Science Subject Leader Report

Subject leader: Miss Farrar

Intention

At Highfield Community Primary School, we strive to deliver a high-quality science curriculum which allows our pupils to be naturally curious about the world around them. We want to embrace their sense of wonder about natural phenomena and to guide them into becoming enquiry-based learners. The science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live. We want our children to develop an understanding of the uses and implications of science, how it has changed and shaped our lives and how vital it is to the world's future prosperity.

Scientific enquiry skills are embedded in each topic the children study and these topics are revisited and developed throughout their time at school. Topics, such as Plants, are taught in Key Stage One and studied again in further detail throughout Key Stage Two. Thus allowing the children to grow in their understanding, building upon their prior knowledge and increasing their enthusiasm for the topics whilst embedding this procedural knowledge into the long-term memory.

We aim for all children to:

- 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.
- Be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- Develop the essential scientific enquiry skills to deepen their scientific knowledge.
- Use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including ICT, diagrams, graphs and charts.
- Develop a respect for the materials and equipment they handle with regard to their own, and other children's safety.

- Develop their understanding and use of scientific vocabulary to enable them to communicate their ideas accurately.
- Develop an enthusiasm and enjoyment of scientific learning and discovery.

Implementation

At Highfield Community Primary School, our curriculum has been tailored to meet the needs of our children. It has been ambitiously planned to engage, excite and progress children's learning. In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school.

Science displays are used to provide useful and powerful vocabulary and share knowledge learnt within each unit. The progression of skills for working scientifically are developed through the year groups and scientific enquiry skills are of key importance within lessons. At Highfield Community Primary School, 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. Science units are designed in a progressive and sequential way to meet the needs of the children and to ensure learning has been embedded

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of all the topics. The learning journey begins in EYFS looking at understanding the world and progresses onto the National Curriculum once the children move into Year 1. Additionally, Science teaching at Highfield Community Primary School involves adapting and extending the curriculum to match all pupils' needs.

PLAN and TAPS resources are used to support both planning and assessment. These provide teachers with age appropriate (National Curriculum) lesson objectives and vocabulary, as well as suggested activities. Every lesson begins with a retrieval activity to assess children's prior knowledge and to address any misconceptions that arise. This way we

minimise gaps in learning. At the end of a topic, children are assessed in an end of unit quiz and complete a TAPS assessment to ensure coverage has been met.

We provide memorable experiences that encourage children to be curious thinkers and intelligent questioners. Children take pride in their science work and are able to discuss their learning confidently.

EYFS

Science begins in Early Years through the delivery of 'Understanding the World'. We provide our children with opportunities to nurture curiosity, begin to record findings and learn the fundamental skills of scientific enquiry. We guide our children to ask 'why' questions and be observant about their physical world, their environment, people, and their community. To deepen learning we provide hands-on exploration and real experiences. We observe the exciting life cycle of a caterpillar and release them as butterflies which enable children a practical experience with change over time and to embed the concepts of natural changes. During our weekly mud kitchen and garden sessions, we plant seeds, bulbs, herbs and shrubs and care for their growth over time to understand the key features of this process. Through hands-on opportunities such as these, our children gain practical experiences, build respect for the natural word, practise the application of vocabulary all whilst growing their sense of curiosity and enquiry. Exploration of the human senses and opportunities for discussion are a significant aspect of science within early years. We embed this through exploring natural and planned opportunities such as the exploration of ice, puddles and evaporation. Our children explore how the world around them works by talking about what they see, the different forces they feel and changes they notice around them. We use Explorify as a tool to retrieve prior knowledge, and offer opportunities for discussion and debate within our setting.

SEN Provision

At Highfield we are committed to providing a safe, stimulating learning environment that meets the needs of all pupils, including those with special educational needs. There is a shared expectation that all pupils, regardless of their specific needs, should be offered inclusive teaching which will enable them to make the best possible progress in school and feel like a valued member of the wider school community.

Provision is tailored to more specific needs in Cedar and the Orchard but follows our knowledge-rich, child-led approach.

Impact

Objectives:	**Actions**	**Monitoring – who? when? how?** *(Observation/Walkthrough/ Book Look/Pupil Interview/Deep Dive/Data Analysis)*	**Training and support:** *Internal/Adviser/ Consultant/ School to school support/* CPD / INSET
To ensure that the curriculum is implemented in accordance with the agreed sequence and content (PLAN)	Clear curriculum guidance provided for teaching staff to support planning SL to monitor the curriculum implementation and ensure learning matches intention	Book look - spring term 2023 Lesson visits – spring term 2023	SIP visit 31/1/23
To ensure that pupils with SEND have access to the agreed curriculum	SL to discuss with staff in SEND units and SEMH class to support teaching and learning in science for these pupil groups SL to consider how learning is adapted across school for SEND pupils to ensure they access their learning	Book creator review - spring term 2023 Lesson visits – spring term 2023	Meeting with SL and The Orchard staff
To check whether pupils can articulate the sticky knowledge identified in the curriculum	Check whether pupils know and remember subject specific knowledge and can discuss key elements of working scientifically	Pupil voice – spring term 2023	SIP visit 31/1/23

To ensure that opportunities to develop reading in science are supported and implemented across school	SL provide staff with quality book list linked to science subjects	Meeting with English Lead to discuss curriculum going forward.	Meeting with CM
To ensure that methods of recording in science reflect the curriculum requirements in mathematics	SL to check the progression of data handling in accordance to year groups through a book look.	Meeting with Maths Lead to check the progressive maths skills across the curriculum.	Meeting with CT
To revisit TAPS assessment information with teaching staff and plan assessments for spring and summer term	Staff meeting – focus on TAPS assessment/utilising LBQ to evaluate pupils' learning	Implement in a staff meeting and then monitor during the Autumn term	Staff meeting
Agree how assessments will be recorded and used to inform future teaching	Discussions with all staff	SL review of assessment information	Staff meeting
To update the science policy ensuring it reflects current practice in school	SL to write a new policy reflecting the changes to the science curriculum.	Governors' curriculum committee	Support by curriculum leaders.
To begin the process of Primary Science Quality Mark	SL to apply and work through the requirements of the process	University of Hertfordshire – external assessment	CPD