Curriculum statement for Science	
Intent	At St. John's Primary School, we aspire for our children to be curious and inquisitive about the world around them throughout their time at school and beyond. We believe that children should be encouraged to have a sense of excitement about natural phenomena. We aim to achieve this by providing the children with multiple experiences, both within and outside the classroom, to plan and carry out scientific enquiries which deepen their scientific knowledge and conceptual understanding. Children are able to gain key scientific knowledge though the programmes of study in accordance with The National Curriculum. Throughout the school, children are given opportunities to use a range of scientific skills which include observing, questioning, researching and recording. Children are encouraged to use skills to understand how science can be used to explain what is happening around them, predict how things will behave and analyse causes. We ensure that children have a broad vocabulary and use specific scientific language in developing questions, investigating hypotheses and when reaching conclusions. The ambition is for each child to be able to ask scientific questions about the world around them, to be inspired and have the skills to develop methods of investigating their questions.
Implementation	Science is allocated 1.5 hours per week in Key Stages 1 and 2. Some classes will split this into one theoretical class of 1 hour and a more practical and experiential lesson of 2 hours over a two week cycle. The learning objectives for each lesson should have a knowledge objective and a working scientifically objective. Teachers use the PLAN knowledge and working scientifically matrices to provide key information about the key concepts to be taught in each unit. These include expected vocabulary, key knowledge, expected prior and future learning and common misconceptions. The working scientifically skills are split into: Plan Do Record Review Children are expected to progress in the complexity of these areas as they develop through the school.

	EYFS Foundations in Science curriculum		
	In the Early Years the prerequisite skills will be taught mainly through the Early Learning Goals of: • Communication and Language • Personal, Social and Emotional Development • Understanding the World In 'Communication and Language' children will learn new vocabulary and ask questions to check what is being said to them. They will develop the ability to use talk to work out problems and organise thinking. Children will describe and explain events in some detail. In 'Personal, Social and Emotional Development' children will learn to make healthy choices about food, drink, activity and tooth brushing. They will learn about the factors that support their overall wellbeing. In 'Understanding the World' children will use all their sense to investigate natural materials. They will explore collections of materials to investigate what is the same? What is different? They will explore how things work and talk about what they see. They will understand some of the important processes and changes on the natural world around them. Including the seasons and changing states of matter. Children will also understand the key features of the lifecycle of a plant and an animal. They will make observations and draw the animals and plants around them. They will understand the need to respect and care for the natural environment and living things. This rich exploration forms the basis of the language skills and understanding of the world around them the children need to provides a solid basis to build on in Key Stage 1 and beyond.		
	Progression of Working Scientifically Skills		
Plan	KS1	LKS2	UKS2

	• ask simple questions and recognising that they can be answered in different ways	• ask relevant questions and using different types of scientific enquiries to answer them • set up simple practical enquiries, comparative and fair tests	• plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
Do	KS1	LKS2	UKS2
	• observe closely, using simple equipment • perform simple tests • identify and classify	• make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, including thermometers and data loggers	• take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
Record	KS1	LKS2	UKS2
	• gather and record data to help in answering questions	• gather, record, classify and present 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	• record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
Review	KS1	LKS2	UKS2
	• use their observations and ideas to suggest answers to questions	• report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	• use test results to make predictions to set up further comparative and fair tests • report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as

		• identify differences, similarities or changes related to simple scientific ideas and processes • use straightforward scientific evidence to answer questions or to support their findings	displays and other presentations • identify scientific evidence that has been used to support or refute ideas or arguments

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	Long term plan for Key Stage 1					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Understanding the World					
Year 1	<u>Animals, including Humans</u> All About Me – Senses	<u>Plants</u> Enchanted Woodland Identifying and naming common plants and describing basic structures		<u>Everyday Materials</u> Distinguishing objects from the material it is made from and describing simple properties .	<u>Animals, Including Humans</u> Dinosaurs Recognising carnivores, herbivores and omnivores	<u>Animals including Humans</u> Identifying and naming fish, amphibians, reptiles, birds, and mammals
	<u>Seasonal changes through the year</u> Observing changes across four seasons and describing associated weather					
Year 2	<u>Animals, Including Humans</u> Animals need water, food and air to survive and to have offspring		<u>Uses of Everyday Materials</u> Comparison of an object's material with its use; impact of bending, twisting etc. on solid objects	<u>Plants</u> Plants grow from seeds, and require water, light and simple food chains	<u>Living Things and Their Habitats</u> Basic introduction to habitats and micro-habitats, and simple food chains	

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	Long term plan for Key Stage 2					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Rocks Comparisons of how rocks and formed and how fossils are formed	Light Relationship between light and how we see; the formation of shadows	Animals, Including Humans The role of muscles and skeletons; the importance of nutrients	Forces and Magnets Magnets have poles which attract or repel	Plants The key features of flowering plants and what they need to survive	
Year 4	States of Matter Solids, liquids and gases and the role of temperature in changing states	Sound Relationship between strength of vibrations and volume of sound	Living Things and Their Habitats Introduction to classifying animals and their environment	Animals, Including Humans The human digestive system and simple food chains	Electricity Simple series circuits	
Year 5	Forces Gravity, air and water resistance and friction; introduction to pulleys	Earth and Space Movements of planets and the Moon, and relationship to day and night	Properties of Materials Relationship between materials and their uses; difference between reversible and non-reversible changes		Living Things and Their Habitats Life cycles of a mammal, amphibian insect and bird, and some reproductive processes	Animals, Including Humans Human development to old age
Year 6	Evolution and Inheritance Fossils; introduction to the idea that adaptation may lead to evolution	Living Things and Their Habitats Classification of living things based on characteristics	Electricity Investigating variations in series circuits	Light How light travels and is reflected, and how this allows us to see	Animals, Including Humans Human circulatory system; transport of nutrients within the body	

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Impact	Each child should develop a love of science, with a strong fundamental grasp of key scientific skills and the scientific method. They will have built on their natural curiosity and be able to observe the world more carefully. Each child will understand the world more due to the knowledge they have, and be well prepared for learning in more depth about science in Key Stage 3. The children are assessed against the requirements of the National Curriculum. The children complete end of unit multiple choice assessments which are used to inform teacher assessment. This identifies key knowledge learnt within each unit and informs future teaching. The teacher assessments are recorded centrally on a data tracker. This is reviewed by the subject leader and the senior leadership team. Where required discussion may be held with the class teacher to discuss how certain units of learning may be adjusted to ensure greater understanding of skills or knowledge. By providing students with a strong foundation in Science, they will be equipped with the necessary skills and knowledge to understand and navigate the complex scientific issues that they will encounter in their daily lives. This will help them to make informed decisions and become active citizens in an increasingly technology-driven world. They should be equipped with the skills to generate scientific questions and be able to investigate them thoroughly. These skills will unlock opportunities for them throughout their lives.