

EYFS

Science EYFS Curriculum Intention

Working scientifically (EYFS):

- choose the resources they need for their chosen activities and say when they do or don't need help
- know about similarities and differences in relation to places, objects, materials and living things
- make observations of animals and plants
- explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
- select and use technology for particular purposes
- represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories
- talk about the features of their own immediate environment and how environments might vary from one another
- explain why some things occur and talk about changes

Statutory Framework for EYFS

	Communication and language	<ul style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts. <p><i>ELG Listening and attention:</i> Make comments about what they have heard and ask questions to clarify their understanding.</p>
	Personal, social and emotional development	<ul style="list-style-type: none"> • Know and talk about the different factors that support their overall health and wellbeing - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian <p><i>ELG Managing Self:</i> Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p>
	Understanding the world	<ul style="list-style-type: none"> • Explore the natural world around them. • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them.

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	<p><i>ELG The Natural World</i></p> <ul style="list-style-type: none"> • Explore the natural world around them, making observations and drawing pictures of animals and 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. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter
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Topic	Reception	Opportunities for learning	Vocabulary	Scientific enquiry	Linked texts
Animals excluding humans	<p><i>Recognise some environments that are different to the one in which they live. Other links: Revise and refine the fundamental movement skills they have already acquired: rolling; crawling; walking; jumping; running; hopping; skipping; climbing</i></p> <p>Name and describe animals that live in different habitats. Describe different habitats</p>	<p>Sharing books about animals in the local area and animals in other countries e.g. jungle, polar regions, desert, ocean</p> <p>Looking at pictures of animals in different habitats</p> <p>Watching videos of animals in different habitats</p> <p>Playing games involving matching animals to their habitats</p> <p>Playing with small world animals in different habitats</p> <p>Visiting the zoo, focusing on animals that live in different habitats</p> <p>Caring for pets from a different habitat e.g. tropical fish</p> <p>Creating pictures of animals in their habitats</p> <p>Pretending to be animals</p> <p>Naming and describing animals they see in books, pictures, videos or while on a trip</p> <p>Describing different habitats</p>	<p>names of animals, live, on land, in water, jungle, desert, North Pole, South Pole, sea, hot, cold, wet, dry, snow, ice</p> <p>Expose children to supplementary vocabulary such as: environment, polar regions, ocean, camouflage</p>	<p><i>Classification:</i> Sort animals according to where they live.</p> <p><i>Researching using secondary sources:</i> Learn how animals from a different habitat are cared for. Learn about animals in a different habitat.</p>	<p>Lost and Found by Oliver Jeffers</p> <p>Shark in the Park by Nick Sharratt</p> <p>One Day on our Blue Planet: In the Antarctic by Ella Bailey</p> <p>Poles Apart by Jeanne Willis</p> <p>Monkey with a Bright Blue Bottom by Steve Smallman</p> <p>Walking through the Jungle by Julie Lacome</p> <p>How many legs? by Kes Gray</p> <p>What do you do with a tail like this? by Steve Jenkins</p> <p>The Rainbow Bear by Michael Morpurgo</p> <p>We're Going on a Bear Hunt by Michael Rosen and Helen Oxenbury</p> <p>Bears by Sally Morgan</p> <p>Usborne Beginners Bears by Helen Helbrough</p>
Humans	<p><i>Talk about members of their immediate family and community. Name and describe people who are familiar to them.</i></p>	<p>Talking about themselves, friends, family and community using photographs</p> <p>Using mirrors to look at their faces</p> <p>Creating pictures or collages of themselves, friends, family and community</p> <p>Making hand and footprints using paint</p>	<p>hair (black, brown, dark, light, blonde, ginger, grey, white, long, short, straight, curly), eyes (blue, brown, green, grey), skin (black, brown,</p>	<p><i>Classification</i> Sort images of people according to their characteristics.</p> <p><i>Researching using secondary sources</i></p>	<p>I Love My Hair by Natasha Anastasia Tarpley</p> <p>What I Like About Me by Alia Zobel-Nolan</p>

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	<p>Describe people who are familiar to them Learn about how to take care of themselves</p>	<p>Making fingerprints using ink pads Using a 'magic' mirror which shows everything about them and getting children to describe themselves and how they are special Sharing books about different types of families Demonstrating and talking about how they look after themselves Talking about other people that look after them Talking to a dentist, nurse, meal supervisor/school cook, road crossing supervisor etc. Sharing videos of people who care for us and how we look after ourselves</p>	<p>white), big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle, grandmother, grandfather, cousin, friend, family, boy, girl, man, woman Expose children to supplementary vocabulary such as: bald, elderly, wrinkles, male, female, freckles</p>	<p>Find out information from visitors (dentist, nurse etc.). <i>Pattern seeking</i> Are taller children faster? Are taller children stronger?</p>	
<p>Living things and their habitats</p>	<p><i>Draw information from a simple map.</i> <i>Explore the natural world around them.</i> <i>Describe what they see, hear and feel whilst outside.</i> <i>Recognise some environments that are different to the one in which they live.</i></p> <p>Explore the plants in the surrounding natural environment Explore the animals in the surrounding natural environment Explore plants and animals in a contrasting natural environment</p>	<p>Taking photographs of the plants they find in the school grounds Observing closely and drawing the plants in the school grounds Finding plants in the school grounds to match with photographs of them Looking at aerial views to count the number of trees in the school grounds Using a map of the school grounds, with pictures of where specific plants can be found, to find those plants Creating a map to show how to find their favourite plants in the school grounds Finding minibeasts in the school grounds Taking photographs of the minibeasts they find in the school grounds Matching the minibeasts they find to pictures that identify them Observing the minibeasts closely, using a magnifying glass or app on a tablet Drawing pictures of the minibeasts Creating a map to show where they found each type of minibeast Sharing books about minibeasts</p>	<p>plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment e.g. beach, forest</p> <p>Expose children to supplementary vocabulary such as: environment</p>	<p><i>Classification</i> Name and describe plants and animals they find in the school grounds.</p> <p><i>Pattern seeking</i> Look for minibeasts in different areas of the school grounds. Look for plants in different areas of the school grounds.</p>	<p>Traditional stories and nursery rhymes Incey, Wincey Spider Ladybird, Ladybird Fly Away Home Other texts Bad-Tempered Ladybird by Eric Carle Mad About Minibeasts by David Wojtowycz & Giles Andrae Ben Plants a Butterfly Garden by Kate Petty Norman the Slug with the Silly Shell by Sue Hendra Aargh a Spider by Lydia Monks Insects: A Close-up Look by Peter Seymour Down at the Cool of the Pool by Tony Mitton Over and Under the Pond by Kate Messner Red Knit Cap Girl by Naoko</p>

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		<p>Playing with small world minibeasts Building minibeast homes Visiting a contrasting natural environment e.g. forest, beach, etc. Finding and taking photographs of plants and animals in the contrasting natural environment Sharing non-fiction and fiction books about the contrasting natural environment visited</p>			<p>Stoop</p>
<p>Seasonal changes</p>	<p><i>Explore the natural world around them.</i> <i>Describe what they see, hear and feel whilst outside.</i> <i>Understand the effect of changing seasons on the natural world around them.</i></p> <p>Play and explore outside in all seasons and in different weather Observe living things throughout the year</p>	<p>Playing in the rain and snow • Drawing around puddles Catching rain and hail in buckets Catching snowflakes on frozen black paper and looking at them with magnifying glasses or an app on a tablet Making icicles Using scarves or pinwheels to explore the strength and direction of the wind Looking at photographs of different seasons and types of weather Sharing books about different seasons and types of weather Sharing books about the seasons Going on seasonal walks to observe key features of the seasons Making artwork with seasonal found objects Visiting a canal or pond to look for birds and their young in spring Visiting a farm to see the young animals in the spring Finding minibeasts in the school grounds at different times in the year Taking photographs of the minibeasts they find in the school grounds at different times in the year Looking for birds and other animals throughout the year using binoculars Sharing books and videos about animals that migrate or hibernate over winter, gather food in autumn, build nests and lay</p>	<p>spring, summer, autumn, winter, seasons, sunny, cloudy, hot, warm, cold, shower, raining, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, windy, rainbow, animals, young, plants, flowers</p> <p>Expose children to supplementary vocabulary such as: hibernate, migrate, snowflake</p>	<p><i>Classification</i> Which clothes are suitable for each season?</p> <p><i>Observing over time</i> How does a puddle change over time? How does a snowman change as it melts? How does the natural world change with the seasons?</p> <p><i>Researching using secondary sources</i> Find out about how animals behave in different seasons. Find out about the weather and seasons</p>	<p>Traditional stories and nursery rhymes Rain, Rain Go Away Rain on the Green Grass It's Raining, It's Pouring I Hear Thunder Other texts Seasons by Anna Pang Autumn is Here by Heidi Pross Gray Spring is Here by Will Hillenbrand One Springy Day by Nick Butterworth WOW! It's Night-time by Tim Hopgood Tree - Seasons Come, Seasons Go by Britta Teckentup The Snowy Day by Ezra Jack Keats The Snowman by Raymond Briggs</p>

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		<p>eggs in spring etc. Taking photographs of the plants they find in the school grounds at different times in the year Observing closely and drawing the plants in the school grounds at different times in the year Matching animals and plants they find to pictures that identify them</p>			
<p>Materials</p>	<p><i>Explore the natural world around them. Describe what they see, hear and feel whilst outside.</i></p> <p>Explore a range of materials, including natural materials Make objects from different materials, including natural materials Observe, measure and record how materials change when heated and cooled Compare how materials change over time and in different conditions</p>	<p>Looking for dew, ice, icicles and frost in the playground Using their senses to explore natural materials in the environment, such as stones, twigs, leaves, feathers, seeds, flowers etc. Gathering natural materials to make collections Making pictures using natural materials they have gathered from the environment Making dens, nests, bug hotels etc. using natural materials Making ice pictures by putting water in a shallow tray and adding natural objects gathered from the environment and then leaving them outside to freeze or putting them in the freezer Making junk models with a range of materials, including natural materials they have gathered from the environment Making popcorn in a microwave and on a fire Making pizza dough with different flours Baking bread in different tins or for different times to compare the outcome Baking cupcakes and removing one after every five minutes Choosing where to put ice cubes in the playground and observing how quickly they melt Observing how a large block of ice changes over time, using string to measure around it</p>	<p>ice, water, frozen, icicle, snow, melt, wet, cold, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, rigid, wood, plastic, paper, card, metal, strong, weak, hot, apply heat, waterproof, soggy, not waterproof, best, change, change back</p> <p>Expose children to supplementary vocabulary such as: solid, liquid, gas, most suited</p>	<p><i>Comparative testing</i> How does popcorn made in a microwave compare to popcorn made on a fire? How quickly do ice cubes melt in different areas of the playground? How are pizza bases different when made with different flours? How does a loaf cook differently in different tins? How do cupcakes cook if they have different amounts of mixture?</p> <p><i>Observing over time</i> How does the block of ice change over time? How does a snowman change over time? How does cake mixture/bread dough change as it is cooked?</p>	

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		<p>Putting wax crayons in different areas of the playground and observing how they change</p> <p>Making a snowman and observing how it changes over time</p> <p>Making snowballs and putting them in different parts of the playground and observing how they change over time</p>			
Light	<p><i>Describe what they see, hear and feel whilst outside</i></p> <p>Explore shadows</p> <p>Explore rainbows</p>	<p>Looking for shadows created by the Sun on cloudy and non-cloudy days</p> <p>Drawing around shadows and comparing their shape and size</p> <p>Making shadows using their bodies, both outside using the Sun and inside using torches</p> <p>Making shadows using transparent and opaque objects/materials</p> <p>Putting hands in a beam of light and making shadow shapes</p> <p>Making shadows using shadow puppets or other objects</p> <p>Observing a toy outside and noticing how the shadow changes during the day</p> <p>Observing what areas are sunny and shady at different times in the day</p> <p>Sharing books about shadows</p> <p>Making rainbows from sunlight e.g. bubbles, water sprinkler, holographic paper, CDs etc.</p> <p>Sharing books about rainbows</p>	<p>Sun, sunny, light, shadow, shady, clouds, torch, see-through, non-see through, source, light source</p> <p>Expose children to supplementary vocabulary such as: casting a shadow, pale, dark, transparent, opaque</p>	<p><i>Comparative testing</i> Compare the shape of shadows made by different objects.</p> <p><i>Classification</i> Which objects/materials make dark shadows?</p> <p><i>Observing over time</i> How do the Sun and shade change during the day? How does a toy's shadow change during the day?</p> <p><i>Researching using secondary sources:</i> Find out about shadows. Find out about rainbows</p>	<p>Suddenly by Colin McNaughton</p> <p>Where is the Dragon? By Leo Timmers</p>
Forces	<p><i>Explore the natural world around them.</i></p> <p><i>Describe what they see, hear and feel whilst outside.</i></p> <p>Explore how to change how things work</p> <p>Explore how the wind can move objects</p> <p>Explore how objects move in water</p>	<p>Adapting objects to see if they can be made to float or sink e.g. cutting and peeling fruit and vegetables, reshaping plasticine etc.</p> <p>Testing how many small objects different foil containers can hold before sinking</p> <p>Testing how toy cars move down ramps and gutters</p> <p>Testing how wheels turn when sand or water is poured through them</p> <p>Testing how objects fall with and without a</p>	<p>float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow</p> <p>Expose children to supplementary</p>	<p><i>Comparative testing</i> How many cubes/small plastic animals can fit in different 'boats'? Compare how cars move down ramps/gutters. Compare how wheels turn when sand or water is poured through. Compare how objects</p>	<p>Traditional stories and nursery rhymes</p> <p>Billy Goats Gruff</p> <p>Gingerbread Man (making boats to cross the river)</p> <p>Other texts</p> <p>Mr Gumpy's Outing by John Burningham</p> <p>Mr Archimedes' Bath by Pamela Allen</p>

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		<p>parachute attached Testing how different balls bounce Making and testing paper aeroplanes Designing different marble runs or routes for water/sand to travel down gutters or pipes Identifying objects being blown around outdoors Observing how toys/objects move in the wind e.g. streamers, balloons, pinwheels, bubbles etc. Explore how a marble moves through different liquids in sealed bottles Observing how sailing boats move through water</p>	<p>vocabulary such as: force, rotate, solid, liquid, gravity</p>	<p>fall with and without parachutes. Compare how different balls bounce. Compare how things move when blown. Compare how a marble moves through different liquids. Compare how different paper aeroplanes fly.</p>	<p>Who sank the boat? by Pamela Allen Stickman by Julia Donaldson Flotsam by David Wiesner Blown Away by Rob Biddulph</p>
<p>Sound</p>	<p><i>Describe what they see, hear and feel whilst outside.</i></p> <p>Listen to sounds outside and identify the source Make sounds</p>	<p>Going on a sound walk Closing eyes and listening to the sounds around them when outside Listening to rain, wind, thunder Recording sounds when outside Playing sound identification games Catching rain in metal buckets or saucepans Making noise by blowing on a blade of grass Making wind chimes Using voices, instruments and other objects to mimic sounds they hear outdoors</p>	<p>sound, noise, listen, hear, music, voices, bird song, traffic, sirens, thunder, high, low, loud, quiet, soft, volume, crackle, thunder, hum, buzz, roar</p> <p>Expose children to supplementary vocabulary such as: source, crescendo, vibration, pitch</p>	<p><i>Comparative testing</i> How does rain sound different when it lands in different containers?</p> <p><i>Observing over time</i> Listen to the siren of an emergency vehicle as it approaches and moves away</p>	<p>Traditional stories and nursery rhymes One Coconut, Two Coconuts Pass the Secret Round Other texts Splish, Splash, Splosh by Mick Manning Alfie's Weather by Shirley Hughes Polar Bear, Polar Bear, What Do You Hear? by Eric Carle The Very Quiet Cricket by Eric Carle The Very Clumsy Click Beetle by Eric Carle</p>
<p>Earth and Space</p>	<p><i>Explore the natural world around them.</i> <i>Describe what they see, hear and feel whilst outside.</i></p> <p>Learn about the Solar System and stars Learn about space travel</p>	<p>Observing that the Sun appears to move across the sky Observing that it is warmer and brighter when the Sun is shining than when it is behind the clouds Observing that they can see the Moon at night and sometimes in the day Observing that they can only see the stars at night Making model planets e.g. with papier-mâché or Modroc and balloons</p>	<p>Sun, Moon, Earth, star, planet, sky, day, night, space, round, light, heavy, fall, bounce, float, rise, fall, air</p> <p>Expose children to supplementary vocabulary such as: sunrise, sunset,</p>	<p><i>Comparative testing</i> Make and testing air-propelled rockets to find out which is the 'best'. Compare how different objects move when falling and bouncing. <i>Pattern seeking</i> Find simple patterns in how light levels and</p>	<p>Traditional stories, songs and nursery rhymes Twinkle, Twinkle Little Star</p> <p>Other texts Whatever Next! by Jill Murphy Astro Girl by Ken Wilson-Max Look Up! by Nathan Bryon How to Catch a Star by Oliver Jeffers</p>

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	<p>Modelling a cratered moon landscape with papier-mâché or Modroc</p> <p>Observing distant objects, including the Moon, with binoculars or a small telescope</p> <p>Sharing books and video clips about the Solar System and stars</p> <p>Talking about what happens and what they can see and hear in the daytime and at night</p> <p>Sorting small world animals into those that are active in the daytime and those that are active at night</p> <p>Joining materials to make model rockets, Moon buggies/Mars rovers and space stations</p> <p>Making and testing simple air-propelled card or plastic bottle rockets</p> <p>Sharing books and video clips about space exploration including video clip of astronauts walking on the Moon and floating in the space station</p> <p>Comparing how different objects fall through the air – feathers, scarves, bubbles, balloons, balls, beanbags etc.</p> <p>Comparing the movements of a ball and a balloon when bouncing or throwing and catching</p>	<p>astronaut, astronomer, constellation, orbit, nocturnal, slow-motion, magnify</p>	<p>temperature change with the movement, or obscuring of, the Sun.</p> <p><u>Research using secondary sources</u></p> <p>Find out about the Solar System, stars and space travel.</p> <p>Find out about nocturnal animals.</p>	<p>Owl Babies by Martin Waddell</p>
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Other resources:

- Plan assessment matrix - file:///C:/Users/jo.crook/Downloads/PLAN%20EYFS%20Matrices.pdf
- <https://www.science-sparks.com/early-years-science-themed-activities/>
- Play, observe, ask (PSTT) - <https://pstt.org.uk/resources/curriculum-materials/eyfs-science>
- Laying the foundations in EYFS (STEM) - <https://www.stem.org.uk/resources/elibrary/resource/30469/science-3-6-laying-foundations-early-years>
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