

Our Vision Statement

“Working together to nurture, raise aspirations and promote life in its fullness. Through our Christian ethos we seek to develop happy, enquiring minds, a spirit of curiosity, respect, and resilience. We value every member of our school community for who they are and through challenge, support and building positive relationships, we pursue excellence in all we do.

‘Ask and it shall be given, seek and you will find, knock and the door will be opened.’
Matthew 7.7”

Science Statement of Intent

We aim to equip pupils with knowledge, skills and understanding as set out in the National Curriculum Science Programmes of Study (POS). Children will know more and remember more due to the slow release method of teaching working scientifically. We have looked at knowledge mapping across year groups so that our pupils can understand the uses and implications of science, in the past, present and for the future. This core knowledge is sequenced so by the end of Y6 our children will be well equipped to ask in depth scientific questions and be inquisitive about the world around them. We use progression grids for the acquisition of scientific knowledge and skills to ensure that prior knowledge, skills and vocabulary are built upon in subsequent year groups. This also allows teachers to recognise what knowledge and skills have been learnt before and what will be learnt after in any given POS.

We recognise the importance of Science in every aspect of daily life; using STEM ambassadors/visitors, educational visits and field work to bring science to life where possible.

We aim to create confident, articulate children with the ability to question and challenge views, discuss, explain, express opinions and reflect. Children will confidently develop and use scientific vocabulary and develop the essential scientific enquiry skills to deepen their scientific knowledge and understanding.

Our science curriculum is designed to motivate, engage, inspire, excite and incite curiosity and provide awe and wonder developing an enthusiasm and enjoyment of scientific learning and discovery. For example: school wildlife area, science week, planetarium visit, experts invited into school, drug and alcohol abuse workshop etc.

The National Curriculum will provide a structure and skill development for the science curriculum being taught throughout the school, which is now linked, where possible to the theme topics to provide a creative scheme of work, which reflects a balanced programme of study.

Implementation

National Curriculum statutory requirements are planned and delivered using strategies including:

- Knowledge organisers

- Curriculum walls
- Vocabulary
- Carefully chosen resources

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;

- Science will be taught in planned and arranged topic blocks by the class teacher which is organised into small, meaningful and logical 'chunks'. This is a strategy to enable the achievement of a greater depth of substantive and disciplinary knowledge. Lessons for each topic are set out to develop both progression and depth.
- Knowledge builds on knowledge. Strategies for retrieval practice are regularly scheduled into learning with increasing time lags between. Teaching is designed to ensure children know more and remember more.
- Knowledge Organisers have been created for each science topic which outline knowledge (inc key vocabulary) for that topic.
- Children are encouraged to ask their own questions and are given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons to aid understanding of conceptual knowledge. Teachers and support staff use precise questioning in class to ascertain conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning. Challenge questions are provided for pupils to apply their learning in a philosophical/open manner.
- We build upon the learning, knowledge and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Children will learn the importance of scientific discoveries and understand that, often, scientific discoveries are made by scientists working together and these conclusions can change over time with new discoveries and theories.
- Disciplinary knowledge is embedded into lessons to ensure these skills are being developed throughout the children's school career (by way of slow release teaching – modelling, applying and embedding). New vocabulary and challenging concepts are introduced through direct teaching which are sequenced in the curriculum over time.
- Teachers demonstrate how to correctly use scientific equipment, and the various working scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops. Trips and visiting experts are planned for which will enhance the learning experience.

- We ensure that teachers of the subject have excellent subject knowledge, and leadership supports the acquisition of this for NQTs and non-specialist teachers. Subject matter is presented clearly, teachers carefully check learning and identify misconceptions, providing direct feedback.

Impact

Children will know more, remember more and understand more about the curriculum. This is evidenced through regular pupil voice, monitoring and looking at outcomes which are measured against our age-based progression grids. Children will retain prior-learning and explicitly make connections between what they have previously learned and what they are currently learning.

The impact and measure of this is to ensure that children at Billingham CE Primary are equipped with skills and knowledge that will enable them to be ready for the curriculum at Key Stage 3 and for life as an adult in the wider world. Science capital is achieved through: engaging parents and the wider community, giving children the opportunity to meet and ask questions of scientists and engineers, linking science to real life, giving every child the opportunity to be engaged and enthused by science and ensuring children are aware of professions that link science to the working environment.

Our engagement with the local environment ensures that children learn through varied and first-hand experiences of the world around them. Through various workshops, trips and interactions with experts and local charities, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children learn the possibilities for careers in science as a result of our community links and connection with national agencies such as the STEM association and Primary Futures. Pupil voice is used to further develop the Science curriculum, through questioning of pupil's views and attitudes to Science to support the children's enjoyment of science and to motivate learners.