



St Helen's Catholic Infant and Nursery School Progression of Topics and Skills in Science



Plants Yellow highlighting Science and RSHE links

Nursery	Reception	YEAR 1	YEAR 2
3- 4yr olds Communication and Language • • Understand 'why' questions • Use a wider range of vocabulary Understanding the World • Use all their senses in hands-on exploration of natural materials. • 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.	Children in Reception Communication and Language • • 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. • ELG • Make comments about what they have heard and ask questions to clarify their understanding.	• 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.	• observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <u>End of KS1 Expectation</u> <u>Plants</u> Pupils should be taught to: • 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 • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

- Begin to understand the need to respect and care for the natural environment and all living things.

- Offer explanations for why things might happen making use of recently introduced vocabulary

Understanding the World

Children in Reception

- 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.

ELG

- 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.

Progression of Vocabulary in Science



Plants

Nursery	Reception	YEAR 1	YEAR 2
plant, seed, nutrients, soil, water, plant, soil, seed, stem, pink, sunlight, compost heap, weeds, garden, roots	Vocabulary from Nursery as well as: Name common everyday/seasonal plants	seed, plant, tree, soil, predict, stem, petal, leaf, root, flower, environment, weed, daisy, dandelion, wild, deciduous, evergreen, seasons, branch, bush, supermarket, fruit, vegetable, farm, tractor, growth, seedling, young plant, adult plant, observe,	seed, bulb, grow, seedling, compare, predict, investigate, experiment, method, conditions, healthily, temperature, nutrients, energy, pollen, life cycle, germination, reproduce, seedling, energy, results, greenhouse, thrive, healthy, forest, desert, results, greenhouse

St Helen's Catholic Infant School Progression of Topics and Skills in Science



Animals, including Humans

Nursery	Reception	YEAR 1	YEAR 2
<u>Personal, Social and Emotional Development</u> 3-4 years - Make healthy choices about food, drink, activity and toothbrushing. <u>Communication and Language</u> 3-4 years - Understand 'why' questions, and activities, and to explain how things work and why they might happen. <u>Understanding the World</u> 3-4 years - Talk about what they see, using a wide vocabulary. - Understand the key features of the life cycle of a plant and	<u>Personal, Social and Emotional Development</u> Children in Reception - 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 <u>ELG</u> <u>Managing Self</u> - Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.	- 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.	- notice that animals, including humans, have offspring which grow into adults - find out about and describe the basic needs of animals, including humans, for survival (water, food and air) - describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. <u>End of KS1 Expectation</u> <u>Animals, including humans</u> Pupils should be taught to: - 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 - notice that animals, including humans, have offspring which grow into adults

an animal. • Begin to understand the need to respect and care for the natural environment and all living things.	<u>Communication and Language</u> Children in Reception • Learn new vocabulary. • Use new vocabulary in different contexts. ELG <u>Listening, Attention and Understanding</u> • Make comments about what they have heard and ask questions to clarify their understanding. • 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 Understanding the World Children in Reception • Explore the natural world around them.		• find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
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- Describe what they see, hear and feel while they are outside.
- Recognise some environments that are different to the one in which they live.

ELG

The Natural World

- 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.

Progression of Vocabulary in Science

Animals, including Humans

Nursery	Reception	YEAR 1	YEAR 2
mud, grass, pig, horse, cow, goat, chicken, dinosaur, lizard, meteorite, museum, reptile	Vocabulary from Nursery as well as: fly, beetle, insect, ant, invertebrate, ladybird, spider, snail, honey, worm, sap, habitat, greenfly, food, toast, chicken, egg, lay, fox, chick, cow, milk, cream, cheese, butter, living, tree, adult, non living, young, pet, ocean, habitat, desert, farm, bird, nest, build,	fish, amphibian, reptile, mammal, bird, feather, warm-blooded, characteristic, backbone, hatchling, amphibian, reptile, gills, scale, cold-blooded, herbivore, carnivore, omnivore, predator, canines, pet, wild, shelter, veterinary, natural, similarities, differences, compare, unsuitable, climate	offspring, inherit, gene, resemble, differences, reproduction, hatchling, chick, bar chart, predict, caterpillar, transformation, larva, chrysalis, metamorphosis, frog, amphibian, frogspawn, tadpole, froglet

St Helen's Catholic Infant School Progression of Topics and Skills in Science



Materials and their properties

Nursery	Reception	YEAR 1	YEAR 2
3- 4yr olds Communication and Language - Understand 'why' questions Understanding the World - 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. - Explore how things work. - Talk about the differences between	Communication and Language Children in Reception - 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.	- 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.	- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
			End of KS1 Expectation Everyday materials Pupils should be taught to: - 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

materials and changes they notice.	• Use new vocabulary in different contexts. ELG Communication and Language - Listening, Attention and Understanding • Make comments about what they have heard and ask questions to clarify their understanding. Understanding the World Children in Reception • Explore the natural world around them. • Describe what they see, hear and feel while they are outside. ELG - The Natural World • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.		
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Progression of Vocabulary in Science



Materials and their properties

Nursery	Reception	YEAR 1	YEAR 2
Material – wood, plastic, metal, soft, hard	Vocabulary from Nursery as well as: non-living, car, toy, bike, scooter, change, solid, liquid, pan, metal, melt, freeze, cold, set, mould, sheep, fleece, shear, wool, ball, bucket, sand, sandcastle, sculpture, shovel, house, flat, semi-detached, terraced, radiator	material, fabric, wood, plastic, metal, object, glass, rock, brick, material, property, opaque, transparent, dull, stiff, natural, man-made, factory, rubber, polyester, predict, float, sink, submerged, heavy, absorbent, properties, waterproof, bendy, materials, solid, strong, brick, clay, wind, waterproof, absorbent, non-absorbent, roof, slate, transparent, opaque, suitable, window pane, window frame, fabric, furniture, cotton, mattress, soft, wool, weather, jumper, suitable, waterproof, evaluate, material, properties, tile, garden	material, property, suitable, object, brick, bridge, triangle, obstacle, structure, construction, stretchy, elastic, floppy, hinder, limit, bend, twist, squash, stretch, force, mackintosh, protective, fluorescent, safety, waterproof, John McAdam, merchant, bound, highway, road

St Helen's Catholic Infant School Progression of Topics and Skills in Science

Seasonal Changes

Nursery	Reception	YEAR 1	YEAR 2
3- 4yr olds Communication and Language - Understand 'why' questions, Understanding the World - Explore how things work. - Begin to understand the need to respect and care for the	Children in Reception Communication and Language - 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.	- observe changes across the four seasons - observe and describe weather associated with the seasons and how day length varies.	Not in curriculum End of KS1 Expectation <u>Seasonal changes</u> Pupils should be taught to: - observe changes across the 4 seasons - observe and describe weather associated with the seasons and how day length varies

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.

- 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.

ELG

- Make comments about what they have heard and ask questions to clarify their understanding.

Understanding the World Children in Reception

- 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.

ELG

- 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.

Progression of Vocabulary in Science

Seasonal Changes

Nursery	Reception	YEAR 1	YEAR 2
Day, night, midnight, yesterday, tomorrow Seasons – Spring, Summer, Autumn, Winter	Vocabulary from Nursery as well as: rain, ice, rainforest, cloud, river, wind, movement, air, rise, sail, snowflake, melt, snowman, cool, cold, rainbow, raindrop, yellow, arc, blue, Spring, Summer, warm, bird, Sun, Autumn, Winter, snow, bark, season	season, spring, summer, autumn, winter, autumn, hibernate, weather, protect, harvest, winter, weather, frost, icicle, temperature, spring, daylight, changes, grow, chick, summer, nectar, sun protection, bloom, heatwave, rainfall, hibernation, rain gauge, temperature, protect	NOT IN CURRICULUM

St Helen's Catholic Infant School Progression of Topics and Skills in Science



Living things and their habitats

Nursery	Reception	YEAR 1	YEAR 2
Communication and Language 3-4 years Understand 'why' questions, Understanding the World	Communication and Language Children in Reception - Learn new vocabulary. - Ask questions to find out more and to	Not in curriculum	- explore and compare the differences between things that are living, dead, and things that have never been alive - identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals

3-4 years • Talk about what they see, using a wide vocabulary.. • Begin to understand the need to respect and care for the natural environment and all living things.	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. ELG Listening, Attention and Understanding • Make comments about what they have heard and ask questions to clarify their understanding. Understanding the World Children in Reception • Explore the natural world around them. • Describe what they see, hear and feel		and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including micro-habitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. End of KS1 Expectation Living things and their habitats Pupils should be taught to: • explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including microhabitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
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while they are outside.

- Recognise some environments that are different to the one in which they live.

ELG

The Natural World

- Explore the natural world around them, making observations and drawing pictures of animals and plants.
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Progression of Vocabulary in Science

Living things and their habitats

Nursery	Reception	YEAR 1	YEAR 2
Bug hotel, minibeasts, birds, trees, nests; Things we can see in immediate environment – for example, worms burrowing and living things outside.	Vocabulary from Nursery as well as: wormery, vocabulary associated with forest animals, sea creatures	Not in curriculum	senses, nutrition, reproduce, excrete, respire, habitat, microhabitat, fungi, survive, shelter, antennae, suitable, condition, colony, insect, producer, consumer, herbivore, carnivore, omnivore, food chain, life cycle, nutrients, rot, caterpillar, automated, frozen food, forklift truck, refrigerated lorry, canned, habitat, microhabitat, organism, environment, mate, rainforest, moisture, extinct, climate, endangered, biodiversity, deforestation, poaching, pollution, rainforest, plankton, ocean, ecosystem, coral reef, trench, Antarctic, Arctic, caribou, narwhal, tundra, earthworm, desert, lizard, cactus, pond

St Helen's Catholic Infant School Progression of Topics and Skills in Science



The National Curriculum states that: During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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

St Helen's Catholic Infant School progression of scientific skills:

Nursery	Reception	YEAR 1	YEAR 2
Key scientific skills in Nursery are : Play, Observe . Discover , Explore Communication and Language 3- 4yr olds • Understand 'why' questions, Understanding the World • Use all their senses in hands-on exploration of natural materials.	Key scientific skills in Nursery are : Play, Observe . Ask , Discover , Explore Predict Communication and Language Listening Attention and Understanding Reception	1) asking simple questions and recognising that they can be answered in different ways 2) observing closely, using simple equipment and measurement 3) performing simple tests 4) identifying and classifying 5) using their observations and ideas to suggest answers to questions 6) gathering and	1) asking simple questions and recognising that they can be answered in different ways including use of scientific language from the National Curriculum. 2) observing closely, using simple equipment and measurement, including changes over time. 3) performing simple comparative tests 4) identify, group and classify 5) using their observations and ideas to suggest answers to questions, noticing similarities, differences and patterns.

• Explore collections of materials with similar and/or different properties. • Explore how things work. • Talk about the differences between materials and changes they notice	Communication and Language • Learn new vocabulary. • Use new vocabulary in different contexts. • 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. • Make comments about what they have heard and ask questions to clarify their understanding. Understanding the World The Natural World Children in Reception	recording data to help in answering questions.	6) gathering, recording and communicating data and findings to help in answering questions. 7) use scientific language and read and spell age-appropriate scientific vocabulary 8) begin to notice patterns and relationships. <u>End of KS1 Expectation</u> <u>Working scientifically</u> During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: 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
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- 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.

ELG

- 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.

Progression of Vocabulary in Science for Working scientifically

Nursery	Reception	Y1	Y2
play observe discover explore the same look at watch find choose	Vocabulary from Nursery as well as: different test question equipment answer predict	questioning answering observe identifying and classifying record group sort chart equipment	identify classify table data diagram compare contrast patterns relationships findings changes over time comparative