



*'Roots to Grow and Wings to Fly'*

Curriculum Progression  
Document

# Science



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## Curriculum Intent

**Intent** - Our aim is to encourage our children to be inquisitive throughout their time at the school and beyond. We intend to prepare our children for life in an increasingly scientific and technological world. Through investigative science, our children will deepen their respect for the natural world and all its phenomena, and increase their care and appreciation of it.

This vision is achieved by:

- A curriculum that is built upon a healthy curiosity about our universe and promotes respect for the living and non-living
- A curriculum that develops scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- A curriculum that develops 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

At St Bartholomew's C of E Primary School, we follow the carefully designed, sequential White Rose Science Curriculum, to ensure full coverage, development of skills and progression of knowledge. The White Rose Science scheme focuses on a small-steps, 'depth-not-breadth' approach as pioneered by the

highly successful White Rose maths scheme. Coupled with high quality teaching and high expectations for all pupils including those with SEND, the White Rose curriculum enables engaging learning opportunities rich in language development with oracy at the heart. Children are immersed in subject specific language and are supported in articulating scientific concepts clearly and confidently.

Teachers build on children's prior knowledge through the continuous revisiting of concepts and by identifying and addressing misconceptions rapidly. Working scientifically skills are core and children are exposed to one of the five types of scientific enquiry in every lesson. In addition, a key feature of the White Rose scheme is the interweaving of sustainability units where children develop a sense of global and local citizenship by understanding the value and importance of making responsible, informed and more sustainable lifestyle choices that minimise our impact on the environment and encourage children to think independently about their own future and impact.

# Science in The Early Years Foundation Stage

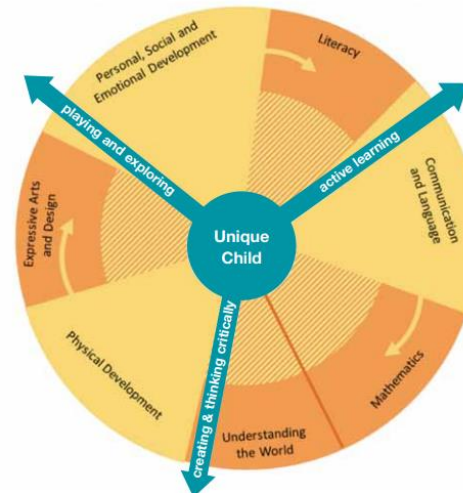
Each area of the EYFS curriculum has an **Early Learning Goal**, which is the standard that a child is expected to achieve by the end of their reception year. The ELG (Early Learning Goals) covers all of the 7 areas of learning as specified in the Early Years Foundation Stage Curriculum.

The Unique Child reaches out to relate to people and things through the **Characteristics of Effective Learning**, which move through all areas of learning.

- playing and exploring
- active learning
- creating and thinking critically

Children develop in the context of relationships and the environment around them.

This is unique to each family, and reflects individual communities and cultures.



**Prime** areas are fundamental, work together, and move through to support development in all other areas.

- Personal, Social and Emotional Development
- Communication and Language
- Physical Development

**Specific** areas include essential skills and knowledge for children to participate successfully in society.

- Literacy
- Mathematics
- Understanding the World
- Expressive Arts and Design

The following link to the teaching and learning of Science in our EYFS:

## ELG: Understanding of the World: People and Communities

Children at the expected level of development will:

- Children know about similarities and differences in relation to places, objects, materials and living things.
- They talk about the features of their own immediate environment and how environments might vary from one to another.
- They make observations of animals and plants and explain why some things occur and talk about changes.

# Science and the National Curriculum: Key Stage One

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 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 be taught about:**

- Working scientifically by 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.

## **Year 1**

- 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.
- 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.)

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- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.
- 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.

Pupils should be taught to:

- Observe changes across the four seasons.
- Observe and describe weather associated with the seasons and how day length varies.

### **Year 2**

- 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 idea of a simple food chain, and identify and name different sources of food.
- 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.
- 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 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.

## Science and the National Curriculum: Lower Key Stage Two

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.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Pupils should be taught about:

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.

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Pupils should be taught to: Year 3

- 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.
- 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.
- 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.
- 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.
- 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.

Year 4

- 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 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.
- 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.

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- 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.
- Identify common appliances that run on electricity.
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- Recognise some common conductors and insulators, and associate metals with being good conductors.

# Science and the National Curriculum: Upper Key Stage Two

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.

Pupils should be taught about:

- 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 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.

Pupils should be taught to: Year 5

- 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 the changes as humans develop to old age.
- 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.

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- 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.
- 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.
- 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.

### Year 6

- 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.
- 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.
- 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 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.
- 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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# Whole School Programme of Study

## Year 1 – Science

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<b>Autumn</b>	Biology The human body FREE TRIAL <a href="#">VIEW</a>					Biology Seasonal changes <a href="#">VIEW</a>	Chemistry Materials <a href="#">VIEW</a>				Biology Seasonal changes <a href="#">VIEW</a>	
<b>Spring</b>	Biology Planting A <a href="#">VIEW</a>	Biology Animals <a href="#">VIEW</a>					Sustainability Caring for the planet <a href="#">VIEW</a>	Biology Seasonal changes <a href="#">VIEW</a>	Biology Planting B <a href="#">VIEW</a>	Consolidation		
<b>Summer</b>	Biology Plants <a href="#">VIEW</a>					Biology Planting C <a href="#">VIEW</a>	Sustainability Growing and cooking <a href="#">VIEW</a>	Biology Seasonal changes <a href="#">VIEW</a>	Consolidation			

# Year 1 | Enquiry types mapping

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	The human body					Seasonal changes	Materials					Seasonal changes
	Pattern seeking					Observation over time	Comparative test					Observation over time
Spring	Planting A	Animals					Caring for the planet			Seasonal changes	Planting B	
	Observation over time	Research					Sustainability			Observation over time	Observation over time	Consolidation
Summer	Plants					Planting C	Growing and cooking			Seasonal changes		
	Identifying, grouping and classifying					Observation over time	Sustainability			Observation over time	Consolidation	

# Year 1 | Working scientifically skills mapping

Autumn	The human body						Seasonal changes		Materials						Seasonal changes		
	Ask questions	Answer questions and make conclusions	Take measurements	Take measurements	Take measurements	Take measurements	Take measurements	Ask questions	Gather, record and classify data	Gather, record and classify data	Make observations	Gather, record and classify data	Take measurements	Gather, record and classify data	Answer questions and make conclusions	Answer questions and make conclusions	Ask questions
Spring	Planting A	Animals						Caring for the planet		Seasonal changes		Planting B					
	Ask questions	Ask questions	Gather, record and classify data	Gather, record and classify data	Gather, record and classify data	Answer questions and make conclusions	Gather, record and classify data	Gather, record and classify data	Gather, record and classify data	Gather, record and classify data	Ask questions	Answer questions and make conclusions	Ask questions	Gather, record and classify data	Make observations	Gather, record and classify data	Consolidation
Summer	Plants						Planting C		Growing and cooking		Seasonal changes		Consolidation				
	Gather, record and classify data	Gather, record and classify data	Make observations	Gather, record and classify data	Gather, record and classify data	Gather, record and classify data	Answer questions and make conclusions	Make observations	Gather, record and classify data	Ask questions	Answer questions and make conclusions	Ask questions	Gather, record and classify data	Answer questions and make conclusions	Consolidation		

## Year 2 – Science

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	
Autumn	Biology Animals' needs for survival FREE TRIAL <a href="#">VIEW</a>			Free trial	Biology Humans <a href="#">VIEW</a>		Chemistry Materials <a href="#">VIEW</a>				Sustainability Plastic <a href="#">VIEW</a>		
Spring	Biology Plants (light and dark) <a href="#">VIEW</a>		Biology Living things and their habitats <a href="#">VIEW</a>							Biology Plants (Light and dark) <a href="#">VIEW</a>		Consolidation	
Summer	Biology Plants (bulbs and seeds) <a href="#">VIEW</a>	Biology Growing up <a href="#">VIEW</a>			Biology Bulbs and seeds <a href="#">VIEW</a>	Biology Growing up <a href="#">VIEW</a>	Sustainability Wildlife <a href="#">VIEW</a>		Consolidation				

# Year 2 | Enquiry types mapping

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	
Autumn	Animals' needs for survival				Humans		Materials					Plastic	
	Identifying, grouping and classifying				Pattern seeking		Comparative test					Sustainability	
Spring	Plants (light and dark)		Living things and their habitats									Plants (light and dark)	
	Comparative test		Research									Comparative test	Consolidation
Summer	Plants (bulbs and seeds)		Growing up			Plants (bulbs and seeds)	Growing up	Wildlife					
	Observation over time		Pattern seeking			Observation over time	Pattern seeking	Sustainability		Consolidation			

# Year 2 | Working scientifically skills mapping

Season	Topic	Skills
Autumn	Animals' needs for survival	Ask questions
		Gather, record and classify data
		Gather, record and classify data
		Gather, record and classify data
		Gather, record and classify data
		Answer questions and make conclusions
	Humans	Gather, record and classify data
		Gather, record and classify data
		Make observations
	Materials	Make observations
		Gather, record and classify data
		Gather, record and classify data
Ask questions		
Gather, record and classify data		
Gather, record and classify data		
Make observations		
Answer questions and make conclusions		
Take measurements		
Plastic	Ask questions	
	Answer questions and make conclusions	
Spring	Plants (light and dark)	Make observations
		Make observations
		Ask questions
		Ask questions
		Take measurements
	Living things and their habitats	Gather, record and classify data
		Answer questions and make conclusions
		Answer questions and make conclusions
		Answer questions and make conclusions
		Gather, record and classify data
		Make observations
		Gather, record and classify data
		Gather, record and classify data
	Gather, record and classify data	
Plants	Gather, record and classify data	
Consolidation	Consolidation	
	Consolidation	
Summer	Plants (bulbs and seeds)	Make observations
		Gather, record and classify data
		Ask questions
		Take measurements
	Growing up	Gather, record and classify data
		Ask questions
		Gather, record and classify data
		Gather, record and classify data
		Make observations
		Answer questions and make conclusions
	Plants	Make observations
		Make observations
	Wildlife	Ask questions
Answer questions and make conclusions		
Consolidation		

## Year 3 – Science

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Biology Skeletons FREE TRIAL VIEW		Free trial VIEW	Biology Movement VIEW	Biology Nutrition and diet VIEW		Sustainability Food waste VIEW	Chemistry Rocks VIEW		Consolidation		
Spring	Chemistry Fossils VIEW	Chemistry Soils VIEW		Physics Light VIEW							Consolidation	
Summer	Biology Plants A VIEW					Physics Forces VIEW	Physics Magnets VIEW	Biology Plants B VIEW	Sustainability Biodiversity VIEW			

# Year 3 | Enquiry types mapping

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Skeletons		Movement		Nutrition and diet		Food waste		Rocks			
	Identifying, grouping and classifying				Research			Sustainability	Identifying, grouping and classifying			Consolidation
Spring	Fossils		Soils		Light							
	Research		Comparative test		Fair test						Consolidation	
Summer	Plants A					Forces		Magnets		Plants B	Biodiversity	
	Observation over time					Pattern seeking		Pattern seeking		Observation over time	Sustainability	

# Year 3 | Working scientifically skills mapping

Autumn	Skeletons				Movement		Nutrition and diet				Food waste		Rocks							
Ask questions	Gather, record and classify data	Gather, record and classify data	Gather, record and classify data	Present findings	Answer questions and make conclusions	Present findings	Gather, record and classify data	Answer questions and make conclusions	Present findings	Answer questions and make conclusions	Answer questions and make conclusions	Ask questions	Present findings	Make observations	Gather, record and classify data	Make observations	Gather, record and classify data	Consolidation		
Spring	Fossils		Soils				Light													
Ask questions	Present findings		Gather, record and classify data	Answer questions and make conclusions	Take measurements	Take measurements	Answer questions and make conclusions	Make observations	Gather, record and classify data	Gather, record and classify data	Gather, record and classify data	Gather, record and classify data	Ask questions	Plan	Gather, record and classify data	Answer questions and make conclusions	Consolidation			
Summer	Plants A								Forces				Magnets			Plants B	Biodiversity			
Answer questions and make conclusions	Gather, record and classify data	Ask questions	Plan	Plan	Make observations	Gather, record and classify data	Present findings	Make observations	Answer questions and make conclusions	Make observations	Answer questions and make conclusions	Plan	Answer questions and make conclusions	Gather, record and classify data	Make observations	Plan	Present findings	Answer questions and make conclusions	Ask questions	Present findings

## Year 4 – Science

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	<p>Biology</p> <hr/> <p><b>Group and classify living things</b></p> <p>FREE TRIAL</p> <p>VIEW</p> <p><i>Free trial</i></p>			<p>Biology</p> <hr/> <p><b>Data collection A</b></p> <p>VIEW</p>	<p>Chemistry</p> <hr/> <p><b>States of matter</b></p> <p>VIEW</p>							<p>Consolidation</p>
Spring	<p>Physics</p> <hr/> <p><b>Sound</b></p> <p>VIEW</p>				<p>Biology</p> <hr/> <p><b>Data collection B</b></p> <p>VIEW</p>	<p>Physics</p> <hr/> <p><b>Electricity</b></p> <p>VIEW</p>				<p>Sustainability</p> <hr/> <p><b>Energy</b></p> <p>VIEW</p> <p><i>Leaf icon</i></p>	<p>Consolidation</p>	
Summer	<p>Biology</p> <hr/> <p><b>Data collection C</b></p> <p>VIEW</p>	<p>Biology</p> <hr/> <p><b>Habitats</b></p> <p>VIEW</p>	<p>Sustainability</p> <hr/> <p><b>Deforestation</b></p> <p>VIEW</p> <p><i>Leaf icon</i></p>	<p>Biology</p> <hr/> <p><b>The digestive system</b></p> <p>VIEW</p>					<p>Biology</p> <hr/> <p><b>Food chains</b></p> <p>VIEW</p>			

# Year 4 | Enquiry types mapping

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Group and classify living things			Data collection A	States of matter							
	Identifying, grouping and classifying			Observation over time	Fair test							Consolidation
Spring	Sound					Data collection B	Electricity				Energy	
	Fair test					Observation over time	Pattern seeking				Sustainability	Consolidation
Summer	Data collection C		Habitats	Deforestation	The digestive system					Food chains		
	Observation over time		Research	Sustainability	Research					Research		

# Year 4 | Working scientifically skills mapping

Season	Topic	Skills
Autumn	Group and classify living things	Gather, record and classify data
		Ask questions
		Gather, record and classify data
		Gather, record and classify data
		Present findings
Data collection A	Gather, record and classify data	
	Gather, record and classify data	
States of matter	Gather, record and classify data	
	Answer questions and make conclusions	
	Ask questions	
	Make observations	
	Plan	
	Gather, record and classify data	
	Answer questions and make conclusions	
	Ask questions	
	Make observations	
	Answer questions and make conclusions	
Consolidation		
Spring	Sound	Ask questions
		Gather, record and classify data
		Take measurements
		Plan
		Answer questions and make conclusions
		Plan
	Data collection B	Gather, record and classify data
		Gather, record and classify data
	Electricity	Gather, record and classify data
		Gather, record and classify data
Energy	Gather, record and classify data	
	Answer questions and make conclusions	
Consolidation		
Summer	Data collection C	Gather, record and classify data
		Gather, record and classify data
		Present findings
	Habitats	Ask questions
		Gather, record and classify data
		Gather, record and classify data
		Present findings
	Deforestation	Ask questions
		Present findings
	The digestive system	Make observations
Ask questions		
Plan		
Plan		
Gather, record and classify data		
Present findings		
Food chains	Answer questions and make conclusions	
	Answer questions and make conclusions	
	Gather, record and classify data	
	Present findings	

## Year 5 – Science

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	<p>Physics</p> <hr/> <p><b>Forces</b></p> <p>FREE TRIAL</p> <p>VIEW</p>					<p>Physics</p> <hr/> <p><b>Space</b></p> <p>VIEW</p>					<p>Sustainability</p> <p>Global warming</p> <p>VIEW</p>	<p>Consolidation</p>
Spring	<p>Chemistry</p> <hr/> <p><b>Properties of materials</b></p> <p>VIEW</p>				<p>Biology</p> <hr/> <p><b>Animals including humans</b></p> <p>VIEW</p>				<p>Biology</p> <hr/> <p><b>Life cycles</b></p> <p>VIEW</p>			
Summer	<p>Biology</p> <hr/> <p><b>Reproduction A</b></p> <p>VIEW</p>		<p>Chemistry</p> <hr/> <p><b>Reversible and irreversible changes</b></p> <p>VIEW</p>			<p>Sustainability</p> <p>Plastic pollution</p> <p>VIEW</p>	<p>Biology</p> <hr/> <p><b>Reproduction B</b></p> <p>VIEW</p>		<p>Consolidation</p>			

# Year 5 | Enquiry types mapping

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Forces					Space					Global warming	
	Fair test					Research					Sustainability	Consolidation
Spring	Properties of materials				Animals including humans					Life cycles		
	Comparative test				Pattern seeking					Research		
Summer	Reproduction A		Reversible and irreversible changes				Plastic pollution	Reproduction B				
	Observation over time		Identifying, grouping and classifying				Sustainability	Observation over time		Consolidation		

# Year 5 | Working scientifically skills mapping

Season	Topic	Skills
Autumn	Forces	Present findings
		Plan
		Plan
		Take measurements
		Present findings
		Plan
		Take measurements
		Answer questions and make conclusions
		Answer questions and make conclusions
		Space
Gather, record and classify data		
Present findings		
Gather, record and classify data		
Present findings		
Answer questions and make conclusions		
Answer questions and make conclusions		
Gather, record and classify data		
Global warming	Gather, record and classify data	
	Answer questions and make conclusions	
Spring	Properties of materials	Gather, record and classify data
		Gather, record and classify data
		Plan
		Take measurements
		Evaluate
	Answer questions and make conclusions	
	Animals including humans	Ask questions
		Gather, record and classify data
		Ask questions
		Answer questions and make conclusions
Gather, record and classify data		
Present findings		
Life cycles	Present findings	
	Gather, record and classify data	
	Gather, record and classify data	
	Present findings	
Summer	Reproduction A	Present findings
		Gather, record and classify data
		Present findings
		Answer questions and make conclusions
		Plan
		Take measurements
	Reversible and irreversible changes	Evaluate
		Gather, record and classify data
		Take measurements
		Present findings
Plastic pollution	Answer questions and make conclusions	
	Present findings	
Reproduction B	Evaluate	
	Evaluate	
Consolidation	Consolidation	

## Year 6 – Science

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	<p>Biology</p> <hr/> <p>Living things and their habitats</p> <p>FREE TRIAL</p> <p>VIEW</p>						<p>Physics</p> <hr/> <p>Electricity</p> <p>VIEW</p>				<p>Sustainability Renewable energy</p> <p>VIEW</p>	
Spring	<p>Physics</p> <hr/> <p>Light</p> <p>VIEW</p>				<p>Sustainability Light pollution</p> <p>VIEW</p>	<p>Biology</p> <hr/> <p>The circulatory system</p> <p>VIEW</p>		<p>Biology</p> <hr/> <p>Diet, drugs and lifestyle</p> <p>VIEW</p>				
Summer	<p>Biology</p> <hr/> <p>Variation</p> <p>VIEW</p>	<p>Biology</p> <hr/> <p>Adaptations</p> <p>VIEW</p>				<p>Biology</p> <hr/> <p>Fossils</p> <p>VIEW</p>	<p>Consolidation</p>	<p>Themed projects (Year 7 ready)</p> <p>VIEW</p>				

# Year 6 | Enquiry types mapping

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Living things and their habitats						Electricity					Renewable energy
	Identifying, grouping and classifying				Observation over time		Fair test					Sustainability
Spring	Light				Light pollution		The circulatory system			Diet, drugs and lifestyle		
	Fair test				Sustainability		Research			Fair test		
Summer	Variation		Adaptations				Fossils				Themed projects	
	Pattern seeking						Research		Consolidation	Comparative test	Fair test	

# Year 6 | Working scientifically skills mapping

Season	Topic	Skills		
Autumn	Living things and their habitats	Answer questions and make conclusions		
		Gather, record and classify data		
		Gather, record and classify data		
		Gather, record and classify data		
		Answer questions and make conclusions		
		Present findings		
		Present findings		
Autumn	Electricity	Gather, record and classify data		
		Gather, record and classify data		
		Gather, record and classify data		
		Plan		
		Take measurements		
		Evaluate		
		Answer questions and make conclusions		
Present findings				
Autumn	Renewable energy	Answer questions and make conclusions		
		Present findings		
		Spring	Light	Answer questions and make conclusions
				Gather, record and classify data
				Gather, record and classify data
				Plan
				Take measurements
Gather, record and classify data				
Answer questions and make conclusions				
Answer questions and make conclusions				
Spring	Light pollution	Answer questions and make conclusions		
		Present findings		
Spring	The circulatory system	Ask questions		
		Answer questions and make conclusions		
		Make observations		
		Ask questions		
		Present findings		
		Evaluate		
		Answer questions and make conclusions		
Spring	Diet, drugs and lifestyle	Answer questions and make conclusions		
		Answer questions and make conclusions		
		Answer questions and make conclusions		
		Plan		
		Take measurements		
		Evaluate		
		Answer questions and make conclusions		
Summer	Variation	Gather, record and classify data		
		Gather, record and classify data		
	Adaptations	Answer questions and make conclusions		
		Answer questions and make conclusions		
		Plan		
		Present findings		
		Plan		
		Present findings		
	Fossils	Answer questions and make conclusions		
		Present findings		
Present findings				
Summer	Consolidation	Consolidation		
Summer	Themed projects	Ask questions		
		Plan		
		Make observations		
		Take measurements		
		Gather, record and classify data		
		Answer questions and make conclusions		
		Evaluate		

# Science Curriculum Progression

The aim of this document is to give an at-a-glance guide to how the White Rose Science schemes of learning link to the Key Stage 1 and 2 National Curriculum: science programmes of study, and how knowledge and skills progresses through topics.

## Substantive knowledge

For each of the major topic areas, you can then see which National Curriculum objectives are covered in that year, together with the term and block in which that objective is first met in version 1 of the White Rose Science schemes.

Animals including humans						
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
<ul style="list-style-type: none"> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>Identify and name a variety of common animals that use camouflage, hibernation and冬眠</li> <li>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including bats)</li> <li>Identify, name, draw and label the basic parts of the human body, stating which part of the body is associated with each sense</li> </ul>	<ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring which grow into adults</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>Identify that humans and some other animals have skeletons, and muscles for support, protection and movement</li> </ul>	<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans, and identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age</li> </ul>	<ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>	<p>Autumn 1 Spring 2</p>
<p>Autumn 1, Autumn 2, Summer 2, Summer 4</p>	<p>Autumn 1, Autumn 2, Summer 2, Summer 4</p>	<p>Autumn 1, Autumn 2, Autumn 3</p>	<p>Summer 4, Summer 5</p>	<p>Spring 2</p>	<p>Summer 3, Summer 4</p>	

## Disciplinary knowledge

The second part of this document highlights how disciplinary knowledge (titled working scientifically in the National Curriculum) progresses from Year 1 to Year 6. The working scientifically skills have been broken down into eight key areas. Statements that have been taken directly from the National Curriculum are highlighted in bold.

Ask questions					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>Ask simple questions.</li> </ul>	<ul style="list-style-type: none"> <li>Ask simple questions and recognise that they can be answered in different ways.</li> </ul>	<ul style="list-style-type: none"> <li>Ask questions and understand there are different enquiry types they could use to answer them.</li> </ul>	<ul style="list-style-type: none"> <li>Ask relevant questions and use different types of scientific enquiry to answer them.</li> </ul>	<ul style="list-style-type: none"> <li>Ask scientific questions and begin to understand which questions would be best suited to each enquiry type.</li> </ul>	<ul style="list-style-type: none"> <li>Ask relevant scientific questions and choose which enquiry type would be best suited to answer them.</li> </ul>

Working scientifically skills are split into eight key areas:

- Ask questions
- Plan
- Make observations
- Take measurements
- Gather, record and classify data
- Present findings
- Answer questions and make conclusions
- Evaluate (KS2 only)

# Animals, including humans

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</li> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> </ul>	<ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring which grow into adults</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul>	<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans</li> <li>Identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age</li> </ul>	<ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans</li> </ul>
Autumn 1 Spring 2	Autumn 1, Autumn 2 Spring 2 Summer 2, Summer 4	Autumn 1, Autumn 2, Autumn 3	Summer 4, Summer 5	Spring 2	Summer 3, Summer 4

# Living things and their habitats

Year 2	Year 4	Year 5	Year 6
<ul style="list-style-type: none"><li>• Explore and compare the differences between things that are living, dead, and things that have never been alive</li><li>• 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</li><li>• Identify and name a variety of plants and animals in their habitats, including microhabitats</li><li>• Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food</li></ul>	<ul style="list-style-type: none"><li>• Recognise that living things can be grouped in a variety of ways</li><li>• explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li><li>• Recognise that environments can change and that this can sometimes pose dangers to living things</li></ul>	<ul style="list-style-type: none"><li>• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li><li>• Describe the life process of reproduction in some plants and animals</li></ul>	<ul style="list-style-type: none"><li>• 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</li><li>• Give reasons for classifying plants and animals based on specific characteristics</li></ul>
Spring 2 Summer 2, Summer 4	Autumn 1, Autumn 2 Spring 2 Summer 1, Summer 2	Spring 3 Summer 1, Summer 4	Autumn 1

Year 1	Year 2	Year 3
<ul style="list-style-type: none"> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>Identify and describe the basic structure of a variety of common flowering plants, including trees</li> </ul>	<ul style="list-style-type: none"> <li>Observe and describe how seeds and bulbs grow into mature plants</li> <li>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>	<ul style="list-style-type: none"> <li>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>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</li> <li>Investigate the way in which water is transported within plants</li> <li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul>
<p>Spring 1, Spring 5 Summer 1, Summer 2</p>	<p>Spring 1, Spring 3 Summer 1, Summer 3</p>	<p>Summer 1, Summer 4</p>

Year 1	Year 2	Year 5
<ul style="list-style-type: none"> <li>• Distinguish between an object and the material from which it is made</li> <li>• Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>• Describe the simple physical properties of a variety of everyday materials</li> <li>• Compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>• use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>• Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>• Demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>• 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</li> </ul>
Autumn 3	Autumn 3	Spring 1 Summer 2

Year 4	Year 6
<ul style="list-style-type: none"><li>• Identify common appliances that run on electricity</li><li>• Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li><li>• 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</li><li>• Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li><li>• Recognise some common conductors and insulators, and associate metals with being good conductors</li></ul>	<ul style="list-style-type: none"><li>• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li><li>• 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</li><li>• Use recognised symbols when representing a simple circuit in a diagram</li></ul>
Spring 3	Autumn 2

## Year 3

- 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

Autumn 5  
Spring 1, Spring 2

# States of matter

## Year 4

- 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 ( $^{\circ}\text{C}$ )
- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

Autumn 3

## Year 5

- 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

Autumn 2

# Seasonal change

## Year 1

- Observe changes across the 4 seasons
- Observe and describe weather associated with the seasons and how day length varies

Autumn 2, Autumn 4  
Spring 4  
Summer 4

## Year 4

- 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

Spring 1

# Light

## Year 3

- 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

Spring 3

## Year 6

- Recognise that light travels 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

Spring 1

# Forces and magnets

Year 3	Year 5
<ul style="list-style-type: none"><li>• Compare how things move on different surfaces</li><li>• Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li><li>• Observe how magnets attract or repel each other and attract some materials and not others</li><li>• 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</li><li>• Describe magnets as having 2 poles</li><li>• Predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li></ul>	<ul style="list-style-type: none"><li>• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li><li>• Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li><li>• Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</li></ul>
Summer 2, Summer 3	Autumn 1

# Evolution and inheritance

Year 6
<ul style="list-style-type: none"><li>• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li><li>• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li><li>• Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li></ul>
Summer 1, Summer 2, Summer 3

# **Working scientifically skills progression**

# Ask questions

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>Ask simple questions.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ask simple questions and recognise that they can be answered in different ways.</b></li> </ul>	<ul style="list-style-type: none"> <li>Ask questions and understand there are different enquiry types they could use to answer them.</li> </ul>	<ul style="list-style-type: none"> <li><b>Ask relevant questions and use different types of scientific enquiry to answer them.</b></li> </ul>	<ul style="list-style-type: none"> <li>Ask scientific questions and begin to understand which questions would be best suited to each enquiry type.</li> </ul>	<ul style="list-style-type: none"> <li>Ask relevant scientific questions and choose which enquiry type would be best suited to answer them.</li> </ul>

# Plan

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Planning is not explicitly mentioned in the KS1 curriculum however, if appropriate, children can verbally state what they will investigate, what they will change and what they will keep the same.</p>		<ul style="list-style-type: none"> <li>Make relevant predictions.</li> <li>Identify what they will change, observe and keep the same.</li> <li>With support, set up simple practical enquiries.</li> </ul>	<ul style="list-style-type: none"> <li>Make predictions based on simple scientific knowledge.</li> <li>Identify what they will change, observe or measure and keep the same.</li> <li><b>Set up simple practical enquiries, comparative and fair tests.</b></li> </ul>	<ul style="list-style-type: none"> <li>Make predictions based on scientific knowledge.</li> <li>With support, plan different types of scientific enquiry. Where appropriate, identify the dependent, independent and controlled variables.</li> </ul>	<ul style="list-style-type: none"> <li>Make predictions based on scientific knowledge.</li> <li><b>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</b></li> </ul>

# Make observations

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"><li>Observe closely.</li></ul>	<ul style="list-style-type: none"><li><b>Observe closely, using simple equipment.</b></li></ul>	<ul style="list-style-type: none"><li>Make careful observations using scientific equipment.</li></ul>	<ul style="list-style-type: none"><li><b>Make systematic and careful observations</b> using scientific equipment.</li></ul>	<ul style="list-style-type: none"><li>Use a range of scientific equipment to make systematic and careful observations.</li></ul>	<ul style="list-style-type: none"><li>Use a range of scientific equipment to make systematic and careful observations with increased complexity.</li></ul>

# Take measurements

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"><li>Carry out simple tests using non-standard measurements when appropriate.</li></ul>	<ul style="list-style-type: none"><li><b>Perform simple tests</b> using standard units when appropriate.</li></ul>	<ul style="list-style-type: none"><li>Perform tests and simple experiments and take measurements using standard units.</li></ul>	<ul style="list-style-type: none"><li><b>Take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</b></li></ul>	<ul style="list-style-type: none"><li>Take accurate measurements using a range of scientific equipment. Start to take repeat readings when appropriate.</li></ul>	<ul style="list-style-type: none"><li><b>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</b></li></ul>

# Gather, record and classify data

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>Gather and record simple data.</li> <li>Sort objects and living things into groups based on simple properties.</li> </ul>	<ul style="list-style-type: none"> <li><b>Gather and record data to help in answering questions.</b></li> <li><b>Identifying and classifying.</b></li> </ul>	<ul style="list-style-type: none"> <li>Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables.</li> </ul>	<ul style="list-style-type: none"> <li><b>Gather, record and classify data in a variety of ways to help in answering questions.</b></li> <li><b>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</b></li> </ul>	<ul style="list-style-type: none"> <li>Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs.</li> </ul>	<ul style="list-style-type: none"> <li><b>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</b></li> </ul>

# Present findings

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>Explain what they found out to an adult or a partner.</li> </ul>	<ul style="list-style-type: none"> <li><b>Talk about what they have found out and how they found it out. (non-statutory)</b></li> </ul>	<ul style="list-style-type: none"> <li>Report on findings from enquiries, including oral and written explanations.</li> </ul>	<ul style="list-style-type: none"> <li><b>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</b></li> </ul>	<ul style="list-style-type: none"> <li>Report and present findings from enquiries, including conclusions and begin to identify causal relationships in oral and written forms such as displays and other presentations.</li> </ul>	<ul style="list-style-type: none"> <li><b>Report and present 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.</b></li> </ul>

# Answer questions and make conclusions

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>Answer simple questions.</li> </ul>	<ul style="list-style-type: none"> <li><b>Use their observations and ideas to suggest answers to questions.</b></li> </ul>	<ul style="list-style-type: none"> <li>Make simple conclusions.</li> <li>Use results, findings or observations to answer questions.</li> </ul>	<ul style="list-style-type: none"> <li><b>Use straight-forward scientific evidence to answer questions or to support their findings.</b></li> <li><b>Use results to draw simple conclusions.</b></li> <li><b>Begin to identify differences, similarities or changes related to simple ideas or processes.</b></li> </ul>	<ul style="list-style-type: none"> <li>Make conclusions based on scientific evidence and from their own testing and findings.</li> <li>Identify scientific evidence and use it to answer questions.</li> </ul>	<ul style="list-style-type: none"> <li>Make conclusions based on scientific evidence and from their own testing and findings.</li> <li><b>Identify scientific evidence that has been used to support or refute ideas or arguments.</b></li> </ul>

## Evaluate

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Evaluating is not explicitly mentioned in the KS1 curriculum.</p>		<ul style="list-style-type: none"> <li>Suggest questions for further investigation.</li> </ul>	<ul style="list-style-type: none"> <li><b>Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</b></li> </ul>	<ul style="list-style-type: none"> <li>Continue to use results to draw simple conclusions, suggest improvements and raise further questions for possible testing.</li> </ul>	<ul style="list-style-type: none"> <li><b>Use test results to make predictions to set up further comparative and fair tests.</b></li> <li>Provide some simple examples of how to extend the investigation.</li> </ul>

# Science Vocabulary

## Introduction

The use of accurate scientific vocabulary is essential for children's understanding and communication of scientific concepts. This document presents a detailed mapping of scientific vocabulary progression, illustrating how language skills in science develop over time.

Words are listed in order of where they appear in the scheme of learning. To save repetition of vocabulary, the words are documented where they are first introduced. For example, the word 'carnivore' is used throughout the schemes, however, it is tracked in Year 1 as this is the year group this word is first introduced in.

Animals, including humans					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
hair, eyes, face, nose, ears, teeth, mouth, head, neck, arm, elbow, hand, leg, knee, foot  light, dark, blind, hear, loud, quiet, noisy, sweet, salty, sour, bitter, starchy, skin, rough, smooth, hard, soft, small, size, stiff, stretch  animal, mammal, fur, wild, mammal, pet, bird, wings, bark, feathers, webbed feet, flippers, web, fins, scales, gills, amphibian, frog, toad, newt, reptile, lizard, crocodile, turtle, carnivore, sheep, track, herbivore, plants, vegetable, fruit, omnivore	shelter, heat, warmth, physical health, mental health, healthy diet, unhealthy diet, meat, sugar, germs, hygiene, doctor, disease, plaque, gums, filling  offspring, egg, parent, baby, child, teenager, life cycle, adolescent, frogspawn, tadpole, freight, caterpillar, pupa, butterfly, insect, adult	skeleton, skull, ribcage, pelvis, femur, spine, cartilage, axoskeleton, joint, hinge joint, ball-and-socket joint, muscle, biceps, triceps, contract, relax  carbohydrates, proteins, dairy products, fats, fruit and vegetables, balanced diet, balanced meal, nutrition, Eatwell Guide, vegan diet, vegetarian diet, omnivorous diet, pescatarian diet	incisors, canines, premolars, molars, enamel, root, decay, digestive system, mouth, oesophagus, large intestine, rectum, anus, salivary gland, stomach, small intestine, large intestine, rectum, anus, salivary gland, stomach, small intestine, large intestine, rectum, anus, salivary gland	fetus, elderly, adult, newborn, worm, period, reproduce, hormones, puberty, life expectancy, gestation period, gestation	circulatory system, blood vessels, arteries, veins, capillaries, red blood cells, white blood cells, lungs, plasma, oxygen, CO <sub>2</sub> , ventricles, right atrium, left atrium, right ventricle, left ventricle, oxygenated blood, deoxygenated blood  collides, saturated fat, unsaturated fat, trans fat, drug, pesticide, aggression, stimulus, cigarette, tar, nicotine, virus, carbon monoxide, infection, heart rate

The aim of this document is to give an at-a-glance guide to the progression of vocabulary throughout the curriculum. Vocabulary is broken down into Years 1 – 6 for the topic areas from the National Curriculum and sustainability blocks. Working scientifically vocabulary is broken down into the primary phases.

Key vocabulary					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
measure, observe, compare, measurement, growth, lowest, longer than, level, square, fold, stretch, observe	hardness, reaction, bar chart, pictogram, data, measure, decrease, prediction, direction, scales, filter paper, filter funnel, measuring cylinder, thermometer, conclusion, evaluation, data, volume, decimal meter, stopwatch, beaker, temperature, Petri dish, blood chart, bar graph, classifying, classification key	line graph, microscope, animals, microscopes, result, control, control/basket, sieve, filtering, repeatability, accuracy, correlation, precision, angle, percentage, line graph, scatter graph, independent variable, dependent variable, controlled variables, duration, theory	measure, observe, compare, measurement, growth, lowest, longer than, level, square, fold, stretch, observe	line graph, microscope, animals, microscopes, result, control, control/basket, sieve, filtering, repeatability, accuracy, correlation, precision, angle, percentage, line graph, scatter graph, independent variable, dependent variable, controlled variables, duration, theory	line graph, microscope, animals, microscopes, result, control, control/basket, sieve, filtering, repeatability, accuracy, correlation, precision, angle, percentage, line graph, scatter graph, independent variable, dependent variable, controlled variables, duration, theory
Exposure words					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
draw, label, change, some, table, record, tally, picture, size, predict, similar, different, sort, group, identify, pattern, height, number, amount, hand lens, ruler, counting cubes, centimetres, metres, suitable, measurable, match, test, scientific enquiry, comparative test, research, pattern seeking	For test, identify, group and classify, model, modelling, investigate, changed, measured, shared the same, millimetres, millilitres, data logger, tape measure, features, scientist, diagram, sorting diagram, block diagram, distance, results	For test, identify, group and classify, model, modelling, investigate, changed, measured, shared the same, millimetres, millilitres, data logger, tape measure, features, scientist, diagram, sorting diagram, block diagram, distance, results	For test, identify, group and classify, model, modelling, investigate, changed, measured, shared the same, millimetres, millilitres, data logger, tape measure, features, scientist, diagram, sorting diagram, block diagram, distance, results	For test, identify, group and classify, model, modelling, investigate, changed, measured, shared the same, millimetres, millilitres, data logger, tape measure, features, scientist, diagram, sorting diagram, block diagram, distance, results	For test, identify, group and classify, model, modelling, investigate, changed, measured, shared the same, millimetres, millilitres, data logger, tape measure, features, scientist, diagram, sorting diagram, block diagram, distance, results

The working scientifically section has been split into two categories. This includes key vocabulary from the schemes and exposure words. Children are not expected to use every word in the exposure words list, but they can hear correct scientific language verbally through teacher discussion and instruction.

# Animals, including humans

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>hair, eyes, face, nose, ears, teeth, mouth, head, neck, arm, elbow, hand, leg, knee, foot</p> <p>light, dark, blind, hear, loud, quiet, noisy, sweet, salty, sour, bitter, savoury, skin, rough, smooth, hard, soft, smell, scent, sniff, stench</p> <p>animal, mammal, fur, wild mammal, pet, bird, wings, beak, feathers, webbed feet, flippers, tail, fins, scales, gills, amphibian, frog, toad, newt, reptile, lizard, crocodile, turtle, carnivore, sharp teeth, herbivore, plants, vegetable, fruit, omnivore</p>	<p>shelter, heart, exercise, physical health, mental health, healthy diet, unhealthy diet, meat, sugar, germs, hygiene, doctor, disease, plaque, gums, filling</p> <p>offspring, egg, parent, baby, child, teenager, life cycle, adolescent, frogspawn, tadpole, froglet, caterpillar, pupa, butterfly, insect, adult</p>	<p>skeleton, skull, ribcage, pelvis, femur, spine, antennae, exoskeleton, joint, hinge joint, ball-and-socket joint, muscle, biceps, triceps, contract, relax</p> <p>carbohydrates, proteins, dairy products, fats, fruit and vegetables, balanced diet, balanced meal, nutrition, Eatwell Guide, vegan diet, vegetarian diet, omnivorous diet, pescatarian diet</p>	<p>incisors, canines, premolars, molars, enamel, root, decay, digestive system, mouth, oesophagus, stomach, small intestine, large intestine, rectum, saliva</p> <p>producer, consumer, prey, predator, farming, overfishing, hunting</p>	<p>foetus, elderly adult, milestone, womb, period, reproduce, hormone, puberty, life expectancy, gestation period, gestation</p>	<p>circulatory system, blood vessels, arteries, veins, capillaries, red blood cells, white blood cells, lungs, plasma, oxygen, atria, ventricles, right atrium, left atrium, right ventricle, left ventricle, oxygenated blood, deoxygenated blood</p> <p>calories, saturated fats, unsaturated fats, trans fats, drug, painkiller, depressant, stimulant, cigarette, tar, nicotine, vape, carbon monoxide, addiction, heart rate</p>

# Living things and their habitats

Year 2	Year 4	Year 5	Year 6
Arctic plants, hibernate, habitat, cactus, desert, rainfall, ocean, seagrass, woodland, fern, moss, microhabitat, spider, snail, diet, food chain, living, dead, never alive	vertebrate, invertebrate, soft-bodied invertebrate, flowering plant, non-flowering plant, seasonal changes, natural resources, rewilding, nature reserve	monotreme, mammary gland, metamorphosis, larva, chrysalis, hatchling, nestling, fledgling, fertilisation, embryo, sperm cells, egg cells, sexual reproduction, anther, stigma, style, filament, ovary, ovule, clone, runner, tuber, asexual reproduction, cutting, parent plant	organism, excretion, reproduction, mollusc, arachnid, classification, coniferous tree, microorganism, bacteria, virus, fungi, characteristics

## Plants

Year 1	Year 2	Year 3
plant, flower, leaf, petals, stem, roots, branch, trunk, roots, wildflower, daisy, garden plant, sunflower, nettle, buttercup, dandelion, deciduous tree, horse chestnut, oak, sycamore, evergreen tree, pine, holly, needles, seed, soil, growth	sunlight, compost, herb, blossom, bulb, shoot	water transportation, seedling, seed coating, germination, stamen, pistil, pollen, reproductive organs, pollination, pollinators, wind dispersal, animal dispersal, water dispersal, explosion dispersal, seed dispersal

# Materials

Year 1	Year 2	Year 5
material, shiny, dull, rock, heavy, light, object, wood, metal, plastic, glass, wool, solid, liquid, melt, freeze, ice, float, sink, absorb, transparent, opaque	natural material, human-made material, recycle, flexible, rigid, stone, pebble, brick, brittle, flexible, translucent, tough, lightweight, strong, breakable, waterproof	electrical conductor, electrical insulator, thermal insulator, properties, lifespan, dissolve, soluble, insoluble, solution, mixture, reversible changes, reverse, chemical reaction, irreversible change, burning, heating, vinegar, bicarbonate of soda

# Rocks

Year 3
granite, pumice, sandstone, chalk, marble, gneiss, crystals, grains, layers, texture, hardness, weathering, fossil, shell, fossilisation, sediment, sandy soil, clay soil, peat soil, chalky soil, organic matter, nutrients, deforestation, habitat loss

# States of matter

## Year 4

solid, liquid, gas, states of matter, pouring solid, ooblek, flow, freezing, melting, boiling, condensation, evaporation, melting point, water cycle, precipitation, atmosphere, petri dish

# Electricity

## Year 4

appliances, plug, socket, cell, electrocuted, circuit, switch, battery, buzzer, conductor, insulator

## Year 6

series circuit, voltage, current, complete circuit, incomplete circuit

# Earth and space

## Year 5

Solar System, orbit, Sun, planets, Pluto, celestial body, gravity, heliocentric model, geocentric model, rotate, axis, North Pole, South Pole, Earth, night, day, moon, gravitational force, satellite

# Seasonal changes

## Year 1

autumn, daylight, night, weather, season, rainfall, weather, rain gauge, winter, rainy, snowy, windy, cloudy, frosty, sunny, spring, summer

# Sound

## Year 4

vibration, sound, volume, pitch, outer ear, ear bones, cochlea, ear drum, ear canal, decibel, insulate, high-pitched, low-pitched, background noise

# Light

## Year 3

light sources, natural light sources, artificial light sources, Sun, sunglasses, protect, reflection, shadow

## Year 6

retina, iris, pupil, lens, ray diagram, solar eclipse, refraction, medium, rainbow, prism, coloured filter, spectrum of light

# Forces and magnets

Year 3	Year 5
push, pull, force, contact force, friction, magnet, magnetic, poles, magnetic force, non-metal, iron, aluminium, steel, attract, repel	frictional force, motion, air resistance, parachute, surface area, water resistance, streamlined, non-contact force, gravity, weight, lever, gear, pulley, machine

# Evolution and inheritance

Year 6
variation, species, inheritance, desirable characteristics, polar habitat, desert habitat, adaptations, evolution, common ancestor, natural selection, finch, Galapagos Islands, decompose, Charles Darwin, palaeontologist, Mary Anning

# Working scientifically

# Key vocabulary

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
measure, observe, compare, measurement, growth, trowel, temperature, bend, squash, twist, stretch, absorb		hardness, reaction, bar chart, pictogram, data, increase, decrease, prediction, dissection, scales, filter paper, filter funnel, measuring cylinder, thermometer, conclusion, evaluation, data, volume, decibel meter, stopwatch, beaker, temperature, Petri dish, block chart, bar graph, classifying, classification key		line graph, microscope, anomaly, anomalous result, control, control beaker, sieve, filtering, repeatability, accuracy, correlation, precision, angle, periscope, line graph, scatter graph, independent variable, dependent variable, controlled variables, duration, theory	

# Exposure words

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
draw, label, change, same, table, record, tally, pipette, size, predict, similar, different, sort, group, identify, pattern, height, number, amount, hand lens, ruler, counting cubes, centimetres, meters, suitable, unsuitable, match, test, scientific enquiry, comparative test, research, pattern seeking		fair test, identify, group and classify, model, modelling, investigate, changed, measured, stayed the same, millimetres, millilitres, data logger, tape measure, features, scientists, diagram, sorting diagram, block diagram, distance, results		causal relationships, decimals, analyse, interpret, conclude, capacity, mass, approximate, justify, secondary source, evidence, duration, mean, calculate, method	

# Sustainability

# Sustainability

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Earth, helpful, harmful, recycle, reuse, crops, farmer, cook	single-use plastic, wildlife, nature, local	food waste, landfill, food waste recycling, edible, inedible, biodiversity, rewilding, endangered, extinct	mains electricity, battery-powered, renewable energy, non-renewable energy, energy usage, habitat destruction, palm oil, sustainable	global warming, greenhouse gases, fossil fuels, climate change, glacier, carbon footprint, plastic pollution, pollution, microplastic	solar power, wind power, solar panels, wind turbine, migration, glare, light pollution, light trespass, skyglow, urban, rural, light emission

## Science Capital

'The concept of **science capital** can be imagined like a 'holdall', or bag, containing all the **science**-related knowledge, attitudes, experiences and resources that you acquire through life. ... That is, the more a young person has, the more likely they are to plan to continue with **science** in the future.'

'Enterprisingscience.com'

As a school it is our duty to challenge Scientific stereotypes and create Science in context that is relevant to our children lives and local area, enriching their 'Science Capital' exposure.

## What will Science look like in the classroom?

- Science will be taught to enthuse and inspire learners to question the world around them.
- Lesson starter activity and low stakes quizzing – reviewing previous learning and consolidation of knowledge and skills through starter activities.
- Specify key vocabulary to be used and its meaning. Vocab mats to be available
- Conduct investigations that are engaging and create awe and wonder, inspiring young minds to investigate independently or with appropriate scaffolding
- Research, investigation and interpretation of findings.
- Children will communicate their Scientific knowledge and understanding appropriately and will be able to apply this to their knowledge outside of school.
- Children will be able to evaluate their learning
- Display materials, vocabulary and resources to support and enhance learning.
- Appropriately challenging texts will be available to develop wider understanding.

Working Scientifically skills are embedded into lessons to ensure that skills are systematically developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.

Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and links to local areas and employers.

## Reading in Science

Reading is at the heart of the curriculum. It is our intent to ensure that every child not only develops the skills of reading but also a love of reading that will last them a lifetime. Our children read at home and school for pleasure, for information and to expand and enhance their knowledge and understanding across all subjects. Our children not only learn to read, they read to learn. Appropriate opportunities are taken to enhance children's learning in science through reading with the use of high-quality texts across a wide range of genres.

These are systematically matched to each topic in each year group, in order to impact on learning in the following ways:

- • Knowledge of an extensive and rich vocabulary.
- • Fluency and accuracy in reading across a wide range of contexts throughout the curriculum.
- • The motivation to read for both study and for pleasure.
- • Extensive knowledge through having read a rich and varied range of texts.
- • Excellent phonic knowledge and skills.
- • An excellent comprehension of texts.
- • A desire to embrace challenging activities, including opportunities to undertake high-quality research across a range of scientific topics.
- • The ability to think, reflect, debate, discuss and evaluate scientific thinking and discoveries.
- • The ability to consistently support, evaluate and challenge their own and others' views using detailed, appropriate and accurate scientific evidence and facts.

## Assessment

At St Bartholomew's C of E Primary School lessons are planned carefully using the National Curriculum and the White Rose Science Curriculum to ensure that assessment takes place in each lesson. Success Criteria is used when planning and a small steps approach is taken. This, along with assessment for learning strategies used within lessons, helps teachers to continually assess the attainment and progress of students in their class on a lesson by lesson basis. This assessment against the small steps and 'factual knowledge' from the White Rose Science Curriculum, helps to inform teacher judgement

## SEN

It is important for teachers to plan work in science which facilitates high expectations, matches children's needs and helps them to make progress.

Teachers implement and develop strategies to support SEN pupils whilst supporting inclusion in science. Teachers plan for appropriate pace and use a range of kinaesthetic /multi-sensory tools to promote enjoyment and progress.

Knowledge and skills can be developed in small steps through analogies, drama and practical activities. Paired and group work in science is widely used and can foster interpersonal and communication skills. Carefully matched work suited to the child's own needs and range of learning can promote confidence and stimulate an interest in future learning, leading to a better understanding of the world around them.

The Science subject leader monitors samples of children's work across the school and conducts regular work scrutinies (book looks). Furthermore, in KS2 their pupil voice is taken into consideration to help teachers to plan an effective and inspiring curriculum

## Monitoring and review

Monitoring of the standards of work and the quality of teaching in Science is the responsibility of the subject leader.

The work of the subject leader also includes supporting colleagues in the teaching of Science, updating staff on current developments in the subject and providing lead and direction for the subject in the school.

Observations of teaching, planning and work scrutiny take place over the course of the year in order to maintain and continue to raise standards.

## Impact

At St Bartholomew's C of E Primary School, children develop a love of science and an eagerness to observe and question the world. Children are equipped with the knowledge and skills to enable them to contribute positively to their community and understand how science can be used to explain what is occurring around them. They learn to communicate their ideas and knowledge using appropriate scientific language as well as becoming confident in using a variety of scientific investigations to help them learn about our world and answer questions. They use graphs and tables to record their results, reaching scientific conclusions and discussing ways in which their investigation could be improved.

At the end of Year 6, the children leave St Bartholomew's C of E Primary School with a full and rounded understanding of the world around them, and are able to articulate and provide rational explanations about scientific concepts and understand how scientific ideas change and develop over time alongside how this has and continues to change our lives and futures.