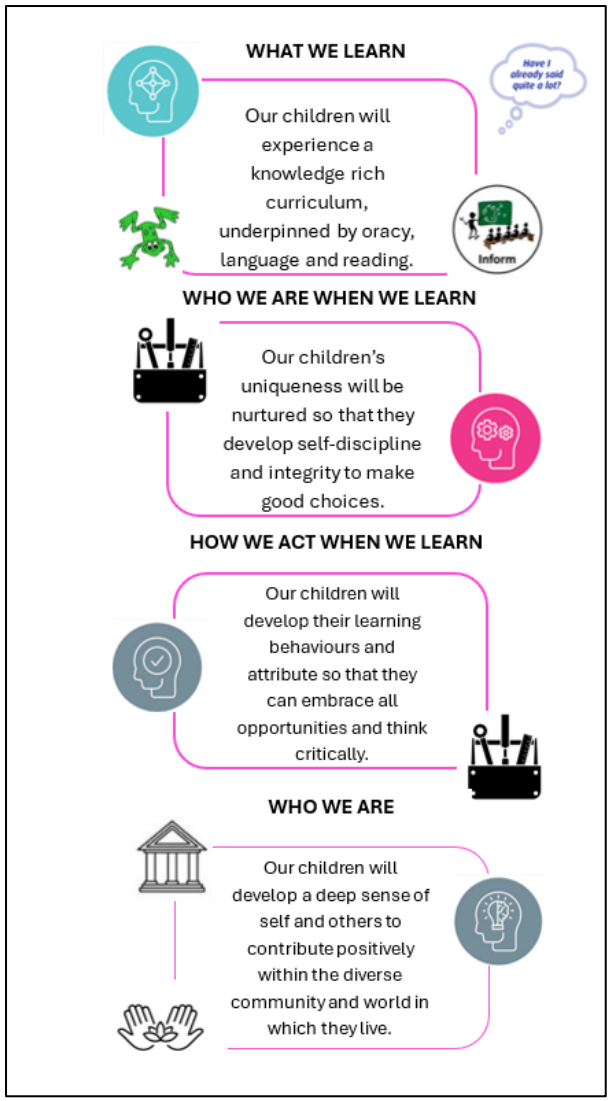
Lifton SCIENCE Overview 2024-2025



Our curriculum has been deliberately designed to be ambitious and meet the needs of our children as well as the National Curriculum expectations. Subjects have been planned to immerse the children within their familiar local context before expanding their knowledge nationally and across the world.

Our curriculum design is rooted in developing our pupils as learners under **4 key principles**:

- Developing learners' learning
- Developing learners' character
- Developing learning behaviour
- Developing learners' moral compass

Curriculum intent for science:

As scientists, our children will experience a sense of awe and wonder of their environment and the natural and physical phenomena of the world they live in. They will understand how scientific advancements and the work of scientists continue to shape human achievement. They will learn scientific enquiry skills that will enable them to predict, investigate and evaluate evidence and draw conclusions. Pupils should be encouraged to recognise the power of rational explanation that enables them to ask and answer questions.

LIFTON
COMMUNITY ACADEMY

Substantive knowledge content

	Autumn 1	Autumn 2	Spring 1 Temporary class restructure R/1/2	Spring 2	Summer 1	Summer 2
EYFS	All About Me Keeping healthy	Traditional Tales Materials	People Who Help us Everyday Materials	Animals Seasonal Changes	Minibeasts and growing Lifecycles Plants: parts of plant and identify and name plants	
Year 1	Seasonal Changes	Animals including humans				
Year 2	Living things and their habitat	Materials				
Year 3/4	States of Matter: solids, liquids and gases; the water cycle	Sound: how sounds are made and how we hear.	Animals inc humans: digestion; teeth; food chains	Electricity: simple circuits	Living things and their habitats: grouping living things	Living things and their habitats: human impact on habitats
Year 5	Forces: gravity and forces between moving surfaces; levers, pulleys and gears.	Earth and Space: solar system; night and day	Properties and changes of materials	Properties and changes of materials	Living things and their habitats: life cycles	Animals including humans: changing and growing
Year 6	Animals including humans: circulatory system and health	Evolution and inheritance	Electricity: complex circuits	Light: how light travels; how we see	Living things and their habitats: classification	Living things and their habitats: classification

Disciplinary/Interdisciplinary Knowledge overview

'Thinking Scientifically.' These skills are mapped throughout the curriculum: identifying and classifying, pattern seeking, research, observing over time and fair and comparative testing. Disciplinary knowledge is taught and embedded within the teaching of each unit of substantive knowledge.

Year Group:	Disciplinary Knowledge:
R	Ask simple questions about the world around them Ask adults within school about things they observe Make observations about things they see around them Give choices when performing simple identifying and classifying Provide some comparison between objects or living things Provide some predictions about living things based on prior knowledge Make suggestions about how things work based on their own observations Make observations to help answer questions Explore the natural world, making observations and drawing pictures of plants and animals. Identify some similarities and differences between the natural world and contrasting environments, drawing on their experiences
1	Ask simple questions and recognise that they can be answered in different ways Observe closely using simple equipment Carry out simple tests to investigate the answer to a given question Use simple identifying and classifying, grouping task using basic observations Use observations and ideas to suggest answers to questions, using simple sentences to describe the answer Collect and record data to help in answering questions, using given tables or data formats
2	Begin to design their own tests to investigate the answer to a given question Carry out simple identifying and classifying, grouping using basic observations Group items using prior knowledge Use observations and ideas to suggest answers to questions, using simple sentences to describe the answer to a question Give some conclusions with simple reasoning Collect and record data to help in answering questions, using given tables or data formats drawing own tables Start to design their own tests to investigate the answer to a given question Ask simple questions and recognise that they can be answered in different ways Research the answers to questions using books, tablets or computers Observe closely, using simple equipment Perform simple tests to investigate the answer to a given question
3	draw conclusions and support with clear evidence, suggest improvements, raise further questions and possible next investigations identify differences, similarities or changes related to simple scientific ideas and processes

	use straightforward scientific evidence to answer questions or to support their findings ask relevant questions and use different types of scientific enquiries to answer them (fair tests, comparative tests, observation over time, research, pattern seeking) select their own methods to find the answer to a scientific question begin to combine research with their own investigations to confirm conclusions set up simple practical enquiries, comparative and fair tests design their own tests & identify and manage variables make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers, rulers, stopwatches, measuring cylinders/jugs and data loggers. begin to make decisions about what equipment is appropriate for investigations identify criteria for classification and use and create simple keys record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
4	ask relevant questions and use different types of scientific enquiries to answer them (fair tests, comparative tests, observation over time, research, pattern seeking) begin to select their own methods to find the answer to a scientific question set up simple practical enquiries, comparative and fair tests begin to design their own tests and manage variables make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment gather record, classify and present data in a variety of ways to help in answering questions begin to use simple keys for classification record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions explain findings from investigations to rest of class use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions draw clear conclusions from findings and make predictions based on this, suggest improvements to the investigation identify differences, similarities or changes related to simple scientific ideas and processes
5	use test results to make predictions to set up further comparative and fair tests make predictions and complete further investigation 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, including explaining trust in results, with reasons identify scientific evidence that has been used to support or refute ideas or arguments, including identifying which evidence they have produced supports or refutes ideas plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (fair tests, comparative tests, observation over time, research, pattern seeking)

	select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate make their own decisions about what observations to make, repeat readings and learn about reliability record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (in line with Year 5 maths curriculum)
6	identify causal relationships in investigations identify scientific evidence that has been used to support or refute ideas or arguments, including identifying which evidence they have produced supports or refutes ideas or arguments begin to research evidence to support or refute ideas/arguments & begin to separate opinion from fact plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (fair tests, comparative tests, observation over time, research, pattern seeking) select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. plan and execute appropriate investigations based on a given or student-led question take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate make their own decisions about what observations to make, repeat readings & learn about reliability, developing an increased level of precision and accuracy record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs (in line with Year 6 maths curriculum learning) use test results to make predictions to set up further comparative and fair tests make predictions and complete further investigation – combine with research 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, including giving an explanation of trust in results, with reasons