

Science Curriculum

Rationale

All children are entitled to a curriculum and to the powerful knowledge which will maximise their life chances. In Science, children will learn the below critical knowledge in science starting from nursery to Y6, in order to equip them with the cultural capital needed to succeed. The curriculum is planned vertically and horizontally, giving thought to the optimum knowledge sequence and revisits key concepts, vocabulary and knowledge regularly in order to build a secure schema.

Knowledge, skills and understanding to be gained at each stage				
		Cycle 1	Cycle 2	Cycle 3
Year N	Knowledge Introduced	Basic body parts and what they do - eyes, ears, mouth legs, head, arms etc	Naming different wild animals and farm animals	Naming different minibeasts, observing seeds and plants - naming some plants and parts e.g. flower, leaves
	Subject Specific Knowledge	How to describe what they see, talking about the weather	How to describe what they see, talking about the weather	How to describe what they see, talking about the weather
	Prerequisite concepts, knowledge and skills	N/A	N/A	N/A
Year R	Knowledge Introduced	Naming simple body parts and their purposes, Self care and hygiene, exploring ice and water, exploring with magnets.	Describing objects by their simple properties (hard/ soft). Observing eggs and chicks. Animals and their babies.	Difference between night and day and light and dark, observing seeds and plants and naming parts
	Subject Specific Knowledge	Question words, how to observe closely and notice patterns, simple sorting and grouping. Observing weather and season	How to describe what they see, basic recording e.g. tally charts. Observing weather and season changes.	Naming the sun and Planet Earth. Basic recording e.g. tally charts. Observing weather and season changes.
	Prerequisite concepts, knowledge and skills	Naming simple body parts	Naming animals	Plants and their parts e.g. flower, leaves

		Cycle 1	Cycle 2	Cycle 3
Year 1	Knowledge Introduced	The five senses and associated body parts. Types of animals and their differences.	Identifying and sorting materials by property. How to perform simple tests with materials.	Identifying and naming common plants, identifying fruit and vegetables. Observing and identifying how plants grow
	Subject Specific Knowledge	Mammals, reptiles, birds, fish, amphibians, carnivores, herbivores, omnivores, simple tests, classifying (venn)	Using properties to sort materials, identifying transparent and opaque materials, fair tests	Deciduous and evergreen trees, structure of flowering plants and trees. Seasonal changes
	Pre-requisite concepts, knowledge, and skills	Simple body parts, simple animal names. Observing closely using simple equipment (EYFS)	Simple properties of materials (EYFS). Classifying with Venn diagrams using equipment.	Basic knowledge of what a plant is and where we find plants (EYFS)
Year 2	Knowledge Introduced	Introduction to what a living thing is and how habitats provide for them. Identifying materials how their uses relate to	Introduction to simple food chains and sources of food, important of diet and exercise. How animals and humans	Introduction to the flowering plant life cycle. Comparing worldwide habitats (rainforest, ocean, woodland etc.)
	Subject Specific Knowledge	7 processes of living things, habitats. Natural and man-made materials, how solid materials can be changed	Food chains, animals have offspring, scientific observations and describing changes using scientific vocabulary	What plants need to grow, conditions for germination
	Pre-requisite concepts, knowledge, and skills	Classifying animals, animal diet, identifying and sorting materials and their properties (Y1)	Animal diet and human body parts. Observing changes over time (Y1)	Basic structure of plants and trees, seasons, and climate (Y1) How habitats provide for living things
Year 3	Knowledge Introduced	Introduction to skeleton and muscles. Introduction to light and shadow	Introduction to types of rocks and soils. Introduction to forces (magnets, push and pulls, gravity and friction)	Naming different parts of flowering plants and the importance flowers play in the life cycle, planning an investigation
	Subject Specific Knowledge	Naming bones and muscles, functions of bones and muscles, light sources, how distance affects shadows	Igneous, sedimentary and metamorphic rocks, formation of fossils and soils, friction, magnetic materials, gravity	Pollination, seed formation, seed dispersal, how water is transported within plants. Plotting graphs, recording findings
	Pre-requisite concepts, knowledge, and skills	Naming and identifying body parts (EYFS and Y1) diet and exercise (Y2)	Basic properties of materials, comparing and classifying, describing basic processes (Y1 and Y2)	Parts of the plant, flowering plant life cycle, elements for growth (Y1 and Y2) Simple tests and using simple equipment (Y1 and)

Year 4	Knowledge Introduced	Introduction to electricity and simple circuits. Introduction to states of matter and changes inc evaporation, melting etc.	Introduction to how sound is made and how it travels. Introduction to classification keys and using them to identify	Introduction to the digestive system and human teeth. Revisit food chains. Flowering and non-flowering plants
	Subject Specific Knowledge	Mains/battery electricity, simple series circuits, conductors, insulators. Solids liquids and gas and changes of	How sound is made, how it travels, pitch and volume, sound and distance	Producers, predators, and prey, incisors, canines, molars. Sorting plants into categories
	Pre-requisite concepts, knowledge, and skills	Properties of materials (Y1, 2, 3) temperature (Y3), melting and freezing (Y1), using simple equipment	States of matter (Y4), animal habitats and food chain (Y2), parts of the body and the senses (Y1), types of animal and animal	Food chains (Y2), classification keys (Y4), parts a of a plant and plant life cycle
Year 5	Knowledge Introduced	Introduction to Earth and space inc naming planets. Describe different forces e.g. gravity, air resistance, water resistance, friction	Grouping materials based on properties and response to magnets. Separating mixtures in different ways, changes	Life processes of plants and comparing plants around the world. Life cycles of different animals, reproduction, and growth
	Subject Specific Knowledge	Movement of earth, moon and planets, day and night. Controlling variables, taking measurements, friction, and air	Thermal and electrical conductors and insulators, dissolving, filtration evaporation, reversible and irreversible changes	Sexual and asexual reproduction in plants, seed dispersal, life process of reproduction in animals
	Pre-requisite concepts, knowledge, and skills	Magnetism and different forces on an object (Y3), using simple equipment and recording results	Conductors and insulators (Y4 sounds) Properties of materials (Y1, 2, 3) and states of matter (Y4)	Parts of flowering plants and basic understanding of plant reproduction (Y1, 2, 3, 4) Types of animals (Y1) and animal growth
Year 6	Knowledge Introduced	Introduction to Linnaeus system and how living things are classified. How light travels, reflection, and refraction of light.	Introduction to evolution and inheritance. Recognising electricity symbols and reasons for variation in how circuits	Introduction to the circulatory system and impact on healthy lifestyle. Planning an investigation and analysing results
	Subject Specific Knowledge	Similarities and differences between living things, classification, microorganisms, angles of light, reflection, shadows	Adaptation, inheritance, variation, inherited and environmental characteristics. Relationship between	Heart, blood vessels and blood, transportation of water. Controlling variables, conditions, planning and using
	Pre-requisite concepts, knowledge, and skills	Types of animals (Y1, 2, 3) Classification (Y4) how light travels and sources of light (Y3)	How fossils are formed (Y3), what electricity is and how to create a simple circuit, knowing the components of a circuit	Importance of diet and exercise (Y2), planning an investigation (Y3)