



Science Long Term Plan

Revised September 2024

Intent:

- To provide children with an understanding of how science impacts us everyday
- To give children a broad range of scientific experiences
- To inspire and inform children of future possibilities for them in science both locally and nationally

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Pre-school	Plants	Humans	Everyday Materials	Forces and Changing Materials	Animals	Plants and environments
FIVE TYPES OF SCIENTIFIC ENQUIRY	Comparative / fair testing Research		How do plants grow? What do plants need to grow? What do animals eat? Do all animals eat the same food? How does it work? How can we move objects?			
	Observation over time		Is every object made out of the same material?			
	Pattern seeking		What colours can we find outside? Does this change across the seasons?			
	Identifying, grouping and classifying		Is every object made out of the same material?			
Reception	Plants	Humans	Everyday Materials	Forces and Changing Materials	Animals Earth and Space (Reception only)	Plants and environments
All areas of science will be studied under the over-arching theme of Seasonal Changes						
FIVE TYPES OF SCIENTIFIC ENQUIRY	Comparative / fair testing Research		What do plants need to grow? How do animals change as they grow How do animals change as they grow? How does the environment change with			
	Observation over time		How does the environment change with the seasons?			
	Pattern seeking		How does rainfall and temperature change over time?			
	Identifying, grouping and classifying		What does it do? What is it for? Who would use it? Where is it from?			

1	Plants <i>Common names, basic structure and ongoing nature journal</i>	Humans <i>Basic structure and senses</i>	Everyday Materials	Seasonal changes	Animals <i>Names and basic structure of birds, fish, amphibians, reptiles, mammals</i>	Plants <i>Sunlight and weather linked to plants</i>
FIVE TYPES OF SCIENTIFIC ENQUIRY	Comparative / fair testing		Performing simple tests. Gathering and record data to help in answering questions. Which of our senses is the most accurate at identifying food?			
	Research		Asking simple questions and recognising that they can be answered in different ways. Are all plants green? Do all animals hunt?			
	Observation over time		Observing closely, using simple equipment.			
	Pattern seeking		How does rainfall and temperature change over time in our school grounds?			
	Identifying, grouping and classifying		Identifying and classify using observations and ideas to suggest answers to questions.			
2	Living things and their habitats	Animals <i>Survival and growth</i>	Uses of Everyday Materials	Micro-Habitats <i>Mini-beasts</i>	Humans <i>Health and growth</i>	Plants <i>Growing plants</i>
FIVE TYPES OF SCIENTIFIC ENQUIRY	Comparative / fair testing		Performing simple tests. Gathering and record data to help in answering questions. Would a chocolate teapot really be so bad?			
	Research		Asking simple questions and recognising that they can be answered in different ways. Do plants flower all year round? How have animals and plants adapted to live in their habitats? Is plastic the best material for a window?			
	Observation over time		Observing closely, using simple equipment.			
	Pattern seeking		Do all animals grow and live the same way?			
	Identifying, grouping and classifying		Identifying and classify using observations and ideas to suggest answers to questions. Are all objects a living thing?			
3	Humans <i>Movement and skeleton</i>	Forces and magnets	Animals/Humans <i>Health and nutrition</i>	Light and Astronomy <i>Shadows and reflective surfaces</i>	Rocks <i>Material properties</i>	Plants <i>Function of plant parts and growth</i>
FIVE TYPES OF SCIENTIFIC ENQUIRY	Comparative / fair testing		Set up simple practical enquiries, comparative and fair tests.			
	Research		Ask relevant questions and using different types of scientific enquiries to answer them. How does soil affect how plants grow? Use secondary sources to explain your answer?			
	Observation over time		Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.			
	Pattern seeking		Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support findings. Can you find patterns in different people's diets to draw conclusions about how to eat healthily?			
	Identifying, grouping and classifying		Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Are all metals magnetic? How can scientists sort rocks? Use a comparative test to classify rocks based on their properties.			
4	Humans <i>Teeth and digestive system</i>	Sound	States of Matter <i>Material properties and changes</i>		Living things and their habitats	Electricity

					Biodiversity, classification and care of environments	
FIVE TYPES OF SCIENTIFIC ENQUIRY	Comparative / fair testing		Set up simple practical enquiries, comparative and fair tests. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. What effect does the food we eat and drink have on our teeth? Which materials make the best conductors or insulators? How can we find out?			
	Research		Ask relevant questions and using different types of scientific enquiries to answer them. What happens to the food we eat? How does sound travel?			
	Observation over time		Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. How is the environment changing?			
	Pattern seeking		Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support findings. How can we change the pitch or volume of a sound?			
	Identifying, grouping and classifying		Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. How can living things be classified? How can you tell the difference between a vertebrate and an invertebrate?			
5	Animals and plants - Living Things and their Habitats <i>Life cycles and habitats</i>	Properties and Materials <i>Changes and testing</i>	Earth and space <i>Light and astronomy</i>	Properties and changes of materials <i>Reversible and irreversible</i>	Forces <i>Friction, gravity, air resistance, mechanisms</i>	Humans <i>Life cycle</i>
FIVE TYPES OF SCIENTIFIC ENQUIRY	Comparative / fair testing		Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Use test results to make predictions to set up further comparative and fair tests. How do forces affect the speed of an object?			
	Research		Identifying scientific evidence that has been used to support or refute ideas or arguments. How important is the work of naturalists such as David Attenborough and Jane Goodall?			
	Observation over time		Report and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. How do plants and animals change over time?			
	Pattern seeking		Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Are the life cycles of plants and animals in the local environment the same as in other habitats around the world?			
	Identifying, grouping and classifying		Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. What material properties could be used to separate and identify solids, liquids and gases?			
6	Evolution and inheritance	Humans (Animals)	Light	Living things and their habitats		Electricity

	<i>Adaptations</i>	<i>Circulatory system and exercise</i>		<i>Classification</i>		
FIVE TYPES OF SCIENTIFIC ENQUIRY	Comparative / fair testing		Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Use test results to make predictions to set up further comparative and fair tests.			
	Research		Identifying scientific evidence that has been used to support or refute ideas or arguments. How can fossil evidence be used to support the theory of evolution?			
	Observation over time		Report and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.			
	Pattern seeking		Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. What happens when you add more bulbs or batteries etc to a circuit?			
	Identifying, grouping and classifying		Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. To what extent has Charles Linnaeus' theory of classification impacted how people define animals and plants today.			