



Science Intent, Implementation and Impact

“Whatever you do, work at it with all your heart” Colossians 3:23

Science Intent

In science, we will inspire our children by giving them the opportunities to explore and investigate whilst being expertly led. Children will be encouraged to ask questions, take risks, experiment, reflect, make and learn from mistakes, in an organised and safe environment; whereby they learn and apply skills which will equip them for an ever-changing world.

Our curriculum aims to encourage and empower pupils to question the ‘hows’ and ‘whys’ of the world around them. Our scheme encourages:

- A strong focus on developing knowledge alongside scientific skills across Biology, Chemistry and Physics.
- Curiosity and excitement about familiar and unknown observations.
- Challenging misconceptions.
- Continuous progression by building on practical and investigative skills across many units.
- The ability to ask perceptive questions and explain and analyse evidence.
- Development of scientific literacy using wide-ranging, specialist vocabulary.

Our scheme of work enables pupils to meet the end of key stage attainment targets in the national curriculum and the aims also align with those set out in the national curriculum.

Implementation

In order to meet the aims of the National curriculum for Science we have identified the following key strands:

- Scientific knowledge and understanding of:
 - Biology - living organisms and vital processes.
 - Chemistry - matter and its properties.
 - Physics - how the world we live in ‘works’.
- Working scientifically - processes and methods of science to answer questions about the world around us.
- Science in action - uses and implications of science in the past, present and for the future.

At Huby, our science scheme is a spiral curriculum, with essential knowledge and skills revisited with increasing complexity, allowing pupils to revise and build on their previous learning. A range of

engaging recall activities promote frequent pupil reflection on prior learning, ensuring new learning is approached with confidence. The Science in action strand is interwoven throughout the scheme to make the concepts and skills relevant to pupils and inspiring for future application.

Each unit is based upon one of the key science disciplines; Biology, Chemistry and Physics and to show progression throughout the school we have grouped the National curriculum content into six key areas of science: Plants Animals, including humans Living things and habitats Materials Energy Forces, Earth and space.

Pupils explore knowledge and conceptual understanding through engaging activities and an introduction to relevant specialist vocabulary. As suggested in Ofsted's Science research review (April 2021), the 'working scientifically' skills are integrated with conceptual understanding rather than taught discretely. This provides frequent, but relevant, opportunities for developing scientific enquiry skills. The scheme utilises practical activities that aid in the progression of individual skills and also provides opportunities for full investigations.

Lessons incorporate various teaching strategies from independent tasks to paired and group work, including practical, creative, computer-based and collaborative tasks. This variety means that lessons are engaging and appeal to those with different learning styles.

Impact

The impact of our science curriculum is constantly monitored through both formative and summative assessment opportunities. Teachers use unit quizzes to provide a summative assessment. Opportunities for children to communicate using scientific vocabulary will also form part of the assessment process in each unit.

Children leave Huby Primary with the necessary tools to confidently and meaningfully question and explore the world around them as well as critically and analytically experiencing and observing phenomena. Pupils understand the significance and impact of science on society.

The expected impact of our science scheme of work is that children will:

- Develop a body of foundational knowledge for the Biology topics in the National curriculum: Plants; Animals, Including Humans; Living Things and Their Habitats; Evolution and Inheritance.
- Develop a body of foundational knowledge for the Chemistry topics in the National curriculum: Everyday Materials; Uses of Everyday Materials; Properties and Changes of Materials; States of Matter; Rocks.
- Develop a body of foundational knowledge for the Physics topics in the National curriculum: Seasonal Changes; Forces and Magnets; Sound; Light; Electricity; Earth and Space.
- Be able to evaluate and identify the methods that 'real world' scientists use to develop and answer scientific questions.
- Identify and use equipment effectively to accurately gather, measure and record data.
- Be able to display and convey data in a variety of ways, including graphs.
- Analyse data in order to identify, classify, group, and find patterns.
- Use evidence to formulate explanations and conclusions.
- Demonstrate scientific literacy through presenting concepts and communicating ideas using scientific vocabulary.
- Understand the importance of resilience and a growth mindset, particularly in reference to scientific enquiry.
- Meet the end of key stage expectations outlined in the National curriculum for Science.