

Science Pathway



	Nursery	Reception	Year 1	Year 2	Expectation
Working Scientifically	<p>Uses a variety of questions (e.g. what, where, who).</p> <p>Questions why things happen and gives explanations. Asks e.g. who, what, when, how.</p> <p>Can talk about some of the things that they have observed and experienced.</p> <p>Showing curiosity about objects.</p> <p>Using their senses to explore the world around them</p> <p>Paying attention to details.</p> <p>Begin to make predictions.</p> <p>Begin to test their ideas.</p>	<p>Talk about their own ideas.</p> <p>Begin to test their own ideas.</p> <p>Question why and how things happen.</p> <p>Begin to use science vocabulary.</p> <p>Use equipment and tools safely.</p> <p>Talk about plants, animals, natural and found objects.</p> <p>Create simple representations of people and objects.</p> <p>Use senses and look closely.</p> <p>Notice similarities and differences.</p>	<p>Asking simple scientific questions and find answers to them.</p> <p>Understand and use the question words what, why, where, when and how with support.</p> <p>Make observations using appropriate senses.</p> <p>Observe closely using simple equipment (<i>hand lenses, egg timers, magnifying glasses and microscopes.</i></p> <p>Say what has happened in a test/enquiry.</p> <p>Make simple comparisons and groupings.</p> <p>Say whether what has happened was what they expected.</p> <p>Draw and label simple pictures.</p>	<p>Ask scientific questions recognising that they can be answered in different ways.</p> <p>Observe closely using simple equipment.</p> <p>Use the observation to answer questions and raise their own questions.</p> <p>Compare and contrast observations.</p> <p>Design and perform simple tests to answer their own questions.</p> <p>Gathering and recording data in a range of ways (tally, bar chart, table) and using it to answer questions and create a hypothesis.</p> <p>Say what their observations from an enquiry show. Begin to</p>	<p>Our children can use appropriate scientific language to –</p> <p>-Ask their own questions about what they notice</p> <p>-Use different types of scientific enquiry to gather and record data, using simple equipment where appropriate, to answer questions:</p> <p>Observing changes over time</p> <p>Noticing patterns</p> <p>Grouping and classifying things</p> <p>Carrying out simple comparative tests</p> <p>Finding things out using secondary sources of information.</p>

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	<p>Making links and noticing patterns in their experiences.</p> <p><i>Can talk about why things happen and how things work.</i></p> <p><i>Can use a developing vocabulary to describe similarities and differences.</i></p> <p><i>Can record findings through photographs and drawing.</i></p>	<p><i>Can record findings through photographs and drawing.</i></p>	<p>Use simple charts to communicate findings.</p> <p>Communicate observations orally and simple writing e.g. stem sentences.</p>	<p>draw simple conclusions from their enquiry. Begin to suggest improvements in their work.</p>	<p>-Communicate their ideas, what they do and what they find out in a variety of ways</p>
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<p>Animals, including humans</p> <p>Key Vocab:</p> <p>EYFS – head, body, eyes, ears, mouth, teeth, heart, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paw, hooves.</p> <p>Year 1 - head, body, eyes, ears, mouth, teeth, heart, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paw, hooves, reptile, amphibian, mammal, omnivore, carnivore, herbivore, all 5 senses.</p> <p>Year 2 – offspring, grow, adult, nutrition, reproduce, survival, water, food, air, exercise, hygiene, survival.</p>	<p>Developing ideas of grouping.</p> <p>Enjoys playing with small world models e.g. farm, under the sea, safari</p> <p>Can talk about some of the things they have observed such as animals.</p> <p>Developing an understanding of growth and change over time.</p> <p>Show care and concern for living things.</p> <p>Learn that they have similarities and differences that connect them to, and distinguish them from, others.</p> <p><i>Health and self-care (Physical Development)</i> <i>To talk about their body.</i></p> <p><i>To identify name and sort animals.</i></p>	<p>Know about similarities and differences in relation to living things.</p> <p>Talk about the features of their own immediate environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p> <p>Know the life cycle of a butterfly.</p> <p>Develop ideas of grouping Look closely at similarities and differences between animals.</p> <p>Children will be able to make observations of animals and explain how some things occur, and talk about changes.</p> <p>Know about similarities and differences between themselves and others.</p>	<p>Identify and name a variety of common animals including fish, amphibians, birds, reptiles and mammals.</p> <p>Describe and compare the structure of common animals (amphibians, reptiles, fish, birds and mammals, including pets)</p> <p>Compare and contrast animals – describing how they identify and group them.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Identify, name, draw and label the basic parts of the human body and say which part is associated with each sense. <i>(including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) – through songs, games, actions and rhymes.</i></p>	<p>Notice that animals, including humans, have offspring that grow into adults.</p> <p>Be aware of the process of growth in animals (stages of life).</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food, air)</p> <p>Learn about the basic needs of animals.</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, & hygiene.</p> <p>Observe the effects of exercise on the body.</p>	<p>Our pupils can:</p> <p>Name and locate parts of the human body, including those related to the senses (year 1) and describe the importance of exercise, a balanced diet and hygiene for humans (year 2)</p> <p>Describe the basic needs of animals for survival and the main changes as young animals, including humans, grow into adults (year 2)</p>
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		<p>Eats a healthy range of foodstuffs and understands the need for variety in food.</p> <p>Shows some understanding that good practises with regard to exercise, eating, sleeping, and hygiene can contribute to good health.</p>			
<p>Living things and their habitats</p> <p>Key Vocab:</p> <p>Year 2 – living, dead, never been alive, suited,</p>	<p>Notices features of objects in their environment.</p> <p>Comments and asks questions about aspects of their familiar world</p>	<p>Children know about similarities and differences in relation to places and living things.</p>	<p>To identify a variety of common animals and their habitats.</p> <p>To describe the habitats of some animals.</p>	<p>Explore and compare the differences between things that are living, dead and things that have never been alive.</p>	<p>Our pupils can:</p> <p>Identify whether things are alive, dead, or have never lived (year 2)</p>

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<p>suitable, basic need, food, food chain, shelter, move, feed, names of habitats and microhabitats.</p>	<p>such as the place they live or the natural world.</p> <p>They talk about features of their own immediate environment and how environments may vary from one another.</p> <p><i>To explore and talk about some of the things they have observed in the natural environment.</i></p> <p><i>To show care and concern for living things and the environment.</i></p>	<p><i>To look closely at similarities, differences, patterns and change.</i></p> <p><i>To make observations; explain why some things occur and talk about changes</i></p>	<p>For children to talk about how some animal features benefit them in their environment e.g. a ducks webbed feet.</p>	<p>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 types of animals and plants, and how they depend on each other.</p> <p>Identify and study a variety of plants and animals within their habitat and observe how living things depend on each other.</p> <p>Compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in woodland, in the ocean, in the rainforest.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro habitats.</p> <p>Introduce children to the idea that all living things</p>	<p>Describe and compare the observable features of animals from a range of groups (year 1)</p> <p>Group animals according to what they eat (year 1), describe how animals get their food from other animals and/or plants, and use simple food chains to describe these relationships (year 2)</p> <p>Name different plants and animals and describe how they are suited to different habitats (year 2)</p>
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				<p>have characteristics for keeping them alive and healthy.</p> <p>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.</p>	
<p>Plants</p> <p>Key vocab:</p> <p>EYFS – plant, leaf, stem, flower, grow, rain, sun, water, soil, seed.</p> <p>Year 1 – leaf, flower, blossom, petal, fruit, berry, root, seed, bulb trunk, branch, stem, bark, stalk, bud, names of trees and wild flowers growing in our local area.</p> <p>Year 2 – As year 1 plus – light, shade, warm, cool, sun, rain, water, grow, healthy</p>	<p>Plant seeds and care for growing plants.</p> <p>Understand the key features of the life cycle of a plant and an animal.</p> <p>Begin to understand the need to respect and care for the natural environment and all living things.</p> <p><i>To develop an understanding of growth, decay and changes overtime.</i></p>	<p>Describe what they see, hear and feel whilst outside.</p> <p>Look closely at similarities, differences and changes <i>in plants</i>. (growing plants)</p> <p>Making observations of plants and talking about why some things occur.</p> <p>Children know about similarities and differences in relation to living things.</p> <p>Make observations of plants that they have planted themselves.</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Make observations of the growth of flowers and vegetables they have planted and keep records of changes over time.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees. (<i>leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem</i>)</p> <p>Compare and contrast what they have found</p>	<p>Observe and describe how seeds grow into mature plants.</p> <p>Learn about the germination, growth and survival of plants as well as pollination.</p> <p>Observe and record with some accuracy and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and suitable temperature to grow and stay healthy. <i>Explore what happens when a plant lacks one of its</i></p>	<p>Our pupils can:</p> <p>Describe the basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plants (year 2)</p>

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			out about different plants.	<i>needs (a comparative test).</i>	
<p>Seasonal changes</p> <p>Key vocab:</p> <p>EYFS – snow, wind, rain, fog, sun, day, night, stormy, cloudy, hot, cold.</p> <p>Year 1 – weather, sunny, rainy, windy, snowy, foggy, cloudy, icy, season, winter, spring, summer, autumn, sun, sunrise, sunset, day, night, long, short.</p>	<p>Comments and asks questions about aspects of their familiar world such as the natural world.</p> <p>Explore and respond to different natural phenomena in their setting and on trips.</p>	<p>Understand the effect of changing seasons on the natural world around them.</p> <p>Introduce the four seasons.</p>	<p>Observe the changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p> <p>Know that it is not safe to look directly at the Sun, even when wearing dark glasses.</p>		<p>Our pupils can:</p> <p>Describe seasonal changes</p>
<p>Everyday materials</p> <p>Key vocab:</p> <p>EYFS – wet, dry, shiny, dull, bendy, stiff, squashy, hard, soft, lumpy, wrinkly, smooth, rough.</p> <p>Year 1 – object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card, rubber, wool, clay, hard, soft, stretchy, stiff,</p>	<p>Explore how things work.</p> <p>Explore materials with different properties and describe them</p> <p>Explore natural materials, indoors and outside.</p> <p>Use all their senses in hands-on exploration of natural materials.</p> <p>Explore collections of materials with similar and/or different</p>	<p>Know about similarities and differences in relation, objects & materials.</p> <p>Talk about the features of their own immediate environment and how environments might vary from one another.</p> <p>Observe changing states of matter e.g. water freezing.</p>	<p>Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Explore the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and</p>	<p>Our pupils can:</p> <p>Distinguish objects from materials, describe their properties, identify and group everyday materials (year 1) and compare their suitability for different uses (year 2).</p>

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<p>bendy, floppy, waterproof, absorbent, breaks, teas, rough, smooth, shiny dull, see through, not see through</p> <p>Year 2 – wood, plastic, glass, metal, water, brick, paper, fabric, card, rubber, suitable, unsuitable, use, useful, hard, soft, stretchy, stiff, rigid, flexible, waterproof, absorbent, strong, weak, rough, smooth, transparent, opaque, shape, push, pushing, pull, pulling, twist, twisting, squash, squashing, bend, bending, stretch, stretching.</p>	<p>properties and talk about them.</p> <p>Explore and talk about different forces they can feel.</p> <p>Talk about what they see, using a wide vocabulary</p> <p>Talk about the differences between materials and changes they notice.</p> <p><i>To answer why and how questions.</i></p>	<p>Look closely at similarities, differences and patterns (rubblings from grates, covers or bricks)</p> <p>Talk about similarities and differences between objects and materials.</p> <p><i>To answer why and how questions.</i></p> <p>To develop vocabulary when describing materials</p>	<p>everyday materials on the basis of their simple physical properties (<i>hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent</i>)</p>	<p>creative uses for everyday materials.</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>Identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass)</p> <p>Find out about people who have developed useful new materials, for example John Dunlop,</p>	
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