Science

'The important thing is to never stop questioning'
Albert Einstein

Intent

Science learning is the perfect space for children to develop such essential learning attributes as enquiry, curiosity, hypothesising and testing. Our science teaching supports children to help them understand the world around us, how it works and our place within it. Science is all around us, our learning in this curriculum area enables us to practice creative thinking and to respect the scientists that have helped humans grow and understanding of the world. We develop children's' scientific knowledge and conceptual understanding through the disciplines of biology, chemistry and physics. All lessons have both an investigative skills and knowledge focus. Investigative skills are built on and deepened throughout our children's time in our school so that they can:

Observe, ask questions, conduct a fair test, understand the importance of variables, record, measure, conclude and explain, report and present, identify differences, similarities and changes and begin to see causal relationships and hypothesise (KS2)

We aim to develop enthusiastic scientists with a sense of awe and wonder in the world around them, a respect for that world and an understanding of how science not only helps us to understand the world but helps to contribute to its progress and protection.

Implementation

Science is taught as part of our Blocked Curriculum *(Science, History, Geography, Art and Design Technology)*. Each year group will have four blocks of science learning (3 weeks per block) each year. Using our mapped overview plans, teachers plan a sequence of lessons across the block clearly setting out what is to be learnt and how each lesson builds on the one before it. Because we teach in mixed classes we operate a Year A/B plan to ensure that curriculum content is not repeated. Teachers are skilled at matching the learning to the children in their care. Using carefully written knowledge and skills maps (*Chris Quigley milestones*) we can plan to meet the needs of each year group albeit that their learning is organised under the same theme.

Knowledge Organisers, written to accompany the block of learning, are shared with parents and children at the start of a unit of teaching.

Employing strategies that are low stakes and low threat, such the use of quizzes and mini tests, teachers seek to ensure that knowledge is retained, returning also to previous knowledge to help children commit what they have learnt to long term memory.
Science teaching will include wherever relevant the setting up and conducting of scientific tests and experiments

Our blocked curriculum overview document sets out the blocks of learning across each year and across the school. This document shows, where relevant, how Science blocks may at times complement the learning in other areas. At other times Science sits as a discreet subject for its own sake. In addition to this we have written a Subject Journey which shows clearly how Science themes are returned to and built on across Key Stages 1 and 2. Our knowledge and concepts map sets out the explicit content of each block of Science learning, enabling staff to clearly see what came before and what comes next, building on previous learning, revisiting and deepening concepts and knowledge alongside developing fluency in the use of investigative skills.

Science

Impact

Children enjoy their learning in Science and across the curriculum. Through an engaging hands-on approach, including opportunities to apply Science learning in the real world and regular opportunities to design and conduct experiments our children become enthusiastic, motivated Scientists who achieve well.

Our work with our Secondary counterparts and the wider Trust ensures that children have strong foundations to make a successful transition to Key Stage 3

Children know the important role that scientists have in the real world, how scientific developments shape and improve our lives and the scientists throughout history that have had significant impact on the lives we live today.

As part of a Multi Academy Trust we have worked on ensuring that there are good links with our Secondary colleagues and carried out cross phase meetings to share curriculum and expertise. The outcome of these cross-phase meetings as been to establish over-riding curriculum intent for all our children ages 3-18.

Excalibur Curriculum Intent for Science

To build a continuum of learning from EYFS to A-Level. Through an aspirational, inclusive curriculum, our pupils will learn to become innovative, curious scientists. They will be challenged to think about the implications of science today and in the future, as responsible, global citizens.