Science

Intent, Implementation, and Impact

Intent

At Tollesbury School, we encourage our children to be life-long learners who are equipped with the skills, knowledge and drive to positively contribute to an ever-evolving world. Our science curriculum is in conjunction with the aims of the National Curriculum, our teaching ensures that it:

- Aims to develop scientific knowledge and conceptual understanding (biology, physics and chemistry) to help them understand the world around them now and in the future.
- Ask and answer questions about the world around them through scientific enquiry
- Be enthusiastic and develop a naturally curious child who has a thirst for knowledge/ enquiry and problem-solving
- All children achieve more through successful differentiation within lessons to support and challenge individuals
- Enhance pupil's cultural capital through making links to everyday life where possible
- Explore possible answers independently and communicate their ideas effectively using specialist vocabulary
- Deepen their understanding further through an ambitious curriculum that has clear structure and sequence in how knowledge and skills build for future learning.

Implementation

At Tollesbury School, teachers create positive attitude to science learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following:

- Science is taught throughout the year each week, at least 6- part lessons structure which enables pupils to deepen knowledge and understanding.
- Teachers refer to the skills progression document for their current topic to ensure teaching is progressive throughout school.
- Children are given opportunities to reflect and build on prior/previous knowledge and link ideas together through continuous revisiting of knowledge and skills.

- Through our clear planning, we involve opportunities scientific enquiry most lessons allowing pupils to find out for themselves – they become more independent learners.
- Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning, forest school sessions, local visits and workshops with experts.
- Planning involves teachers creating engaging lessons, modeling new vocabulary, involving high-quality resources to aid understanding of conceptual knowledge at all levels.
- Teachers demonstrate how to use scientific equipment and model Working Scientifically skills in order to embed scientific understanding.
- Teachers use precise questioning in class to test and challenge conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning, so that all children keep up
- Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching
- Enrichment days offer additional science knowledge and understanding and make a link between science and the real world. These give a sense of empowerment to all children and allow them to feel they can achieve these professions.
- High-quality AFL used in all lessons to support and challenge pupil's vocabulary, knowledge and understanding

Impact

Tollesbury School aims for a fun, engaging and high-quality science education which enables most children to achieve age-related expectations at the end of their cohort year. This allows children to retain knowledge that is pertinent to science in a real-life context.

Our engagement with the local environment within and external to the school ensures that children learn through varied and first-hand experiences.

Here at Tollesbury School, we measure the impact through the following methods:

- observing children speaking and listening in science
- marking of written work
- triangulated monitoring (books, data, pupil's voice) throughout the year
- use of Primary Stem Quick Quizzes to assess children's understanding
- staff meetings allow a dialogue between teachers to measure the progress between year groups and highlight areas for development.
- annual reporting of standards to parents
- climate walks
- subject tracking