Learning &
Caring Together

Science

It is our responsibility to ensure that our science curriculum not only meets the statutory requirements of the National Curriculum but also inspires and nurtures a lifelong curiosity in our students. To achieve this, we have adopted the White Rose Science Scheme of Learning, which is integral to delivering high-quality science education across our school.

The National Curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Children at Masham C of E (VA) School are on a scientific adventure to explore and understand the world around them. As they journey through the Science Curriculum, our children make significant and educated decisions, impacting their health, planet and environment.
Awe and wonder are the gateway into all Science lessons: we nurture our children's passion and innate curiosity as they question 'how do spiders walk on the ceiling?' or 'how far away is Mars?' The children's wonder for the world provides them with a foundation for discovery. Children partake in purposeful investigations, working scientifically to determine, for example, 'which material will make the best umbrella for Mr Boyle?' Lessons are 'hands on and minds on' and the 5 scientific enquiry types are placed at the heart of our children's learning.

Our Intent

At Masham C of E (VA) School, it is our endeavour to provide a high-quality, engaging science education that provides children with the foundations they need to recognise the importance of science in every aspect of daily life. It is our intention to ensure that by the end of their primary education, all pupils appreciate how science has changed the lives of human beings and know that it is vital to the world's future prosperity. Therefore, all pupils will be taught essential aspects of the knowledge, methods, processes and uses of science.
All children will be provided with a broad and balanced science curriculum, which builds on prior learning and reflects the equality and diversity policies and practice in school.

Our intent is that, through the teaching of science pupils will:

- understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes
- become enquiry-based learners, collaborating through researching, investigating and evaluating experiences.
- be immersed in key scientific vocabulary, which supports in the acquisition of scientific knowledge and understanding

- recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena.
- explore the key work of scientists who have changed the world forever, while ideas such as 'Scale of the World' give children the opportunity to experience awe and wonder at what the physical world has to offer

Our Implementation

At Masham C of E (VA) School, science is taught weekly using the White Rose Science scheme. Children will be able to build on prior knowledge and link ideas together.

Science Curriculum

Our science curriculum offers:

- An environment that encourages pupils to pose their own questions and suggest their own way of investigating their hypotheses to develop their ideas and independence,
- Key vocabulary and scientific pedagogical methods are used in order to challenge pupils and broaden their understanding.
- Reflective learning and questioning opportunities for all pupils building on their prior knowledge and providing cross-curricular links.
- Nurturing and applying pupils' science learning to real-life experiences, making science meaningful and building the 'Science Cultural Capital'.
- Hands-on, practical experiences of working in a range of scientific methods to explore, inspire and foster pupils' natural curiosity.
- A creative, inclusive and stimulating science curriculum, enabling pupils to secure and extend their scientific knowledge and vocabulary. Making learning fun!
- Memorable, exciting and collaborative learning experiences that carry on beyond the classroom.

The following types of scientific enquiries are woven throughout our curriculum: Problem Solving, Pattern Seeking, Comparative/Fair Testing, Research, Observation Over Time and Identifying, Grouping and Classifying to ensure that children are gaining a full breadth of opportunities to engage in learning as scientists

All aspects of 'Working Scientifically' from the National Curriculum are interwoven throughout our curriculum, again, to ensure that children understand what it means to be a successful scientist.

Impact

The successful approach to the teaching of science at Masham C of E (VA) School 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 at Masham C of E (VA) School is teacher based and formed using formal strategies (e.g. periodic year group assessment tasks, quizzes) and informal strategies (Use of concept maps, verbal/written outcomes, reflection tasks/presentations).

Formative assessment is used as the main tool for assessing the impact of Science at Masham C of E (VA) School as it allows for misconceptions and gaps to be addressed more immediately rather than building on insecure scientific foundations.

Children at Masham C of E (VA) School 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 a high love of mathematical skills through their work, organising, recording and interpreting results.
- Work collaboratively and practically to investigate and experiment.

Impact *of* learning will be assessed though: Interviews, deep dives, assessing whether or not children can answer questions about BIG IDEAS and make links to prior learning etc.

Assessment.

Effective assessment is key to ensuring that our students are making progress and achieving the learning objectives set out in our curriculum Our learners are assessed regularly and closely tracked through the following:

- Formative Assessment: We use ongoing formative assessments to gauge students' understanding during lessons. This includes questioning, class discussions, and observations, which help teachers tailor their instruction to meet the needs of each student.
- Summative Assessment: At the end of each topic, students are assessed through quizzes, tests, or projects that measure their grasp of the material. These assessments are designed to align with the objectives of the White Rose Science Scheme, providing a clear picture of each student's progress.
- Practical Skills Assessment: We place a strong emphasis on assessing students' practical skills. This includes their ability to plan and conduct experiments, analyse data, and draw conclusions. Practical assessments are integral to our understanding of how well students are applying their scientific knowledge.
- Self and Peer Assessment: We encourage students to take ownership of their learning through self and peer assessments. This reflective practice helps students develop a deeper understanding of their strengths and areas for improvement.

Through these comprehensive assessment strategies, we ensure that all students are progressing towards their full potential in science, and that we are providing the necessary support and challenge to help them succeed. Assessment informs future planning sequences and feed into out .

Interventions
Teachers should use assessment to ascertain which children require additional intervention. Children working below Age-Related Expectations should be accessing additional reading support. All interventions are tracked and evaluated through Edukey.