Intent, Implementation and Impact in Science

'Working together, learning together, achieving together'

At Mattishall Primary School we value the whole child and balance their academic needs with their social, emotional and personal development. We nurture children to have active, inquisitive and creative minds. We help them by:

- ***providing a high-quality curriculum with a clear pedagogical approach***
- ***developing empathy, confidence and resilience***
- ***recognising what equality, diversity and tolerance means***
- ***equipping them with 'life skills' and behaviours for learning***
- ***encouraging individuality***
- ***having high expectations and celebrating success and achievement***
- ***raising aspirations for the present and future***
- ***providing a stimulating environment***
- ***promoting a positive partnership with our parents/carers***
- ***developing independent global citizens of the future***

Intent

At Mattishall Primary School our intent for Science is to encourage children to be inquisitive throughout their time at the school and beyond. The Science curriculum (supported by Cornerstones) fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. We aim to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of science, today and for the future. We ensure that the Working Scientifically skills are built-on and developed throughout children's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.

Implementation

The sequencing of projects ensures that children have the substantive knowledge and vocabulary to comprehend subsequent projects fully. Each project's place in the year has also been carefully considered. For example, projects that involve growing plants or observing animals are positioned at a suitable time of year to give children the best possible opportunity to make first-hand observations. Within all the science projects, disciplinary knowledge is embedded within substantive content. Teachers use Cornerstones as a framework and various resources to plan the principal focus of science teaching across the key stages is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. As Pupils move through the school, they

should broaden their scientific view of the world around them. This should happen through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. The teaching of Science in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically.

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. 'Working scientifically' is embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.

Staff will model and explicitly explain the subject-specific vocabulary, knowledge and skills relevant to the learning to allow them to integrate new knowledge into larger concepts. "Vocabulary Victories", relate to their vocabulary mats, where children highlight words they already understand in "Baseline Blue". Upon meeting new words, they will highlight them in "Yay, I've met it Yellow!" ensuring all children can celebrate success in all lessons.

The objectives of the curriculum are met through blocked projects that follow a series of stages which teachers build and sequence into lessons, taking into account the needs of the children:
Introductory knowledge- children take part in an introductory session to build a picture of scientific content they will be learning about.
Engage - children immerse themselves in their theme gaining knowledge, vocabulary and understanding.
Develop - children build upon this knowledge to gain a deeper understanding and use their skills in a meaningful way to gain a better understanding of scientific topics.
Express - children reflect on their initial thoughts after research to formulate a well-thought-out opinion based on scientific evidence.

Impact

We have different ways of measuring the success of learning across the curriculum. This allows children to celebrate their successes as well as knowing what they need to do to progress. These may include:

Statutory assessment (Maths, English)
Adult observation including staff, parent/carers and governors
Self-Assessment (Traffic light)
Attainment Tracker
Recorded Tasks (Children's work)
Verbal Feedback
End of unit quizzes
Vocab Victories
Video /photo evidence
Performance
Talking Partners
Peer feedback
Pupil Progress Tracking meetings
Pupil Passport (SEND)