



Grazeley Primary School EYFS Curriculum – Foundations for SCIENCE

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 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 to Four-Year-Olds and Reception to match the programme of study for design technology.

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

- Mathematics
- Understanding the World
- Communication and Language

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; **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

<p>Three and Four-Year-Olds</p> <p>(Not on track – working below Age Related Expectations)</p>	<p>Mathematics</p>	<ul style="list-style-type: none"> • Solve real world mathematical problems with numbers up to 5. • Compare quantities using language ‘more than’ ‘fewer than’ • Understand position through words alone – for example ‘the bag is under the table’ (no pointing). • Discuss routes and locations, using words like ‘in front of’ and ‘behind’ • Make comparisons between objects relating to size, length, weight and capacity • Talk about and identify patterns around them. Eg. Stripes on clothes, designs on rugs and wallpaper. Use informal language like ‘pointy’ ‘spotty’ ‘blobs’ etc. • Notice and correct an error in a repeating pattern • Begin to describe a sequence of events, real or fictional, using words such as ‘first’ ‘then...’
	<p>Understanding the World</p>	<ul style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials • Explore collections of materials with similar or different properties • Talk about what they see using a wide vocabulary • 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 differences in materials and changes they notice
<p>Reception</p>	<p>Mathematics</p>	<ul style="list-style-type: none"> • Compare numbers • Understand the ‘1 more than, 1 less than’ relationship between consecutive numbers • Continue, copy and create repeating patterns • Compare length, weight and capacity
	<p>Understanding the World</p>	<ul style="list-style-type: none"> • Explore the natural world around them • Describe what they see, hear and feel while outside • Recognise some environments that are different to the one in which they live • Understand the effect of changing seasons on the world around them

ELG (Early Learning Goals) On-Track – end of year expectations	Mathematics	<ul style="list-style-type: none"> • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
	Understanding the 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.

Statements taken from 'Working with the revised Early Years Foundation Stage: Principles into Practice by Julian Grenier (Pub 2020: Creative Commons Licence)

EYFS Understanding the World

Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension.

Understanding the World – Early Years Framework September 2023

AUTUMN TERM
Who is in my Community?
 (My Community & People Who Help Us)

What can I find in the Dark?
 (Autumn & Light and Dark)

Communication & Language	Mathematics	Understanding the World
Children can follow one-step instructions and beginning to follow two-step instructions	Children use knowledge of number to 5 to help them describe a place	Use senses to explore the natural world around the school

<p>Children understand and can respond appropriately to a variety of questions eg: Why...? Do you think...? What...?</p> <p>Children will ask questions to clarify instructions.</p> <p>Children will talk about their likes and dislikes</p> <p>Children will talk about what they can see, hear, touch and smell</p>	<p>Children make observations about the world around them using day to day language comparing weight length and capacity</p> <p>Observe patterns in the natural world</p> <p style="text-align: center;">PSED</p> <p>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>	<p>grounds and foundation stage classroom.</p> <p>Know how to care for an animal/pets</p> <p>Discuss how we care for the natural world around us</p> <p>Identify plants in the natural world around us in autumn.</p> <p>Observe how animals' behaviour changes with the season.</p> <p>Observe and recognise signs of autumn.</p> <p>Closely observe plants and animals in the natural world. Draw pictures of their observations.</p> <p>Observe and interact with the natural process of light travelling through transparent material, an object casting a shadow.</p> <p>Children use their five senses to explore the world around them</p>
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Science Programmes of Study

Working Scientifically	Plants	Animals - including humans	Everyday Materials	Seasonal Changes
<p>Children can follow one-step instructions and beginning to follow two-step instructions</p> <p>Children understand and can respond appropriately to a variety of questions eg: Why...? Do you think...? What...?</p>	<p>Know how to care for an animal/pets</p> <p>Discuss how we care for the natural world around us</p> <p>Identify plants in the natural world around us in autumn.</p> <p>Closely observe plants and animals in the</p>	<p>Observe how animals' behaviour changes with the season.</p> <p>Children make observations about the world around them using day to day language comparing weight length and capacity</p>	<p>Observe and interact with the natural process of light travelling through transparent material, an object casting a shadow.</p>	<p>Observe how animals' behaviour changes with the season.</p> <p>Observe and recognise signs of autumn.</p> <p>Children use their five senses to explore the world around them</p>

<p>Children will ask questions to clarify instructions.</p> <p>Children use their five senses to explore the world around them</p> <p>Children use knowledge of number to 5 to help them describe what they find</p>	<p>natural world. Draw pictures of their observations.</p>	<p>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>		<p>Observe patterns in the natural world</p> <p>Children make observations about the world around them using day to day language comparing weight length and capacity</p>
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Subject Specific Knowledge

Children know the names of animals that are pets
 Children know the baby animal names for common pets – cat/kitten, dog/puppy, fish/fry,
 Children can describe what is needed to look after a pet
 Children know what they need to stay fit and healthy – sleep, staying clean, eating healthy food
 Children know Autumn is a season and can identify signs of autumn
 Children know and understand the terms 'Nocturnal' and 'Diurnal' in relation to animals
 Children know that night is dark and day is light
 Children know that some colours reflect light and show up in the dark
 Children can identify, observe and plant a bulb

SPRING TERM

How do things around me change?

(Winter, Growing up and Machines)

How do I tell 'Once upon a time' stories?

(Traditional Tales & Long Long Ago)

Communication & Language	Mathematics	Understanding the World
<p>Children can follow two-step instructions</p> <p>Children can ask 'Why...?' questions</p> <p>Children can use talk to help them work out problems and possible solutions.</p>	<p>Children use knowledge of number to 10 to help them describe a place</p> <p>Children observe and describe materials using the language of shape and position appropriately</p>	<p>Observe and interact with natural processes such as ice melting, magnets attracting objects, boats floating on the water</p> <p>Identify plants in the natural world around us in winter. Observe how animals' behaviour changes with the season.</p>

	<p>Children make observations about the world around them using day to day language comparing weight length and capacity</p> <p>Observe patterns in the natural world</p>	<p>Observe and recognise signs of winter.</p> <p>Identify things in the environment that are natural and man-made</p> <p>Through story, learn identify the specific features of the natural and man-made world</p> <p>Observe and interact with natural processes in changing state of materials when heating/cooling.</p>
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Science Programmes of Study

Working Scientifically	Plants	Animals - including humans	Everyday Materials	Seasonal Changes
<p>Children can follow two-step instructions</p> <p>Children can ask 'Why...?' questions</p> <p>Children can use talk to help them work out problems and possible solutions.</p> <p>Children use their five senses to explore the world around them</p> <p>Children use knowledge of number to 10 to help them describe a place</p>	<p>Identify plants in the natural world around us in winter.</p>	<p>Observe how animals' behaviour changes with the season.</p>	<p>Observe and interact with natural processes such as ice melting, magnets attracting objects, boats floating on the water</p> <p>Identify things in the environment that are natural and man-made</p> <p>Through story, learn identify the specific features of the natural and man-made world</p> <p>Observe and interact with natural processes in changing state of materials when heating/cooling.</p>	<p>Observe and recognise signs of winter.</p> <p>Identify plants in the natural world around us in winter.</p> <p>Children make observations about the world around them using day to day language comparing weight length and capacity</p> <p>Observe patterns in the natural world</p>

Subject Specific Knowledge

Children know Winter is a season and can identify signs of winter
 Children observe and describe changes to water as it freezes

Children know what hibernation is
 Children recognise elements of their environment that are natural and manmade
 Children know the different phases human children go through as they grow into adults eg, baby, child, teenager, adult, old person
 Children know what a lifecycle is and recognise the lifecycle of animals such as frogs and butterflies
 Children know magnets attract and repel
 Children observe and describe changes to foodstuffs when they are heated
 Children observe and describe the effect of water on gingerbread
 Children observe and describe the properties of materials used in building – bricks, wood, straw, glass
 Children know that materials have different properties
 Children know that materials are chosen for their properties
 Children can identify, observe and plant potato tuber

SUMMER TERM

Where does my food come from?
 (Spring, Growing and Eating, Farms)

Does everyone live like I do?
 (All Around the World - Animals and People)

Communication & Language	Mathematics	Understanding the World
<p>Children will ask relevant questions to clarify the meaning of what they see and hear</p> <p>Children can follow instructions in order to complete learning tasks independently</p> <p>Children will articulate their thoughts and ideas in well-formed sentences</p> <p>Children use full sentences to talk about their feelings, experiences and ideas. They usually use the correct tense.</p> <p>Children talk about places using phrases such as ‘so that’ ‘because’ ‘I think its...’ ‘You could...’ ‘ It might be...’</p>	<p>Children use knowledge of number to 10 to help them describe a place</p> <p>Children observe and describe materials using the language of shape and position appropriately</p> <p>Children make observations about the world around them using day to day language comparing weight length and capacity</p> <p>Observe patterns in the natural world</p>	<p>Identify plants in the natural world around us in spring. Observe how animals’ behaviour changes with the season.</p> <p>Observe and recognise signs of spring.</p> <p>Observe and recognise signs of summer.</p> <p>Understand the key features of the life cycle of a plant or animal.</p> <p>Discuss how we care for the natural world around us</p> <p>Closely observe plants and animals in the natural world. Draw pictures of their observations.</p> <p>Observe the world around them using their 5 senses</p>

Science Programmes of Study

Working Scientifically	Plants	Animals - including humans	Everyday Materials	Seasonal Changes
<p>Children will ask relevant questions to clarify the meaning of what they see and hear</p> <p>Children can follow instructions in order to complete learning tasks independently</p> <p>Children will articulate their thoughts and ideas in well-formed sentences</p> <p>Children use full sentences to talk about their feelings, experiences and ideas. They usually use the correct tense.</p> <p>Children talk about places using phrases such as 'so that' 'because' 'I think its...' 'You could...' 'It might be...'</p> <p>Observe the world around them using their 5 senses</p>	<p>Understand the key features of the life cycle of a plant or animal.</p> <p>Discuss how we care for the natural world around us</p> <p>Closely observe plants and animals in the natural world. Draw pictures of their observations.</p> <p>Identify plants in the natural world around us in spring.</p>	<p>Understand the key features of the life cycle of a plant or animal.</p> <p>Discuss how we care for the natural world around us</p> <p>Closely observe plants and animals in the natural world. Draw pictures of their observations.</p> <p>Observe how animals' behaviour changes with the season.</p>		<p>Observe and recognise signs of spring.</p> <p>Observe and recognise signs of summer.</p> <p>Discuss how we care for the natural world around us</p> <p>Observe how animals' behaviour changes with the season.</p> <p>Identify plants in the natural world around us in spring.</p>

Subject Specific Knowledge

Children know Spring and Summer are seasons and can identify signs of spring and summer
Children recognise elements of their environment that are natural and manmade
Children know that seeds grow into plants
Children know how to plant a seed
Children know that plants and seeds need water and light to grow
Children observe and describe changes in plants as they grow
Children know the parts of the plant – root, leaf, stem, flower
Children know that food comes from plants and animals
Children know animals and their babies for farm animals eg. cow/calf, sheep/lamb, pig/piglet, deer/fawn, hen/chick
Children know that butter is made from milk
Children know food groups – dairy, protein, fruit and vegetables
Children know animal groups mammals, birds and fish
Children know that animals live in different habitats
Children can observe and describe animals and their adaptations
Children know that some animals are carnivores and some herbivores

Assessment

- Can the children describe the effects of the four different seasons, making comparisons?
- Can children talk about plants, how to look after them?
- Can the children talk about people and places in other countries, showing an awareness of what things are similar and what things are different?

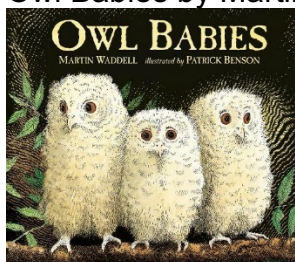
Vocabulary

Nocturnal, diurnal, hibernate, habitat, season, weather, hot, cold, light, dark, reflect, luminous, battery, electricity, bulb, spring, summer, autumn, winter, freeze, thaw, lifecycle, baby, child, teenager, adult, old person, egg, caterpillar, pupa, butterfly, frogspawn, tadpole, froglet, frog, root, stem, leaf, flower, seed, bulb, tuber, cat/kitten, dog/puppy, fish/fry, horse/pony, sheep/lamb, hen/chick, pig/piglet, healthy, fruit, vegetables, dairy, protein, materials, liquid, solid, transparent, properties, mammal, fish, bird, insect, animal groups, herbivore, carnivore, magnet, attract, repel

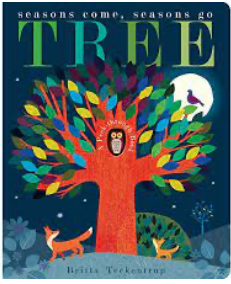
Supportive Texts

Autumn Term

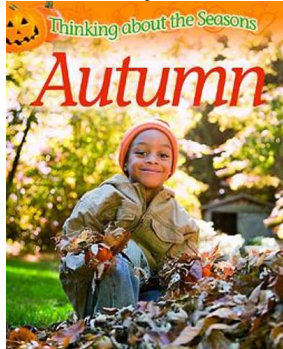
Owl Babies by Martin Waddell



Tree: Seasons Come, Seasons Go By Britta Treckentrup

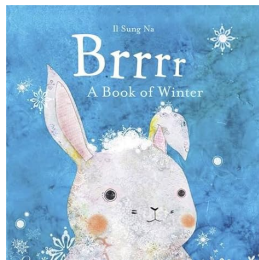


Autumn by Clare Collinson



Spring Term

Brrrrr A book of Winter by Il Nung Su



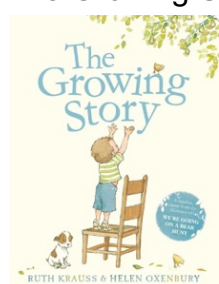
What can you see in Winter? By Sian Smith



The Most Magnificent Thing by Ashley Spires

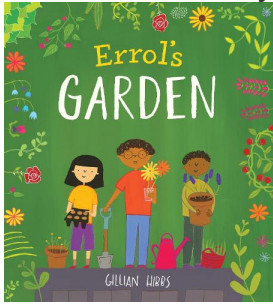


The Growing Story by Helena Kruz



Summer Term

Errol's Garden by Gillian Hibbs



What Can You See In Spring? by Sian Smith



What can you see in Summer? By Sian Smith



Continuous Provision

(Available throughout the day for both focussed and self-chosen learning)

Resources Available through Continuous Provision

- Water area inside and out to explore water, forces, freeze and thaw
- Large construction to explore forces, balance and construction
- Tree in outside area that changes with the seasons (including hazelnuts in the autumn!)
- Junk modelling resources to explore materials
- Malleable area with playdough, clay and other materials
- Large construction including blocks, crates, waffle blocks, den making equipment
- Photographs, pictures, books and stories about seasons, plants and animals
- Paper and pencils/pens/crayons and art materials to respond to what seen in art
- Small world area inside with models of different animals
- Tough spot and small world resources
- Jigsaw puzzles related to animals and lifecycles
- Growing area in outside provision – pots, tubs and gardening equipment

Areas of Continuous Provision

Indoors

Construction Area – Explore forces

Creative Area – respond to objects, books and pictures through drawing, painting and different art work

Role Play – food preparation and healthy eating cook books for children to explore

Small World – Creating 3D models of different environments using the different types of animals.

Local area photos that change with the season

Mark Making/ Writing – Writing materials to mark make and draw; clipboards; paper (different types and sizes); pencils, pens, crayons, squared paper

Reading – Non-fiction texts about animals, plants, and seasons. Also different materials

Outdoors

Water Area – Water and gutters provide many opportunities to explore the different ways that water behaves and responds

Tree and growing area – Opportunities to grow different plants and observe seasonal changes

Mud Kitchen – seasonal recipe books added to area

Understanding the World Area – Back packs, binoculars, magnifying glasses for exploring the world, bug hunting pots, mirrors, magnets