Science

Purpose of study

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, 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

Our thoughtfully crafted curriculum is built upon a progression of knowledge, skills and understanding from Class 1 to Class 5 – it is planned to be sequential over time. Our school's curriculum is reviewed, refined, and adapted (by class teachers and subject leaders) to ensure that the curriculum meets the diverse needs of all of our children.

At Eastington, we understand that children are naturally curious, and we encourage this inquisitive nature throughout their time with us and beyond. Science fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Through the programmes of study in the National Curriculum science document children will acquire and develop these skills throughout their Primary years. We ensure that the Working Scientifically skills are built-on and developed throughout their school career so that they can use equipment, conduct experiments, build arguments and explain concepts confidently and continue to ask questions and be curious about their surroundings.

Implementation

Teachers create a 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 will be taught in planned and arranged topics by the class teacher, to have a project-based approach. This is a strategy to enable the achievement of a greater depth of knowledge.
- Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. Planning involves teachers creating engaging lessons, using resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to

test conceptual knowledge and skills and assess children regularly to identify those children with gaps in learning, so that all children keep up.

- We build upon the learning and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating, and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- 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. This is developed through the years, in-keeping with the topics.
- -Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning.

The needs of all children are met through planning and delivery of subject-specific skills. This is carried out in a variety of ways such as: differentiation through outcome or task, adult support, adapted tasks or materials and pre-teaching of skills and vocabulary where necessary. On some occasions, skills, knowledge and understanding may be adapted to make learning accessible for all, whilst at the same time ensuring challenge.

Impact

The successful approach at Eastington results in a fun, engaging, high-quality science education, that provides children with the foundations for understanding the world. Our engagement with the local environment ensures that children learn through varied and first-hand experiences of the world around them. So much of science lends itself to outdoor learning and so we provide children with opportunities to experience this. Through various trips and interactions with visitors and experts, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children at Eastington overwhelmingly enjoy science and this results in motivated learners.

We aim to celebrate children's achievements in this subject in a variety of ways. This could include displays, celebration assemblies, sharing on school website, peer evaluation and whole class discussions. This not only supports pupils' self-esteem and motivation but raises the profile of the subject throughout the school community.