Subject on a page: Science

At Hurst Green Primary School, we believe that the teaching of Science should give opportunities for children to question and investigate the world around them.

Intent—We aim to...

- Deliver an investigative based curriculum where children are encouraged to ask question and search for answers.
- Provide children with real life scenarios where they are required to use their knowledge of the world around them to solve problems as faced by Scientists.
- Develop an enquiry-based approach to Science by planning the learning around 'The Big Question'
- Support all children in accessing high-quality Science teaching, while challenging diversity stereotypes both in & outside the classroom
- Foster a love of learning where children develop their passion for Science.

Implementation—How do we achieve our aims?

We are very proud of our Science curriculum at Hurst Green. In EYFS, Science is predominantly within their lifetime to develop a growing understanding of sense of self. Our curriculum has impact at its very heart. Every topic includes a strong focus on the skills of Scientific inquiry through an investigative and exploratory approach that makes learning memorable. Children will take away a deep understanding of both Science content and scientific method. We have recently started to follow the Plymouth Science scheme, after a successful trial in two year groups.

Curriculum design

Using the Plymouth scheme, the Science curriculum at Hurst Green is planned inline with the National Curriculum, ensuring time is appropriately attributed to each strand. Meaningful connections are made between topics so that they build into a significant body of knowledge across a wide range of aspects. Clear explanations and teacher demonstrations play a critical part in developing pupils Scientific knowledge and enquiry based learning. Through interactive lessons, children are encouraged to investigate problems, learn how Science works and discover why Science matters in the world. Being able to question and make sense of things are two of the key skills children gain from science lessons which they can hold onto for life.

Knowledge Rich

Science is taught with knowledge at its core. Through carefully planned units, pupils know more and remember more. Science knowledge is important for children to be able to explain what they have learnt from the Scientific process. This process includes questioning, experimenting, collecting data, looking for patterns in results and drawing conclusions.

Enquiry based learning

Enquiry based learning is the driver of every topic based on a Scientific strand. Enquiry questions are given to the children under the term 'The Big Question' and all lessons plan towards answering this in a final piece of work. Linking lessons to the big question ensures that children are working towards a meaningful final outcome, rooted in 'hands-on' investigative skills. Subject leaders work closely with teachers to ensure the quality of the enquiry question and that a range of concepts are met across topics.

Vocabulary

Vocabulary is one of the threads which runs through every curriculum area and is key to academic success. In order to explain a science investigation or describe observations, pupils need to have a bank of scientific words. Vocabulary is carefully planned to feed through from EYFS to Yr6 , ensuring children develop Scientific literacy. Previous years' vocabulary, based on the topic taught, will be revisited alongside introducing and embedding new vocabulary. Children should know the meanings and pronunciation of words and use them in their writing as well as verbal explanations. All classrooms should have a vocabulary display for pupils to use when they are predicting, experimenting, investigating, discussing and evaluating.

Implementation (continued)

Practical work

Practical work is used purposefully inline with curricular goals. Practical work is a vital element of school science as hands-on learning experiences are key to the development of skills and the tying together of practical and theory. Good quality practical work engages pupils with the processes of scientific enquiry and also communicates the awe and wonder of the subject. A wide range of resources are available to enrich practical activities.

Diversity

Diversity is a complex subject that must be addressed and carefully planned for within science teaching. Children need to understand a wide range of individuals & groups must be reflected in the curriculum as to not create stereotypes in their understanding. Work has been done to highlight the achievements in science by people from different backgrounds including a range of ethnicities, ages and genders.

Assessment and Retrieval Practice

Assessment in science falls under three strands. Firstly, teachers use summative assessment as part of their daily practice to gauge understanding. This includes a weekly retrieval practice quiz, which feeds into the inclusivity for all and provides opportunity for misconception identification. In addition, teachers assess understanding of key concepts and investigation techniques used through weekly lessons and the final response to 'the big question'. Finally, teachers & subject leads record judgements based on the NC objectives after each topic.

Trips & Visitors

We always look forward to celebrating British science Week each year and invite visitors from local high schools to provide a 'stunning start'. Several classes take part in online live lessons enabling children to see aspects of science beyond their classroom and link up with other schools as part of a wider learning community. We are fortunate to be located close to BCLM and Think Tank and trips are organised to these places to enrich learning.

Focus days & Events

Focus days and events are being developed within the curriculum as we feel these allow the children to apply their learning to a real life context. STEAM subjects join together for a more holistic and creative approach to learning. Thus 1 or 2 days a term will be allocated to one of these areas to help children develop critical thinking, reasoning and investigative skills whilst encouraging innovation and creativity. For 2023, we are planning a focus week to coincide with British Science Week.

Inclusivity

The content of the curriculum is not reduced for children with SEND, rather the manner in which they access the curriculum and produce work related to it, is amended to suit their needs. Any adaptations concentrate on how the content is taught, rather than changing the content itself. High expectations exist for all pupils at their own level of understanding.

High Quality CPD

CPD ranges from in-house training to curriculum leads attending Teach Meets with other local schools. Curriculum leads keep up to date with current scientific research and learning opportunities, sharing them with all staff.

Impact: How will we know we achieved our aims?

- Pupils are engaged in their learning and share a passion for science.
- Pupils are confident in the use of key vocabulary in a range of contexts & are ambitious in achieving age -related expectations
- Pupils know more and remember more, demonstrating good progress from their starting points
- Pupils have the ability to explain their own Scientific thinking and understand that science is constantly developing and improving thus impacting our daily lives.
- Pupils feel they are all scientists and capable of achieving high aspirations in the field of science. They understand that science has changes our lives and is vital to the world's prosperity.
- Pupils can recognise & appreciate the diversity of Scientists in Britain and around the world.