

INTENT - Purpose of Study

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

Science teaching at West Berry Federation aims to harness children's natural 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. 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 creating a fun and engaging poster containing all their newfound knowledge. 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, as a result of our community links with our 'Broadening Horizons' Google Classroom.

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. 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.

Reception

(end point overview)

Explore the natural world around them
Describe what they see, hear and feel whilst outside

Understand the effect of changing seasons on the natural world around them

Key Stage 1

(end point overview)

Achieve age related expectations for NC scientific knowledge

Skills:

Ask simple questions and know they can be answered in different ways

Observe closely, using simple equipment

Perform simple tests

Identify and classify

Use observations and ideas to suggest answers to questions

Gather and record data to help in answering questions

Lower Key Stage 2

(end point overview)

Achieve age related expectations for NC scientific knowledge

Skills:

Gather, record classify and present data in a variety of ways to help in answering questions

Ask relevant questions and use different types of scientific enquiries to answer them

Set up simple practical enquiries, comparative and fair tests

Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers

Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Use straightforward scientific evidence to answer questions or to support their findings

Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
Identify differences, similarities or changes related to simple scientific ideas and processes

Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables

Upper Key Stage 2

(end point overview)

Achieve age related expectations for NC scientific knowledge

Skills:

Ask relevant questions and use different types of scientific enquiries to answer them.

Set up simple practical enquiries, comparative and fair tests.

Make systematic and careful observations and where appropriate take accurate measurements using standard units, using a range of equipment including thermometers and data loggers.

Gathers, records, classifies and presents data in a variety of ways to help answer questions

Records findings, using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.

Reports on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

Uses results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Identifies differences, similarities or changes related to simple scientific ideas and processes.