Science Progression Map

Achieving Excellence Together

Ladybridge Primary School

**"The important thing is not to stop questioning.
Curiosity has its own reason for existence." Albert Einstein**

Our Curricuulm Intent:

Our curriculum is designed to take into account individual starting points to ensure an equality of opportunity to a broad, balanced and **knowledge-rich** curriculum, with a particular **emphasis on VOCABULARY**. The content of our **ambitious** curriculum is carefully **sequenced** to encourage progression of **skills**, **connections** and **transference to long-term memory**, and is chosen for its **usefulness** and **relevance** to our pupils. Pupils are immersed in **rich, relevant and contextualised** first-hand experiences, which enthuse, excite and challenge them. Pupils are encouraged to investigate, explore and take risks. As a result, pupils make excellent progress in their development and application of knowledge, understanding and skills (across different contexts).

At Ladybridge, we encourage our pupils to, 'Think like Scientist.'

Intent:

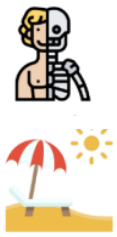
At Ladybridge, we provide a carefully sequenced and ambitious science curriculum that progressively builds pupils' substantive knowledge and disciplinary (working scientifically) skills over time. Our science topics have been thoughtfully selected to help children develop a secure understanding of the key concepts in biology, chemistry, and physics, while encouraging curiosity about the world around them. Pupils build their knowledge of scientific processes, and learn how these explain both the natural and man-made world.Through practical, first-hand investigations and rich, contextualised learning experiences, pupils are immersed in science that is relevant, meaningful, and engaging. They are taught to work scientifically, asking questions, making predictions, planning and carrying out experiments, observing closely, taking accurate measurements, and gathering and analysing data to draw evidence-based conclusions. By progressively strengthening their knowledge and enquiry skills, Ladybridge pupils develop a deep understanding of scientific ideas and how they are established through evidence. This equips them for future learning and helps them to think critically, reason logically, and appreciate the role of science in shaping and improving the world around them.

Implementation:

At Ladybridge, Science is taught every week. This regular, consistent approach ensures pupils have frequent opportunities to build, revisit and deepen their scientific understanding. A carefully designed progression grid underpins our Science curriculum. Teachers use this document to plan sequenced medium-term units and well-structured individual lessons. The progression of learning is mapped to ensure concepts build systematically over time, enabling pupils to develop secure scientific knowledge and working scientifically skills year on year. To support scientific thinking and ensure consistency across the school, we have created two sets of Science 'lenses' that help children make meaningful connections in their learning. The first set focuses on working scientifically, guiding pupils to think about the processes involved in scientific enquiry such as asking questions, making predictions, recording results and presenting data. The second set consists of enquiry-based lenses, which include pattern seeking, grouping and classifying, collecting and interpreting data, observation over time, research, and comparative or fair testing. By using these lenses regularly, pupils are able to recognise which type of enquiry they are carrying out and understand the purpose behind each investigation. This structured approach helps them draw links between different scientific activities and develop a deeper understanding of scientific processes over time. Learning is scaffolded carefully across the school, with each year group revisiting and extending prior knowledge to promote depth and long-term understanding. Every classroom features a consistent Science working wall, updated weekly to reflect current learning. These working walls display key vocabulary, enquiry questions, scientific lenses, diagrams and models relevant to the topic. Vocabulary is progressively mapped across the school and is visible both in books and on walls to strengthen scientific language and conceptual understanding.At Ladybridge, we believe it is essential for pupils to develop their scientific understanding through rich, hands-on exploration. Teachers provide regular practical experiences that allow pupils to investigate, test ideas, and apply scientific concepts in real contexts. Pupils are encouraged to be curious, to question, to observe closely and to think critically about the world around them. Through this approach, we aim to nurture confident, motivated young scientists who are excited to explore, enquire and make sense of the phenomena they encounter.

Impact:

At Ladybridge, the impact of our Science curriculum is seen in pupils who think and work like scientists. They are curious, reflective, and increasingly confident in exploring and questioning the world around them. By the time they leave us, children have a secure understanding of key scientific concepts, strong foundational knowledge, and the ability to apply scientific skills with accuracy and independence. They are equipped with a rich and progressive scientific vocabulary that enables them to articulate their ideas clearly and explain their thinking using precise scientific language. Children present their scientific learning to a high standard in a range of purposeful ways, and regular discussions, practical work and book looks demonstrate their growing confidence in using scientific enquiry skills and applying key concepts. Consistent teaching and collaborative staff moderation ensure that science is delivered effectively across all year groups, with clear progression and high expectations. Hands-on investigations and scientific enquiries help bring science to life and make learning memorable. Above all, we want every child to thoroughly enjoy science, feeling motivated to ask questions, investigate, test ideas and develop a deep understanding of how and why things happen in the world around them.

	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
Year 1						
Year 2						
Year 3						
Year 4						
Year 5						
Year 6						

Knowledge:

Substantive Knowledge	Disciplinary Knowledge
Biology plants, animals, habitats, human systems **Chemistry** changes in matter, rocks, everyday materials **Physics** light, electricity, space, sound, forces, weather	**Working Scientifically Skills:** Asking questions, planning, observing, measuring, interpreting results, concluding, predicting, evaluating. **Approaches to Scientific Enquiry:** Fair testing, researching, observing over time, pattern seeking, identifying, grouping, classifying.

Themes:

Themes build knowledge sequentially with opportunities to revisit and build on children's prior learning – deepening knowledge and understanding. Links are made in learning through recurring themes throughout our curriculum.

Biology			
Plants	**Animals Including Humans**	**Living Things and their Habitats**	**Evolution and Inheritance**
			

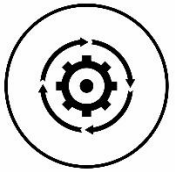
Chemistry		
Rocks	**Sates of Matter**	**Materials**
		

	Physics				
Seasonal Changes	**Light**	**Forces**	**Earth and Space**	**Electricity**	**Sound**
					

Scientific Enquiry:

				
Comparative/Fair Testing	**Research**	**Observation over Time**	**Pattern Seeking**	**Identifying, Grouping and classifying**
Changing one variable to see its effect on another, whilst keeping all others the same.	Using secondary sources of information to answer scientific questions.	Observing changes that occur over a period of time – ranging from minutes to months.	Identify patterns and looking for relationships in enquires where variable are difficult to control.	Making observation to name, sort and organise things.

Working Scientifically Skills:

Asking Questions	Making Predictions	Planning an Enquiry	Gathering Data	Recording Data	Drawing and presenting Data	Evaluating
						
Asking questions that can be answered using a scientific enquiry.	Using prior knowledge to suggest what will happen in an enquiry.	Deciding on the methods and equipment to use to carry out an enquiry.	Using senses and measuirng equipment to make observations and measurements	Using tables, drawings and other means to note observations and measurements.	Using information from the data to say what you found out	Reflecting on the success of the enquiry approach and identifying further questions for enquiry

	Chemistry				Chemistry								
	Plants	Animals Including Humans	Living Things and their Habitats	Evolution and Inheritance	Materials	Rocks	Sates of Matter	Seasonal Changed	Light	Forces	Earth and Space	Electricity	Sound
													
Reception													
Year 1													
Year 2													
Year 3													
Year 4													
Year 5													
Year 6													

Plan Enquiries

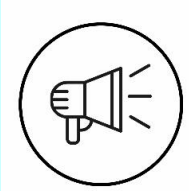
Ask Questions

Think Like a Scientist....

Gather Data

Present Data

Draw Conclusions



Record Data

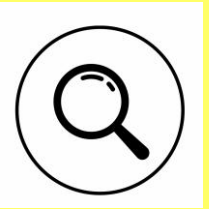
Think Like a Scientist....

Make Predictions

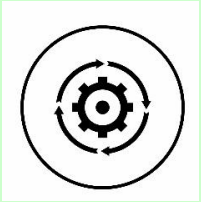
Plan Enquiries

Ask Questions

Gather Data

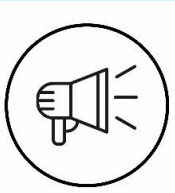


Evaluate



Present Data

Draw Conclusions



Record Data

Working Scientifically:	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ask Questions	Ask questions about the world around them.	Use everyday language and begin to use simple scientific words to ask or answer a scientific question. Use a range of given question stems, such as: what; what if; why; when; who; and how; to ask questions about the objects, living things and processes they are exploring.	Suggest ideas, ask simple questions and know that they can be answered/investigated in different ways.	Use ideas to pose questions, independently, about the world around them. Ask scientific enquiry questions, with support.	Asking relevant questions and using different types of scientific enquiries to answer them.	Independently ask scientific enquiry questions. Raise different types of scientific questions, and hypotheses.	Pose/select the most appropriate line of enquiry to investigate scientific questions.
National Curriculum:	**EYFS**	Explore the natural world around them, making observations and drawing pictures of animals and plants.					
	Ks1	Asking simple questions and recognising that they can be answered in different ways					
	Lks2	Asking relevant questions and using different types of scientific enquiries to answer them. Using straightforward scientific evidence to answer questions or to support their findings.					
	Uks2	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.					

Working Scientifically:	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Planning an Enquiry identify how to gather the data required to answer the scientific enquiry question Select appropriate practical equipment to gather the data.	Performing simple tests.	Performing simple tests.	Performing simple tests.	Discuss enquiry methods and describe a fair test. Set up simple practical enquiries.	Set up simple practical enquiries, comparative and fair tests. Make decisions about different enquiries including recognising when a fair test is necessary. Begin to identify variables. Using straightforward scientific evidence to answer questions or to support their findings.	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Identify specific clear questions that will help to sort without ambiguity. Select and plan the most suitable line of enquiry, explaining which variables need to be controlled and why, in a variety of comparative and fair tests. Decide how often to take a measurement.

National Curriculum:		
	EYFS	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
	Ks1	Performing simple tests.
	Lks2	Setting up simple practical enquiries, comparative and fair tests
	Uks2	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary

Working Scientifically:	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Making Predictions				Use the data they have already gathered to suggest values for the next reading.	Make predictions and give a reason using simple scientific vocabulary.	Make predictions and give a reason using scientific vocabulary. Use the data they have already gathered to suggest further values.	Use the scientific understanding gained from scientific enquiry to make predictions they can investigate using further comparative and fair tests.
National Curriculum:	**Lks2**	Setting up simple practical enquiries, comparative and fair tests					
	Uks2	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary					

Working Scientifically:	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Gathering Data	Explore the natural world around them, making observations and drawing pictures of animals and plants.	Talk about their observations when comparing objects, materials and living things Compare objects based on obvious, observable features e.g. size, shape, colour, texture etc. Talk about their observations when describing changes. When using a magnifying glass, adjust the position of the magnifying glass in order to see the enlarged image clearly.	Make direct comparisons of length and height Use simple measuring equipment, such as teaspoons, pipettes, rulers, metre sticks etc.	Make systematic and careful observations. Measure time in standard units using stopwatches or timers. Measure temperature in standard units using thermometers. Measure capacity in standard units using syringes, beakers or measuring cylinders.	Make systematic and careful observations. Measure length in standard units using rulers, meter sticks, tape measures or trundle wheels. Use data loggers.	Make relevant systematic and detailed observations Select measuring equipment to give appropriately precise results Take repeat readings as appropriate	Use a range of equipment to take measurements (e.g. distance, time, temperature, capacity, force) using standard units

National Curriculum:		
	EYFS	Explore the natural world around them, making observations and drawing pictures of animals and plants.
	Ks1	Observing closely, using simple equipment
	Lks2	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
	Uks2	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.

Working Scientifically:	**EYFS**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recording Data	Record their observations using drawings.	Use a camera to take photographs or videos to record their observations. Record their observations using drawings. Physically group objects, materials and living things or their images by a criterion. Use data they gather to physically rank objects or materials (comparative testing)	Record their observations or comparisons in writing. Record their observations using labelled drawings Physically group objects or materials according to the data they gather (classifying) Add their data to a prepared table. Make a physical block graph or bar chart by using bricks, lolly sticks. Add tally marks to a tally chart and count up the total number. Maths: Construct simple pictograms, tally charts, block diagrams and simple tables.	Record data in a simple table they construct themselves Record their measurements directly onto a bar chart with the axes and scales provided Maths: Present data using bar charts, pictograms and tables.	Record observations and information using a drawing, a labelled diagram and, a key. Maths: Present discrete and continuous data, including bar charts and time graphs	Construct, and record data in, a complex table. Construct, and record data in, a bar chart. Maths: Complete, read and interpret information in tables, including timetables.	Choose an appropriate method to record the data they will gather using experience of recording methods learnt in Key Stage 1 and Lower Key Stage 2 (e.g. photographs, videos, drawings, labelled diagrams, writing, tables, keys) Construct, and record data in, a line graph Add data on to a scatter graph with the axes and scales provided. **Maths: Interpret and construct pie charts and line graphs.**
National Curriculum:	**EYFS**	Explore the natural world around them, making observations and drawing pictures of animals and plants.					
	Ks1	Gathering and recording data to help in answering questions.					
	Lks2	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.					
	Uks2	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.					

Working Scientifically:	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Presenting Data and Drawing Conclusions		Use their observations and simple sources (e.g. identification sheets) to name living things. Recognise 'biggest and smallest', 'best and worst' etc. from their data. .	Give an answer to their scientific enquiry question that is consistent with the data they have gathered either through observations, measurements or from research. Recognise that they can answer scientific enquiry questions in different ways.	With support, answer the scientific enquiry question using the data gathered. Communicate their findings from practical activities.	With support, answer the scientific enquiry question using the data gathered. Present, with support, the recorded data in a different way in order to help answer the question.	Answer the scientific enquiry question using the data gathered. Talk about how their scientific ideas change due to new data that they have gathered Talk about how scientific discoveries have changed scientific understanding in the past and continue to do so today.	Present the recorded data in a different way in order to help answer the question. Answer the scientific enquiry question using the data gathered. Discuss whether other evidence (e.g. from other groups or their scientific understanding) supports or refutes their answer
National Curriculum:	Ks1	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions					
	Lks2	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.					
	Uks2	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					

Working Scientifically:	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evaluating				Compare two methods for a test.	Identify ways in which they adapted their method as they progressed or how they could change it to improve the data gathered	Evaluate the precision of their measurements.	Evaluate whether the results are trustworthy enough to answer the scientific enquiry question.
National Curriculum:	**Lks2**	Using straightforward scientific evidence to answer questions or to support their findings.					
	Uks2	Identifying scientific evidence that has been used to support or refute ideas or arguments.					

	Progression of Knowledge						
Key Concept	**EYFS**	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**	**YEAR 6**
 PLANTS	Plant seeds and care for growing plants. Observe the changes of seeds into plants. Understand the need to respect and care for the natural environment and all living things.	Identify and describe the basic structure of a variety of common flowering plants. Identify and name a variety of common wild and garden plants, including deciduous and evergreen 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.	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.			

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
 ANIMALS INCLUDING HUMANS	Identify and name a variety of animals. observations of animals and explain why some things occur. To use my 5 senses. Understand the key features of the life cycle of an animal. Understand the need to respect and care for the natural environment and all living things.	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.	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.	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.

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
 MATERIALS STATES OF MATTER	Explore collections of materials with similar and/or different properties. Talk about the differences between materials and changes they notice. Explore how different materials sink and float.	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 about how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.		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.  STATES OF MATTER	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	

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
 LIVING THINGS AND THEIR HABITATS		Explore and compare difference 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 food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.		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.	Describe the difference 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 difference, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.

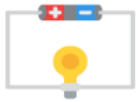
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
ROCKS 			Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.			

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
LIGHT 				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. Recognise that shadows formed when light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.			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 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.

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
FORCES 	Explore and talk about different forces I can feel (push/pull).			Compare how things move on different surfaces. Notice that some forces need contact between two 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 two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.		Explain that unsupported object 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. Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
SEASONS AND WEATHER 	Understand some of the signs in the change of seasons.	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.					

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
SOUND 				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. Recognise that sounds get fainter as the distance from the sound increases.		

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
ELECTRICITY 				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 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.		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.

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
EARTH AND SPACE 					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.	

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
EVOLUTION AND INHERITANCE 						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.

EYFS												
	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Theme	What makes me, me?		Can we go into the woods today?		What do terrific tales teach us?		How does your garden grow?		What is in our wonderful world?		What can we see under the sea?	
		Explore collections of materials with similar and/or different properties. I can explore my environment.	      	Understand some of the signs in the change of seasons → Autumn. **Explore the natural world around them, making observations** I can find some signs of autumn, on an autumn walk. I can use a tick sheet to show what I find. Make observations of animals and explain why some things occur. I can observe autumn animals e.g hedgehogs and squirrles. Identify and name a variety of animals. I can identify autumul animals. To use my 5 senses. I can use my senses to collect information about autumn. Talk about the differences between materials and changes they notice (cooking – biscuits) I know that ingrediants can be missed together to make a biscuit, when heated.	      	Understand some of the signs in the change of seasons → Winter. **Explore the natural world around them, making observations** I can find some signs of winter, on a winter walk. I can use a tick sheet to show what I find. Make observations of animals and explain why some things occur. Identify and name a variety of animals. I can observe winter animals. I know why animals hibernate. Talk about the differences between materials and changes they notice (winter water – freezing/melting.) **Performing simple tests.** I know what happens when water freeses. I know what happens when ice is heated. Respect and care for the natural environment and all living things.I know how to help look after animals during winter. E.g make bird feeders.	         	Plant seeds and care for growing plants. I know how to plant a seed and care for it. Observe the changes of seeds into plants. I can talk what happens to a seed once it has been planted. Respect and care for the natural environment and all living things.I know how to help look after plants in my environement. Identify and name a variety of animals. I can identify farm animals. Understand the key features of the life cycle of an animal. (Butterfly – Hungry caterpillar) I know a caterpillar build a cocoon and changes into a butterfly. Make observations of animals and explain why some things occur. I can observe animals in spring. E.g. lambs, chicks etc. Understand some of the signs in the change of seasons → Spring. **Explore the natural world around them, making observations. Record their observations using drawings.** I can find some signs of spring, on a spring walk. I can use a tick sheet to show what I find.		Explore and talk about different forces I can feel (push/pull). I know what happens when I push or pull a toy car.	     	Respect and care for the natural environment and all living things. I know the importance of recycling. Talk about the differences between materials and changes they notice (sinking & floating) . **Performing simple tests.** I can explore items which float and sink. Understand some of the signs in the change of seasons → Summer. **Explore the natural world around them, making observations** I can find some signs of summer, on a summer walk. I can use a tick sheet to show what I find. Make observations of animals and explain why some things occur. I can observe animals during summer.

Outcomes that are ongoing throughout the year:	Looks closely at similarities, differences, patterns, and change in nature. Use all of my senses in hands-on exploration of natural materials  Ask questions about the world around them.  Make observation to sort and group things. (seasons – provision.)
ELG link: **(to be achieved by the end of the year)**	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.*

Year 1			
Summer 1		**Summer 1**	
Materials			
Key Concept:		**Key Concept:**	
			
National Curriculum: 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.		**National Curriculum:** 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.	
Key Knowledge: Know that all objects are made of one or more materials. Some objects can be made from different materials e.g. plastic, metal or wooden spoons. Know that materials can be described by their properties e.g. shiny, stretchy, rough etc. Some materials e.g. plastic can be in different forms with very different properties.		**Key Knowledge:** Know that animals vary in many ways having different structures and have different skin coverings. Know that animals eat certain things. Know that humans have key parts in common, but these vary from person to person. Know that humans (and other animals) find out about the world using their senses. Humans have five senses – sight, touch, taste, hearing and smelling. These senses are linked to particular parts of the body.	
Key Enquiry Questions:		**Key Enquiry Questions:**	
	How are materials different? How can we sort materials? Classify materials based on their properties		What are the parts of your body called? Close observations of parts of the body e.g. hands, eyes. Classify people according to their features. compare parts of their own body How can we group animals based on what they eat? Identify and name a variety of common animals (carnivore, herbivore and omnivore)
	Which materials are waterproof? Classify materials based on their properties. Sort materials into waterproof and not waterproof.		Do people with big hands have big feet? Look for patterns between people.
	Which materials are best for a superhero costume? Test the properties of objects e.g. absorbency of cloths, strength of party hats made of different papers, stiffness of paper plates, and waterproofness of shelters.		Is our sense of smell better when we can't see? Investigate human senses e.g. Which part of my body is good for feeling, which is not? Which food/flavours can I identify by taste? Which smells can I match?

Year 1			
Summer 1		**Summer 1**	
Plants		**Seasons and Weather**	
Key Concept:		**Key Concept:**	
			
National Curriculum: 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.		**National Curriculum:** Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	
Key Knowledge: Know that plants all have specific names. Know that can be identified by looking at the key characteristics of the plant. Know that plants have common parts, but they vary between the different types of plants. Know that some trees keep their leaves all year while other trees drop their leaves during autumn and		**Key Knowledge:** Know that in the UK, the day length is longest at mid-summer (about 16 hours) and gets shorter each day until mid-winter (about 8 hours) before getting longer again. Know that the weather also changes with the seasons. In the UK, it is usually colder and rainier in winter, and hotter and dryer in the summer. Know that the change in weather causes many other changes e.g. seed and plant growth; leaves on trees; and type of clothes worn by people.	
Key Enquiry Questions:		**Key Enquiry Questions:**	
	Which trees grow in our local area? Know and name a variety of common wild and garden plants, including deciduous and evergreen trees.		In what season does it rain the most? Collect information about the weather regularly throughout the year.
	Do taller trees have the bigger leaves? Name and identify trees. Label parts of a tree.		What happens to trees in each season? Observe changes across the four seasons.
	What are the most common British plants and where can we find them? Use secondary sources to find out information about		How long is a day? Gather data about the length of days in different seasons.

<table>
<tr><th colspan="4">Year 2</th></tr>
<tr><th colspan="2">Summer 1 and 2</th><th colspan="2">Autumn 1 and 2</th></tr>
<tr><td colspan="2">Living Things and their Habitats</td><td colspan="2">Animals including Humans</td></tr>
<tr><td colspan="2"><u>Key Concept:</u></td><td colspan="2"><u>Key Concept:</u></td></tr>
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td colspan="2"><u>National Curriculum:</u>

Explore and compare difference 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 food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</td><td colspan="2"><u>National Curriculum/ Key Knowledge:</u>

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.</td></tr>
<tr><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td></td><td>How would you group things to show which are living, dead or have never been alive? Classify objects found in the local environment.</td><td></td><td>What food do you need in a healthy diet? Why? Classify food in a range of ways, including using the</td></tr>
<tr><td></td><td>What do insects eat the most? Create simple food chains for a familiar local habitat from first-hand observation and research. Create simple food chains from information given.</td><td></td><td>How does a tadpole change over time? How does a butterfly change over time? Ask people questions and use secondary sources to find out about the life cycles. Match animals to their offspring. Observe animals growing over a period of time.</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">How does the habitat of the Arctic compare to the habitat of the rainforest? Compare different habitats.</td><td></td><td>What do drinks do to our teeth?
Explore the effect of diferent drinks on our teeth.</td></tr>
<tr><td></td><td>Are there patterns between the ife cycles of different animals? Children will encouraged to spot patterns, as well as similarties and differences, based on observations, across different animal groups</td></tr>
</table>

Year 2			
Spring 1		**Spring 2**	
Materials		**Plants**	
Key Concept:		**Key Concept:**	
			
National Curriculum: 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 about how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.		**National Curriculum:** 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.	
Key Scientific Enquiries:	**Key Questions:**		
	Which materials are best for different jobs? How can we change materials?		How do plants grow? Plants change over a period of time grow a variety of items. Record our flowers changing each week.
	Which material would be best for the roof of the little pig's house?Test the properties of materials for a particular use. Test the materials for streght, flexibility, waterproof. Etc		What happens to my bulb after I planted it? Research and plan when and how to plant a range of seeds and bulbs. Look after the plants as they grow. Make close observations and measurements of plants. Make comparisons between plants as they grow.
	What materials can be recycled? Identify materials that can be recycled.		Are seeds and bulbs the same? Classify seeds and bubs. Make close observations of seeds and bulbs.
			Do bigger seeds grow into bigger plants? Find out what plants need to grow.

Year 3					
Summer 1		**Spring 1**		**Summer 1**	
Rocks		**Animals including Humans**		**Light**	
Key Concept:		**Key Concept:**		**Key Concepts:**	
					
National Curriculum/ Key Knowledge: Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter.		**Key Knowledge:** 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.		**Key Knowledge:** 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. Recognise that shadows formed when light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.	
Key Enquiry:					
 	Is a rock always hard? Observe and classify rocks in a range of ways. (Appearance, hardness, if they are crumbly, rock types etc) Compare rocks based on their properties		What do you need to eat to stay healthy? Classify food in a range of ways. (answering enquiry questions such as how much sugar in in this soft drink?) Label and identify the food groups and their importance. Use secondary sources to find out the types of food that contain the different nutrients.		How many sources of light are there? Name light sources including the sun. Know that the moon, windows and mirrors are not sources of light.
			How do the skeletons of different animals compare? Research the parts and functions of the skeleton using secondary sources. Identify and sort animals with different skeleton types (vertebrates and invertebrates).		Which object reflects the most light? If we change the material what will happen to how it reflects the light? Observe how objects with different surfaces, e.g. shiny vs matt reflect light.
	Who is Mary Anning? Observe fossils Explain how fossils are formed Research the work of Mary Anning		Do people with longer arms throw further?		What happens to shadows when the light source is moved? Explore how shadows vary.

Year 3			
Summer 1		**Summer 1**	
Forces		**Plants**	
Key Concept:		**Key Concept:**	
			
National Curriculum/ Key Knowledge: Compare how things move on different surfaces. Notice that some forces need contact between two 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 two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.		**National Curriculum/ Key Knowledge:** 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.	
	Which materials are magnetic? Observe materials that are attracted to a magnet. Classify materials that are magnetic or not.		Which conditions help seeds germinate faster? Investigate what happens to plants when they are put in different conditions e.g. in darkness, in the cold, deprived of air, different types of soil.
	Which magnet is the strongest? To investigate and test the strength of magnets.		How does the length of the stem affect how fast the food colouring dyes the petals? Explain how water is transported in plants. Observe the effect of putting cut white petals in coloured water.
	How do magnets move? Explore the way that magnets behave in relation to each other. Explore how magnets work at a distance e.g. through the table, in water, jumping paper clips up off the table.		What is pollination? Observe flowers carefully to identify the pollen. WALT explain how pollination works. observe flowers being visited by pollinators - bees and butterflies in the summer
	How does the surface that a toy car moves on affect the distance that it will travel? Investigate how objects move on different surfaces e.g. grass, gravel, wooden flooring, concrete etc		

Year 4					
Summer 1		**Autumn 1**		**Summer 1**	
Sound		**Animals including Humans**		**Electricity**	
Key Concept:		**Key Concept:**		**Key Concepts:**	
					
National Curriculum/ Key Knowledge: 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. Recognise that sounds get fainter as the distance from the sound increases.		**Key Knowledge:** 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.		**Key Knowledge:** 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 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.	
Key Enquiry:					
	How does the volume of a drum change as you move further away from it? Measure sounds over different distances. Measure sounds through different insulation materials.		What organs are involved in the digestive system? Identify the function of the parts of the digestive system. Understand and sequence the digestive system by drawing a diagram or verbal explanation.		Is it an insulator or conductor? Identify and classify materials that are insulators or conductors. Classify the materials that were suitable/not suitable for wires. Identify which appliances need electricity to work.
	What material is best to use for muffling sound in ear defenders? Investigate making sounds and how it travels. Investigate what materials are best to stop sound travelling.		Do all mammals have the same type of teeth? Explore eating different types of food to identify which teeth are being used for cutting, tearing and grinding (chewing). The importance of having different teeth. Explain the role of teeth.		Which room has the most electrical sockets in your home?
	How do we hear things? Classify sound sources. Explore making sounds with a range of objects, such as musical instruments and other household objects. Explore altering the pitch or volume of objects, such as the length of a guitar string, amount of water in bottles, size of tuning forks.		Who eats who? Use a food chain to identify producers, predators and prey within a habitat. Create a food chain based on an animal from our local environment. Use secondary sources to identify animals in a habitat and find out what they eat.		How does a light bulb work? Identify electrical components and their symbols (cells, wires, bulbs, switches and buzzers). Create a simple electrical circuit.
	Who is Alexander Graham Bell? Alexander Graham Bell and his impact on Science.				Who is Thomas Eddison? Joseph Swan? Thomas Eddison and his impact on Science, and how we live.

<table>
<tr><th colspan="3">Year 4</th></tr>
<tr><th colspan="2">Summer 1</th><th colspan="2">Summer 1</th></tr>
<tr><th colspan="2">Living Things and their Habitats</th><th colspan="2">States of Matter</th></tr>
<tr><td colspan="2"><u>Key Concept:</u></td><td colspan="2"><u>Key Concept:</u></td></tr>
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td colspan="2"><u>National Curriculum/ Key Knowledge:</u>
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.</td><td colspan="2"><u>National Curriculum/ Key Knowledge:</u>
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.</td></tr>
<tr><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td></td><td>Can we use identification keys to identify all the animals we found in the Wildlife Area? Use classification keys to name unknown living things. Classify living things found in different habitats based on their features. Create a simple identification key based on observable features.</td><td></td><td>What is a solid, liquid or gas?
Observe closely and classify a range of solids and liquids. Classify materials according to whether they are solids, liquids and gases.</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">Do some animals (including mini-beasts) prefer to live in an environment with light and some prefer a dark environment? Observe plants and animals in different habitats throughout the year in our local environment. Observe animal habitats in our local environment.</td><td></td><td>How can temperature change the state of materials? Observe a range of materials melting e.g. ice, chocolate, butter. Investigate the melting point of different materials e.g. margarine, butter and chocolate. investigate how to melt ice quickly.</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">Does pond water evaporate quicker than fresh water?
Observe water evaporating and condensing e.g. cups of icy water and hot water. Investigate changing the rate of evaporation e.g. washing, puddles, handprints on paper towels, liquids in containers.</td></tr>
<tr><td></td><td>Why are people cutting down the rainforest and what effect does that have? Use secondary sources to find out about how environments may naturally change. Use secondary sources to find out about human impact, both positive and negative, on environments.</td></tr>
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Year 5		
Autumn 1	**Summer 1**	**Autumn 2**
Forces	**Animals including Humans**	**Earth and Space**
Key Concept:	**Key Concept:**	**Key Concepts:**
		
National Curriculum/ Key Knowledge: Explain that unsupported object 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. Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	**Key Knowledge:** Describe the changes as humans develop to old age.	**Key Knowledge:** 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. .
Key Enquiry:		
Do all objects fall through water the same way? Investigate the effects of water resistance in a range of contexts e.g. dropping shapes through water and pulling shapes, such as boats, along the surface of water.	Why do people get grey/ white hair, as thy get older?	Is there a pattern between the size of a planet and the time it takes to travel around the sun? Explain how the Earth and the other planets in the solar system move. Use secondary sources to help create a model to show the movement of the Earth around the Sun and the Moon around the Earth.
Who is Isaac Newton? Research Isaac Newton.	Are the oldest children in school, the tallest?	Have theories about Earth and space changed over the years?
Which shape parachute creates the most air resistance ? Investigate the effects of air resistance in a range of contexts.		Why does the moon appear to change shape? Explain how the moon moves. Explain how the Moon's appearance appears to change when viewed from Earth (moon phases explain how day and night were formed (rotations time zones).

Year 5			
Summer 2		**Spring**	
Living Things and their Habitats		States of Matter	
Key Concept:		**Key Concept:**	
			
National Curriculum/ Key Knowledge: Describe the difference 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.		**National Curriculum/ Key Knowledge:** 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	
	What are the differences between the life cycle of a mammal and an insect? Identify the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Compare two or more animal life cycles.		Can you group these materials? Classify materials from our classroom. 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.
	What are the functions of the different parts of the flower? Name parts of the flower. Take cuttings from a range of plants in our local environment. Investigate whether a new plant will grow from cuttings.		Which material is most suitable for a soundproof room? Investigate the properties of different materials for particular functions. Explain why materials are used for different purposes.
	Is there a relationship between a mammal's size and how it changes when it gets older? Look for patterns between the size of an animal and its expected life span		How does a container of salt water change over time? Observe and record changes to materials. Explain how to recover a substance from a solution. Identify if a change is easily reversible and how to reverse it. Explain that some changes result in the formation of new materials e.g. burning and the action of acid on bicarbonate of soda. Separate mixtures by sieving, filtering and evaporation.
			How does the temperature of tea affect how long it takes for the sugar cube to dissolve? Investigate rates of dissolving.

Year 6					
Autumn 1		**Spring 1**		**Summer 1**	
Light		**Animals including Humans**		**Electricity**	
Key Concept:		**Key Concept:**		**Key Concepts:**	
					
National Curriculum/ Key Knowledge: 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 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.		**Key Knowledge:** 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.		**Key Knowledge:** 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.	
Key Enquiry:					
	How does light travel? Explain that light travels in straight lines. Label the main parts of the human eye and explain their functions.		What are the components of blood? What is the circulatory system? Name and identify the red blood cells, white blood cells, plasma and platelets. Describe the functions of blood and blood vessels. Explain how the blood travels through the body.		How do we draw a circuit scientifically? Draw a given circuit using the correct symbols.
	How do shadows change throughout the day? Take observations of the size and direction of a shadow (pole) hourly throughout the day. What does this suggest about the sun (light source).		How do different foods impact our bodies? Analyse food labels and decipher the information given to work out which foods are the most nutritious. Identify which foods may lead to heart disease.		How does the number of components affect a circuit? Use prior knowledge to suggest what will happen as the number of components in a circuit increases.
	How do shadows change throughout the day? Measure the length of the shadow and the direction.		How does exercise affect our heart rate? Understand how exercise affects our heart rate..		How does the voltage in a circuit affect the components? Plan an investigation to test what will happen to a series circuit when the voltage is increased. Predict what will happen. Conduct and evaluate an investigation to test what will happen to a series circuit when the voltage is increased
	How do shadows change throughout the day? Plan own investigation similar to the pole but with different shaped objects.				

<table>
<tr><th colspan="4">Year 6</th></tr>
<tr><th colspan="2">Summer 2</th><th colspan="2">Autumn 2</th></tr>
<tr><td colspan="2">Living Things and their Habitats</td><td colspan="2"></td></tr>
<tr><td colspan="2"><u>Key Concept:</u></td><td colspan="2"><u>Key Concept:</u></td></tr>
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td colspan="2"><u>National Curriculum/ Key Knowledge:</u>

Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and difference, including micro-organisms, plants and animals.

Give reasons for classifying plants and animals based on specific characteristics.</td><td colspan="2"><u>National Curriculum/ Key Knowledge:</u>

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.</td></tr>
<tr><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td></td><td>What plants grow in our school grounds? Identify the plants that are found in our school grounds by using a tree/hedgerow identifier.
How do you know which organisms are most closely related? Analyse Carl Linnaeus' classification system to find closely related organisms
How would you classify a group of animals or plants? Create a classification key</td><td></td><td>Could a polar bear and a camel live together? Identify similarities and differences between animals. Explain how animals are adapted to their environment. Explain how some plants are adapted to their environment.</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">What are microorganisms? Explain how microorganisms can be both helpful and harmful.</td><td></td><td>How have animals adapted to their environment? Use secondary sources to research into Charles Darwin's theory of evolution. Gather data from secondary sources on how animals have adapted over time. How did the beaks of different finches lead to the Theory of Evolution?
Use data to explain how the finches evolved over time.</td></tr>
<tr><td></td><td>How did the peppered moth evolve over time?
Use data, based on observations over time, to explain how the peppered moth evolved.</td></tr>
</table>

SEND Adaptations for Science "Learning in Science involves children building their knowledge of important concepts and procedures. When learning new content, learners must connect this to what they already know. This means that it is important that learners develop secure understanding or previously taught concepts and procedures."			
Cognition and Learning	**Communication and Interaction Social**	**Emotional and Mental Health**	**Sensory and/or Physical**
Use of first-hand practical activities to explore and spark interest. Use of secondary sources to support understanding of content such as books, photos, videos, simulations or animations. Use of word banks (and picture cards where necessary) to support understanding and learning of vocabulary. These could be displayed in class in a personalised version for adults to point to during whole class teaching or independent learning. Keep referring back to the vocabulary. Use of alternative ways of recording for writing up experiments including some scribing (leaving blanks for children to complete some known words independently rather than copying).	Create a calm and simple working classroom with clear routines, expectations and organised, labelled workspaces. Consider carefully where children are seated to maximise their focus and attention and minimise background noise/distraction. Pre-expose children with some of the Science equipment so that they naturally have an interest in what the learning is going to be about. Science does not always run according to a set routine so children can be prepared for the structure of a lesson by breaking it down for them into manageable chunks and explaining this in advance of the learning. Now and Next boards could be useful for this. Visual words/cues/phrases.	Ensure that the learning environment is calm and not too stimulating, that resources are clearly labelled and organised for independent use, therefore not encouraging frustration. Ensure that instructions are clear and tasks are broken down to be achievable. Children can be given a role within a group which does not involve them being highly active or speaking out to not heighten arousal. Using IT to support where necessary either for whole class learning or for recording their learning. Providing a safe space for children within the lesson if needed – this can be accessed through an adult directed or child-initiated time out card.	Ensure all images are large enough and accessible. Consider where children with a hearing, sensory or other impairment are sitting in relation to the whiteboard or resources. Use of an iPad to support children with a visual impairment where screen sharing can occur. Additional ways of recording, i.e. videos, verbal commentary etc rather than always writing. Consider the Science equipment which is being used – does the child have a fine motor control difficulty which makes using equipment such as tweezers or electrical circuits difficult.

Providing examples of Science learning or experiments as models for children. Use of small groups to scaffold SEND children where needed.	Repetition and reinforcement. Scaffolding observational skills for Science through careful and targeted questioning. Giving a processing prompt that a question will be coming, give the question before moving onto a few		Working within mixed ability groups to support. Careful consideration of trips for Science, will the child need some access arrangements or physical support?