



# 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.

<b>Animals</b>	<b>Plants</b>	<b>The Human Body</b>	<b>Energy and Forces</b>	<b>Earth and Space</b>	<b>Materials and Matter</b>

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.

<b>Energy</b>	<b>Structures and Systems</b>	<b>Changes and Cycles</b>	<b>Cause and Effect</b>	<b>Sustainability</b>

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 club.

### Scope and sequence of working scientifically

<b>Disciplinary knowledge and key concepts</b>						
	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.	<b>A) Research using secondary sources</b>  <b>B) Grouping and classifying</b>  <b>C) Observing over time</b>  <b>D) Noticing patterns</b>  <b>E) Comparative and fair testing</b>	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?

Progress and attainment is measured in a variety of ways at North Curry School but, primarily, it is measured by talking to the children about what they know and what they would like to find out. This informs the planning and delivery of our science curriculum.

At the beginning of a topic, teachers will find out what the children already know by asking targeted questions and introducing subject specific vocabulary. Key scientists and potential careers are also introduced to the children.

At the end of each academic term, teachers complete attainment trackers showing what has been covered in their classes and which children have exceeded, met or not met the age related expectations. This is a useful tool in supporting teachers to plan for how to support those children to catch up and attain better in subsequent subjects.

When questioned during an internal review, children repeatedly sighted science as their favourite subject. This shows the impact the subject has on the children at our school.