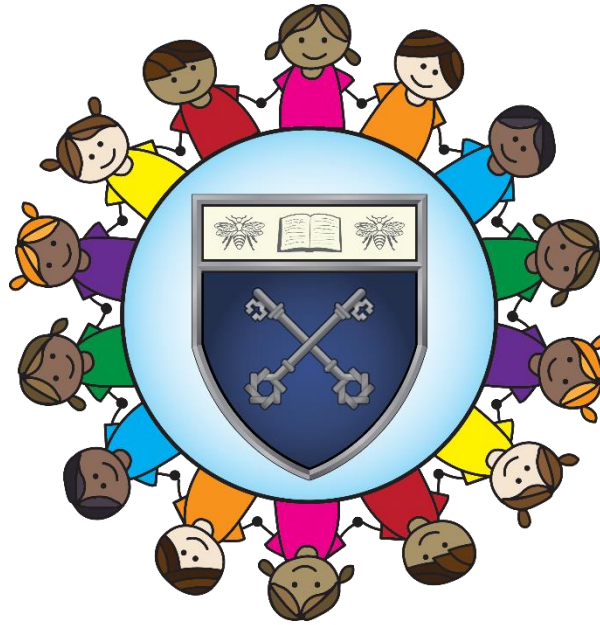


Science Curriculum



Intent, Implementation
and Impact

Purpose

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, our pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

The national curriculum for science aims to ensure that all pupils:

- ♣ develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- ♣ develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- ♣ are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Intent

At Longshaw Junior School, we recognise the importance of Science in that it is fundamental to everyday life and developing understanding in this area is vital for the future of the UK and the world. We aim to develop pupils' interest and enjoyment of science to broaden children's interests and successes within STEM, to value the impact of it, and to know and understand how it is linked to our everyday lives.

Our curriculum has been developed, using the PLAN and TAPS resources, to provide practical and engaging high-quality teaching, ensuring coverage of the knowledge prescribed within the National Curriculum and carefully planned progression of enquiry skills. This method of teaching also supports learning access for all pupils, including SEND, as well as offering challenges and greater thinking opportunities, for more able children. Through this, we are able to equip children with the essential characteristics to help them become scientists:

- To develop scientific knowledge using first hand and concrete experiences, wherever possible.

- To develop their conceptual understanding of science disciplines (biology, chemistry and physics), using different types of scientific enquiries.
- To create and answer scientific questions about the world around them.
- To broaden their understanding and use of scientific vocabulary.
- To develop their understanding of the nature, processes and methods of science for each year group.
- To develop critical and creative thinking skills.

Through the high quality planning, resourcing and delivery of Science, pupils will develop in their substantive knowledge (what facts the children should know) and their disciplinary knowledge (how the substantive knowledge has come about).

Essentially, the intent of our Science curriculum is to prepare pupils for success in later life. The ambition for what pupils will learn in Science is high for all learners – especially the most disadvantaged and those pupils with SEND.

Implementation

At Longshaw, we have high expectations of teaching and learning in science and have implemented a curriculum which is progressive throughout school. We use the 'PLAN' scheme of work which is organised into year groups and topics and has been designed around the statutory requirements for primary science and gives full coverage of the national curriculum. This ensures that substantive knowledge (what facts the children should know) and the disciplinary knowledge (how the substantive knowledge has come about) is taught. Teachers recognise that both types of knowledge are interlinked and one cannot be understood without the other.

At the start of each topic, teachers take time to find out what the children already understand and plan activities to engage their prior learning. Children have access to a knowledge organiser for each topic which is discussed and referred to regularly. Teachers are clear about the key learning, vocabulary and working scientifically skills that the children need to acquire and activities are selected that will best support the children to become secure in their substantive and disciplinary knowledge and skills.

To ensure the working scientifically skills are covered, we use the TAPS (Primary Science Teaching Trust) Working Scientifically Wheel throughout school which is split in to three sections 'Plan, Do, Review'. This allows teachers to focus on each skill and ensures coverage throughout the academic year. Teachers are also required to carry out a TAPS activity, which will focus on a specific working scientifically skill, during each topic to support children's progression.

We are committed to providing exciting, hands on and practical experiences for all children at Longshaw. In turn, this will help promote independent learning, curiosity and a love for enquiry and knowledge.

Cultural Capital

Our science curriculum is enhanced further with trips, visitors, STEM talks and science days to improve children's learning experiences when possible.

Impact

The impact of the Science curriculum will be monitored and evaluated in specific ways by the Science subject leader/s and SLT, as well as reporting to the governing body.

Examples of how standards and achievements will be monitored are as follows:

- children's work from across the school with an indication of where it meets expectations – for example – pupil's books
- photographs recording displays, artwork, visits and visitors;
- teachers' plans showing evidence of quality, creative and challenging Science;
- records of scrutiny of work and lesson observations / learning walks
- plans and work from enrichment activities
- pupil voice

The purpose of the monitoring and evaluation of impact is to monitor standards and achievements and to ensure that all children are experiencing creative and challenging Science, enabling them to achieve ambitious end goals.