SCIENCE – INTENT

At Hardwick Primary, it is our intention to provide a high-quality science education that provides children with the foundations they need for understanding the world through a scientific lens in all aspects of daily life. All children will be provided with a broad and balanced science curriculum which reflects the equality and diversity policies and practice at Hardwick Primary School. Science is timetabled weekly.

At Hardwick we follow and adapt the PKC Science programme in units of work that cover the National Curriculum in the specific disciplines of biology, chemistry and physics. Pupils will build a body of key foundational science knowledge as they work through the units, asking questions and developing a sense of curiosity about the world around us. The curriculum will build disciplinary literacy for pupils, enabling them to communicate scientific understanding through diagrams and written explanations in increasing depth and complexity as they progress through the primary phase. The PKC builds knowledge incrementally and pupils have opportunities to secure and build upon their knowledge by revisiting subject content at carefully sequenced points. By building upon their knowledge in a cumulative manner, the curriculum ensures pupils secure greater breadth and depth in their understanding of scientific knowledge, skills and the discipline of science.

The Human Body strand taught in all year groups is a prominent example of how pupils' understanding progresses over time to achieve this. This progression helps children to master the knowledge and concepts whilst simultaneously accruing an extended subject-specific vocabulary that enables them to communicate their knowledge. This incremental approach helps teachers to identify knowledge gaps and to make informed observations about the processes they see. Substantive scientific knowledge is taught first before pupils are asked to undertake enquiry so that they can make informed observations about the processes they see. Gathering information, recording data, graphing data and interpreting findings are all essential skills that pupils can apply to new contexts.

Teachers will ensure that all 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 and use prediction on how things will behave. It will provide opportunities for the evaluation of evidence and explanation of scientific phenomena as well as an opportunity to apply their mathematical knowledge to their understanding of science, including

collecting, presenting, and analysing data. Children will be immersed in key scientific vocabulary, which supports in the acquisition of scientific knowledge and understanding.

SCIENCE - IMPACT

The successful approach to the teaching of science at Hardwick Primary 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.

Assessment is teacher based and formed using formal strategies (e.g. group assessment tasks, quizzes, learning logs) and informal strategies (such as verbal/written outcomes or presentations).

Children will:

- demonstrate a love of science work and an interest in further study and work in this field.
- 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.
- demonstrate mathematical skills through their work, organising, recording and interpreting results.
- work collaboratively, safely, and practically to investigate and experiment.
- achieve age related expectations in science at the end of their cohort year.
- display high quality work within their classroom and/or around school.

SCIENCE – IMPLEMENTATION

At Hardwick Primary staff have regard to the units in the PKC Science curriculum. It is a knowledge-rich, spiralling programme of study and provides full coverage of the National Curriculum, with staff refining programmes of study for each year group carefully to meet the needs of their cohort. Staff ensure that it provides the right balance between working scientifically and learning scientific facts.

The PKC Science curriculum links directly to scientific knowledge, skills and understanding to ensure that learning is progressive and continuous.

Pupils will be encouraged to use the knowledge they learn in science and apply it to investigations that test a theory or set out to answer a question. Importantly, substantive scientific knowledge is taught first before pupils are asked to undertake enquiry. This helps them to fully understand the elements of the enquiry first and to make informed observations about the processes they see. Gathering information through recording data, graphing data, and interpreting findings are skills pupils will apply to new contexts as they work through the curriculum. They draw simple conclusions and use scientific language to talk and write about what they have found out.

Children are asked to review their learning at the end of each topic through mini assessments providing immediate feedback, through a reflection task or report writing.

The use of knowledge organisers for each unit allows pupils to share their learning with a wider audience, including parents. The importance of vocabulary is stressed in each lesson and is identified for each of the units to provide progressive acquisition of knowledge. Teachers regularly refer to this knowledge and key vocabulary with meanings so that the children remember this. This enables children to readily apply knowledge and vocabulary to their written, mathematical, and verbal communication of skills.