



SCIENCE

UNDERSTANDING OF THE WORLD 2 (The World)

This document shows how our Science curriculum develops from Nursery to Year 2.

	Nursery (Development Matters – EYFS)	Learning experiences (implementation)	Reception (Development Matters – EYFS)	Learning experiences (implementation)	Year 1 (National Curriculum – POS KS1)	Learning experiences	Year 2 (National Curriculum – POS KS1)	Learning experiences (implementation)
Working scientifically	Children are stimulated to talk about what they see in the learning environment and to ask questions about the natural world. They talk about things they have observed such as plants, animals, natural and found objects.	Using magnifiers and binoculars to focus and observe closely Teacher led investigatory experiences e.g. cutting open fruits/vegetables, exploring a sunflower head over time Exploratory investigative play e.g. torches (light/dark) Sensory investigative play e.g. gloop, ice	Children observe closely and discuss similarities, differences, patterns and change.	Using magnifiers and binoculars to focus and observe closely Teacher led investigatory experiences : <ul style="list-style-type: none">• minibeast hunts• recording• investigating what washes our hands best Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to	-asking simple questions and recognising that they can be answered in different ways -observing closely , using simple equipment -performing simple tests -identifying and classifying	Teacher led investigations planned across the year: <ul style="list-style-type: none">• Growing and planting – conditions for growth, recording growth on a graph, bean diary• Designing an allotment• Rot or not – planting objects to find out if they decompose or not over time• Recording the weather	-asking simple questions and recognising that they can be answered in different ways -observing closely , using simple equipment -performing simple tests -identifying and classifying	Teacher led investigations planned across the year: <ul style="list-style-type: none">• Investigate how our body changes after exercise• Observe changes to food when heated or cooled (reversible/irreversible changes)• How can you keep an ice cube frozen?• Dissolving investigation – which substances dissolve?• Which is the bounciest ball? (recording data)• Grouping and classifying plants and animals

		<p>cubes, sand and water play</p> <p>Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to previous experiences at home and school</p>		<p>previous experiences at home and school</p>	<p>-using their observations and ideas to suggest answers to questions</p> <p>-gathering and recording data to help in answering questions</p>	<ul style="list-style-type: none"> Hands and feet – does the oldest child have the biggest hand? Does the tallest child have the biggest foot? 	<p>-using their observations and ideas to suggest answers to questions</p> <p>-gathering and recording data to help in answering questions</p>	<ul style="list-style-type: none"> Investigate what happens to bread when it is left to go mouldy (Louis Pasteur) Learn about extraordinary scientists and their work – Katherine Johnson, Alan Turing, Louis Pasteur, Jane Goodall, Mae Jemison, David Attenborough.
	Nursery (Development Matters – EYFS)	<i>Learning experiences (implementation)</i>	Reception (Development Matters – EYFS)	<i>Learning experiences (implementation)</i>	Year 1 (National Curriculum – POS KS1)	<i>Learning experiences (implementation)</i>	Year 2 (National Curriculum – POS KS1)	<i>Learning experiences (implementation)</i>
Plants	Children are developing an understanding of growth, decay and changes over time.	<p>Teacher led investigatory experiences e.g. cutting open fruits/vegetables, exploring a sunflower head over time</p> <p>Adults model plant related vocabulary in context e.g. stem,</p>	Children make observations of plants and explain why some things occur and talk about changes.	<p>Teacher led growing and planting experiences</p> <p>Adults model plant related vocabulary in context e.g. stem, bud, leaf, root, seed, bulb</p> <ul style="list-style-type: none"> Growing beans and recording in a 'bean diary' 	Children can identify and describe the basic structure of a variety of common flowering plants, including trees	<ul style="list-style-type: none"> Teachers introduce key vocabulary: stem, trunk, leaves, bulb, roots, light, minerals, energy, sun, photo-synthesis, flower, petals, stigma, stamen, style 		

		<p>bud, leaf, root, seed, bulb</p> <p>Teacher led growing and planting experiences</p> <p>Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to previous experiences at home and school</p>		<ul style="list-style-type: none"> • Observing the changes over time to a flower that has been picked • Making 'seed bombs'. • Dissecting flowers <p>Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to previous experiences at home and school</p>	<p>Children can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>Children observe and describe how seeds and bulbs grow into mature plants</p> <p>Children find out and describe how plants need water, light and a suitable temperature</p>	<ul style="list-style-type: none"> • Investigating trees on school grounds – map location, identify type (sycamore, beech, birch), bark rubbing looking at patterns. • Growing and planting (conditions for growth) • Lifecycles – the story of 'The Tiny Seed' by Eric Carle • Recording a bean diary – Introduce fair test, nine combinations with an element of growth removed for each pot 		
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					to grow and stay healthy	<ul style="list-style-type: none"> Taking a plant apart and naming parts of a plant, looking under a visualiser 		
	Nursery (Development Matters – EYFS)	Learning experiences (implementation)	Reception (Development Matters – EYFS)	Learning experiences (implementation)	Year 1 (National Curriculum – POS KS1)	Learning experiences (implementation)	Year 2 (National Curriculum – POS KS1)	Learning experiences (implementation)
Animals, including humans	Children comment and asks questions about aspects of their familiar world such as the natural world.	<p>Talking about changes in themselves, naming basic parts through finger rhyme and action songs</p> <p>Talking about experiences of animals e.g. pets at home, animals in stories, linking to small world play</p> <p>Developing awareness of personal hygiene e.g. teeth brushing, hand washing</p>	Children make observations of animals and explain why some things occur and talk about changes.	<p>Life cycles: Living eggs chick hatching experience</p> <p>Butterfly hatching experience</p> <p>‘How have I changed?’ – talking about and describing how we have changed from 0-5 years, visits from Mums and babies/toddlers</p> <p>Adults model the language of comparison and use comments and open ended questioning to encourage children to</p>	<p>Children can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</p> <p>Children notice that animals, including humans, have offspring</p>	<ul style="list-style-type: none"> Senses carousel Fruit tasting Hearing investigation outside Lifecycles – an animal which changes completely as it grows e.g. tadpole to a frog, an animal which grows but remains the same e.g. giraffe and the human lifecycle 	<p>Children find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Children can describe the importance for humans of exercise, eating the right amounts of different types of</p>	<ul style="list-style-type: none"> Identifying the basic needs of animals What is a balanced diet? Why is exercise important? Why do we need to brush our teeth? Why do we need to wash our hands?

		<p>Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to previous experiences at home and school</p>		<p>make links to previous experiences at home and school</p>	<p>which grow into adults</p> <p>Children can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p>	<ul style="list-style-type: none"> Visit from school nurse (effective teeth brushing, diet, personal hygiene – hand washing) – pre learning for Year 2 topic on Healthy Eating 	<p>food, and hygiene.</p> <p>Children can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Children can identify and name a variety of common animals that are carnivores, herbivores and omnivores</p>	<ul style="list-style-type: none"> Sorting and classifying animals (link to Rainforest topic and Fire and Ice topic) Educational visit to Woburn Safari Park
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Everyday materials	Children can talk about why things happen and how things work.	<p>Teacher led cooking experiences, learning about characteristics of liquids and solids (melting, mixing)</p> <p>Children make informed choices based on properties of materials when building at junk modelling area</p> <p>Children explore the properties of materials that can be squeezed and squashed in sensory play</p> <p>Adults model the language of comparison and use comments</p>	Children know about similarities and differences in relation to materials	<p>Teacher led investigation and exploratory play with natural and manmade materials e.g. ice, magnetic/non-magnetic materials, collections of objects sharing properties</p> <p>Developing children's awareness of recycling in the classroom</p> <p>Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to previous experiences at home and school</p>	<p>Children can distinguish between an object and the material from which it is made.</p> <p>Children can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock</p> <p>Children can describe the simple physical properties of a variety of everyday materials</p>	<ul style="list-style-type: none"> • Sorting objects by material • Going for a material hunt in the environment • Investigating how waterproof different materials are. Contrast with which are most absorbent (using water trays) 	<p>Children investigate how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p> <p>Children can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard</p>	<p>Links to experiences in Art and Design technology</p> <ul style="list-style-type: none"> • Making dough • Using clay • Collage <ul style="list-style-type: none"> • Sorting and classifying • Exploring silly scenarios e.g. metal trousers • Design and make a puppet

		and open ended questioning to encourage children to make links to previous experiences at home and school			Children can compare and group together a variety of everyday materials on the basis of their simple physical properties		for particular uses (<i>link to DT</i>)	
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Seasonal changes	Children are developing an understanding of changes over time.	Adults introduce, model and develop key vocabulary associated with time: night/day, yesterday/today/tomorrow. Adults introduce, model and develop key vocabulary associated with weather: rain,	Children can talk about change (weather, seasons)	Seasonal walks with digital cameras (Autumn and Spring) Children use real experiences and ICT (Espresso) to explore and discuss which fabrics are best for different clothes and different seasons and why. Adults introduce, model and develop key vocabulary	Children can discuss observations of changes across the four seasons Children can describe and observe weather associated with the seasons and	Weather diaries Recording a ‘weather report’ on tablet Taking weekly weather photographs and developing a weather timeline (weather topic)		

		sunny, hot, clouds, rainbow etc Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to previous experiences at home and school		associated with fabric; waterproof, warm, wool, cotton Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to previous experiences at home and school	how day length varies			
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Living things and their habitats	Children comment and asks questions about aspects of their familiar world such as the natural world.	Adults introduce, model and develop key vocabulary associated with living things and their habitats in context in the outdoor area; naming minibeasts, talking about where living	Children make observations of animals and explain why some things occur and talk about changes.	Life cycles: Living eggs chick hatching experience Butterfly hatching experience Children use ‘explorer packs’ in child-initiated learning to discover living things in the outdoor environment			Children explore and compare the difference between things that are living, dead, and things that have never been alive Children identify that	<ul style="list-style-type: none"> Sorting and classifying

		<p>things live and what they need to survive, naming and describing weather</p> <p>Teacher led growing and planting experiences</p> <p>Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to previous experiences at home and school</p>		<p>Adults model the language of comparison and use comments and open ended questioning to encourage children to make links to previous experiences at home and school</p>			<p>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</p> <p>Children can identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>Children can describe how</p>	<ul style="list-style-type: none">• Learning about Antarctica (Fire and Ice topic)• Learning about Rainforests
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							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	<ul style="list-style-type: none">• Food chains
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