Science at Longridge C of E Primary School

Intent:

The important thing is not to stop questioning. Curiosity has its own reason for existing.

- Albert Einstein

The greatest discoveries in science were made through asking questions. Why is the sky blue? How high is up? What is it that causes an apple to fall from a tree? Children are naturally inquisitive and at Longridge C of E Primary School, we aim to nurture children's curiosity. We guide them in the development of their scientific knowledge and conceptual understanding across biology, chemistry and physics. We help develop their understanding of the nature, processes and methods of science through guiding them in different types of science enquires that will help them answer scientific questions about the world around them and enable them to discover the answers for themselves. We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this and ensure that throughout the key stages, children are confident and competent in carrying out investigations.

We live in a world where STEM is the future and so it is vital that our children are prepared for life beyond primary school. At Longridge C of E Primary School we aim to ensure that all children are equipped with the scientific skills required to understand the uses and implications of science, today and for the future.

Implementation: What Science looks like at Longridge C of E Primary School

At Longridge C of E Primary School, teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. To ensure high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the school in both knowledge and skills in working scientifically. Planning for science is a process in which all teachers ensure that the school gives full coverage of The 2014 National Curriculum programmes of study for Science and Understanding of the World in the Early Years Foundation Stage. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge.

- In order to do this, teachers find out what the children know at the start of each topic, which allows them to plan their lessons effectively taking into account any missed learning or misconceptions. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up. Tasks are selected and designed to provide appropriate challenge to all learners, in line with the school's commitment to inclusion.
- We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become Increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are embedded into lessons to ensure that skills are systematically developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.
- Children are offered a wide range of activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.
- At the end of each topic, key knowledge is reviewed by the children and rigorously checked by the teacher and consolidated as necessary.
- We include the use of technology such as iPads, computers and data loggers, wherever appropriate, to aid teaching and learning in science.

What 'Working Scientifically' looks like at Longridge C of E Primary School:

At Longridge C of E Primary School, we ensure that through our strands we:

- Ask questions and recognise that they can be answered in different ways
- Make observations and take measurements
- Engage in practical enquiry to answer questions
- Record and present evidence
- Answer questions and conclude our findings
- Evaluate and raise further questions and predictions
- Communicate our findings.

In the EYFS, the characteristics of effective learning from the Statutory Framework for the Early Years Foundation Stage are the foundations on which the working scientifically skills build in Key Stage 1. While children are playing and exploring, teachers model, encourage and support them to do the following:

- show curiosity and ask questions
- make observations using their senses and simple equipment
- make direct comparisons
- use equipment to measure
- record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets
- use their observations to help them to answer their questions
- talk about what they are doing and have found out
- identify, sort and group.

Impact: How Science impacts our pupils at Longridge C of E Primary School

The successful approach to science at Longridge C of E Primary School results in a fun, engaging, high-quality science education, that provides children with the foundations for understanding the world. Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them. Through various workshops, trips and interactions with experts, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children learn the possibilities for careers in science as a result of learning from and working with professions, ensuring access to positive role models from the local community. Pupil voice is used to further develop the Science curriculum, through questioning of pupil's views and attitudes to Science to support the children's enjoyment of science and to motivate learners. Children at Longridge C of E Primary School find science challenging and interesting, resulting in engaged and motivated learners with a sound scientific understanding.

What pupils say about Science at Longridge C of E Primary School:

" I like Science because it is interesting and makes you want to find out more" - Lyra

" Science is sometimes challenging but extremely interesting " - Isabella

"I like Science because the teachers make lessons fun" - Lucy G

"Teachers always explain it so that you can understand it" - Leila

" It can be hard but its fun and interesting" - Elicia

"It's like a mystery where you explore new things" - Layton

" I like Science because you get to investigate new things and use special equipment and find out what happens" Alexia

" What I love about science are all the interesting facts and cool experiments!" - Evie

" I liked going to Liverpool to see the Space floor and seeing Tim Peake on the screen doing experiments on the ISS. It made what I researched at home more real." - Josh

Opportunities to celebrate Science at Longridge C of E Primary School:

- Visit from the Dentist in Year 3
- Trips to Longridge High School in Year 5
- Safety Town in Y6
- Trip to Liverpool Museum to the Space exhibit In Year 5
- Trip to MOSI in Year 4
- Tomato STEM Challenge in Year 4
- Hedgehog visit in Year R
- Vets visit in Year R
- Seasonal Walks in Year 1
- Trip to Wild Boar Park and Brockholes in Year 1
- The opportunity to observe metamorphosis of caterpillars and tadpoles (YR,1&5)
- Planting various plants and observing them over time (Year R, Year 2 and Year 5)
- Mad Science Assembly and offer of Science Club in school open to all ages
- Science Festival at UCLAN in Year 5