



Together Everyone Achieves More

Through....Loving learning, loving each other and loving life itself

AGAPE: The Good Samaritan (Luke 10: 25-37)

North Curry C of E Primary School
Science Intent, Implementation and Impact Statement

Intent – our agreed ways of working

Our intention at North Curry Primary School is that children understand the importance of science not only as a subject taught to support their basic understanding of how things work, but also as a tool for major social and environmental change and improvement. We want our children to understand that scientific principles underpin everything humans understand about the world. Our curriculum promotes spiritual development by enabling them to make better sense of the world around them and the wider universe by making connections between science and everyday life and appreciating the awe and wonder of science e.g. natural phenomena and an openness to the fact that some answers cannot be provided by science.

We believe that at a time when environmental and climate issues are at the fore, children need to understand how science and advancements in scientific understanding can support the development of renewable and carbon neutral initiatives such as wind and solar power, buses powered by biomethane and the development of products with a lower carbon footprint such as electric cars. We also want children to see how science advances and improves the health of our nation and the world population – to understand that scientists work tirelessly to create vaccines for diseases, including the rapid development of a vaccine for COVID 19.

Implementation – everyday delivery

At North Curry we pride ourselves on delivering high quality, weekly science lessons which excite and inspire our pupils. Teaching is of an excellent standard and staff deliver content accurately and with a high level of scientific understanding. We prioritise practical science; carrying out a range of scientific enquiries and investigations throughout the year and building upon previously learnt skills. Children in EYFS and KS1 will learn to independently ask scientific questions, make predictions and conclusions. In lower KS2 they will understand more about making a test fair and how to plan and record a method and evaluation. As they progress through KS2 we will build on these skills but ensure that children can record results in tables and graphs. By year 6 the children will have the tools to plan and carry out a full scientific experiment.

Each year, our children will explore their science learning through six core areas of learning. These are repeated and built upon every academic year.

Animals	Plants	The Human Body	Energy and Forces	Earth and Space	Materials and Matter

In each of these areas of learning, children will explore five key scientific concepts, or 'big ideas'. The big ideas provide cohesion to the curriculum and are returned to again and again, with links made between different areas of learning.

Energy	Structures and Systems	Changes and Cycles	Cause and Effect	Sustainability

Science is delivered in an exciting and multi-faceted way, which means the children love it. We prioritise science trips, whole school science weeks and Fizz Pop Science.

Scope and sequence of working scientifically

Disciplinary knowledge and key concepts						
	Asking questions and proposing theories >>>	Selecting a scientific enquiry >>>	Carrying out enquiries: planning >>>	Carrying out enquiries: using scientific apparatus correctly >>>	Carrying out enquiries: observing and measuring >>>	Using evidence to draw conclusions and ask new questions
EYFS	Explore the world around them and ask questions with adult support.	Informal exploration of the world around them using the concepts of scientific enquiry implicitly.	Discusses with adults how to find answers to their questions.	Use magnifying glasses and simple pocket microscopes to observe closely.	Informal discussion of comparison using non-standard units.	Discuss with peers and adults what they have found out. Children begin to answer 'how do you know?' questions from adults.
Year 1	Begin to ask simple questions about the world around them.	A) Research using secondary sources B) Grouping and classifying C) Observing over time D) Noticing patterns E) Comparative and fair testing	Listen carefully as an adult explains how to find answers using types of scientific enquiry – predominantly grouping and classifying and observing closely.	Use magnifying glasses and simple pocket microscopes to observe closely.	With support from adults, record simple data.	Talk about what they have found out during their enquiries.
Year 2	Ask simple questions related to a concept and discuss relevant thoughts and ideas. Recognise that the answers can be reached in different ways.		With adult support, perform simple tests to answer questions.	Use simple timers, such as egg timers to monitor simple tests.	Record simple data in a range of different ways.	Record and communicate findings in a range of different ways and begin to use simple scientific language.
Year 3	Ask a range of questions with different purposes such as discovering answers over time or making links and identifying patterns. Begin to consider possible answers to proposed questions.		Set up simple practical enquiries – begin to use comparative and fair testing.	Use rulers and simple measuring containers correctly in scientific enquiries. Use a range of data loggers.	Take accurate measurements using standard units for temperature, length and capacity.	Record findings using simple scientific language and labelled diagrams.
Year 4	Ask a range of questions to support and to further their understanding of a scientific enquiry. Propose multiple possible outcomes or responses and use scientific reasoning to consider each possible outcome.		Understand which enquiries will help to answer a specific question from across the range of enquiry types and contribute to class discussions around planning their implementation.	Experiment with electrical circuit apparatus, ensuring correct connections. Begin to use thermometers – digital and analogue.	Take accurate measurements using standard units for temperature, length and capacity.	Use keys, bar charts and tables to present conclusions and explain in oral and written form. Begin to ask new questions which are raised by the outcomes of scientific enquiries.
Year 5	Devise questions, consider and put forward relevant theories and hypotheses.		Select the most appropriate type of scientific enquiry independently and plan its implementation.	Use of filtering apparatus and apparatus to measure weight.	Taking measurements using a range of scientific equipment with increasing accuracy and precision, taking repeat readings where appropriate.	Include conclusions, causal relationships and explanations of and degrees of trust in results, in oral and written forms such as displays and presentations.
Year 6	Devise questions, propose and scrutinise possible theories and identify the type of enquiry most relevant to answer proposed questions. Ask further questions based on results.		Plan an appropriate type of scientific enquiry, recognising and controlling variables where necessary.	Use mirrors, torches, safe laser pens and prisms to observe how light travels. Use heart rate monitors to measure pulse.	Explain how to gather and record data accurately using a range of equipment.	Identifying scientific evidence from their enquiries that can support or refute their ideas or arguments. Raise new enquiries based on the data gathered.

Scope and sequence of progression of study

EYFS – Understanding of the World

In EYFS we ensure that we achieve the objectives set out in *development matters*:

- 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.

- Plant seeds and care for growing plants.
- 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 and talk about different forces they can feel.
- Talk about the differences between materials and changes they notice.
- Understand the effect of changing seasons on the natural world around them.

Impact – How are we making a difference?

Science has a positive and significant impact across our school, fostering a sense of curiosity, wonder and discovery in our children. Through our science curriculum, pupils are encouraged to be inquisitive about the world around them, ask questions and develop the confidence to explore ideas through practical investigation. Science is a popular subject across the school, with pupil voice consistently highlighting how much children value the opportunities to be actively involved in learning, particularly through planning and carrying out their own enquiries.

Our approach provides children with a clear and consistent structure to their science learning. Each unit is underpinned by a knowledge lesson, where children develop and secure the key scientific knowledge and vocabulary they need, followed by an enquiry lesson in which they apply this knowledge practically. This structure enables pupils to understand what is expected of them and supports them in making meaningful connections between scientific concepts and their own experiences. It also ensures that practical work has a clear purpose and is rooted in developing scientific understanding, rather than being an isolated activity.

The impact of this approach can be seen in the confidence with which children engage in scientific enquiries. Pupils are increasingly able to ask relevant questions, make predictions, plan fair tests, identify variables, observe carefully, record results and draw conclusions from evidence. They are encouraged to see mistakes and unexpected results as valuable opportunities to learn, refine their thinking and develop their understanding.

Ultimately, science enables our children to become confident, curious and resilient learners. They are developing the skills to think critically, question evidence and make informed decisions about the world around them. By providing regular opportunities to discover, investigate and explain, our science curriculum inspires children to see themselves as scientists and develops a lifelong curiosity about how and why things work.

Progress and attainment in science are tracked systematically across the school to ensure that teachers have a clear understanding of each child's developing knowledge and skills. At the beginning of each topic, teachers assess pupils' prior knowledge and understanding to identify what children already know and any areas that may require further teaching or development. This provides a clear starting point from which progress can be measured. At the end of each topic, pupils complete an assessment which allows teachers to evaluate their learning and identify the progress they have made. Assessment information is recorded termly on Curriculum Maestro, providing an overview of attainment and progress across the school. The Science Coordinator regularly reviews this data to monitor trends, identify strengths and areas for development, and ensure that pupils are making appropriate progress in their scientific knowledge, understanding and enquiry skills.