Progression in Science
at St Michael's CE Primary School

SCIENCE

National Curriculum Expectations

Purpose of Study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

- The national curriculum for science aims to ensure that all pupils:
- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Scientific knowledge and conceptual understanding

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally,

they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.

The nature, processes and methods of science

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. The notes and guidance give examples of how 'working scientifically' might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data. 'Working scientifically' will be developed further at key stages 3 and 4, once pupils have built up sufficient understanding of science to engage meaningfully in more sophisticated discussion of experimental design and control.

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Statutory and Non-Statutory Frameworks:

EYFS		KS1		LKS2		UKS2	
Nursery	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Development Matters: 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 Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.	**Development Matters:** Explore the natural world around them Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them.	**National Curriculum** Working Scientifically: During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions		**National Curriculum** Working Scientifically: LKS2: During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings. UKS2: During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary		

			• taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • using test results to make predictions to set up further comparative and fair tests • reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations • identifying scientific evidence that has been used to support or refute ideas or arguments
Statutory Framework for the early years foundation stage **ELG:** Make comments about what they have heard and ask questions to clarify their understanding Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate Explore the natural world around them, making observations and drawing pictures of animals and plants; 15 - 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.	The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary	LKS2: The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

	sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos. 'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.	Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge. UKS2: The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. 'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read, spell and pronounce scientific vocabulary correctly.

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Science at St Michael's CE Primary School:

Our science curriculum ensures all children leave the school with a secure foundation of science knowledge and practical skills. Children develop a respect for the discipline through collecting, understanding and evaluating scientific evidence. As they develop their substantive knowledge, they take greater responsibility for planning and leading investigations; respecting others' views and contributions. They persevere when testing theories and drawing conclusions.

Big Ideas:

Understanding and knowledge

- Pupils build their knowledge and understanding around the areas of biology, chemistry and physics. They develop recall of key information and concepts

Working scientifically

- Pupils build skills of scientific enquiry. They pose and answer questions, gathering data and presenting the information accurately.

'It is important to view knowledge as sort of a semantic tree – to make sure you understand the fundamental principles, i.e. the trunk and big branches, before you get into the leaves/details or there is nothing for them to hang on to.'

Elon Musk (Tech Entrepreneur)

Links with other subjects

English

- Vocabulary and non-fiction writing

Maths

- Number, measuring, 2D and 3D shape, handling data

DT – forces and electricity

Computing – solving problems

PSHE

Healthy eating, growing, hygiene

Pedagogy

- Low stakes quizzing for long term memory
- Varied teaching and learning activities
- Thoughtful sequencing of content
- Specific teaching of vocabulary
- Higher order thinking tasks

Progress

- Units of work are carefully sequenced so prior knowledge and concepts are built upon
- Regular formative assessment and assessment for learning (including low-stakes quizzing) ensures gaps are filled
- Effective questioning and higher order thinking features in every lesson
- Progress and attainment within units is recorded and shared with all teaching staff

Support

For staff:

- National Curriculum
- Subject associations - ASE
- Plan Assessment
- STEM in school
- Knowledge organisers

For Pupils:

- Ambitious targets
- Quality first planning and teaching to meet all needs
- Guidance from individual support plans
- Texts / resources chosen which are accessible

		• Opportunities are provided for revisiting content or applying learning at greater depth. • End of unit quizzes	• Children requiring support do not miss the same lesson every week

Long term plan over a 2-year cycle:

Year A September 2020 and then September 2022

	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
EYFS	**The Natural World** Life cycle of an animal Exploring the natural world (Hist)		**Materials** Differences between materials		**Plants** Life cycle of a plant	
KS1	**Animals including humans** How animals grow What animals need Importance of exercise, diet and hygiene		**Seasonal changes** Observe change across the seasons (Eng)	**Everyday materials** Name describe and compare materials and their properties (DT/Computing)	**Plants** Naming and describing plants	
LKS2	**Rocks** Compare a group rocks by properties, how fossils are formed (Hist/Art/Eng)	**Forces and magnets** Forces, magnets and sorting magnetic materials	**Animals including humans** Identify animals' needs Skeletons	**Sound** How sounds are made, pitch and volume	**Plants** Parts and requirements of a plants and life cycles	
UKS2	**Earth and space** Earth, planets Sun and Moon (Eng)	**Animals including humans** Changes as humans develop to old age	**Properties and changes of materials** Grouping materials – reversible and irreversible changes	**Living things and their habitats** Group classifications of plants and animals (Computing)	**Electricity** Voltage, function of components, symbols in a circuit diagram (DT)	

Year B September 2021 and then 2023

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	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
EYFS	**Seasonal Change** Effects of seasonal changes (Art)		**Forces** Forces we can feel		**Senses** Explore all 5 senses	
KS1	**Animals including humans** Naming and describing animals and parts of the human body (Art)		**Living things and their habitat** Habitats and food chains (Art/Eng)	**Uses of everyday materials** Compare materials and their uses	**Plants** How plants grow and what plants need	
LKS2	**Animals including humans** Digestive systems, teeth, food chains		**States of matter** Solids, liquids and gases – changing state of matter	**Living things and their habitats** Classification (Comp/Eng)	**Electricity** Construct a circuit – conductors and insulators (DT)	**Light** Light sources and shadows
UKS2	**Evolution and inheritance** Changes over time, adaptation (RE/Eng)	**Light** How light travels, light sources	**Animals including humans** Circulatory system, impact of diet	**Living things and their habitats** Different life cycles	**Forces** Gravity, air resistance, water resistance, and friction Mechanisms	

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Skills Progression	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
Scientific Knowledge: Animals Including Humans		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. Construct and interpret a variety of food chains, identifying producers, predators and prey. Identify the different types of teeth in humans and their simple functions.	Describe the changes as humans develop to old age	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. 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. Identify and name the main parts of the human circulatory

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Skills Progression	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
							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.
Plants	Plants need water and light Plants have leaves, flowers, stems and roots Plants must be cared for.	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	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	Recognise that environments can change and that this can sometimes pose dangers to living things.	Describe the life process of reproduction in some plants.	

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Skills Progression	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
				flowering plants, including pollination, seed formation and seed dispersal.			
Living Things and Their Habitats			Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, including micro-habitats Describe how animals obtain their food from plants and other animals, using the		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 differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.

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			idea of a simple food chain, and identify and name different sources of food				
Materials: **- Everyday materials (Y1),** **- Uses of everyday materials (Y2),** **- Rocks (y3), -** **States of matter (y4),** **- Properties & changes of materials (Y5**	How materials can be collected together: wood, rock, shells How to look closely at materials e.g. with a magnifying glass How to change materials e.g. in cooking Different properties of materials e.g. light can shine through or not	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	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	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.	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	Y6 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)

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Skills Progression	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
						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	
Forces and Magnets	Explore the natural world around them. Describe what they see, hear and feel whilst outside.			Compare how things move on different surfaces. Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a		Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	

Skills Progression	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
				magnet, and identify some magnetic materials describe magnets as having 2 poles. Predict whether 2 magnets will attract or repel each other, depending on which poles are facing.			
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 a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a		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.

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Skills Progression	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
					simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.		
Light and Sound		.		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 are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.	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 source increases.		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.

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Skills Progression	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
Seasonal Change and Earth and Space	Understand the effect of the changing season on the natural world around them.	Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies.				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.	
Working Scientifically Skills		asking simple questions and recognising that they can be answered in different ways		asking relevant questions and using different types of scientific enquiries to answer them		planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	
		performing simple tests		setting up simple practical enquiries, comparative and fair tests		using test results to make predictions to set up further comparative and fair tests	
		observing closely, using simple equipment		making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers		taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	
		using their observations and ideas to suggest answers to questions gathering and recording data to		gathering, recording, classifying and presenting data in a variety of ways to help in answering questions		recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables,	

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		help in answering question	recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	scatter graphs, bar and line graphs
			reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
		identifying and classifying	identifying differences, similarities or changes related to simple scientific ideas and processes	identifying scientific evidence that has been used to support or refute ideas or arguments
			using straightforward scientific evidence to answer questions or to support their findings.	
Scientists				
Animals Inc Humans		**Get Well Soon Cbeebies (importance of diet etc)** **Sir David Attenborough** **Linda Brown Buck**	**George Mottershead**	**Dame Anne McLaren**
Plants	cbeebies series **Maddie, the plants and you**	**Jane Colden** **Nicholas Grimshaw** **Jeanne Baret**	**Sandra Díaz** **Sir Joseph Banks**	

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Skills Progression	EYFS	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Living things and their Habitats		Sir David Attenborough Cbeebies: Teeny tiny creatures	Rachel Carson Marie Maynard Daly	Carolus Linnaeus Rosalind Franklin Jane Goodall Eva Crane
Materials	Nina and the Neurons	Charles Macintosh Ole Kirk Christiansen Archimedes		Andre Geim and Konstantin Novoselov Stephanie Kwolek
Forces and Magnets			Sir Isaac Newton	Albert Einstein Orville and Wilbur Wright
Electricity			Michael Faraday	Yuan Cao
Light and Sound			Sir Isaac Newton, Prof Brian Cox	Lewis Howard Latimer Lene Hau
Seasonal Change and Space		George James Symons James Blyth		Mae Jeminson Tim Peake Caroline Hershel Katherine Johnson

Promoting SMSC and British Values in Science

Spiritual	Moral	Social	Cultural
• WOW science topics to inspire awe and wonder. Offsite visits to inspire children • Residential trips to ensure that children can draw upon a range of knowledge.	• Risk management and safety • Respecting living things and their environments • Importance of exercise and looking after our bodies	• To look at how the structure and expectations of society have been challenge throughout history when major scientific discoveries have been made. • Working with others.	• The ability to learn about different scientists from across the world and how their discoveries may have been seen as controversial.

• Use of the local environment, including the school grounds, to explore nature and the seasons. • Discussions and assemblies with local religious leaders to discuss varying views with scientifically discoveries	including looking after teeth and healthy living. • The importance of morale and ethical decisions to be made in science - circle time discussions.	• Presenting work to others across the school. • Collaborating with others schools on projects. • Taking part in activities and experience days across the wider community. • Posing and answering questions through scientific enquiry work.	• Taking part in open-ended enquiries where they may not always be an answer. • Showing respect to people's beliefs when discussing areas of science that are considered to be challenging.

Democracy	The Rule of Law	Individual Liberty	Respect	Tolerance of those with different faiths
○ Listening to all. ○ Established group work - voting and turn taking.	○ Safety in science ○ Hypothesising and making predictions	○ Open-ended investigations. ○ Discussions of opinions and findings. ○ Hypothesising	○ Group work. ○ Class projects. Discussing others' findings. ○ Support each other through enquiry.	○ Discussions to ensure that pupils understand how people's beliefs may clash with scientific findings and theories and the importance of showing respect in these situations. ○ Teaching of evolution- respect for others viewpoints and cultural beliefs