



What Science looks like at Church Drive Primary School

Curriculum Intent

What Science looks like in our school:

- A variety of activities which take place inside and outside of the classroom to engage children about the world around them
- Investigations/practical explorations with the children being able to plan, record, carry out and conclude their learning
- Opportunities to work individually, in pairs or groups
- A range of scientific resources to enable the children to carry out engaging experiments
- Subject specific vocabulary which is focused upon within each topic and embedded within each lesson
- Different aspect of Science are focused upon such as Biology, Chemistry or Physics
- Using a range of media where possible to help the children to learn about a modern world

This is our philosophy:

- S. self-assessment
- C. cross-curricular
- I. interesting and relevant
- E. exploring using all the senses
- N. new, fresh ideas which 'hook' the children into the learning
- C. child initiated
- E. enquiry led

This is the knowledge and understanding gained at each stage:

By the end of EYFS pupils will:

- Know about similarities and differences in relation to objects, materials and living things.
- Make observations of animals and plants and explain why some things occur, and talk about changes.

By the end of Key Stage 1 pupils will:

- Experience and observe phenomena, looking more closely at the natural and humanly constructed world around them
- Be encouraged to be curious and ask questions about what they notice.
- Be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information
- Begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.
- Carry out first-hand practical experiences
- Use appropriate secondary sources, such as books, photographs and videos to support their learning
- Read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1

When Working Scientifically Lower Key Stage 2 pupils will:

- Ask simple questions and recognising that they can be answered in different ways
- Observe closely, using simple equipment
- Perform simple tests
- Identify and classify
- Use their observations and ideas to suggest answers to questions
- Gather and record data to help in answering questions

By the end of Lower Key Stage 2 pupils will:

- Enable pupils to broaden their scientific view of the world around them.
- Explore, talk about, test and develop ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions
- Ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information
- Draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

- Work scientifically
- Read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge

When Working Scientifically Lower Key Stage 2 pupils will:

- Ask relevant questions and use different types of scientific enquiries to answer them
- Set up simple practical enquiries, comparative and fair tests.
- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, use a range of equipment, include thermometers and data loggers
- Gather, record, classify and present data in a variety of ways to help in answering questions
- Record findings use simple scientific language, draw, label diagrams, keys, bar charts, and tables
- Report on findings from enquiries; include oral and written explanations, displays or presentations of results and conclusions.
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- Identify differences, similarities or changes related to simple scientific ideas and processes
- Use straightforward scientific evidence to answer questions or to support their findings

By the end of Upper Key Stage 2 pupils will:

- Enable pupils to develop a deeper understanding of a wide range of scientific ideas
- Explore and talk about their ideas; ask their own questions about scientific phenomena; and analyse functions, relationships and interactions more systematically
- Encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates
- Recognise that scientific ideas change and develop over time.
- Select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying

	<p>When Working Scientifically Upper Key Stage 2 pupils will:</p> <ul style="list-style-type: none"> • Plan different types of scientific enquiries to answer questions, include recognise and control variables where necessary • Take measurements, use a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • Use test results to make predictions to set up further comparative and fair tests • Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations • Identify scientific evidence that has been used to support or refute ideas or arguments
<p>Curriculum Implementation</p>	<p>This is how it works:</p> <ul style="list-style-type: none"> • Knowledge and understanding taught in blocks of work with a new topic each half term, following the Developing Experts units. • Science taught discretely every week. • Where possible links made with other subjects to enrich learning through our creative curriculum • Regular opportunities for children to develop their investigative skills focusing on different aspects of enquiry • Incorporate the use of technology where appropriate • Regular practical lessons • Teachers use TAs to help support children when needed • Teaching of scientific vocabulary during the topic, with vocabulary revisited during retrieval tasks in each lesson • Provide a range of engaging resources to enable the children to carry out fun and exciting experiments to deepen their learning and develop their understanding of the concept that is being taught • Opportunities for paired, group and class discussion/debate to consolidate learning • Use of STEM ambassadors, visitors, parents and online resources to raise the children’s Science Capital where possible. <p>This is what Adults do:</p> <ul style="list-style-type: none"> • Teachers plan and deliver a series of lessons which build on areas previously taught in other year groups that show progression, following the Developing Experts units of work. • Teachers will ensure lessons meet the needs of all learners by scaffolding and extending as appropriate • At all ages, teachers will engage the pupils through the use of engaging resources and use of media to carry out practical sessions • Subject lead will conduct book looks, pupil voice and lesson observations • All adults will support, encourage, foster and nurture a love of Science • Adults with research innovative, engaging practice and new techniques

	<p>This is how we support and ensure access for all children:</p> <ul style="list-style-type: none"> • Support in learning the vocabulary for EAL and SEN pupils in order for them to join in with discussion • Work will incorporate support and scaffolding so that all children can meet the Learning Objectives for each lesson • Teachers to identify which children will need support during different lessons • Experiment resources to be checked to ensure they are safe and can be used with the children • Children who have SEN or EAL needs are supported with key vocabulary • Seating children alongside good role models to support one another • By providing visual/practical prompts • Teaching lessons using a range of different techniques e.g. videos, drama, artefacts, texts etc. <p>This is how we challenge:</p> <ul style="list-style-type: none"> • Work extended to give certain children a further challenge • Questions can be asked to children to further their individual knowledge and work on the extra information they may know • Children to be allowed to use initiative during team activities and experiments
<p>Curriculum Impact</p>	<p>This is what you might typically see:</p> <ul style="list-style-type: none"> • Engaged learners • Practical/hands on investigations where possible • Open and closed questioning for retrieval activities • Children posing their own questions and hypothesis for investigation • Paired/group work • Varied activities • Children discussing, reflecting and sharing their learning <p>This is how we know how well our pupils are doing:</p> <ul style="list-style-type: none"> • Lessons planned based on work done in previous year groups to ensure children are progressing and building on prior knowledge • Formative assessment through effective questioning during lessons and retrieval tasks • Observations of children during investigation and exploration • Photographic/video evidence • Assessment tracked at the end of each block of work through a double page spread in KS2



This is the impact of teaching:

- Confident children who can talk about their science lessons and discoveries they've made
- Children are able to use and explain the meaning of scientific vocabulary
- Children who can confidently explain what they have learnt
- Children who are prepared to take risks
- Children who enjoy science lessons