

Science

Science provides the foundations for understanding the world through the specific areas of biology, chemistry and physics.

Working scientifically

	<u>Reception</u>	<u>Years 1 and 2</u>	
EYFS (Reception)/National Curriculum Objectives (Years 1 and 2)	<p>Understanding the world:-</p> <ul style="list-style-type: none"> • Children know about similarities and differences in relation to places, objects, materials and living things. • They talk about their own immediate environment and how environments might vary from one another. • They make observations of animals and plants and explain why some things occur, and talk about changes. 	<ul style="list-style-type: none"> • To ask simple questions and recognising that they can be answered in different ways. • To observe closely, using simple equipment. • To perform simple tests. • To identify and classify. • To use their observations and ideas to suggest answers to questions. • To gather and record data to help answer questions. 	
Cecil Gowing's curriculum coverage	<ul style="list-style-type: none"> • Through continuous provision children will conduct experiments and begin to investigate the world around them by making predictions based on what they know. 	<u>Year 1</u>	<u>Year 2</u>
		<ul style="list-style-type: none"> • With support make predictions about what they think will happen. • Experiment, test and hypothesise across all areas. • With support classify animals according to a given criterion. • Make observations and begin to suggest reasons for what they are seeing. • With support begin to record their findings using drawing, simple tables and labels. • Begin to be aware of the necessity to carry out fair tests. • With support, children are 	<ul style="list-style-type: none"> • Predict and give reasons to explain their thinking. • Experiment, test and hypothesise and justify their responses. • Children classify objects and animals by their chosen criterion. • Make observations and suggest reasons for what they are seeing. • To record their findings using simple tables and labels. • Begin to think of their own method of recording. • Identify what a fair test looks like and carry out fair test experiments.

		encouraged to think about simple questions and how to answer them.	<ul style="list-style-type: none">• To encourage children to think about simple questions and how to answer them.
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Everyday materials

	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>
EYFS (Reception)/National Curriculum Objectives (Years 1 and 2)	<p>Understanding the world:-</p> <ul style="list-style-type: none"> • Children know about similarities and differences in relation to places, objects, materials and living things. • They talk about their own immediate environment and how environments might vary from one another. • They make observations of animals and plants and explain why some things occur, and talk about changes. 	<ul style="list-style-type: none"> • To use a range of materials creatively to design and make products. • To use drawing, painting and sculpture to develop and share their ideas, experiences and imagination. 	<ul style="list-style-type: none"> • To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space. • Learn about the work of a range of artists, craft makers, and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work.
Cecil Gowing's curriculum coverage	<ul style="list-style-type: none"> • Explore and label objects in familiar environments – talk about their physical properties, e.g. hard, smooth, etc. • Classify into groups based on their own criteria related to materials they can describe, e.g. man-made, wood, plastic. • Be able to choose suitable materials for a given purpose. • Identify and classify manmade and made materials. 	<ul style="list-style-type: none"> • Explore and label objects in familiar environments - talk about their physical properties e.g. hard, smooth, etc. • Discuss forces and what makes a vehicle move, e.g. toys. • Discuss what different materials are used for, name them and understand where they come from. • Be able to choose suitable materials for a given purpose. 	<ul style="list-style-type: none"> • Identify the materials that objects are made of by sight. • Discusses, using a range of vocabulary, why materials have been used. • Select and test materials for a specific purpose. • Discuss and evaluate the effectiveness of materials for purpose. • Identify what type of force is being applied to an object, e.g. identify and object is being twisted. • Explore the effectiveness of materials for purpose. • Explore the effectiveness of forces on solids. • Experiment with different types of forces – squashing, bending, twisting and stretching and discuss the possible results of the force. • Explain why some objects do not behave in the same way when a force is applied. • Investigate floating and sinking and

			<p>why materials differ.</p> <ul style="list-style-type: none">• Discuss and make electrical circuits, with and without a break.
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Seasonal changes (Year 1) and Living things and their habitats (Year 2)

	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>
EYFS (Reception)/National Curriculum Objectives (Years 1 and 2)	<p>Understanding the world:-</p> <ul style="list-style-type: none"> • Children know about similarities and differences in relation to places, objects, materials and living things. • They talk about their own immediate environment and how environments might vary from one another. • They make observations of animals and plants and explain why some things occur, and talk about changes. 	<ul style="list-style-type: none"> • Observe seasonal changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies. 	<ul style="list-style-type: none"> • 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.
Cecil Gowing's curriculum coverage	<ul style="list-style-type: none"> • Through continuous provision children will conduct experiments and begin to investigate the world around them by making predictions based on what they know. 	<ul style="list-style-type: none"> • Observe weather changes and discuss the reasoning behind seasons including the wider picture (harvest, farming). • Begin to explore and understand the earth's relation to the sun and compare with other countries, e.g. penguins. • Introduce data logging as evidence. • Discuss weather changes and patterns through outdoor learning. 	<ul style="list-style-type: none"> • Discuss habitats and why animals live there. • Animal adaptations. • Food chains. • Sorting and classifying through living, dead and never alive.

Plants

	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>
EYFS (Reception)/National Curriculum Objectives (Years 1 and 2)	<p>Understanding the world:-</p> <ul style="list-style-type: none"> • Children know about similarities and differences in relation to places, objects, materials and living things. • They talk about their own immediate environment and how environments might vary from one another. • They make observations of animals and plants and explain why some things occur, and talk about changes. 	<ul style="list-style-type: none"> • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • Identify the basic structure of a variety of common flowering plants, including trees. 	<ul style="list-style-type: none"> • 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.
Cecil Gowing's curriculum coverage	<ul style="list-style-type: none"> • Through continuous provision children will conduct experiments and begin to investigate the world around them by making predictions based on what they know. 	<ul style="list-style-type: none"> • Investigate and explore different plants in the local surroundings (school grounds and nearby parks) by sampling. • Children to explore plants by observing closely. • Explore the different parts of a plant (flower, stem, leaf and roots). 	<ul style="list-style-type: none"> • Perform simple tests to explore how living conditions affect plants and what happens when these conditions are changed. • Justify predictions and make conclusions from experiments. • Grow a bean and watch it change from a seed through different stages of growth.

Animals

	<u>Reception</u>	<u>Year 1</u>	<u>Year 2</u>
EYFS (Reception)/National Curriculum Objectives (Years 1 and 2)	<p>Understanding the world:-</p> <ul style="list-style-type: none"> • Children know about similarities and differences in relation to places, objects, materials and living things. • They talk about their own immediate environment and how environments might vary from one another. • They make observations of animals and plants and explain why some things occur, and talk about changes. <p>Health and self-care:-</p> <ul style="list-style-type: none"> • Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep them safe. • They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently. 	<ul style="list-style-type: none"> • Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and animals. • 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). • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 	<ul style="list-style-type: none"> • Notice that humans, 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.
Cecil Gowing's curriculum coverage	<ul style="list-style-type: none"> • Comment and ask questions about aspects of their familiar world such as the place where they live or the natural world. • Can talk about some of the things they have observed such as plants, animals, natural found objects. • Talk about how things happen and how things work. • Develop an understanding of growth, decay and changes over time. • Shows care and concern for living things and the environment. • Look closely at similarities, differences, patterns and change. 	<ul style="list-style-type: none"> • Look at and discuss the term conservation. • Look at oceans – corals and how animals depend on them. • Naming and functions of body parts. • Compare and contrast animals. • Be able to classify data using pictures. 	<ul style="list-style-type: none"> • Life cycles of a variety of different animals. • Finding out about basic needs for survival. • Looking at food categories and the importance of hygiene. • Discussing the difference between carnivores, herbivores and omnivores.

Outdoor Learning Opportunities

Activities such as...

Emergency services bike role play, climbing wall, habitats/maps, woodwork, treasure hunt, camp fire/cooking, gardening/maintenance, archery, woodland crowns, games in the woods, weather, art using natural materials, bug hunting and identification, mud kitchen potion making, bird feeders/watching, litter picking, pond dipping and den building.