



Learning in EYFS:

What Science Subject Leaders Need to Know

The EYFS Framework is structured very differently to the National Curriculum as it is organised across seven areas of learning rather than subject areas. The aim of this document is to help subject leaders to understand how the skills taught across EYFS feed into National Curriculum subjects.

This document demonstrates which statements from the 2020 Development Matters are prerequisite skills for science within the National Curriculum. The table below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for science.

The most relevant statements for science are taken from the following areas of learning:

- Communication and Language
- Personal, Social and Emotional Development
- Understanding the World

In planning and guiding what children learn, practitioners must reflect on the different rates at which children are developing and adjust their practice appropriately, referring to the Characteristics of Effective Teaching and Learning

These are: **playing and exploring** - children investigate and experience things, and 'have a go'; **active learning** - children concentrate and keep on trying if they encounter difficulties, and enjoy their achievements for their own sake; **creating and thinking critically** - children have and develop their own ideas, make links between ideas, and develop strategies for doing things.

In addition, the Prime Areas of Learning (Personal, Social and Emotional Development, Communication and Language and Physical Development) underpin and are an integral part of children's learning in all areas.

Science		
Children not on track - working below ARE	Communication and Language	Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"
	Personal, Social and Emotional Development	Make healthy choices about food, drink, activity and toothbrushing.
	Understanding the World	<p>Use all their senses in hands-on exploration of natural materials.</p> <p>Explore collections of materials with similar and/or different properties.</p> <p>Talk about what they see, using a wide vocabulary.</p> <p>Begin to make sense of their own life-story and family's history.</p> <p>Explore how things work.</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>Explore and talk about different forces they can feel.</p> <p>Talk about the differences between materials and changes they notice.</p>

Reception	Communication and Language		<p>Learn new vocabulary.</p> <p>- Ask questions to find out more and to check what has been said to them.</p> <p>Articulate their ideas and thoughts in well-formed sentences.</p> <p>Describe events in some detail.</p> <p>Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.</p> <p>Use new vocabulary in different contexts.</p>
Reception	Personal, Social and Emotional Development		<p>Know and talk about the different factors that support their overall health and wellbeing:</p> <p>regular physical activity</p> <p>healthy eating</p> <p>toothbrushing</p> <p>sensible amounts of 'screen time'</p> <p>having a good sleep routine</p> <p>being a safe pedestrian</p>
	Understanding the World		<p>Explore the natural world around them.</p> <p>Describe what they see, hear and feel while they are outside.</p> <p>Recognise some environments that are different to the one in which they live.</p> <p>Understand the effect of changing seasons on the natural world around them.</p>
ELG (On track - meeting ARE)	Communication and Language	Listening, Attention and Understanding	<p>Make comments about what they have heard and ask questions to clarify their understanding.</p>
	Personal, Social and Emotional Development	Managing Self	<p>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	The Natural World	<p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <p>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.</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>

How science is taught in EYFS:

- Science is taught through a combination of adult-led teaching/activities and continuous provision with enhancements that are linked to the topic or children's interests.
- It builds on children's prior experience and backgrounds.
- It develops children's curiosity and encourages them to pursue their own questions and develop their own ideas.
- It engages children in in-depth exploration of a topic over time in a carefully planned environment.
- It encourages children to reflect on, represent and document their experiences and share and discuss their ideas with others.
- It is embedded in children's daily work and play.

Progression of Enquiry Skills from EYFS to KS1

In EYFS, children should have opportunities to play, explore, create, engage in active learning, and think critically (link to Characteristics of Effective Learning). In order for primary school children to operate as successful scientists, they should be taught a wide range of essential enquiry skills, which build upon the learning in EYFS.

EYFS

Engage in open-ended activity (Playing & Exploring)

Take a risk, engage in new experiences and learn by trial and error (Playing & Exploring)

Find ways to solve problems/find new ways to do things/test their ideas (Creating & Thinking Critically)

Develop ideas of grouping, sequences, cause and effect (Creating & Thinking Critically)

Know about similarities and differences in relation to places, objects, materials and living things (ELG: The World)

Use senses to explore the world around them (Playing & Exploring)

Make links and notice patterns in their experience (Creating & Thinking Critically)

Choose the resources they need for their chosen activities (ELG: Self Confidence & Self Awareness)

Handle equipment and tools effectively (ELG: Moving & Handling)

Answer how and why questions about their experiences (ELG: Understanding)

Make observations of animals and plants and explain why some things occur, and talk about changes (ELG: The World)

Develop their own narratives and explanations by connecting ideas or events (ELG: Speaking)

Key Stage One

Experience different types of science enquiries, including practical activities.

Begin to recognise different ways in which they might answer scientific questions

Carry out simple tests

Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying)

Observe closely using simple equipment

With help, observe changes over time

With guidance, they should begin to notice patterns and relationships

Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data

Use their observations and ideas to suggest answers to questions

Talk about what they have found out and how they found it out

With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language

Topic	Reception Development Matters	Activities	Main Provision Areas	Vocabulary	KS1 Objectives
Marvellous Me! Autumn 1	<p>Know and talk about the different factors that support their overall health and wellbeing:</p> <ul style="list-style-type: none"> - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian <p>Understand the effect of changing seasons on the natural world around them.</p> <p>Explore the natural world around them. Describe what they see, hear, and feel whilst outside.</p>	<ul style="list-style-type: none"> • Discussions around snack time and lunch time - healthy eating choices. • Discussions around healthy living choices including: washing hands, brushing teeth, eating, exercise and sleep. • Story time and circle time to explore books focusing on staying healthy and the human body: Funnybones. • Naming body parts through songs: if you're happy and you know it and head, shoulders, knees and toes... • Explore the senses. <p><i>Seasonal changes - Autumn:</i></p> <ul style="list-style-type: none"> • Exploring school's grounds and observing seasonal changes in the Autumn. • Exploring natural autumnal resources in Tuff Tray, asking questions and making/drawing observations. 	<p>Autumn table - books, animals, leaves, conkers, acorns, magnifying glasses, photographs</p> <p>Reading Area - books related to healthy eating, our bodies/teeth, exercise, Autumn</p> <p>Creative Area - resources to make Autumn pictures, self-portraits, skin coloured crayons, paper plates to make faces, art straws to make skeletons, foam shapes to add features to faces, wool for hair..</p> <p>Paint Area - face templates, skin-coloured paints.</p> <p>Home corner - variety of toy food to role play cooking/picnics.</p> <p>Playdough Area (Malleable) - natural resources to make prints, blank face templates to add features to.</p> <p>Painting Area - different tools to paint with e.g. sticks, colours to mix</p> <p>Outside - Autumn tray (leaves, conkers, acorns), magnifying glasses, Autumn hunt sheets</p>	<p>Healthy, unhealthy, exercise, body, skeleton, bones, grow.</p>	<p>Animals, including humans:</p> <p>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>Seasonal changes:</p> <ul style="list-style-type: none"> • Observe changes across the 4 seasons • Observe and describe weather associated with the seasons and how day length varies.
Topic	Reception	Activities	Main Provision Areas	Vocabulary	KS1 Objectives

	Development Matters				
Terrific Tales! Autumn 2	<p>Understand the effect of changing seasons on the natural world around them.</p> <p>Explore the natural world around them. Describe what they see, hear, and feel whilst outside.</p>	<p><i>Seasonal changes - Autumn:</i></p> <ul style="list-style-type: none"> • Exploring school's grounds and observing seasonal changes in the Autumn. • Exploring natural autumnal resources in Tuff Tray, asking questions and making/drawing observations. • Explore hibernation. • Explore harvest time in the UK and farming at harvest time. • Observe seasonal weather changes and longer nights in the autumn compared to the summer. • Observe and explain decomposition of pumpkins <p><i>Festivals:</i></p> <ul style="list-style-type: none"> • Observe changes - light 	<p>Autumn table - books, animals, leaves, conkers, acorns, magnifying glasses, photographs</p> <p>Reading Area - books related to Autumn, animals that hibernate, festivals (Bonfire Night and Diwali), props to support books/stories.</p> <p>Playdough Area (Malleable) - matchsticks to make hedgehogs, natural resources to make prints, gingerbread cutters to make gingerbread men to role play baking.</p> <p>Outside - Autumn tray (leaves, conkers, acorns), magnifying glasses, Autumn hunt sheets, pumpkins (different sizes and colours)</p>	<p>Autumn, season, hibernate, conkers, darker, longer nights, colder.</p>	<p>Animals, including humans</p> <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) <p>Seasonal changes:</p> <ul style="list-style-type: none"> • Observe changes across the 4 seasons • Observe and describe weather associated with the seasons and how day length varies.
Topic	Reception Development Matters	Activities	Main Provision Areas	Vocabulary	KS1 Objectives

<p>The Earth and Beyond! (Spring 1)</p>	<p>Understand the effect of changing seasons on the natural world around them.</p> <p>Explore the natural world around them. Describe what they see, hear, and feel whilst outside.</p>	<p>The Earth and Beyond!</p> <ul style="list-style-type: none"> • Explore the effects of winter on our environment. • Make bird feeders. • Investigate changing states of matter. • Objects trapped in ice - freezing and melting. • Explore compare/contrast our environment with polar regions. 	<p>Small world - Polar animals, books about polar animals, maps, atlases, photos.</p> <p>Reading Area - books about polar animals, cold places, winter, props to support books/stories.</p> <p>Water Area - polar animals, snow/ice (weather permitting).</p> <p>Playdough Area (Malleable) - polar animal stampers to make footprints.</p> <p>Craft Area -resources to make penguins, polar landscapes e.g. cotton wool, pastels, collage materials.</p> <p>Paint Area - polar animal templates, colour mixing to make grey.</p> <p>Outside - objects frozen in ice, tools to free the objects, spades, brushes</p>	<p>Winter, ice, iceberg, blubber, camouflage, freeze, melt.</p>	<p>Animals, including humans</p> <ul style="list-style-type: none"> • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) <p>Seasonal changes:</p> <ul style="list-style-type: none"> • Observe changes across the 4 seasons • Observe and describe weather associated with the seasons and how day length varies.
Topic	Reception Development Matters	Activities	Main Provision Areas	Vocabulary	KS1 Objectives
<p>Amazing Animals! Spring 2</p>	<p>Understand the effect of changing seasons on the natural world around them.</p>	<ul style="list-style-type: none"> • Observe, explore and compare contrasting natural environments around the world: rainforest, Kenya 	<p>Small world - African animals, books about Africa/animals, maps, atlases, photos</p>	<p>Pattern, fur, scales, rough, bumpy, hatch, life-cycle</p>	<p>Animals, including humans</p> <ul style="list-style-type: none"> • Identify and name a variety of common

	Explore the natural world around them. Describe what they see, hear, and feel whilst outside.	<ul style="list-style-type: none"> Explore, compare, contrast, observe, draw and discuss animals native to Africa. Knowing where different animals come from. Explore, compare, contrast and discuss life, living and schools in Africa. Learn about the life cycle of a chick (link to Easter). <p><i>Seasonal Changes - Winter & Spring:</i></p> <ul style="list-style-type: none"> Exploring schools' grounds and observing seasonal changes in the winter/spring. Observe seasonal weather changes in the winter/spring Explore natural spring resources in Tuff Tray, asking questions and making/drawing observations. Conduct Winter/Spring walk around School grounds, describing and discussing what is found. Observe, question and draw spring plants/spring growth. 	<p>Reading Area - books about Africa, animals, resources linked to Handa's Surprise.</p> <p>Sand Area - African animals</p> <p>Playdough Area (Malleable) - resources to make animals patterns e.g. stripes/scales.</p> <p>Craft Area -resources to make African animals, African landscape e.g. pastels, stencils</p> <p>Paint Area - African animal templates, paint to mix colours.</p> <p>Outside - Spring hunt checklist, magnifying glasses, large paper to stick signs of Spring onto.</p>		<p>animals including fish, amphibians, reptiles, birds and mammals.</p> <ul style="list-style-type: none"> 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) <p>Seasonal changes:</p> <ul style="list-style-type: none"> Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies.
Topic	Reception Development Matters	Activities	Main Provision Areas	Vocabulary	KS1 Objectives
Gardeners' World	<p>Understand the effect of changing seasons on the natural world around them.</p> <p>Explore the natural</p>	<ul style="list-style-type: none"> Planting seeds and plants Discover, compare and contrast food produce/grown in different 	<p>Small world - Minibeasts, magnifying glasses, The Very Hungry Caterpillar story sack.</p>	<p>Seed, plant, grow, soil, frogspawn, tadpole, minibeast.</p>	<p>Plants</p> <ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants,

	<p>world around them. Describe what they see, hear, and feel whilst outside.</p>	<p>climates around the world, including UK farms.</p> <ul style="list-style-type: none"> • Discuss how to stay healthy - food and exercise. • Learn about and observe different minibeasts and their habitats. • Make habitats for minibeasts. • Learn about the life-cycle of a frog and butterfly. 	<p>Reading Area - books about minibeasts, fruit and vegetables, life-cycles (frog and butterfly).</p> <p>Sand Area - minibeasts, magnifying glasses</p> <p>Playdough Area (Malleable) - resources to make bug patterns e.g. webs, honeycomb</p> <p>Craft Area -resources to make minibeasts e.g. pipe cleaners for antennae, egg boxes for spiders/ladybirds.</p> <p>Paint Area - Minibeast templates, paint to mix colours, thin and thick paint brushes to add details.</p> <p>Outside - Bug hunt checklist, magnifying glasses, tuff tray filled with soil/plant pots, seeds.</p>		<p>including deciduous and evergreen trees.</p> <ul style="list-style-type: none"> • Identify and describe the basic structure of a variety of common flowering plants, including trees.
Topic	Reception Development Matters	Activities	Main Provision Areas	Vocabulary	KS1 Objectives
Fun at the Seaside Summer 2	<p>Understand the effect of changing seasons on the natural world around them.</p> <p>Explore the natural world around them. Describe what they see, hear, and feel whilst outside.</p>	<p><i>Fun at the Seaside</i></p> <ul style="list-style-type: none"> • Investigate objects that float and sink. • Make boats out of different materials and test if they float. • Explore creatures that live in the ocean. 	<p>Home-corner - sun hats, beach bags, sun cream bottles (empty), sunglasses.</p> <p>Reading Area - books about the seaside, pirates, sea-creatures, dinosaurs.</p> <p>Small World Area - dinosaurs, dinosaur skeleton pictures.</p>	<p>Seaside, beach, float, sink, pirate, ship, sea-creatures.</p>	<p>Uses of everyday materials:</p> <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

		<ul style="list-style-type: none"> • Explore the change of state - ice-cream melting. • Explore magnets - magnetic fishing game. <p>Seasonal Changes - Summer:</p> <ul style="list-style-type: none"> • Exploring schools' grounds and observing seasonal changes in the summer. • Observe seasonal weather changes in the summer 	<p>Sand Area - dinosaurs, fossils, magnifying glasses, treasure (gold coins), treasure chest.</p> <p>Playdough Area (Malleable) - resources to make dinosaur prints.</p> <p>Craft Area -resources to make boats/pirate ships e.g. plastic bottles, cardboard boxes.</p> <p>Resources to make dinosaurs and sea creatures e.g. paper plates for jelly fish.</p> <p>Paint Area - Sea creature/dinosaur templates, paint to mix colours, thin and thick paint brushes to add details.</p> <p>Outside - Signs of summer checklist, magnifying glasses, tuff tray to make a rock pool, water tray with guttering, sea-creatures, pipes.</p>		<p>materials, including wood, plastic, glass, metal, water and rock.</p> <ul style="list-style-type: none"> • 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.
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