Science at Hillesley

Intent

At Hillesley, we want our children to flourish in science as we recognise how this subject impacts every aspect of our daily lives. We want our children to love science and as a core subject, we give the teaching and learning of science a high priority.

Our science curriculum has been carefully crafted to enable learners to be active, excited and challenged while working within the parameters of our class structure and the National Curriculum. A high-quality science education provides the foundations for understanding our world through the scientific disciplines of biology, chemistry and physics.

By building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes.

It is our intent that the Science curriculum we provide gives children the confidence, independence and motivation to continue to further develop their skills into the next stage of our children's education.

Implementation

Our science curriculum is underpinned by the Plan Bee scheme of work which teaches science skills and knowledge progressively across the primary years. Learning takes place outdoors whenever possible so pupils can investigate their immediate environment. Visitors to Hillesley Primary include sixth-form students from KLB who carry out scientific investigations with all classes, STEAM workshops, visits to science fairs and interactions with experts; this helps our children understand that science changes our lives and that it is vital to the world's future prosperity. Science is also taught through cross-curricular activities so that children make links with their learning in other subjects thus developing a sound understanding.

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children can achieve their best in science working independently or collaboratively. This is achieved this through these actions:

- Following a detailed skills and knowledge progression document illustrating the topics taught across our classes from EYFS to Year 6, and which meets the year group requirements of the National Curriculum. This progression enables the accumulation of knowledge and skills to build upon the learning and skill development of previous years.

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As the children's knowledge and understanding increases, and they become more proficient in selecting and using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.

- The Early Years Foundation Stage (EYFS) follows the 'Development Matters in the EYFS' guidance which aims for all children in reception to have an 'Understanding of the World; people and communities, the world and technology' by the end of the academic year.
- In EYFS, science is sometimes taught discretely through a focused lesson but is often woven into the children's day as they learn through play.
- Teachers use knowledge organisers to help identify the key information that children need to learn for each topic.
- In KS1 and KS2 science lessons are taught weekly or blocked where appropriate for class needs.
- To close gaps created by previous curriculum coverage teachers complete an elicitation activity at the start of each unit. This can take the form of a 'what do you already know?, 'what do you want to find out' activity or a small quiz. Teachers then use this to identify prior knowledge gaps that will need to be filled during the unit and adapt planning as needed.
- Engaging lessons are created with each lesson having both practical and knowledge elements. Teachersuse precise questioning in class to test conceptual knowledge and skills and children are regularly assessed to identify those children with gaps in learning, so that all children keep up.
- Whenever possible, misconceptions are identified and addressed during lessons and this will inform subsequent planning.
- Each lesson has a strong focus on specific vocabulary and a specific list of key words has been produced for each science topic. New vocabulary and challenging concepts are introduced through direct teaching.
- Working Scientifically skills are explicit in lessons to ensure these skills are being developed throughout the children's school career and are given the same prominence as scientific knowledge.
- Teachers demonstrate how to 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 with experts.

Impact

A cumulative approach to scientific learning helps to give pupils a scientific framework which enriches language and pupils' understanding of key knowledge, concepts and skills. This will develop later learning, not just in science but also across the curriculum. By the time pupils leave Hillesley Primary in Year Six they will have a coherent knowledge and understanding of a wide range of different scientific topics and have the skills necessary to engage with any topic they set their minds to.

Science at Hillesley

The successful approach at Hillesley results in a fun, engaging, high-quality science education, that provides children with the foundations for understanding our diverse natural world. Our beautiful village provides excellent opportunities for engagement with the local environment which enables our children learn through varied and first-hand experiences.

When do we assess?	Assessment Type
Every lesson	**Formative assessments** are made after each lesson. Information may come from: a range of observations; questioning; responses on whiteboards; children's explanations to whole class; 'live' marked work; individual, incidental conversations with pupils during lessons; discussion of extension activities; 1:1 work
At the end of each science unit of work (termly)	**Summative assessment** After each science unit, children will be assessed against progression of knowledge and skills map using a 'best fit' approach to establish if Early Learning Goals and National Curriculum objectives have been met. This may be in the form of a short test, quiz or questioning.
Monitoring	Work scrutiny and pupil voice activities are planned throughout the year across the school and are identified on our monitoring schedule. These are carried out by the subject leader and also our science governor and help us to further develop our science curriculum through assessing children's views and attitudes to science.

Reporting

Assessment information is updated onto our whole school tracking at the end of each term. Teachers report progress to parents during consultations and in an end of year report.