Science at St Michael's

We inspire and challenge our pupils to become independent thinkers, who use their knowledge of Maintaining Curiosity (2013), a report by Ofsted into the teaching of science, highlights 'the importance of teaching science for understanding. For pupils to achieve well in Science to develop their understanding of the constant changing world in which they live. We ensure that our children can learn about how Science impacts upon and underpins much of our lives in today's society, while practical activities should stimulate their curiosity and develop a clear understanding for the future. This is done through engaging Science lessons, practical experiments, visits, talks, and links with our local community. We firmly believe that Science should be a sector that our children aspire to work in and we have designed our curriculum to compliment this.

Intent

Academic We aim for every child to actively participate in science whether this be in a classroom environment or at home. Children should be enthused by our science curriculum and link the work that is done in school with the wider world.

With children coming from a range of backgrounds we aim to make science a career that our children can and will pursue by giving the curriculum real-life context. We believe that children should be at the heart of how a unit of work is delivered and each teacher is given the capability to teach science effectively through our Career Professional Development (CPD) sessions.

Each child will be given the opportunity to predict outcomes and articulate a hypothesis both verbally and in written form. They will be encouraged to share their reasoning and justify their thinking.

Children will not only study the practicalities of modern science but also explore its history and recognise the efforts of the pioneers that helped change the face of the modern world.

Written work will be purposeful and teach the children to value the importance of meticulous planning, conducting methods as well as analysing and evaluating the outcomes and results.

Children will be given the opportunity to link acquired knowledge to their everyday lives. They will have the capability to explain why we have day and night, why poles on magnets attract and repel and give descriptions of the functions of a plant.

Social

The aim is to give children the tools to be confident young scientists. They will be able to use appropriate scientific vocabulary in context and share their ideas with others.

They will develop social skills through teamwork and collaboration and be able to accept different roles within group situations. Experiments and investigations will be sufficiently challenging so as not to produce simple foregone conclusions but rather promote investigative thought.

Pupils will be able to engage with real life scientists through arranged visits to school who can share their experiences and help promote engagement in the subject and potential future careers. STEM provide free visitations to schools and this has proved successful in the past.

Implementation

In the Autumn of 2019 both Mr Anstiss and Mr West took part in a Science subject leadership course provided by STEM. The course provided a detailed insight on how to promote science excellence through targeted leadership.

Upon completion of the course the science subject leaders planned a series of CPD sessions for staff at St Michael's which focused on scientific vocabulary, written work and assessment. Staff found the focus on vocabulary particularly useful as it was noted children were not as aware of a variety of subject specific vocabulary as had been previously thought.

This was followed up with a session focused on developing the quality of written work in books across the school. The previous focus on vocabulary was becoming evident in the children's work and leant itself positively in improving the written outcomes for all pupils. Unfortunately, the third session on assessment was cancelled due to the emerging pandemic at the time.

Another valuable asset gained through the science subject leadership training was a completely free online resource known as 'Explorify'. This resource opened up endless opportunities to promote scientific enquiry and engage pupils in using appropriate vocabulary. This has become intrinsic throughout science lessons in the school as they can be frequently used as 'starter activities'.

In terms of expanding science beyond the school grounds, during the summer of 2019 Mr West developed a professional relationship with a STEM ambassador specialising in engineering. A visit was organised for upper school classes and this resulted in a fantastic real life experience for all of the children involved. The vision is to continue this working relationship moving forward and will provide more positive experiences for the children of St Michael's.

Impact

We use formative assessment to assess the children's knowledge and understanding of Science objectives. Our curriculum means that we are assessing children all the time in lessons and a lot of this is through their verbal responses. Written work is marked by adults and is used, alongside lesson observations, to build up a true assessment of where children are.

Subject leaders regularly carry out book scrutinies to ensure that the curriculum is being delivered to a high standard and year group meeting time is dedicated to discussions around how science is going with that cohort.

Staff have been given a range of CPD to enhance the teaching and assessment of science within the school. These sessions are delivered to all teaching staff to ensure consistency of the training and allow teachers to share ideas and good practice with each other.