Science Intent, Implementation and Impact Statement

Intent

At Kirk Smeaton CE Primary, it is our intention to provide a high-quality science education that provides children with a lifelong curiosity and interest in the sciences. It is our intention to provide children with the foundations they need to recognise the importance of Science in every aspect of daily life. We intend for our children to have the opportunity, wherever possible, to learn through varied systematic investigations, to ask and answer scientific questions about the world around them.

Our curriculum will enable children to become enquiry-based learners who collaborate through researching, investigating and evaluating experiences. As children progress through the year groups, they build on their skills in working scientifically, as well as on their scientific knowledge, as they develop greater independence in planning and carrying out fair and comparative tests to answer a range of scientific questions. Kirk Smeaton children will also be in charge of their own learning journeys, as we provide the children with unit overviews for each topic, which they can use to see where their learning is going and evaluate their own progress.

Teachers will ensure that all our children are exposed to high quality teaching and learning experiences. These will hook the children's interest, enabling them to develop a sense of excitement and curiosity about natural phenomena. They will be encouraged to ask questions about the world around them and work scientifically to further their conceptual understanding and scientific knowledge.

Children will be encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes. It will provide opportunities for the critical evaluation of evidence and rational explanations, as well as opportunities to apply their mathematical knowledge to their understanding of science. Children will be immersed in key scientific vocabulary, which supports in the acquisition of scientific knowledge and understanding.

We also endeavour to use outdoor learning wherever possible in order for our children to work in 'real' situations, using the world around them.

All children will be provided with a broad and balanced science curriculum that provides the opportunity for progression across the full breadth of the science national curriculum for EYFS, KS1 and KS2.

Implementation

Kirk Smeaton CE Primary does not adhere to the use of one specific scheme for our teaching of Science. We believe that an eclectic and autonomous approach which is not overly prescriptive, but instead ensures a wide range of teaching and learning opportunities for our children. We use a variety of resources in order to ensure the full coverage of the National Curriculum and follow the programmes of study for each year group carefully. We are confident that we provide the right balance between working scientifically and the learning of scientific facts.

At Kirk Smeaton, we use the PLAN primary resources in order to ensure progression in knowledge (links between the topics taught in different year groups to ensure that teachers are covering the correct content for their year group). Alongside these, we also use the PLAN progression in working scientifically skills documents to monitor progression of the working scientifically skills throughout our school. We understand and acknowledge that both the conceptual knowledge and the working scientifically skills are inextricably linked and work to ensure that these are taught together and progressively built upon.

Alongside these progression documents, Kirk Smeaton teachers are then encouraged to use a wide range of resources in order to provide an eclectic and varied approach to their teaching. 'Planbee', 'Explorify', 'PZAZ' and 'Natural Curriculum' are interwoven. We use PZAZ videos to aid teacher knowledge and understanding and to build into our curriculum a discovery and enquiry-based approach. We also encourage staff to, wherever possible, link science teaching and learning with other subject areas. We use 'Natural Curriculum' to draw on links between Science, Maths and English and to provide further cross-curricular reading and writing opportunities linked to the context of current scientific topics. The use of texts and secondary sources engages children to create links and make comparisons to their learning in Science. This varied approach to our teaching, we believe, ensures that teachers are equipped with secure scientific subject knowledge, enabling them to deliver high-quality teaching and learning opportunities while making them aware of any possible misconceptions.

Our curriculum is built around the principle of greater learner involvement in their work. It requires deep thinking and encourages learners to work using a question as a starting point, considering different avenues for further research. We do this through exploring, talking about, testing and developing ideas and the relationships between living things and familiar environments, and by beginning to develop children's ideas about functions, relationships and interactions. Children ask questions about when they observe and make some decisions about which type of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying our simple comparative and fair tests and finding things our using secondary sources of information. They draw simple conclusions and use scientific language to talk and write about what they have found out.

Impact

The successful approach to the teaching of science at Kirk Smeaton will result in a fun, engaging, high quality science education, that provides children with the foundations for understanding the world, that they can take with them once they complete their primary education.

Progress at Kirk Smeaton is measured through a child's ability to know more, remember more and explain more. The schemes we use ensure that opportunities are built into lessons for ongoing assessment (end of unit quizzes, discussion and use of pupil voice during regular monitoring sessions). Attainment and progress can be measured across the school using our assessment spreadsheets. These combine the national curriculum conceptual understanding objectives alongside working scientifically skills. The working scientifically skills are constantly reviewed and updated as the different science topics are taught across each year group. The impact of using the range of resources will also be seen across the school with an increase in the profile of science. Children who feel confident in their science knowledge and enquiry skills will be excited about science, show that they are actively curious to learn more and will see the relevance of what they learn in science lessons to real-life situations and also the importance of science in the real world.

Children at Kirk Smeaton will:

- Demonstrate a love of science work and an interest in further study and work in this field;
- Be exposed to and learn about real life Scientists from a rich and diverse range of backgrounds, including male, female, BAME and Scientists who have overcome disability challenges. This ensure we provide a rich cultural capital for the children we teach;
- Retain knowledge that is pertinent to Science with a real-life context;
- Be able to question ideas and reflect on knowledge;
- Be able to articulate their understanding of scientific concepts and be able to reason scientifically using rich language linked to science;
- Participate in Scientific and cross-curricular learning outdoors, wherever possible, including trips and using our immediate locality;
- Demonstrate a high love of mathematical skills through their work, organising, recording and interpreting results;
- Work collaboratively and practically to investigate and experiment;
- Achieve age related expectations in Science at the end of their cohort year.