

Science EYFS		
Nursery	Communication and language	*Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"
	Physical Development	*Make healthy choices about food, drink, activity and toothbrushing.
	Understanding The World	*Use all their senses in hands-on exploration of natural materials. *Explore collections of materials with similar and/or different properties. *Talk about what they see, using a wide vocabulary. *Begin to make sense of their own life-story and family's history. *Explore how things work. *Plant seeds and care for growing plants. *Understand the key features of the life cycle of a plant and an animal. *Begin to understand the need to respect and care for the natural environment and all living things. *Explore and talk about different forces they can feel. *Talk about the differences between materials and changes they notice.
Reception	Communication and language	*Learn new vocabulary. *Ask questions to find out more and to check what has been said to them. *Articulate their ideas and thoughts in well-formed sentences. *Describe events in some detail. *Use talk to work out problems and organise thinking and activities. Explain how things work and why they might happen. *Use new vocabulary in different contexts.
	Physical Development	*Know and talk about the different factors that support their overall health and wellbeing: -regular physical activity -healthy eating -toothbrushing -sensible amounts of 'screen time' -having a good sleep routine -being a safe pedestrian
	Understanding The World	*Explore the natural world around them. *Describe what they see, hear and feel while they are outside. *Recognise some environments that are different to the one in which they live. *Understand the effect of changing seasons on the natural world around them.
ELG	Communication and language- Listening, Attention and Understanding.	*Make comments about what they have heard and ask questions to clarify their understanding.
	Personal, Social and Emotional Development- Managing Self	*Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.
	Understanding The World- The Natural World	*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.

Science Year 1				
Year	Term	Theme	Skills	Knowledge
1	Autumn 1	Community: Our Families  Science: Seasonal changes & weather. Autumn.	<b>Ask simple questions and recognise that they can be answered in different ways</b> Use practical science to raise questions about: how things are similar and different / How things change and how they happen. Observe changes across the four seasons. Autumn.	To know a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen.  To know the basic parts of the human body and say which part of the body is associated with each sense.

	Plants. Humans.	<b>Observe closely using simple equipment</b>  <b>Identify and classify phenomena</b> Make comparisons between different objects, materials and living things and begin to sort them	
Autumn 2	Once Upon a Time:  Science: Seasonal changes & weather. Winter.  Materials.	<b>Ask simple questions and recognise that they can be answered in different ways</b> Use practical science to raise questions about: how things are similar and different / How things change and how they happen. Observe changes across the four seasons. Winter.  Gather simple secondary sources (e.g. internet, books, visitors) to find answers  <b>Identify and classify phenomena</b> Notice patterns and relationships (with help)	To know simple physical properties of a variety of everyday materials.  To be able to compare and group together a variety of everyday materials on the basis of their simple physical properties.
Spring 1	Toys: Then and Now.  Science: Seasonal changes & weather.  Materials.	<b>Ask simple questions and recognise that they can be answered in different ways</b> Use practical science to raise questions about: how things are similar and different / How things change and how they happen. Observe changes across the four seasons. Spring.  <b>Identify and classify phenomena</b> Make comparisons between different objects, materials and living things and begin to sort them. Carry out simple tests	To know lots of everyday materials, including wood, plastic, glass, metal, water, and rock.  To understand the difference between an object and the material from which it is made.
Spring 2	Our Garden.  Science: Plants. Edible Garden.	<b>Use their observations and ideas to suggest answers to questions.</b> Carry out simple tests – comparative fair testing. Begin to make predictions. Use simple measurements and equipment to gather data. Record simple data (bar charts, pictograms, tall chart etc.)  Observe changes over different periods of time and talk about what has happened.  <b>Notice patterns and relationships (with help).</b> Record and communicate findings from relevant enquiries (including research) in a range of ways and begin to use simple scientific language (with help).	To know the basic structure of a variety of common plants including roots, stem, leaves and flowers.  To know how seeds and bulbs grow into mature plants. To be able to describe how plants need water, light and the right temperature to grow and stay healthy.
Summer 1	On the Farm.  Science: Seasonal changes & weather.  Animals Including Humans.	<b>Ask simple questions and recognise that they can be answered in different ways</b> Use practical science to raise questions about: how things are similar and different / How things change and how they happen. Observe changes across the four seasons. Summer.  Use science experiences to explore the world around them  <b>Identify and classify phenomena</b>	To know weather that is associated with the seasons, and how day length varies.  To know lots of common animals that are carnivores, herbivores and omnivores.

			Make comparisons between different objects, materials and living things and begin to sort them	
	Summer 2	A Seaside Adventure  Science: Animals Including Humans.	<b>Identify and classify phenomena</b> Make comparisons between different objects, materials and living things and begin to sort them Record and communicate findings from relevant enquiries (including research) in a range of ways and begin to use simple scientific language (with help)	To know lots of common animals including fish, amphibians, reptiles, birds and mammals  To be able to describe and compare lots of common animals (fish, amphibians, reptiles, birds and mammals, including pets) by how they look and how they move.

Science Year 2				
Year	Term	Theme	Skills	Knowledge
Year 2	Autumn 1	Community: People Who Help Us  Science: Animals Including Humans. biology	Use science experiences to explore the world around them  Ask questions and use simple secondary sources (e.g. internet, CD-ROMS, books, visitors) to find answers	To know the importance for humans of exercise, eating the right amounts of different types of food, and hygiene (being clean)
	Autumn 2	The Fire of London  Science: Materials. Physics.	<b>Identify and classify phenomena</b> Make comparisons between different objects, materials and living things and begin to sort them Use practical science to begin to work with different scientific enquiries - comparative (fair) testing, pattern seeking  <b>Begin to make predictions</b>  <b>Use their observations and ideas to suggest answers to questions</b>  <b>Gather and record data to help in answering questions</b>	To be able to identify and compare how different materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard are used because of their properties.  To know that the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
	Spring 1	Who lives in the Secret Garden?  Science: Plants. Edible Garden. biology.  Living Things & their habitat. Biology.	<b>Ask simple questions and recognise that they can be answered in different ways</b> Use practical science to raise questions about: how things are similar and different / How things change and how they happen.  Use practical science to begin to work with different scientific enquiries – observation over time  <b>Begin to make predictions</b>  <b>Use their observations and ideas to suggest answers to questions</b>  <b>Gather and record data to help in answering questions</b> <b>Identify and classify phenomena</b>	To be able to 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.  To be able to identify and name different plants and animals in their habitats, including micro-habitats.
	Spring 2	Exploring the United Kingdom  Science: Living Things & their habitat.	Make comparisons between different objects, materials and living things and begin to sort them. Ask questions and use simple secondary sources (e.g. internet, CD-ROMS, books, visitors) to find answers	To be able to explore and compare the differences between things that are living, dead, and things that have never been alive  To know how animals get their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.
	Summer 1	The Seven Continents of the World	<b>Ask simple questions and recognise that they can be answered in different ways</b> Use practical science	To know that animals, including humans, have offspring (babies) which grow into adults.

	Science: Animals Including Humans.	to raise questions about: how things are similar and different / How things change and how they happen.  Make comparisons between different objects, materials and living things and begin to sort them. <b>Identify and classify phenomena</b> Ask questions and use simple secondary sources (e.g. internet, CD-ROMS, books, visitors) to find answers	To understand the basic needs of animals, including humans, for survival (water, food and air)
Summer 2	Roald Dahl		To be able to describe how seeds and bulbs grow into mature plants.  To know how plants need water, light and the right temperature to grow and stay healthy.

### Science Year 3

Year	Term	Theme	Skills	Knowledge
Year 3	Autumn 1	Community: Where we Live  Science: Light. Physics.	<b>Ask relevant questions</b> <b>Set up simple practical enquiries, comparative and fair tests</b> <b>Make predictions</b> Make systematic and careful observations and, where appropriate, take accurate measurements using standard units  Identify simple changes, patterns, similarities and differences in data (with help) Gather, record, classify and present data in a variety of ways to help answer questions  Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables  Use results to draw simple conclusions	To know that you need light in order to see things and that dark is the absence of light  To understand that light is reflected from surfaces  To recognise that light from the sun can be dangerous and that there are ways to protect your eyes  To recognise that shadows are formed when the light from a light source is blocked by a solid object  To be able to find patterns in the way that the size of shadows changes
	Autumn	Stone Age to the Iron Age.  Science: Rocks. Chemistry.	<b>Ask relevant questions and use different types of scientific enquiry to answer them</b> Suggest criteria for grouping, sorting and classifying information <b>Gather, record, classify and present data in a variety of ways to help answer questions</b> <b>Set up simple practical enquiries- observation over time</b> <b>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</b>	To be able to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties  To know, in simple terms, how fossils are formed when things that have lived are trapped within rock  To recognise that soils are made from rocks and organic matter
	Spring 1	The Human Body  Science: Animals Including Humans. Biology.	ask relevant questions Decide which type of enquiry to use to answer the questions they come up with  Suggest criteria for grouping, sorting and classifying information  <b>Identify differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence</b>	To know that humans and some other animals have skeletons and muscles for support, protection and movement  To be able to 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

			<b>to answer questions or to support their findings</b> Use scientific language to discuss ideas and communicate findings	
Spring 2	Ancient Civilisations			
Summer 1	Mountains of the World  Science: Plants. Edible Garden Biology.	Ask relevant questions Decide which type of enquiry to use to answer the questions they come up with. Make predictions  Set up simple practical enquiries Suggest how to plan a fair test  Make decisions about observations - what to make, how long to make them for and what equipment to use (with help) Collect data from observations and measurements by using notes, tables and standard units <b>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</b>	To know the functions of different parts of flowering plants.  To be able to explore the requirements of plants for life and growth and how they vary from plant to plant.  To know the way in which water is transported within plants.  To understand the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and dispersal	
Summer 2	Who were the Romans?  Science: Forces and Magnets. Physics.	Ask relevant questions Make predictions  <b>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables</b>  Suggest criteria for grouping, sorting and classifying information  Draw simple conclusions from data or relevant enquiries (including research) to answer questions (with help)	To be able to compare how things move on different surfaces.  To understand that some forces need contact between two objects, but magnetic forces can act at a distance.  To know how magnets attract or repel each other and attract some materials and not others.  To be able to compare and group together a variety of everyday materials based on whether they are attracted to a magnet and identify some magnetic materials.  To be able to describe magnets as having two poles.  To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing.	

Science Year 4				
Year	Term	Theme	Skills	Knowledge
4	Autumn 1	Community: The Tower of London  Science: Electricity. Physics.	Suggest criteria for grouping, sorting and classifying information Use practical science to ask questions about the world around them Make predictions  <b>Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables</b>  Collect data from observations and measurements by using notes, tables and standard units  Help make decisions on how to record and analyse the data  Draw simple conclusions from data or relevant enquiries (including	To be able to identify common appliances that run on electricity  To be able to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers  To be able to 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  To know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit  To be able to recognise some common conductors and insulators, and associate metals with being good conductors

		research) to answer questions (with help) Find ways of making improvements	
Autumn 2	Rainforests  Science: Living Things & their Habitats. Biology.	Decide which type of enquiry to use to answer the questions they come up with Suggest criteria for grouping, sorting and classifying information Sort information into criteria that they have decided Recognise when secondary sources of information should be used when their questions cannot be answered practically Collect data from observations and measurements by using notes, tables and standard units	To be able to recognise that living things can be grouped in a variety of ways  To be able to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment  To recognise that environments can change and that this can sometimes pose a danger to living things
Spring 1	Anglo Saxons and Scots.  Science: Sound. physics	Ask relevant questions Decide which type of enquiry to use to answer the questions they come up with – pattern seeking Make predictions  <b>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers</b> <b>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</b> Find ways of making improvements Use scientific language to discuss ideas and communicate findings	To be able to identify how sounds are made, associating some of them with something vibrating  To know that vibrations from sounds travel through a medium to the ear  To be able to find patterns between the pitch of a sound and features of the object that produced it  To be able to find patterns between the volume of a sound and the strength of the vibrations that produced it  To know that sounds get fainter as the distance from the sound source increases
Spring 2	Who were the Vikings?		
Summer 1	Explorers  Science: Animals Including Humans. Biology	Ask relevant questions Decide which type of enquiry to use to answer the questions they come up with <b>Set up simple practical enquiries, comparative and fair tests</b> Make predictions Collect data from observations and measurements by using notes, tables and standard units. <b>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</b> Suggest criteria for grouping, sorting and classifying information.	To be able to identify the different types of teeth in humans and their simple functions  To know the simple functions of the basic parts of the digestive system in humans  To be able to construct and interpret a variety of food chains, identifying producers, predators and prey
Summer 2	Extreme Earth.  Science: States of Matter. Chemistry.	Ask questions Suggest criteria for grouping, sorting and classifying information.  <b>Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers and data loggers</b>  Record findings using simple scientific language, drawings,	To be able to compare and group materials together, according to whether they are solids, liquids or gases  To know that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius  To be able to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

			labelled diagrams, bar charts and tables.  Draw simple conclusions from data or relevant enquiries (including research) to answer questions (with help). Recognise when secondary sources of information should be used when their questions cannot be answered practically.	
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### Science Year 5

Year	Term	Theme	Skills	Knowledge
5	Autumn 1	Community: Festival of Britain  Science: Living Things & their Habitats. (Biology)	Ask meaningful scientific questions.  Use and then develop scientific keys and information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment  Recognise which secondary sources will be most useful to research ideas and begin to separate opinion from fact  Use their scientific experiences to select and plan the most appropriate line of enquiry to answer scientific questions.  Use results from relevant enquiries (including research) to write conclusions and explanations	To know the differences in the life cycles of a mammal, an amphibian, an insect and a bird  To know the life processes of reproduction in some plants and animals
	Autumn 2	Ancient Egyptians  Science: Animals Including Humans (biology)	ask meaningful science questions Research  Use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas  <b>Report and present findings from enquiries, including conclusions, causal relationships and explanations of, and degrees of trusts in results, in oral and written forms</b>	To be able to describe the changes as humans develop to old age.
	Spring 1	ECO Warriors  Science: Properties and Change of Materials (chemistry)	<b>Ask meaningful scientific questions.</b> <b>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</b> Make predictions and hypotheses. Make decisions about what observations to make and decisions about how to record data and information. Use results from relevant enquiries (including research) to write conclusions and explanations  Identify when further comparative tests and observations might be needed  Use relevant scientific language and illustrations to discuss,	To be able to compare and group together everyday materials based on their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets  To understand that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution  To use knowledge of solids, liquids, and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.

		communicate and justify scientific ideas	
Spring 2	Ancient Greeks  Science: Properties and Change of Materials (chemistry)	Use their scientific experiences to select and plan the most appropriate line of enquiry to answer scientific questions  Report and present findings from enquiries, including conclusions, causal relationships and explanations of, and degrees of trusts in results, in oral and written forms such as displays and other presentations  Use test results to make predictions to set up further comparative and fair tests  Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs  Make decisions about what observations to make  Make decisions about what measurements to make and how long to make them for and whether to repeat them	To be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic  To know that dissolving, mixing and changes of state are reversible changes  To know 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
Summer 1	Space Explorers  Science: Earth and Space (physics)	Ask meaningful scientific questions Talk about how scientific ideas have developed over time Recognise which secondary sources will be most useful to research ideas and begin to separate opinion from fact <b>Report and present findings from enquiries, including conclusions, causal relationships and explanations of, and degrees of trusts in results, in oral and written forms such as displays and other presentations</b> <b>Identify scientific evidence that had been used to support or refute ideas or arguments</b> Talk about how scientific ideas have developed over time	To be able to describe the movement of the Earth, and other planets, relative to the Sun in the solar system  To be able to describe the movement of the Moon relative to the Earth  To be able to describe the Sun, Earth and Moon as approximately spherical bodies  To use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
Summer 2	The Industrial Revolution  Science: Forces (physics)	Ask meaningful questions <b>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</b> Talk about how scientific ideas have developed over time. <b>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</b> Report and present findings from enquiries, including conclusions, causal relationships and explanations of, and degrees of trusts in results, in oral and written forms such as displays and other presentations	To know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object  To be able to identify the effects of air resistance, water resistance and friction that act between moving surfaces  To know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect



			Use test results to make predictions to set up further comparative and fair tests	
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Year 6

**Science Year 6**

Year	Term	Theme	Skills	Knowledge
6	Autumn 1	Community: Political Poplar  Science: Animals Including Humans. Biology.	Ask meaningful questions  <b>Identify scientific evidence that had been used to support or refute ideas or arguments</b>  Use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas	To be able to identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood  To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function  To know the ways in which nutrients and water are transported within animals, including humans
	Autumn 2	Early Islamic Civilisation  Science: Light. Physics.	Make predictions and hypotheses Make decisions about what observations to make. Make decisions about what measurements to make and how long to make them for and whether to repeat them.  Make decisions about how to record data and information  <b>Take measurements using a range of scientific equipment with increasing accuracy and precision, taking repeated readings where appropriate</b> Use results from relevant enquiries (including research) to write conclusions and explanations Recognise which secondary sources will be most useful to research ideas and begin to separate opinion from fact	To know that light appears to travel in straight lines  To be able to 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  To be able to 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  To be able to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
	Spring 1	WWII  Science: Electricity. Physics.	Use their scientific experiences to select and plan the most appropriate line of enquiry to answer scientific questions  Recognise when and how to set up fair tests and explain which variables need to be controlled and why <b>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</b>	To be able to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit  To be able to 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  To be able to use recognised symbols when representing a simple circuit in a diagram
	Spring 2	Rivers		
	Summer 1	Refugees and Immigration  Science: Evolution and Inheritance. Charles Darwin. Biology.	Use their scientific experiences to raise different kinds of questions <b>Report and present findings from enquiries, including conclusions, causal relationships and explanations of, and degrees of trusts in results, in oral and written forms such as displays and other presentations</b> Use relevant scientific language and illustrations to discuss, communicate and justify scientific ideas Talk about how scientific ideas have developed over time	To know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago  To know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents  To be able to identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
	Summer 2	Refugees and Immigration	Use their scientific experiences to select and plan the most	To know how living things are classified into broad groups according to common observable

		<p>Science: Living things and their Habitats. Biology.</p>	<p>appropriate line of enquiry to answer scientific questions</p> <p>Use and then develop scientific keys and information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment Research</p> <p>Make decisions about how to record data and information</p> <p><b>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</b></p>	<p>characteristics and based on similarities and differences, including micro-organisms, plants and animals</p> <p>To be able to give reasons for classifying plants and animals based on specific characteristics</p>
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### Vocabulary/ Spoken Language

The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.