

Science Pathway



	Nursery	Reception	Year 1	Year 2	Expectation
	During EYFS: Show curiosity and ask questions Make observations using their senses and simple equipment Make direct comparisons Identify, sort and group Record their observations by drawing, taking photos, using sorting rings etc Talk about what they have done and found out Use their observations to help them answer questions.				
Working Scientifically	Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" (Communication and language) Use all their senses in hands-on exploration of natural materials. (Understanding the world) Explore how things work. (Understanding the world) Use one-handed tools and equipment. (Physical development)	Ask questions to find out more and to check they understand what has been said to them. (Communication and language) Explore the natural world around them. (Understanding the world) Describe what they see, hear and feel whilst outside. (Understanding the world) Develop their small motor skills so that they can use a range of tools competently, safely and confidently. (Physical development)	Asking simple scientific questions and find answers to them. Understand and use the question words what, why, where, when and how with support. Make observations using appropriate senses. Observe closely using simple equipment (<i>hand lenses, egg timers, magnifying glasses</i> and microscopes. Say what has happened in a test/enquiry.	Ask scientific questions recognising that they can be answered in different ways. Observe closely using simple equipment. Use the observation to answer questions and raise their own questions. Compare and contrast observations. Design and perform simple tests to answer their own questions. Gathering and recording data in a range of ways (tally, bar	Our children can use appropriate scientific language to – -Ask their own questions about what they notice -Use different types of scientific enquiry to gather and record data, using simple equipment where appropriate, to answer questions:

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	Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel. (Physical development) <i>Make comparisons between objects relating to size, length, weight and capacity. (Mathematics)</i> <i>Compare quantities using language: 'more than', 'fewer than'. (Mathematics)</i> Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them. (Personal, social and emotional development)	Count objects, actions and sounds. (Mathematics) Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. (Communication and language) Show resilience and perseverance in the face of challenge. (Personal, social and emotional development) <i>Connect one idea or action to another using a range of connectives. (Communication and language)</i> <i>Describe events in some detail. (Communication and language)</i> Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary. (Communication and language)	Make simple comparisons and groupings. Say whether what has happened was what they expected. Draw and label simple pictures. Use simple charts to communicate findings. Communicate observations orally and simple writing e.g. stem sentences.	chart, table) and using it to answer questions and create a hypothesis. Say what their observations from an enquiry show. Begin to draw simple conclusions from their enquiry. Begin to suggest improvements in their work.	Observing changes over time Noticing patterns Grouping and classifying things Carrying out simple comparative tests Finding things out using secondary sources of information. -Communicate their ideas, what they do and what they find out in a variety of ways
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	Talk about what they see, using a wide vocabulary. (Understanding the world) Create closed shapes with continuous lines, and begin to use these shapes to represent objects. (Understanding the world) Draw with increasing complexity and detail, such as representing a face with a circle and including details. (Understanding the world) <i>Make comparisons between objects relating to size, length, weight and capacity. (Mathematics)</i> <i>Compare quantities using language: 'more than', 'fewer than'. (Mathematics)</i>	<i>Connect one idea or action to another using a range of connectives. (Communication and language)</i> <i>Describe events in some detail. (Communication and language)</i> Compare length, weight and capacity. (Mathematics)			
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Animals, including humans Key Vocab: EYFS – head, body, eyes, ears, mouth, teeth, heart, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paw, hooves. Year 1 - body, head, neck, arm, elbow, leg, knee, face, ears, eyes, nose, hair, mouth, teeth, hands, feet, tail, wing, claw, fin, scales, feathers, fur, beak, paw, hooves, reptile, amphibian, mammal, bird, fish, pet, omnivore, carnivore, herbivore, sight,	EYFS: <u>The Natural World</u> Explore the natural world around them, making observations and drawing pictures of animals. Begin to make sense of their own life-story and family's history. Begin to understand the key features of the lifecycle of a plant and animal. <u>People, culture and communities</u> Describe their immediate environment using knowledge from observation, discussion, stories and non-fiction texts and maps. <u>Personal, social and emotional development</u> Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. <u>Key indicators:</u> Children can explore the natural world around them. They can describe what they see, feel and hear when outside. They can recognise environments which are different to the one they live in. They can talk about simple similarities and differences between living things. They can make simple observations about animals and explain why some things occur. They can explore basic lifecycles of animals.	Identify and name a variety of common animals including fish, amphibians, birds, reptiles and mammals. Describe and compare the structure of common animals (amphibians, reptiles, fish, birds and mammals, including pets) Compare and contrast animals – describing how they identify and group them. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Identify, name, draw and label the basic parts of the human body and say which part is associated with each sense. (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) – through	Notice that animals, including humans, have offspring that grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food, air) Describe the importance for humans of exercise, eating the right amounts of different types of food, & hygiene. Observe the effects of exercise on the body.	Our pupils can: 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) Describe the basic needs of animals for survival and the main changes as young animals, including humans, grow into adults (year 2)
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hearing, touch, smell, taste. Year 2 – human, young, offspring, develop, grow, adult, baby, nutrition, water, food, air, diet, reproduce, germs, survival, hygiene, exercise.		songs, games, actions and rhymes.		
Living things and their habitats Key Vocab: Year 2 – living, dead, never been alive,	EYFS: <u>People, culture and communities</u> Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non- fiction texts and maps.		Explore and compare the differences between things that are living, dead and things that have never been alive.	Our pupils can: Identify whether things are alive, dead, or have never lived (year 2)

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suited, suitable, basic need, depend, food, food chain, food source shelter, move, feed, names of habitats and microhabitats, environment	<u>Understanding the world</u> Begin to understand the need to respect and care for the natural environment and all living things. Explore the natural world around them. <u>Key indicators:</u> Children will be able to explore the natural world and make observations. Children will recognise animal habitats. Children will understand how to look after animals and the environment including habitats. Children will begin to explore where they live and compare to other places in the world e.g. weather, climate.		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. Identify and study a variety of plants and animals within their habitat and observe how living things depend on each other. Identify and name a variety of plants and animals in their habitats, including micro habitats. Introduce children to the idea that all living things have characteristics for keeping them alive and healthy. 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.	Describe and compare the observable features of animals from a range of groups (year 1) 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) Name different plants and animals and describe how they are suited to different habitats (year 2)
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Plants Key vocab: EYFS – plant, leaf, stem, flower, grow, rain, sun, water, soil, seed. Year 1 – common, wild and garden plant, 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, evergreen, deciduous Year 2 – As year 1 plus – light, shade, warm, cool, sun, rain, water, grow, healthy, temperature, germination, growth, survival, mature, pollination	EYFS: <u>Natural world</u> Explore the world around them making observations and drawings of 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. <u>Communication and language</u> Express their ideas and feelings about their experiences using full sentences. <u>Key indicators:</u> Can plant seeds and care for growing plants. Understand the basic features of a simple plant lifecycle. Can name basic parts of a plant e.g. leaf, petal.	Identify and name a variety of common, wild and garden plants, including deciduous and evergreen trees. Make observations of the growth of flowers and vegetables they have planted and keep records of changes over time. 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>)	Observe and describe how seeds grow into mature plants. Learn about the germination, growth and survival of plants as well as pollination. Observe and record with some accuracy and describe how seeds and bulbs grow into mature plants. 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 needs (a comparative test).</i>	Our pupils can: 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)
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Seasonal changes Key vocab: EYFS – snow, wind, rain, fog, sun, day, night, stormy, cloudy, hot, cold. Year 1 – weather , sunny, rainy, windy, snowy, foggy, cloudy, icy, season , winter , spring , summer , autumn , sun, sunrise, sunset, day, night, long, short, daylight .	<u>The Natural World</u> Understand some important processes and changes in the natural world around them, including seasons. Key Indicators: Can describe the weather outside and suggest what they might wear and what they might see. Can comment on the environment e.g. the leaves have fallen off the tree, there is a puddle. Children can understand the effect of changing seasons on the natural world around them.	Observe the changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. Know that it is not safe to look directly at the Sun, even when wearing dark glasses.		Our pupils can: Describe seasonal changes
Everyday materials Key vocab: EYFS – wet, dry, shiny, dull, bendy, stiff, squashy, hard, soft, lumpy, wrinkly, smooth, rough. Year 1 – object , material , wood , plastic , glass , metal , water , rock , brick , paper , fabric , elastic ,	EYFS: <u>The Natural World</u> Understand some important processes and changes in the natural world around them, including changing states of matter. <u>Speaking</u> Offer explanations for why things happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems where appropriate. <u>Understanding of the world</u> Use all their senses in hands on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see using a wide vocabulary.	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. Describe the simple physical properties of a variety of everyday materials.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Explore the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials.	Our pupils can: Distinguish objects from materials, describe their properties, identify and group everyday materials (year 1) and compare their suitability for different uses (year 2).

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foil, cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, not bendy, waterproof, absorbent, rough, smooth, shiny, dull, opaque, transparent Year 2 – wood, plastic, glass, metal, water, brick, rock, paper, fabric, cardboard, rubber, suitable, unsuitable, use, useful, hard, soft, stretchy, shiny, dull, stiff, flexible, waterproof, absorbent, strong, weak, rough, smooth, transparent, opaque, shape, push, pushing, pull, pulling, twist, twisting, squash, squashing, bend, bending, stretch, stretching.	Explore how things work. Talk about the difference between materials and changes they notice. Key Indicators: They can talk about simple similarities and differences between two materials and how materials change in terms of shape, size and texture. They can describe materials using basic scientific words. They can explore how things work. They can group and classify materials using their properties.	Compare and group together a variety of everyday materials on the basis of their simple physical properties	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	
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