

Turton & Edgworth



C.E.M.P.S.

Science Intent, Implementation & Impact Policy

Compiled by:	Science Lead - Robyn Valentine
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Turton Edgworth CE/Methodist Primary School

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Always, 'Doing all we can' and celebrating 'Life in all its fullness'.

"You will have life and life in all its fullness" (John 10:10)

'Do all you can' (John Wesley)

Intent

The national curriculum for science aims 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.

At Turton and Edgworth Primary, we want to foster a love for science in our children through stimulating natural curiosity and by bringing learning to life in the classroom. Our mission statement, which we hold at the heart of our school and curriculum is 'We celebrate all successes in our happy, inclusive and aspirational school' and we strive to empower our children with the skills and knowledge through their science learning to achieve their highest potential in all areas of the science curriculum.

The science curriculum teaches an understanding of natural phenomena and encourages our children to use their incredible, inquisitive minds to find out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought and allows our children to learn through asking scientific questions so they begin to appreciate the way science will affect their future on a personal, national and global level.

Our children will acquire and develop the key knowledge that has been identified within each science unit across each year group, building on previous knowledge, alongside their understanding of the application of scientific skills. We ensure that the children's Working Scientifically skills are built upon and developed throughout their school journey so that they can apply their knowledge of science when using equipment, conducting experiments independently and explaining concepts confidently. We see our children's science learning as a journey and it is pivotal that our children continue to ask questions and be curious about their surroundings.

The aims of science in our school are to enable children to:

- ask and answer scientific questions;
- plan and carry out scientific investigations, using equipment, including computers, correctly;
- know and understand the life processes of living things;
- know and understand the physical processes of materials, electricity, light, sound and natural forces;
- know about the nature of the solar system, including the earth;
- evaluate evidence and present their conclusions clearly and accurately.

Implementation

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We wanted to know what our children desired from their science learning so we asked our school science ambassadors what made science so special in their eyes:

'We want our learning to be hands on. We love scientific experiments and learning through seeing things happen with our own eyes. We want to science learning to be fun and interactive.'

From our subject ambassadors' views along with pupil voice from across our school, we understood the importance of engaging our children in a wealth of scientific learning, real life learning and working scientifically in the classroom and outside. We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity, individually, paired or in groups. We encourage our children to ask, as well as answer, scientific questions and to always endeavour to build their curious minds through real life experiences. They have the opportunity to use a variety of data, such as statistics, graphs, pictures, and photographs and we encourage cross curricular learning with subjects such as maths, design technology and English. We encourage the use of ICT in science lessons to enhance learning, particularly to present the results of their findings using data packages. The children often take part in discussions and debates and are given opportunities to develop their oracy through presenting to the rest of the class. Our children engage in a wide variety of practical problem-solving activities, which aim to develop investigative skills in a memorable way. Wherever possible, we involve the pupils in 'real' scientific activities, for example, researching a local environmental problem or carrying out a practical investigation in the school grounds and analysing the results.

We ensure that all our children are supported in reaching their potential in science and it is the expectation that all pupils are capable of achieving high standards across the science curriculum. We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- grouping children by ability in the room and setting different tasks for each ability group;
- providing resources of different complexity, matched to the ability of the child;
- using classroom assistants to support the work of individual children or groups of children.

Science curriculum planning:

Our school curriculum is focused around scientific enquiry which fosters a love of the subject by creating hands on, memorable lessons. Our curriculum encourages learning through questions so that our children learn through their own research and investigations. We also teach our

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children specific enquiry skills which focusses their thinking on the scientific content of a lesson.

Early Years

We teach science in reception classes as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the scale points which underpin the curriculum planning for children within the EYFS. Science makes a significant contribution to children's progress within the strand of knowledge and understanding of the world.

The contribution of science to teaching in other curriculum areas

As part of our learning journey throughout school, we incorporate STEM projects into our termly planning which allows children to develop their science learning alongside technology, mathematics and engineering. The children thrive in this area and develop a much deeper understanding of the ever-changing world we live in.

The inclusive teaching of science

As our mission states, our inclusive curriculum is adapted to meet the needs of all learners. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of all our children and work in science takes into account the targets set in the children's Individual Education Plans (IEPs).

Impact

It is the responsibility of the science co-ordinator to monitor the standards of children's work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The science subject leader gives the Headteacher a block summary report in which evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The science co-ordinator has specially-allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe teaching in the subject. We highly regard the voice of our pupils and understand the importance of listening to their views. The science lead will oversee the 'science ambassadors' speaking to children in both key stages about their science learning and use this as an opportunity to assess our children's retention of their previous learning. As it is important that our children are continuously consolidating their learning, we factor in opportunities to revisit previously taught areas into our curriculum planning. In school, we moderate using external examples of children's learning and use this to support our teacher assessments in all areas of the science curriculum. Teachers also use assessment information from individual lessons to inform future lessons, ensuring children are supported and challenged appropriately, highlighting strengths and achievements as well as any improvements, knowledge and skills that still need to be embedded.

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