



Being the best we can be; committed to making a difference
EXPERIMENT. REFINE. LEARN. REPEAT.

INTENT - Purpose of Study

Science teaching at West Berry Federation aims to harness children's natural lifelong curiosity and sense of wonder about the world around them and furnish them with a strong scientific knowledge and conceptual understanding. Our science curriculum aims to deliver fun, practical and engaging lessons with scientific enquiry embedded at the heart of it. We know children learn best through first-hand experiences, exploration and investigation and we want our lessons to inspire the next generation to succeed and excel in science. Subject specific vocabulary is taught and built upon so that communication skills are progressed and children can question, discuss, explain and clarify their thinking in science. Our federation aims to give every child the opportunity to foster enthusiasm for science and an understanding of its importance in caring for the world in which we live.

Implementation

Our science curriculum follows the progression of knowledge and skills set out in the National Curriculum. As we have mixed year group classes we follow our own rolling programme to ensure full coverage of the curriculum and make cross curricular links wherever possible. Each learning sequence is carefully planned for opportunities to reflect and build upon children's previous learning so that they link ideas together and prepare them for learning new knowledge. Planning involves teachers creating practical, engaging lessons with opportunities for precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning. Key scientific vocabulary is displayed, modelled and used so that children understand and apply it readily in their spoken and written work. Each science unit begins with a 'What do you know' task that provides an opportunity for children to share their existing knowledge and ask questions about the new topic. Children are asked to review their learning at the end of their topic by adding to their initial elicitation task showcasing all the components of their newfound knowledge. This then contributes to building evidence against the National Curriculum Objectives. A wide range of resources are used to teach the key features of scientific enquiry: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing; and researching using secondary sources. We promote the profile of Science and allow time for the children to freely explore scientific topics through enrichment days, such as 'Science Week' and STEM activity days and trips. Children learn the possibilities for careers in science, they will see the relevance of what they learn in science lessons to real-life situations and the importance of science in the real world within our 'Broadening Horizons' event in Upper Key Stage 2.

Impact

Children at West Berry Federation will experience an engaging and exciting hands-on approach to science. This we believe will create enthusiastic scientists, who will develop a love of science work and an interest to further study and work in this field. Our aim is for every child to achieve age related expectations in science at the end of their key stage. Progress is measured through a child's ability to know more, remember more and explain more. They will be able to articulate their understanding of scientific concepts and be able to reason scientifically using rich vocabulary. Children will become increasingly independent in science, initiate investigations, working collaboratively and practically. Formative assessment is the main tool for assessing the impact of science, as it allows for misconceptions and gaps to be addressed more immediately. Pupil voice is also used to further develop the science curriculum, through questioning of pupils' views and attitudes towards Science lessons.

<p align="center"><u>Reception</u> (end point overview)</p>	<p align="center"><u>Key Stage 1</u> (end point overview)</p>	<p align="center"><u>Lower Key Stage 2</u> (end point overview)</p>	<p align="center"><u>Upper Key Stage 2</u> (end point overview)</p>
<p><u>Communication and Language</u></p> <p>Ask questions to find out more and to check what has been said to them. Articulate their ideas and thoughts in well-formed sentences. Describe events in some detail. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. Use new vocabulary in different contexts.</p> <p><u>Personal, Social and Emotional Development</u></p> <p>Know and talk about the different factors that support their overall health and wellbeing:</p> <ul style="list-style-type: none"> - regular physical activity - healthy eating - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian <p><u>Understanding the World</u></p> <p>Explore the natural world around them. Describe what they see, hear and feel while they are outside. Recognise some environments that are different to the one in which they live. Understand the effect of changing seasons on the natural world around them.</p> <p><u>ELG</u></p> <p>Make comments about what they have heard and ask questions to clarify their understanding</p> <p>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>	<p>Achieve age related expectations for NC scientific knowledge (see assessment objective sheets)</p> <p><u>Skills:</u></p> <p>During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> ● asking simple questions and recognising that they can be answered in different ways; ● observing closely, using simple equipment; ● performing simple tests; ● identifying and classifying; ● using their observations and ideas to suggest answers to questions; ● gathering and recording data to help in answering questions. 	<p>Achieve age related expectations for NC scientific knowledge (see assessment objective sheets)</p> <p><u>Skills:</u></p> <p>During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> ● asking relevant questions and using different types of scientific enquiries to answer them; ● setting up simple practical enquiries, comparative and fair tests; ● making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers; ● gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; ● recording findings using simple scientific language, drawings, labeled diagrams, keys, bar charts, and tables; ● reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; ● using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; ● identifying differences, similarities or changes related to simple scientific ideas and processes; ● using straightforward scientific evidence to answer questions or to support their findings. 	<p>Achieve age related expectations for NC scientific knowledge (see assessment objective sheets)</p> <p><u>Skills:</u></p> <p>During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> ● planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary; ● taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; ● recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs; ● using test results to make predictions to set up further comparative and fair tests; ● reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations; ● identifying scientific evidence that has been used to support or refute ideas or arguments.