

CURRICULUM INTENT: PREP SCHOOL CURRICULUM - SCIENCE

Our aim is for children to make sense of the world that they live in and to challenge concepts in a scientific way. We encourage children to ask questions, test hypotheses and practically investigate concepts around us. Children's natural curiosity in science is championed especially in our focus on Scientific Enquiry. Children predict how things behave, explain what is happening and analyse concepts in our ever changing technological and scientific world. Children are encouraged to elicit natural curiosity through their own scientific enquiries promoting a sense of autonomy in the subject.

By the time our pupils leave Year 6 we aim to ensure that their skills reflect the expectation of the national curriculum, and they will:

- Become fluent in the fundamentals of science, ensuring that pupils develop conceptual understanding and the ability to recall and apply knowledge accurately.
- Utilise scientific vocabulary within high order thinking and challenging scientific enquiry.
- Problem solving utilising concepts covered in investigations and theory work. The format of hypothesising from scientific knowledge and testing investigative skills in conjunction with scientific vocabulary covered will equip children to make reasoned judgments in their scientific understanding.

CURRICULUM IMPLEMENTATION: SCIENCE. Key: **Biology**; **Chemistry**; **Physics**; **Sustainability**

	AUTUMN TERM		SPRING TERM		SUMMER TERM		TRIPS AND EVENTS
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
Year 3 Knowledge	Skeletons Movement Nutrition and diet	Nutrition Food waste Rocks	Fossils Soils	Light	Plants	Forces Magnets Plants	Rocks: <ul style="list-style-type: none"> • Natural History Museum • Local rock survey
	<ul style="list-style-type: none"> • Explore the human skeleton by identifying and naming the bones. • Identifying the functions of the human skeleton. 	<ul style="list-style-type: none"> • Identify the effects of different food groups on the body. • Identifying balanced diets. 	<ul style="list-style-type: none"> • Exploring fossils. • Explore the process of fossilisation. • Explore different types of soil and 	<ul style="list-style-type: none"> • Explore the sources of light. • Explore the harmful effects of the Sun and how to protect 	<ul style="list-style-type: none"> • Identifying parts of a plant and their functions. • Plant dissection. • Identifying stems and 	<ul style="list-style-type: none"> • Explore forces • What is friction? • What are magnets? • Magnetic and non-magnetic materials. 	

	<ul style="list-style-type: none"> Identify and name bones in a range of animals. Exploring animals with and without spines. Are all skeletons the same? Identifying and naming joints. Exploring how the skeleton, joints and muscles work together to allow movement. Understanding the five food groups. 	<ul style="list-style-type: none"> Explore the wider animal kingdom to identify different dietary requirements. Investigate the impacts food waste have on the planet. How can we reduce our food waste? Identify and group rocks (granite, pumice, sandstone, chalk, marble and gneiss). How can rocks be identified and grouped based on their properties? Conduct a survey around the local area to identify rocks and their uses. 	<p>what they are made up of.</p> <ul style="list-style-type: none"> Explore the importance of soil Plan, investigate and evaluate which type of soil absorbs the most water. 	<p>eyes from the Sun's rays.</p> <ul style="list-style-type: none"> Explore the eye and how we see. Explore the concept of shadows. Opaque, translucent or transparent? Plan, investigate and evaluate a shadow experiment to explore how the distance from a light source affects the size of an object's shadow. 	<p>water transportation</p> <ul style="list-style-type: none"> Looking at seeds. Reproductive parts in plants. Understanding pollination. What is seed dispersal? Identifying the life cycle of plants. 	<ul style="list-style-type: none"> Plan & investigate how different materials affect friction. Findings – plant growth. 	
<p>Year 3 Skills</p>	<p>Literacy Keywords, Full sentences.</p>	<p>Literacy Recording findings using simple scientific language.</p>	<p>Literacy Reporting on findings from enquiries, including oral and</p>	<p>Literacy Setting up simple practical enquiries, comparative and fair tests.</p>	<p>Literacy Reporting on findings from enquiries, including oral and</p>	<p>Literacy Using results to draw simple conclusions, make predictions for new values, suggest</p>	

			written explanations, displays or presentations of results and conclusions.		written explanations.	improvements and raise further questions
	Numeracy Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.	Numeracy Food waste -Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	Numeracy -Mass units. -Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	Numeracy -Force units, - Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Numeracy Number of plants -Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	Numeracy General units -Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
	SMSC Healthy living and understanding of dietary healthy habits	SMSC Caring for the Environment. Understanding the environmental factors of food waste	SMSC Caring for the Environment – understanding soil and fossils in the environment and to look after local habitats	SMSC Careers Focus – Engineering and Construction. Caring for the Environment. Understanding the environmental factors of light sources.	SMSC Caring for the Environment – Awareness of conserving plants and trees for humans to survive	SMSC Careers – Scientist careers. Problem solving skills and higher order thinking developed
	Subject Specific Skills Gathering, recording, classifying and presenting data in a	Subject Specific Skills Reporting on findings from	Subject Specific Skills Using results to draw simple	Subject Specific Skills Reporting on findings from	Subject Specific Skills Asking relevant questions and	Subject Specific Skills Asking relevant questions and using

	variety of ways to help in answering questions.	enquiries, including oral and written explanations, displays or presentations of results and conclusions -Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	conclusions, make predictions for new values, suggest improvements and raise further questions.	enquiries, including oral and written explanations, displays or presentations of results and conclusions -Setting up simple practical enquiries, comparative and fair tests.	using different types of scientific enquiries to answer them Setting up simple practical enquiries, comparative and fair tests.	different types of scientific enquiries to answer them Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	
Year 4 Knowledge	Groups and classify living things Data collection A States of matter	States of matter	Sound Data collection B	Electricity Energy	Data collection C Habitats Deforestation	The Digestive System Food Chains	Living Things and their habitats –

	<ul style="list-style-type: none"> Identify and sort animals based on their features. Investigate vertebrates and invertebrates. Explore classification keys in animals. Learn how to group plants. Explore classification keys in plants. Collecting and analysing data – observation enquiry in their local area. Exploring solids, liquids and gases. Understanding how to think differently about solids, liquids and gases, which are more difficult to categorise. Exploring changing states. 	<ul style="list-style-type: none"> Learn how to appropriately and accurately use a thermometer and stopwatch. Plan & investigate whether the temperature of water affects the time it takes for ice to melt in it. Exploring the water cycle. Plan, investigate and evaluate whether the temperature of the air affects the time it takes for water to evaporate. 	<ul style="list-style-type: none"> Identify how vibrations are made. Explore the structure and functions of the ear. Investigating sounds and how the intensity is measured. Explore the strength of the vibrations affects the volume of a sound. Explore pitch Plan, investigate and evaluate whether distance affects volume of a sound. Collecting and analysing data. 	<ul style="list-style-type: none"> Identifying common appliances that use electricity. Exploring how to build and draw series circuits. Understanding what went wrong. Exploring conductors and insulators. Investigating conductivity within a circuit. What is energy? How can we reduce our energy usage at home and school? 	<ul style="list-style-type: none"> Collecting, analysing and making conclusions about data. Understanding living things and their habitats. Create a classification key for animals and plants. What impact do humans have on plant and animal habitats? What is deforestation? What are the impacts of deforestation on their local area, the UK and the rest of the world? 	<ul style="list-style-type: none"> Exploring teeth in carnivores, herbivores and omnivores. Exploring human teeth. What are the layers of teeth? Investigating tooth decay. Explore the digestive system and the route food takes through the body, starting with the teeth. Explore food chains and identify producers, consumers, prey and predators. How to interpret & draw different food chains. Explore the potential impact of human activity on food chains. 	<p>Natural History Museum</p>
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Year 4 Skills	<p>Literacy Recording findings using simple scientific language</p>	<p>Literacy Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>	<p>Literacy Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion.</p>	<p>Literacy Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p>	<p>Literacy Recording findings using simple scientific language</p>	<p>Literacy Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p>
	<p>Numeracy Setting up simple practical enquiries, comparative and fair tests understanding the units and measurements involved</p> <p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	<p>Numeracy States of Matter Units-Volumes and Mass of solids. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p>	<p>Numeracy Sound units Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p>	<p>Numeracy Electricity units Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p>	<p>Numeracy Pollution statistics Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p>	<p>Numeracy Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p>
	<p>SMSC Caring for the Environment – understanding conservation of habitats and the importance to</p>	<p>SMSC Careers – Engineering and focus on renewable sources caring for the environment.</p>	<p>SMSC Careers – Engineering and Musician. Healthy living (understanding care for our ears).</p>	<p>SMSC Careers – Engineering Caring for the environment of different states.</p>	<p>SMSC Caring for the Environment – Conservation learning to help humanity to live in harmony with nature.</p>	<p>SMSC Healthy Living – linked with PSHE of Health Me and looking after yourself.</p>

	prevent endangering species.						
	Subject Specific Skills						
	<ul style="list-style-type: none"> • Making systematic and careful observations. • Reporting on findings from enquiries, including oral and written explanations. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. 	<ul style="list-style-type: none"> • Using straightforward scientific evidence to answer questions or to support their findings. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. 	<ul style="list-style-type: none"> • Identifying differences, similarities or changes related to simple scientific ideas and processes. • Setting up simple practical enquiries, comparative and fair tests. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. 	<ul style="list-style-type: none"> • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • Using straightforward scientific evidence to answer questions or to support their findings. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. 	<ul style="list-style-type: none"> • Identifying differences, similarities or changes related to simple scientific ideas and processes. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. 	<ul style="list-style-type: none"> • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • Using straightforward scientific evidence to answer questions or to support their findings. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. 	

Year 5 Knowledge	Forces	Space Global warming	Properties of materials Animals including humans	Animals including humans Life cycles	Reproduction Reversible and irreversible changes	Reversible and irreversible changes Plastic pollution.	Trip to Greenwich Planetarium (Space) London Zoo (Living Things and their habitats)
	<ul style="list-style-type: none"> Explore friction and its effects. What is air resistance? Plan, investigate and evaluate an experiment to test whether surface area of a parachute affects the time taken to fall to the ground. Plan and investigate whether the shape of an object affects the time taken to fall to the bottom of a measuring cylinder. Understand and explore gravity. Investigating use of small forces for greater effects. 	<ul style="list-style-type: none"> Explore the Solar System. Explore and understand the planets in our Solar System. Understand the motion of the Earth and planets. Understanding how theories about space have changed over time. Explain the Earth's rotation and night and day Explain the movement of the Moon. What is global warming? Investigate the impacts of global warming on living things. 	<ul style="list-style-type: none"> Explore and testing properties of materials looking at magnetism, transparency and hardness. Explore and test materials for electrical conductivity. Plan, investigate and evaluate which material is the best thermal insulator. Investigating the uses of everyday materials. Investigating the human life cycle. Investigating the changes that occur in babies and children. 	<ul style="list-style-type: none"> Investigating the changes that occur during puberty in adolescence. Investigating the changes that occur in adults and the elderly. Exploring the gestation periods of mammals. Exploring the commonalities in gestation periods and lifespans. 	<ul style="list-style-type: none"> Understanding sexual reproduction in mammals. Exploring reproductive parts in plants. What is pollination? How is asexual reproduction different to sexual reproduction? Investigating the material process of dissolving. Exploring how to separate materials via sieving and filtering. 	<ul style="list-style-type: none"> Explore the process of evaporation and how this can be used to separate a soluble solid from a liquid. Explore reversible and irreversible changes. Explore how burning affects the chemical & physical structure of items. Explore how the uses of acids affect the chemical & physical structure of items. Explore the causes of plastic pollution. How can we reduce the negative 	

						impacts of plastic pollution?	
Year 5 Skills	Literacy -Reporting and presenting findings from enquiries	Literacy Reading and accounts of former space explorers -Identifying scientific evidence that has been used to support or refute ideas or arguments	Literacy -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	Literacy -Reporting and presenting findings from enquiries, including conclusions, in oral and written forms	Literacy -Identifying scientific evidence that has been used to support or refute ideas or arguments	Literacy -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	
	Numeracy -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	Numeracy -Recognising and controlling variables where necessary with the correct measurements	Numeracy -Measurements of materials Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	Numeracy -Using test results to make predictions to set up further comparative and fair tests	Numeracy -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	Numeracy -Force calculations and units -Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	
	SMSC Careers in Chemistry and Physics pathways	SMSC Caring for the Environment –	SMSC Recycling. Focus on utilising products	SMSC Recycling	SMSC	SMSC Careers in Engineering	

	<p>habitat knowledge for future sustainability to preserve habitats.</p> <p>Understanding the solar system and big bang theories linked with PSHE.</p>	<p>for inventions and creative work with art</p>	<p>Focus on creative use of materials for sustainability</p>	<p>Caring for the Environment and Healthy Me.</p> <p>Careers – Veterinarian and Medicine</p>	<p>-Understanding of energy saving and with renewable forces</p>	
	Subject Specific Skills					
	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Planning different types of scientific enquiries to answer questions, - Reporting and presenting findings from enquiries.</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>	<p>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.</p>	<p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>
	<p>Reporting and presenting findings from enquiries - including conclusions, causal relationships and explanations of and a degree of trust in results.</p>		<p>Using test results to make predictions to set up further comparative and fair tests.</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>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</p>	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>

					displays and other presentations.		
Year 6 Knowledge	Living things and their habitats	Electricity Renewable energy	Light Light Pollution	The Circulatory System Diet, drugs & lifestyle	Variation Adaptions	Fossils Themed Projects (Transition to Year7)	

	<ul style="list-style-type: none"> Explore requirements for life and the differences between living and non-living things. Understanding how to group animals based on their features. Why are animals placed in one group and not another? Understanding how to classify flowering and non-flowering plants. Explore microorganisms. How can animals, plants and microorganisms be identified, grouped and classified? Research the work of Carl Linnaeus and his classification system. 	<ul style="list-style-type: none"> Understanding how to construct and draw series circuits using symbols. Explore reasons why a circuit may be incomplete. Explore variations within circuits. How does the voltage in a circuit affect the loudness of a buzzer? Plan, investigate & evaluate voltage. Explore renewable energy and how it can be used to generate electricity. Explore the impact renewable and non-renewable energy sources have on the environment. 	<ul style="list-style-type: none"> Explore how humans can see objects. Explore light and straight lines. Explore how light affects the formation of shadows. Plan, investigate and evaluate an investigation to see how distance from a light source affects a shadow's size. Explore the process of refraction. Explore the different properties of light and how ideas have changed over time. Explore light pollution and its impact on living things on Earth. 	<ul style="list-style-type: none"> Explore the circulatory system. Explore the composition of blood. Explore blood Understand the function of the heart and its role in the circulatory system. Explore the components of a balanced diet. Understand the impact of drugs and alcohol on the body. Plan, investigate and evaluate a fair test to explore how the duration of exercise affects heart rate. 	<ul style="list-style-type: none"> Explore the term variation. Explore inheritance & characteristics Explore animal adaptations. Explore how plants are adapted to survive in their habitats. Understand the term evolution. Research Charles Darwin and his contribution towards understanding evolution. explore the theory of natural selection. is this type of food a bird eats related to the shape of its beak? 	<ul style="list-style-type: none"> Explore fossils and how they are formed. Explore a variety of fossils and what scientists can learn from them. Research Mary Anning and her Jurassic fossil discoveries. <p>Project 1: Melting</p> <ul style="list-style-type: none"> Develop a question. Research and predict. Identify the variables and write the method. Investigate. Evaluate <p>Project 2: Thermal Conductivity</p> <ul style="list-style-type: none"> Develop a question. Research and predict. Identify the variables and 	
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			<ul style="list-style-type: none"> How can we reduce light pollution? 			<p>write the method.</p> <ul style="list-style-type: none"> Investigate. Evaluate 	
Year 6 Skills	<p>Literacy 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.</p>	<p>Literacy Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>	<p>Literacy Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Literacy 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.</p>	<p>Literacy Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	<p>Literacy Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations in written and oral form such as presentations.</p>	
	<p>Numeracy Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p>	<p>Numeracy 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.</p>	<p>Numeracy</p> <ul style="list-style-type: none"> Units of Light. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. 	<p>Numeracy</p> <ul style="list-style-type: none"> Volume of blood. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, 	<p>Numeracy Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</p>	<p>Numeracy</p> <ul style="list-style-type: none"> Using test results to make predictions to set up further comparative and fair tests. Recording data and results of increasing complexity using scientific diagrams and labels, classification 	

				bar and line graphs.		keys, tables, scatter graphs, bar and line graphs.
	SMSC <ul style="list-style-type: none"> • Career Focus – Engineering. • Caring for the Environment. • Sustainability. 	SMSC Renewable sources and awareness of the environment.	SMSC <ul style="list-style-type: none"> • Careers – Palaeontologists. • Caring for the Environment. • Understanding of humans and our ancestors. 	SMSC <ul style="list-style-type: none"> • Healthy living • An understanding of healthy diets • Careers – Medicine. 	SMSC <ul style="list-style-type: none"> • Caring for the Environment • Understanding of the world we live in, in relation to nature working hand in hand with mindfulness. 	SMSC <ul style="list-style-type: none"> • Caring for the Environment. • Awareness of sustainability for the environment.
	Subject Specific Skills					
Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	<ul style="list-style-type: none"> • Record data and results of increasing complexity using scientific diagrams and labels. • Identifying scientific evidence that has been used to support or refute ideas or argument. • Planning different types of scientific enquiries to answer 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Taking measurements , using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Identifying scientific evidence that has been used to support or refute ideas or arguments. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Recording data and results of increasing complexity using scientific diagrams and labels, 	

		<p>questions, including recognising and controlling variables where necessary.</p> <ul style="list-style-type: none"> • 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 <p>Planning different.</p>	<ul style="list-style-type: none"> • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. 	<ul style="list-style-type: none"> • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary diet exercise heart rate. 	<ul style="list-style-type: none"> • Animals adapted to suit their environment in different ways and that adaptation may lead to evolution. 	<p>classification keys, tables, scatter graphs, bar and line graphs.</p> <ul style="list-style-type: none"> • Identifying scientific evidence that has been used to support or refute ideas or arguments. 	
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Working Scientifically *National Curriculum objectives in bold.

<u>Knowledge</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
Ask questions	<ul style="list-style-type: none"> • Ask questions and understand that there are different enquiry types they could use to answer them. 	<ul style="list-style-type: none"> • Ask relevant questions and use different types of scientific enquiry to answer them. 	<ul style="list-style-type: none"> • Ask scientific questions to begin to understand which questions would be best suited to each enquiry type. 	<ul style="list-style-type: none"> • Ask relevant scientific questions and choose which enquiry type would be best suited to answer them.
Plan	<ul style="list-style-type: none"> • Make relevant predictions. • Identify what they will change, observe and keep the same. 	<ul style="list-style-type: none"> • Make predictions based on simple scientific knowledge. 	<ul style="list-style-type: none"> • Make predictions based on scientific knowledge. • With support, plan different types of scientific 	<ul style="list-style-type: none"> • Make predictions based on scientific knowledge. • Plan different types of scientific enquiries to

	<ul style="list-style-type: none"> With support, set up simple practical enquiries. 	<ul style="list-style-type: none"> Identify what they will change, observe or measure and keep the same. Set up simple practical enquiries, comparative and fair tests. 	<p>enquiry. Where appropriate, identify the dependent, independent and controlled variables.</p>	<p>answer questions, including recognising and controlling variables where necessary.</p>
Make observations	<ul style="list-style-type: none"> Begin to use scientific equipment to make observations. 	<ul style="list-style-type: none"> Make systematic and careful observations. 	<ul style="list-style-type: none"> Use a range of scientific equipment to make systematic and careful observations. 	<ul style="list-style-type: none"> Use a range of scientific equipment to make systematic and careful observations with increased complexity.
Take measurements	<ul style="list-style-type: none"> Carry out tests and simple experiments and take measurements using standard units. 	<ul style="list-style-type: none"> Take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. 	<ul style="list-style-type: none"> Take accurate measurements using a range of scientific equipment. Start to take repeat readings when appropriate. 	<ul style="list-style-type: none"> Take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
Gather, record and classify data	<ul style="list-style-type: none"> Gather and record data in different ways to help answer questions. Recording findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables. 	<ul style="list-style-type: none"> Gather, record and classify data in a variety of ways to help in answering questions. Record findings using simple scientific language drawings, labelled diagrams, keys, bar charts and tables. 	<ul style="list-style-type: none"> Gather, record and classify data with increasing complexity to help in answering questions. Record data using scientific diagrams and labels, classification keys, tables, bar and line graphs. 	<ul style="list-style-type: none"> Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
Present findings	<ul style="list-style-type: none"> Report on findings from enquiries, including oral and written explanations. 	<ul style="list-style-type: none"> Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. 	<ul style="list-style-type: none"> Report and present findings from enquiries, including conclusions. Begin to identify causal relationships in oral and written forms such as displays and other presentations. 	<ul style="list-style-type: none"> 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.
Answer questions and make conclusions	Make simple conclusions. Use results, findings or observations to answer questions.	<ul style="list-style-type: none"> • Use straightforward scientific evidence to answer questions or to support their findings. • Use results to draw simple conclusions. • Begin to identify differences, similarities or changes related to simple ideas or processes. 	<ul style="list-style-type: none"> • Use scientific evidence to answer questions. • Make conclusions based on scientific evidence and from their own testing and findings. • Identify differences, similarities or changes related to simple ideas or processes. 	<ul style="list-style-type: none"> • Use scientific evidence to answer questions. • Make conclusions based on scientific evidence and from their own testing and findings. • Identify scientific evidence that has been used to support or refute ideas or arguments.
Evaluate	<ul style="list-style-type: none"> • Suggest questions for further investigation. 	<ul style="list-style-type: none"> • Begin to make predictions for new values, suggest improvements and raise further questions. 	<ul style="list-style-type: none"> • Make predictions for new values, suggest improvements and raise further questions. 	<ul style="list-style-type: none"> • Use test results to make predictions to set up further comparative and fair tests. • Suggest investigation improvements including accuracy of results. • Provide some simple examples of how to extend the investigation.

IMPACT:

Children demonstrate a recall of facts and investigation concepts from long term memory.

Children show confidence in believing that they will achieve and show resilience when problems are encountered.

Each child achieves objectives (expected standard) for year group.

The development of the ability to recognise links between science topics and further cross-curricular connections.

Science skills are developed, using scientific language to explain ideas, and children can independently apply the concept to new problems.

Children show a high level of pride in the presentation and understanding of the work.

Children will be able to garner greater confidence in the articulation of concepts and the correct use of scientific vocabulary whilst developing a growth mindset in investigations and learning experiences in relation to the world around them.

Each child will nurture a self-autonomy in their learning by independently evaluating scientific results and reflecting on their learning.