does salt/sugar dissolve in water? How can it be recovered?</p> <p>Pattern seeking: How does the temperature of the liquid affect the speed or amount of solid that dissolves?</p> <p>Comparative & Fair testing: Can you stop this ice cube from melting? Which material insulates best?</p> <p>Identify, classify and group: Identify materials that can undergo reversible changes and those that cannot.</p> <p>Research using Secondary Sources: find out how sieving, dissolving, chemical reactions are used in the 'real' world</p>
<p>Physics</p> 	<p>Movement, forces and magnets</p>	<p>Explore the natural world around them.</p>	<ul style="list-style-type: none"> • Notice and describe how things move, using simple comparisons such as faster and slower. • Compare how different things move. <p><i>We teach this building block in: DT unit axles and wheels</i></p>	<ul style="list-style-type: none"> • compare how things move on different surfaces • notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • 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 • describe magnets as having 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing 	<ul style="list-style-type: none"> • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing. • 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 air resistance, water resistance and friction, that act between moving surfaces • Describe, in terms of drag forces, why moving objects that are not driven tend to slow down.



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					<ul style="list-style-type: none"> Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect
<p>key conceptual vocabulary</p> 	<p>Experience vocabulary such as..</p> <p>move, fast, faster, slow, slower</p>	<p>Know, understand and use vocabulary such as...</p> <p>move, fast, faster, slow, slower</p>	<p>Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull, iron, nickel, cobalt, magma, topsoil, subsoil, parent material, bedrock</p>	<p>Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys</p>	
<p>Possible enquiries</p> 	<p>Examples of activities could include:</p> <p>Observe and interact with natural processes, such as a magnet attracting an object and a boat floating on water.</p>		<p>Pattern seeking: Are all metals magnetic? Do all metals conduct electricity?</p> <p>Comparative and Fair Testing: Which magnet is the strongest? On which surface will this car travel the fastest/furthest?</p> <p>Identify, classify and group: identify and group materials according to those which are attracted by a magnet</p> <p>Research using Secondary Sources: find out how magnets are used in the 'real' world</p>	<p>Pattern Seeking: How does the height of a ramp affect how the car travels along? What is the relationship between the size of a gear/[pulley/lever and the effort required to move an object</p> <p>Comparative & Fair testing: How does the type of string or straw used affect the distance travelled by a balloon? (fair) How does the shape of an object (ie boat or parachute or helicopter) affect the time it takes to travel through water or air? (fair)</p> <p>Identify, classify and group: Identify the force acting on the object</p> <p>Research using Secondary Sources: find out how forces and mechanics are used in the 'real' world</p>	
<p>Light and Seeing</p>	<p>Explore the natural world around them.</p>	<ul style="list-style-type: none"> Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because light travels from them to our eyes. <p><i>We teach the foundations of this building block through history (Victorians), geography (Japan technology) and general</i></p>	<ul style="list-style-type: none"> recognise that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes 	<ul style="list-style-type: none"> 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 explain that we see things because light travels from light sources to our eyes or from 	




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			<p><i>knowledge discussions in Circle times such as seasonal changes leading to darker mornings and street lights, stunning sunsets, Diwali and Christmas lights</i></p>	<ul style="list-style-type: none"> recognise that shadows are formed when the light from a light source is blocked by an opaque object find patterns in the way that the size of shadows change 	<ul style="list-style-type: none"> light sources to objects and then to our eyes use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
<p>key conceptual vocabulary</p> 	<p><i>Experience vocabulary such as..</i></p> <p>light, dark, electrical light, flame, sun light, see</p>	<p><i>Know, understand and use vocabulary such as...</i></p> <p>light, dark, electrical light, flame, sun light, see, travel, eye</p>	<p>Light, Shadows, Mirror, Reflective, Dark, Reflection</p>	<p>Refraction, Reflection, Light, Spectrum, Rainbow, Colour</p>	
<p>Possible enquiries</p> 	<p><i>Examples of activities could include:</i></p> <p>Observe and interact with natural processes, such as light travelling through transparent material, an object casting a shadow</p>	<p><i>Examples of activities could include:</i></p> <p><i>Observe the seasonal light changes, explore light sources within role play</i></p>	<p>Observing over time: How do shadows change over the day? Make a sundial to measure time.</p> <p>Pattern Seeking: What is the link between the object's distance from a light source and its shadow?</p> <p>Comparative & Fair testing: What is the best material to block out UV light? (comparative) What is the best material to reflect light? (comparative)</p> <p>Identify, classify and group: Group light sources. Group items that reflect/don't reflect. Group materials as transparent, translucent or opaque.</p> <p>Research using Secondary Sources: find out how to stay safe in the sun ie how to view an eclipse</p>	<p>Comparative & Fair testing: How does the angle that a light ray hits a plain mirror affect the angle at which it reflects off the surface?</p> <p>Research using Secondary Sources: find out how our eyes see</p>	
<p>Sound and Hearing</p>	<p>Explore the natural world around them.</p>	<ul style="list-style-type: none"> Observe and name a variety of sources of sound, noticing that we hear with our ears. <p><i>We teach this building block in:</i></p> <p><i>Music</i></p>	<ul style="list-style-type: none"> identify how sounds are made, associating some of them with something vibrating recognise that vibrations from sounds travel through a medium to the ear find patterns between the pitch of a sound and features of the object that produced it find patterns between the volume of a sound and the strength of the vibrations that produced it 		

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				<ul style="list-style-type: none"> recognise that sounds get fainter as the distance from the sound source increases 	
<p>key conceptual vocabulary</p> 	<p><i>Experience vocabulary such as..</i> <i>sound, ear, loud, quiet, high, low</i></p>	<p><i>Know, understand and use vocabulary such as...</i> sound, ear, names some sources of sound, loud, quiet, high, low</p>		Volume, Vibration, Wave, Pitch, Tone, Speaker	
<p>Possible enquiries</p> 	<p><i>Examples of activities could include:</i> Observe and interact with natural processes, such as a sound causing a vibration</p>	<p><i>Examples of activities could include:</i> <i>playing a range of instruments in music lessons</i></p>		<p>Pattern Seeking: What is the difference in sound patterns in different items?</p> <p>Comparative & Fair testing: How does distance from the source affect the volume of the sound? (fair) Which material makes the most effective sound proofing for a music studio? (comparative)</p> <p>Research using Secondary Sources: How are sounds made?</p>	<p>Pattern seeking: What is the relationship between the strength of vibrations and the volume of a sound?</p> <p>Comparative & Fair testing: Which material makes the most effective sound proofing for a music studio? (comparative)</p> <p>Research using Secondary Sources: Find out how the ear hears</p>
Electricity		<ul style="list-style-type: none"> Identify common appliances that run on electricity <p><i>We teach the foundations of this building block through history and general knowledge discussions in circle times</i></p>		<ul style="list-style-type: none"> identify common appliances that run on electricity construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers 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 recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit recognise some common conductors and insulators, and associate metals with being good conductors 	<ul 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 use recognised symbols when representing a simple circuit in a diagram
<p>key conceptual vocabulary</p>		<p><i>Experience vocabulary such as..</i> electrical, electricity, appliance</p>		Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators	Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell

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<p>Possible enquiries</p> 				<p>Pattern Seeking: What are the effects of adding more components to a simple series circuit?</p> <p>Comparative and fair testing: Which material conducts electricity best?</p> <p>Identify, classify and group: group conductors and insulators of electricity</p> <p>Research using Secondary Sources: investigate the symbols used in electrical circuit diagrams</p>	<p>Pattern seeking: What are the effects of adding more components in a parallel circuit?</p> <p>Comparative & Fair testing: Does increasing the voltage affect the brightness of the bulb? (fair)</p> <p>Research using Secondary Sources: What contribution did ... Michael Faraday make to electricity? Using an image with symbols, make this circuit.</p>
<p>Earth in Space</p>	<p>Understand the effect of changing seasons on the natural world around them.</p>	<ul style="list-style-type: none"> observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies Observe the apparent movement of the Sun during the day. 			<ul style="list-style-type: none"> 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 describe the sun, Earth and moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
<p>key conceptual vocabulary</p> 	<p><i>Experience vocabulary such as..</i></p> <p>Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark</p> <p>rain, sun, wind, storm, cloudy, bright, warm, cold</p>	<p><i>Know, understand and use vocabulary such as...</i></p> <p>Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark, shadow, solar system, Earth, sun, moon</p> <p>rain, sun, wind, storm, cloudy, bright, warm, cold</p>			<p>Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation</p>
<p>Possible enquiries</p> 	<p><i>Examples of activities could include:</i></p> <p>Guide children's understanding by drawing children's attention to the weather and seasonal features.</p> <p>Provide opportunities for children to note and record the weather.</p>	<p>Observing over time: How do habitats change over the seasons? What happens to trees in each season?</p> <p>Pattern Seeking: How does the length of daylight in a day change throughout the year?</p>			<p>Pattern Seeking: How does the planet's distance from the sun affect its temperature?</p> <p>Comparative & Fair testing: How does the mass of an object affect the size of the crater formed on impact? (fair)</p>

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		<p>Select texts to share with the children about the changing seasons.</p> <p>Throughout the year, take children outside to observe the natural world and encourage children to observe how animals behave differently as the seasons change.</p> <p>Look for children incorporating their understanding of the seasons and weather in their play</p>			<p>Research using Secondary Sources: How close / far away are the planets in our solar system away from the sun?</p>
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Working Scientifically: Enquiry Skills mapped onto Types of Enquiry

KS1			Making Predictions 	Setting up Tests 	Observing and Measuring		Recording Data		Interpreting and Communicating Results		Evaluating 	
					Observing	Measuring	Recording Data	To present results	Interpret Results	Draw Conclusions		
	Identifying, Classifying and Grouping	Be able to ask a Yes/No questions to aid sorting	Children in KS1 are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask children what they think may happen, but this will be based on experience or may simply be a guess.	Identify the headings for the two groups (it is, it is not)	Be able to compare objects based on obvious, observable features e.g. size, shape, colour, texture etc.			Sort objects and living things into two group using a basic Venn diagram or simple table	Talk about the number of objects in each group i.e. which has more or less	Children in KS1 are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the subject knowledge to give reasons for what they observe so they cannot draw scientific conclusions.	Children in KS1 are not expected to evaluate. However, children should be encouraged to consider their method and adapt this where necessary.	
		Researching		Ask one or two simple questions linked to a topic					Present what they have learnt verbally or using pictures			Be able to answer their questions using simple sentences
		Comparative /fair testing		Identify the question to investigate from a scenario or choose a question from a range provided	Choose equipment to use and decide what to do and what to observe or measure in order to answer the question	Make observations linked to answering the question	When appropriate, measure using standard units where all the numbers are marked on the scale	Record data in simple prepared tables, pictorially or by taking photographs	Present what they learnt verbally, using pictures or block diagrams			Answer their question in simple sentences using their observations or measurements


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	O b s e r v i n g o v e r t i m e	Ask a question about what might happen in the future based on an observation					Record data in simple prepared tables, pictorially or by taking photographs	Present what they learnt verbally or using pictures			
	P a t t e r n s e e k i n g	Ask a question that is looking for a pattern based on observations					Record data in simple, prepared tables and tally charts	Present what they learnt verbally			
LKS2		Scientific Questions 	Making Predictions 	Setting up Tests 	Observing and Measuring 		Recording Data 		Interpreting and Communicating Results 		Evaluating 
					Observing	Measuring	Recording Data	To present results	Interpret Results	Draw Conclusions	
	Identifying, Classifying and Grouping	Be able to ask a range of Yes/No questions to aid sorting		Be able to put appropriate headings onto intersecting Venn and Carroll diagrams	Be able to compare objects based on more sophisticated, observable features. Present observations in labelled diagrams.			Sort objects and living things into groups using intersecting Venn and Carroll diagrams	Spot patterns in the data particularly two criteria with no examples e.g. there are no living things with wings and no legs	Draw simple conclusions, when appropriate, for patterns e.g. a flying insect with no legs might always crash land	Suggest improvement e.g. a wider range of objects – only looked at British trees. Suggest new questions arising from the investigation.

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	<p>R e s e a r c h i n g</p>	<p>Ask a range of questions linked to a topic</p>		<p>Choose a source from a range provided</p>				<p>Present what they learnt verbally or using labelled diagrams</p>	<p>Be able to answer their questions using simple scientific language</p>		<p>Suggest limitations e.g. only had one book. Suggest new questions arising from the investigation.</p>
	<p>C o m p a r a t i v e / f a i r t e s t i n g</p>		<p>Use results from an investigation to make a prediction about a further result</p>	<p>Decide what to change and what to measure or observe</p>	<p>As for KS1</p>	<p>Measure using standard units where not all the numbers are marked on the scale, and take repeat readings where necessary</p>	<p>Prepare own tables to record data</p>	<p>Present data in bar charts</p>	<p>Refer directly to their evidence when answering their question</p>	<p>Where appropriate provide oral or written explanations for their findings</p>	<p>Suggest improvements e.g. to method of taking measurements. Suggest new questions arising from the investigation.</p>
	<p>O b s e r v i n g o v e r t i m e</p>			<p>Decide what to measure or observe. Decide how often to take a measurement.</p>	<p>Make a range of relevant observations</p>	<p>Measure using standard units where not all the numbers are marked on the scale. Use dataloggers to measure over time.</p>		<p>Present data in time graphs</p>			

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	P a t t e r n s e e k i n g			Decide what to measure or observe	As for KS1	Measure using standard units where not all the numbers are marked on the scale.		Use ICT package to present data as a scattergram			
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UKS2	Scientific Questions 	Making Predictions 	Setting up Tests 	Observing and Measuring 		Recording Data 		Interpreting and Communicating Results 		Evaluating 	
				Observing	Measuring	Recording Data	To present results	Interpret Results	Draw Conclusions		
	Identifying, Classifying and Grouping	Be able to ask a range of Yes/No questions to aid sorting and decide which ways of sorting will give useful information		Identify specific clear questions that will help to sort without ambiguity	Be able to compare not only based on physical properties but also on knowledge gained through previous enquiry			Create branching databases (tree diagrams) and keys to enable others to name living things and objects	Be able to talk about the features that objects and living things share and do not share based on the information in the key etc.	Be able to use data to show that living things and materials that are grouped together have more things in common than with things in other groups	Be able to explain using evidence that the branching database or classification key will only work for the living things or materials it was created for
	Researching	Ask a range of questions recognising that some can be answered through research and others may not		Choose suitable sources to use				Present what they learnt in a range of ways e.g. different graphic organisers	Be able to answer their questions using scientific evidence gained from a range of sources		Be able to talk about their degree of trust in the sources they used

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	<p>C o m p a r a t i v e / f a i r t e s t i n g</p>	<p>Ask a range of questions and identify the type of enquiry that will help to answer the questions. Ask further questions based on results.</p>	<p>Use test results to make predictions for further investigations</p>	<p>Recognise and control variables where necessary</p>	<p>As for KS1</p>	<p>Measure using standard units using equipment that has scales involving decimals</p>	<p>Prepare own tables to record data, including columns for taking repeat readings</p>	<p>Choose an appropriate form of presentation, including line graphs</p>	<p>Be able to answer their question, describing causal relationships</p>	<p>Provide oral or written explanations for their findings</p>	<p>Explain their degree of trust in their results e.g. precision in taking measurements, variables that may not have been controlled, and accuracy of results</p>
	<p>O b s e r v i n g o v e r t i m e</p>						<p>As for LKS2</p>		<p>Be able to answer their questions, describing the change over time</p>		
	<p>P a t t e r n s e e k i n g</p>							<p>Choose an appropriate form of presentation, including scatter graphs</p>	<p>Be able to answer their questions identifying patterns</p>		

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Assessment of our curriculum in Science

Teachers complete ongoing informal assessments on children's learning that help them to identify gaps in learning which can be addressed promptly. These may be in the form of careful questioning, recall quizzes, mind maps or other assessment for learning tasks.

Within a unit of learning, teachers will select high quality tasks that will enable all pupils to demonstrate what they have learned in the unit. We recognise that the purpose of these tasks is to identify where there is under or over provision for learners so that any problem can be addressed promptly. Therefore teachers know what good learning looks like on a daily basis and over time; and know that it is their understanding of **how** a pupil completes a task or activity enables the pupil to clearly demonstrate **what** they have learned and their **depth** of learning.

GLD (EYFS)

Understanding the World: ELG: The Natural World

Children at the expected level of development will:

- Explore the natural world around them, making observations and drawing pictures of animals and plants;
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.