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## Science - Curriculum Overview

### Curriculum Intent

Our Science curriculum has been designed to stimulate and excite children's curiosity about phenomena and events in their environment and the world around them. Science links practical experience with ideas. It develops children's observational, investigative and communication skills through first-hand experience and secondary sources such as books and computing.

Our curriculum allows pupils to:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

In addition to the National Curriculum aims, our school vision sets out the following aims which will be achieved through the teaching of high-quality geography sequences of learning:

- Pupils are happy in their learning and set high expectations of themselves in all areas
- Children taking ownership of their own learning journey
- We have an engaging, ambitious and inclusive curriculum which results in happy learners
- We celebrate and share our successes

The Science curriculum reflects our school values in the following ways:

**Ready:**

We always try our best  
 We keep going when things get difficult  
 We set high expectations of ourselves  
 We are positive about new challenges

**Respectful:**

We look after our environment and our equipment  
 We respect difference and know that we are all equal

**Responsible:**

We look after ourselves and each other

	<b>Animals including Humans</b>	<b>Living Things and their Habitats</b>	<b>Everyday Materials</b>	<b>Plants</b>	<b>Seasonal Changes</b>	<b>Forces</b>
<b>Nursery</b>	Life Cycles	Caring for All Living Things	Difference between Materials	Planting Seeds	N/A	Exploring Forces
<b>Reception</b>	Explore the Outside World  Factors Supporting health and Hygiene	Explore the Natural World and contrasting Environments	N/A	N/A	Changing Seasons	N/A
<b>Year 1</b>	What makes an animal	N/A	Material detectives	Plant sunflower and sunflower	Seasonal walks throughout the	N/A

	Animal diets Animal groups		Testing different properties experiments	diary Flower hunt and Tree hunt	year Seasonal tree in class	
<b>Year 2</b>	Offspring Basic Need for Survival Importance of Exercise, Eating Well and Hygiene	Living, Dead, Never been Alive Habitats Micro Habitats Food chains	Identify and Compare Materials Properties and Uses of Materials	Grow Plant in Different Environments Observational Drawing of a Plant	N/A	N/A

**Working Scientifically - Knowledge and Skills Progression**

	<b>Nursery</b>	<b>Reception</b>	<b>Y1</b>	<b>Y2</b>
<b>Knowledge</b>	Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.	Can talk about some of the things they have observed such as plants, animals, natural and found objects. Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time.	WS1 asking simple questions and recognising that they can be answered in different ways. WS2 observing closely, using simple equipment and measurement. WS3 performing simple tests. WS4 identifying and classifying. WS5 using their observations and ideas to suggest answers to questions. WS6 gathering and recording data to help in answering questions.	WS1 asking simple questions and recognising that they can be answered in different ways including use of scientific language from the National Curriculum. WS2 observing closely, using simple equipment and measurement, including changes over time. WS3 performing simple comparative tests WS4 identify, group and classify WS5 using their observations and ideas to suggest answers to questions, noticing similarities, differences and patterns.

		Shows care and concern for living things and the environment.		<p>WS6 gathering, recording and communicating data and findings to help in answering questions.</p> <p>WS7 use scientific language and read and spell age-appropriate scientific vocabulary.</p> <p>WS8 begin to notice patterns and relationships.</p>
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Animals including Humans - Knowledge and Skills Progression				
	Nursery	Reception	Y1	Y2
<b>Knowledge</b>	<p>Use all their senses in hands-on exploration of natural materials.</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>Be increasingly independent in meeting their own care needs, e.g., brushing teeth, using the toilet, washing and drying their hands thoroughly.</p> <p>Make healthy choices about food, drink, activity and toothbrushing.</p>	<p>Describe what they see, hear and feel whilst outside.</p> <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>Can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Can identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p> <p>Can 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>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>

**Living Things and their Habitats – Knowledge and Skills Progression**

	<b>Nursery</b>	<b>Reception</b>	<b>Y1</b>	<b>Y2</b>
<b>Knowledge</b>	Talk about what they see, using a wide vocabulary. 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 the natural world around them. 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.	N/A	Can explore and compare the differences between things that are living, dead, and things that have never been alive. Can 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. Can identify and name a variety of plants and animals in their habitats, including microhabitats. Can 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.

**Everyday Materials – Knowledge and Skills Progression**

	<b>Nursery</b>	<b>Reception</b>	<b>Y1</b>	<b>Y2</b>
<b>Knowledge</b>	Explore collections of materials with similar and/or different properties. Talk about the differences between materials and changes	N/A	Can distinguish between an object and the material from which it is made. Can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and	Can distinguish between an object and the material from which it is made. Can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Can describe the simple

	<p>they notice. Explore collections of materials with similar and/or different properties. Use all their senses in hands-on exploration of natural materials.</p>		<p>rock. Can describe the simple physical properties of a variety of everyday materials. Can compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>physical properties of a variety of everyday materials. Can compare and group together a variety of everyday materials on the basis of their simple physical properties. Can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>
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Plants – Knowledge and Skills Progression				
	Nursery	Reception	Y1	Y2
<b>Knowledge</b>	Plant seeds and care for growing plants.	N/A	Can identify and name a variety of common wild and garden plants, including deciduous and evergreen. Can identify and describe the basic structure of a variety of common flowering plants, including trees.	Can observe and describe how seeds and bulbs grow into mature plants Can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Seasonal Changes- Knowledge and skills progression				
	Nursery	Reception	Y1	Y2
<b>Knowledge</b>	N/A	Understand the effect of	Observe changes across the four	N/A

		changing seasons on the natural world around them.	seasons Observe and describe weather associated with the seasons and how day length varies.	
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Forces- Knowledge and skills progression				
	Nursery	Reception	Y1	Y2
<b>Knowledge</b>	Explore and talk about different forces they can feel.	N/A	N/A	N/A

Vocabulary Progression				
	Nursery	Reception	Year 1	Year 2
Animals Including Humans	head eyes nose mouth ears hands fingers feet toes arm leg animal	herbivore face carnivore hair omnivore leg human knee animal arm fish elbow	fish amphibians reptiles birds mammals carnivores herbivores omnivores head neck arms elbows legs knees	observe seeds bulbs grow mature healthy temperature environment offspring humans survival hygiene egg chick

		birds back head toes ear hands eye fingers mouth nose	face ears eyes hair mouth teeth senses Scientifically Seasons weather	chicken caterpillar pupa butterfly spawn tadpole frog lamb sheep adults baby toddler child teenager adult materials wood metal plastic glass brick rock paper cardboard solid squashing bending twisting stretching
Living Things and their Habitats			N/A	
Everyday Materials	material wood glass paper hard soft	material metal wood rock plastic hard	textures sounds smell object material wood plastic	

		<p>glass soft paper fabric material smooth shiny rough</p>	<p>glass metal water rock physical properties hard/soft stretchy/stiff shiny/dull rough/smooth bendy/not bendy waterproof/not waterproof absorbent/not absorbent opaque/transparent brick paper fabrics elastic foil</p>	
Plants	<p>tree leaf flower stem seed</p>	<p>tree petals trunk fruit branch roots leaves bulb flowers seed stem</p>	<p>observe compare contrast identify common evergreen deciduous structures leaves flowers (blossom) petal fruit roots bulb seed trunk branches stem</p>	