



Whole School Science Progression Map

Our scientific progression is developed using the National Curriculum Programme of Study for Science as detailed below. Pupils build upon a range of skills during each year group that enhance their knowledge of scientific concepts and ways of working scientifically. As pupils approach the end of KS2 in topics such as Evolution and Inheritance they will be drawing knowledge from a number of different topic areas that they have learnt across previous year groups.

Access to scientific knowledge and skills begins in the Early Years through exploratory and adult directed learning and being given the chance to develop skills using the natural world around them and to use tools and resources to help them record, test out and enhance their exploration.

Science in the Early Years

The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. Although science as a topic roughly aligns with the Natural World strand of the Understanding the World, EYFS pupils are able experience scientific learning through the other six areas of learning as asking questions, experimenting with a hypothesis and learning through play is actively encouraged and planned for in the continuous provision and adult-led learning within the different areas of learning and physical areas of the learning environment.

The three characteristics of effective learning in the early years underpin thinking scientifically.

- Playing and exploring - children investigate and experience things, and 'have a go'.
- Active learning - children concentrate and keep on trying if they encounter difficulties, and enjoy achievements.
- Creating and thinking critically - children have and develop their own ideas, make links between ideas, and develop strategies for doing things.

Three- and Four-Year-olds	Understanding the World		<ul style="list-style-type: none"> • use all their senses in hands-on exploration of natural materials • explore collections of materials with similar or different properties • talk about what they see, using a wide vocabulary • explore how things work • plant seeds and care for growing plants • understand the key features of the life cycle of a plant and an animal • begin to understand the need to respect and care for the natural environment and all living things • explore and talk about different forces they can feel • talk about the differences between materials and changes they notice
Reception	Understanding the World		<ul style="list-style-type: none"> • explore the natural world around them • describe what they see, hear and feel whilst outside • recognise some environments that are different from the one in which they live • understand the effect of changing seasons on the natural world around them
ELG	Understanding the world	The Natural World	<ul style="list-style-type: none"> • Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Science Progression in KSI and KS2

	Animals inc Humans	Living Things and their Habitats	Plants	Electricity	Materials Evolution and Inheritance	Light Sound	Forces	Earth and Space
Year 1	Year 1 pupils will begin to name parts of the body building upon work in EYFS using sense to describe what they observe in the outdoors. Naming animals and identifying their eating patterns and body structure. This is first encountered in EYFS drawing and observing animals and plants.		Building on the exploration of the outdoors in EYFS, pupils will learn about the basic structure of plants and learn the names of common species.		Using their knowledge from exploration of material in EYFS, pupils will begin to name materials and describe simple properties. They will compare and group materials based on their properties.			Following on from observations of different seasonal changes in EYFS, Year 1 will observe changes across the seasons and the weather associated with these seasons.
Year 2	Continuing their knowledge of animals, they will then begin to look at life cycles of animals and begin new learning on a healthy lifestyle.	Year 2 will explore simple food chains, why animals are suited to habitats and explore organisms in their habitats. This will build upon their work in EYFS of observing the natural world	Building upon their knowledge in Year 1 pupils will plant and observe how seeds/bulbs develop and the factors that are necessary for successful growth.		Continuing their exploration of materials from Year 1, pupils will begin to compare the suitability of materials for different uses and explore what happens to them when they are altered.			
Year 3	Building upon the healthy lifestyle work in Year 2 pupils will explore nutrition and how humans cannot produce food. They will continue their work started in Year 1 on naming parts of the body but this time exploring the inside of the body, looking at the skeleton and muscles.		Building upon their work in Year 1 and 2, in Year 3 pupils will delve a little deeper into the functions of plants and start to look at how plants reproduce.		In Year 3 children will take a focussed look at Rocks and Soils. Although they will touch upon the concept that rocks can be used as a material they will focus on the similarities and differences between the rocks and understand they are made from organic matter.	In new learning pupils will investigate light and how it is produced. They will investigate shadows and learn about the dangers of the sun.	In new learning Year 3 will explore basic forces and how objects move using different forces. They will build upon their knowledge of materials investigating materials that react to magnetic forces. (Link to materials)	
Year 4	Continuing the theme of exploring the inside of the body, Pupils will explore the functions of the teeth and name the parts and functions of the digestive system. They will also learn about food chains building upon their knowledge of animals learnt in Year 1 and 2.	Pupils will revisit the work on how crucial a habitat is for an organism's survival and explore new learning on grouping and naming organisms.		In new learning pupils will learn the basic parts of a circuit and make them, identifying appliances that run on electricity and common conductors and insulators. (Link to materials)	Building upon their work in Year 1 and 2, Year 4 will begin looking at materials in more depth and how they can change when manipulated by heat or cooled. They will also focus on new learning looking at solids, liquids and gases. They will focus on the water cycle and evaporation.	In new learning pupils will learn about how sounds are made and understand that vibrations from sounds travel through a medium to the ear. They will find patterns between the pitch of a sound and the object that produced it. They will also learn that sounds get fainter as the sound source becomes		

						further away. Links can be made to light and sound waves.		
Year 5	Pupils will focus on humans and the changes that occur from conception through to old age including puberty.	Using the knowledge of grouping animals from Year 4, pupils will look at the differences between life cycle of different types of animals. They will build upon their knowledge of life cycles from Year 2 and explore different methods of reproduction in plants and animals.			Using previous learning from Year 1,2 and 4, pupils will investigate the properties of materials in greater depth, looking at conductivity, dissolving and evaporation (first looked at in Year 4) They will build upon their work in Year 2 of testing materials and if changes are reversible or irreversible. (Link to electricity)		Using previous learning from Year 3, pupils will begin to explore certain forces in more detail. They will expand their knowledge of forces investigating the impact of forces on levers.	Pupils will look at Earth's position in the solar system and how the seasons are affected by these movements. They will begin to explain the concept of night and day linked to the Earth's rotation.
Year 6	Building upon the work from Year 1, 2, 3 and 4 pupils will explore the mechanisms of the heart and the importance of lifestyle on the health of humans.	Using their previous knowledge of grouping animals from Year 4 and 5, pupils will explore the classification of animals in greater depth and explore how organisms can be classified into more specific groups based on their characteristics.		Using their knowledge from Year 4 pupils will expand their learning giving reasons for changes in circuit output and representing circuits using scientific diagrams.	Using previous learning from Year 3 and the rocks and soils topic, Year 6 will learn that living things have changed over time and fossils provide this evidence. They will also draw upon knowledge from living things and their habitats when thinking about how different animals have adapted to and flourish in the environments they inhabit.	Revisiting the topic that was first introduced in Year 3, pupils will build upon their knowledge of shadows, investigating how shadows can change. In new learning they will learn that light travels in straight lines and how the eye sees light.		