



Curriculum Knowledge and Skills Progression Document for Science 2022 2023

Whilst we have separated Nursery and Reception's knowledge and skills, certain concepts may need to be revisited in Reception or taught for the first time, dependant on children's capabilities and if they attended our nursery setting previously.

Knowledge, Skills and Understanding Breakdown for Nursery

Animals (including humans)	Plants	Seasonal Change	Everyday Materials
<ul style="list-style-type: none"> • Do they know what a pet is? • Do they know what a wild animal is? • Do they know what a mini beast it? • Can they use some vocabulary related to features of animals and humans e.g. wings? • Do they show an interest in minibests / nursery pets? • Can they name some animals, including pets? 	<ul style="list-style-type: none"> • Do they know that plants grow from a seed? • Do they know we need to take care of plants and can they suggest ways in which we can do this? • Can they name some plants? 	<ul style="list-style-type: none"> • Can they talk about the different weather that we have? • Can they talk about how they dress for different weather? • Do they talk about the changes around them that may happen? E.g. leaves falling off the trees, weather getting warmer, days being brighter than others 	<ul style="list-style-type: none"> • Can they use vocabulary to describe objects e.g. hard, soft, shiny, fluffy?
Living things and their habitats	Environment	Working scientifically (observing closely, performing tests, identifying and classifying, recording findings)	
<ul style="list-style-type: none"> • Do they show care and concern for living things? • Do they know that living things grow and die? • Can the children talk about where different animals live? 	<ul style="list-style-type: none"> • Can they talk about what they can see in the natural world and in their environment? • Do they show concern for their environment? • Do they look after the outside area? 	<ul style="list-style-type: none"> • Can they talk about some of the things they have observed such as plants, animals, natural and found objects? (Observing) • Can they talk about why things happen and how things work? (Performing tests) • Can talk about things they have observed such as plants, animals and natural objects they have found? (Observing) • Do they make observations of plants and explain why some things may happen? (Observing) • Can they observe different animals and say what they are doing? (Observing) 	

Knowledge, Skills and Understanding Breakdown for Reception

Animals (including humans)	Plants	Seasonal Change	Everyday Materials
<ul style="list-style-type: none"> Can they use some vocabulary related to features of animals and humans e.g. wings? Do they show an interest in minibeasts and pets? Can they name some animals, including pets? Do they know the importance of being healthy and having a healthy diet? Can they talk about ways in which they can stay healthy, including how to keep clean and safe? 	<ul style="list-style-type: none"> Can they name some plants? Can they talk about plants needing water and sunlight to grow? 	<ul style="list-style-type: none"> Do they talk about the changes around them that may happen? E.g. leaves falling off the trees, weather getting warmer, days being brighter than others Do they know the different seasons? Can they talk about the different seasons and changes in the weather? 	<ul style="list-style-type: none"> Can they use a wider range vocabulary to describe objects e.g. see through, bendy, firm? Do they name different materials? Do that they know that materials can be used for different things? Can they suggest what materials should be used in different situations e.g. in the rain?
Living things and their habitats	Environment		Working scientifically (observing closely, performing tests, identifying and classifying, recording findings)
<ul style="list-style-type: none"> Do they know that living things grow and die? Are they developing an understanding of growth, decay and changes over time? Can the children talk about where different animals live? Do they talk about the features of their own immediate environment and where they live? Do they know that a habitat is a place that something lives/grows? Do they know how environments (habitats) might vary from one another? Do they understand that living things may need different things e.g. fish have fish food and they need to live in water? 	<ul style="list-style-type: none"> Do they look after the outside area? Are they beginning to understand the effect their behaviour can have on the environment? Do they know how to look after the world around them and can they suggest how they might do this? Do they know that the environment and living things are influenced by human activity? E.g. litter on the floor. Can they describe some actions which people in their own community do that help maintain the area they live in (e.g. caring for animals, recycling, waterproofing)? 		<ul style="list-style-type: none"> Can they talk about some of the things they have observed such as plants, animals, natural and found objects? (Observing) Can they talk about why things happen and how things work both natural and made? (Performing tests) Can talk about things they have observed such as plants, animals and natural objects they have found? (Observing) Do they make observations of plants and explain why some things may happen and how they have changed? (Observing) Can they observe different animals and say what they are doing? (Observing) Can they identify some similarities and differences between objects, plants, materials and animals? (Identifying and Classifying) Can they group materials, plants and animals based on their features? (Identifying and Classifying) Can they observe similarities, differences, patterns and change in nature? (Observing) Are they familiar with basic scientific concepts such as floating and sinking? (Performing tests) Do they have their own ideas for investigations? (Performing tests)



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The following knowledge and skill document has been formulated through using the national curriculum objectives and considering they essential scientific knowledge and skills that we believe children in our school need to learn.

National Curriculum Requirements for Science at Key Stage 1

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

'Working scientifically' is described separately, but must always be taught through and clearly related to the teaching of substantive science content.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Knowledge, Skills and Understanding Breakdown for Year 1

Animals (including humans)	Plants	Seasonal Change	Everyday Materials
<ul style="list-style-type: none"> Can they point out some of the differences between different animals? Can they identify and name a variety of common animals? (birds, fish, amphibians, reptiles, mammals, invertebrates) Can they identify and name a variety of common animals that are carnivores, herbivores and omnivores? Can they begin to classify animals according to a number of given criteria? Can they name the parts of the human body that they can see? Can they draw & label basic parts of the human body, using scientific vocabulary for private parts? Can they identify the main parts of the human body and link them to their senses? Can they name the parts of an animal's body? Can they classify animals by what they eat? (carnivore, herbivore, omnivore) Can they compare the bodies of different animals? 	<ul style="list-style-type: none"> Can they name the petals, stem, leaf, bulb, flower, seed, stem and root of a plant? Can they identify and name a range of common plants and trees? Can they recognise deciduous and evergreen trees? Can they name the trunk, branches and root of a tree? Can they describe the parts of a plant (roots, stem, leaves, flowers)? Can they observe the growth of flowers and vegetables that they have planted? 	<ul style="list-style-type: none"> Can they observe changes across the four seasons? Can they name the four seasons in order? Can they observe and describe weather associated with the seasons? Can they observe and describe how day time length varies? Can they talk about weather variation in different parts of the world, linked to Geography? 	<ul style="list-style-type: none"> Can they distinguish between an object and the material from which it is made? Can they describe materials using their senses, using specific scientific words? Can they explain what material objects are made from and describe some of their properties? Can they explain why a material might be useful for a specific job? Can they name some different everyday materials? e.g. wood, plastic, metal, water and rock Can they sort materials into groups by a given criteria? Can they explain how solid shapes can be changed by squashing, bending, twisting and stretching? Can they describe things that are similar and different between materials?

<ul style="list-style-type: none"> • Can they name some parts of the human body that cannot be seen? 			
<p style="text-align: center;">Living things and their habitats</p>	<p style="text-align: center;">Environment</p>	<p style="text-align: center;">Working scientifically (observing closely, performing tests, identifying and classifying, recording findings)</p>	
<ul style="list-style-type: none"> • Can they sort living things and non-living things? (This can be done through photos if needed.) • Can they name different habitats? • Can they describe how an animal is suited to its environment? 	<ul style="list-style-type: none"> • Can the children name three ways they can help to look after our planet? • Are they aware of what recycling is and can they give examples of how and what we can recycle? • Do children show an awareness of what happens to waste? • Are they aware of some pollution? • Do they understand deforestation? • Are they aware that because of humans, habitats are being destroyed? (Link to African Adventure Topic) 	<p>Observing Closely:</p> <ul style="list-style-type: none"> • Can they talk about what they can sense (see, touch, smell, hear or taste)? • Can they use simple equipment to help them make observations? <p>Performing Tests:</p> <ul style="list-style-type: none"> • Can they perform a simple test? • Do they know what a test is? • Can they tell other people about what they have done? • Can they use simple equipment safely and with appropriate purpose? • Can they make a prediction? <p>Identifying and Classifying:</p> <ul style="list-style-type: none"> • Can they identify and classify things they observe? • Can they think of some questions to ask? • Can they answer some scientific questions? • Can they give a simple reason for their answers? • Can they explain what they have found out, using some scientific vocabulary? • Can they talk about similarities and differences? <p>Recording findings:</p> <ul style="list-style-type: none"> • Can they show their work using pictures, labels and captions? • Can they record/interpret their findings, with support, using standard units? • Can they put some information in a chart or table? 	

Knowledge, Skills and Understanding Breakdown for Year 2			
Animals (including humans)	Plants	Seasonal Change	Everyday Materials
<ul style="list-style-type: none"> Can they describe what animals need to survive? Can they explain that animals grow and reproduce? Can they explain why animals have offspring which grow into adults? Can they describe the life cycle of some living things? (e.g. egg, chick, chicken) Can they describe why exercise, balanced diet and hygiene are important for humans? 	<ul style="list-style-type: none"> Can they describe what plants need to survive? Do they know that a seed is a miniature plant that will grow if given water and sunlight in the right conditions? Do they know that a bulb is the part of plant that stores food, when it is resting from growing? Do they know that not all plants have bulbs? Can they observe and describe how seeds and bulbs grow into mature plants? Can they find out & describe how plants need water, light and a suitable temperature to grow and stay healthy? Can they explain that plants grow and disperse their seeds in different ways (reproduce)? 	<ul style="list-style-type: none"> Do they continue to observe the weather and the seasons, linking to learning done in Geography regarding the equator? 	<ul style="list-style-type: none"> Can they describe the simple physical properties of a variety of everyday materials? Can they compare and group together a variety of materials based on their simple physical properties? Can they explore how the shapes of solid objects can be changed? (squashing, bending, twisting, stretching) Can they find out about people who developed useful new materials? (E.g. Charles Macintosh -link to experiments – waterproof materials) Can they identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, cardboard for particular uses? Do they know that there are solids, liquids and gases?
Living things and their habitats	Environment	Working scientifically (observing closely, performing tests, identifying and classifying, recording findings)	
<ul style="list-style-type: none"> Can they match certain living things to the habitats they are found in? Can they explain the differences between living and non-living things? Can they describe some of the life processes common to plants and animals, including humans? 	<ul style="list-style-type: none"> Can they talk about Reduce / Recycle and Reuse and use this information to consider ways to protect our Planet? Are they aware that because of humans, there are harmful gases in the air around them and that this has led to the earth warming up, and that this is called Global Warming? 	<p>Observing Closely:</p> <ul style="list-style-type: none"> Can they compare several things and make observations on them? Can they use their senses to share what they think has happened, stating why? Can they answer some scientific questions such as 'What does a plant need to grow?' drawing on their observations to back up their answers? <p>Performing Tests:</p> <ul style="list-style-type: none"> Can they understand that tests need to be fair? 	

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<ul style="list-style-type: none">• Can they decide whether something is living, dead or non-living?• Can they describe how a habitat provides for the basic needs of things living there?• Can they describe the features of a habitat and how this helps the animal/plant?• Do they know that a microhabitat is a smaller area in a larger habitat?• Do they know what a food chain is and can they talk about sources of food?• Can they use scientific vocabulary when learning about a food chain? E.g. producer.	<ul style="list-style-type: none">• Do they know that Global Warming can be harmful? E.g. Ice caps melting <p>(Link to Geography Topic – Would You Like To Live On Top Of The World?)</p>	<ul style="list-style-type: none">• Do they recognise when a test has not been fair and what may need to stay the same for it to be fair?• Can they think of scientific questions that they would like answering and make suggestions about how they could find out? <p>Identifying and Classifying:</p> <ul style="list-style-type: none">• Can they organise things and sort them using more than one criteria?• Can they spot patterns or associations e.g. noticing animals in the arctic often have white fur? <p>Recording findings:</p> <ul style="list-style-type: none">• Can they measure in 2s, 5s and 10s?• Can they look at their findings (analyse) to draw conclusions?
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Progression Vocabulary - To be reviewed

This document has been generated to clearly show the progression of Science terminology and subject specific vocabulary, which need to be acquired, understood and applied across different contexts and subject areas from the Early Years to Year 2. Vocabulary will need to be **revisited** by subsequent year group/s and therefore teachers will need to look carefully at prior vocabulary acquisition before planning teaching and learning opportunities to ensure that revisitation opportunities are carefully considered. Vocabulary will **not** necessarily be repeated for a year group, if it has been documented in a previous year group. Each year group outlines **new** vocabulary acquisition as the assumption will be that teachers will refer to prior vocabulary knowledge.

EYFS	Plants	Animals, including Humans	Materials	Seasons
	Plants, living, water, sun, compost growth, change, garden, outside, die, decay, look after	Living things, grow, die, minibeasts, pets, farm animals, wild animals, look after, healthy, safe, body part, senses, grow, change, community, , places – park, shops etc, patterns,	wood, plastic, metal, fabric, glass, hard, soft, rough, smooth, shiny, dull, natural, manmade, same, different,	light, dark, night, daytime, hibernation, environment, hot, cold, planet, space, sun, moon
Scientific enquiry - investigation, research, explain, observe, why?				
Year 1	Plants	Animals including Humans	Everyday Materials	Seasonal Changes
	Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem, Grow	Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each), living, non-living, environment, Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Knees, Face, Ears, Eyes, Hair, Mouth, Teeth, Neck, Back, Wings, Beak, Tail, Examples of Wild	Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth, Similar, Different, Object, Material	Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark, Changes, Weather, Season,



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		Animals, Domestic animals, Characteristics		
	Observing	Performing	Identifying & Classifying	Recording Findings
	Observe, talk, see, smell, touch, hear, taste, equipment, observe, observations, find out	Test, equipment, safe, reason	Identify, classify, questions, reason, explain, similarities, differences, scientific, vocabulary	Pictures, labels, captions, record, findings, standard units, information, chart, table, accurate, measurements
Year 2	Living Things and Their Habitats	Animals including Humans	Plants	Classifying and Grouping Materials
	Living, Dead, Non-Living, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert, Survive, Life Processes, Plants, Animals, Humans	Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene, Balanced Diet, Reproduce, Basic Needs, Life-Cycle, Offspring	Seeds, Bulbs, Water, Light, Temperature, Growth, Grow, Reproduce, Survive,	Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent, Natural, Man-made, Properties,
	Changing Materials	Observing	Performing	Identifying & Classifying
	Everyday material names e.g. Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil, Change, Heat, Cool	Answer, question, describe, compare, similar/similarities, different/differences	Fair test, compare, expect, explain, find things out, suggest	Organise, patterns, identify, criteria, grouping, explain, reason
	Recording Findings			
	Record, observations, text, diagrams, pictures, charts, tables, measure, information, online			