



Science in Early Years

Main links to the seven areas of learning: **Communication and Language**, **Personal, Social and Emotional Development** and **Understanding the World**

Science: Nursery	
Communication and Language	<ul style="list-style-type: none">* Use a wider range of vocabulary.* Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"* Be able to express a point of view and to debate when they disagree with an adult or a friend, using words as well as actions.
Personal, Social and Emotional Development	<ul style="list-style-type: none">* Make healthy choices about food, drink, activity and toothbrushing.
Understanding the World	<ul style="list-style-type: none">* 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* Begin to make sense of their own life-story and family's history.* Explore how things work.* Plant seeds and care for growing plants.* Understand the key features of the life cycle of a plant and an animal.* Begin to understand the need to respect and care for the natural environment and all living things* Explore and talk about different forces they can feel.* Talk about the differences between materials and changes they notice.
Expressive Arts and Design	<ul style="list-style-type: none">* Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.

	<ul style="list-style-type: none"> * Explore different materials freely, to develop their ideas about how to use them and what to make. * Develop their own ideas and then decide which materials to use to express them. * Join different materials and explore different textures. * Create closed shapes with continuous lines, and begin to use these shapes to represent objects.
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Science: Reception	
Communication and Language	<ul style="list-style-type: none"> * Learn new vocabulary. * Ask questions to find out more and to check they understand 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 * Engage in non-fiction books.
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
Understanding the World	<ul style="list-style-type: none"> * Explore the natural world around them. * Describe what they see, hear and feel whilst outside. * Recognise some environments that are different from the one in which they live. * Understand the effect of changing seasons on the natural world around them.

Communication and Language <u>ELG</u>	Listening, Attention and Understanding <ul style="list-style-type: none"> * Make comments about what they have heard and ask questions to clarify their understanding
Personal, Social and Emotional Development <u>ELG</u>	Managing Self Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.
Understanding the World <u>ELG</u>	The Natural World <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.

Science: Year One

Working scientifically	<ul style="list-style-type: none"> * Asking simple questions and recognising that they can be answered in different ways * Observing closely, using simple equipment * Performing simple tests * Identifying and classifying * Using their observations and ideas to suggest answers to questions * Gathering and recording data to help in answering questions.
Plants	<ul style="list-style-type: none"> * Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees * Identify and describe the basic structure of a variety of common flowering plants, including trees.

Animals	<ul style="list-style-type: none"> * Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals * 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.
Everyday materials	<ul style="list-style-type: none"> * 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 * Compare and group together a variety of everyday materials on the basis of their simple physical properties.
Seasonal changes	<ul style="list-style-type: none"> * Observe changes across the four seasons * Observe and describe weather associated with the seasons and how day length varies.

Key questions in EYFS Science

- * What can you see?
- * Where did they come from?
- * What are they made of?
- * What do you think will happen if . . . ? What do you think might happen next?
- * How could we change this?

- * What do you already know about . . . ?
- * What is the difference between . . . ?
- * I see . . . I notice. . . I wonder . . .

How can EYFS children learn about Science?

- * Teach children how to use simple equipment like **magnifying glasses** – start with simple items like leaves, so children are ready to observe those moving minibeasts from the bug hotel.
- * Enjoy observing activities that **change over time** – a melting snowman, dissolving vitamin C tablet, seeds grown in transparent cups so the roots can be observed. Use time lapse videos to speed things up (e.g. changes over the seasons) and slow things down (e.g. a bubble popping).
- * Use Explorify **zoom in zoom out** activities and **digital microscopes** to look closely at items that the children are interested in. Talk in detail about what you notice and encourage children to do the same.
- * Observing changes in the garden over time
- * Talking about weather and seasonal changes
- * Taking care of living creatures

Ideas to enhance the setting:

- * Magnifying glasses
- * Plastic pipettes, pots, beakers, jugs, spoons
- * Clipboards, paper, pencils

- * Magnets, torches, cubes
- * Use of the garden and outdoor area
- * Light filters, water bottles with glitter, torches, mirrors
- * Bugs in resin / toy minibeasts / fact cards / sorting hoops
- * Variety of pegs / lolly sticks / elastic bands for tower building STEM fun
- * Nature items from different seasons with magnifying glasses and non-fiction books
- * Seeds - bean / sunflower / pea / cress / pumpkin etc and sorting trays
- * Water tray, sorting hoops and items to test for floating and sinking

<p>Key Vocabulary: Nursery</p>	<p>The Natural World Farm, field, barn, tree, forest, grass, leaves, water, sand, sky Spring, Summer, Autumn, Winter, clouds, rain, sunshine, thunder, wind, snow, frost, fog, frozen/freeze, steam, runny, water, melt, wet, dry, soft, hard, grow, leaves, dead, soil, fur, paws, claws, feathers, skin, tail, head eyes nose mouth ears hands fingers feet toes arm leg , tree leaf flower stem seed, material wood glass paper hard soft loud quiet</p>
<p>Key Vocabulary: Reception</p>	<p>The Natural World Forest, woodland, countryside, city, seaside, Spring, Summer, Autumn, Winter clouds, rain, sunshine, thunder, wind, snow, frost, fog, condensation, mist, frozen/freeze, liquid, solid, steam, melt, dissolve, waterproof, translucent, transparent, opaque, smooth, rough, bumpy, grow, petals, leaves, stem, roots, dead, compost, decompose, rots, fur, paws, claws, feathers, skin, tusk, tail, scales, herbivore face carnivore hair omnivore leg human knee animal arm fish elbow birds back head toes ear hands eye fingers mouth nose, tree petals trunk fruit branch roots</p>

	leaves bulb flowers seed stem, material metal wood rock plastic hard glass soft paper fabric material smooth shiny rough, Summer day Spring dark Autumn light Winter night Season Moon Sun, Summer day Spring dark Autumn light Winter night Season Moon Sun loud quiet volume sound
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