



Science Curriculum at Bletchingley Village Primary School and Nursery

Intent, Implementation and Impact

Intent

At Bletchingley, we aim to develop a sense of excitement and curiosity about natural phenomena and an understanding of how the scientific community contributes to our past, present and future.

We want pupils to develop a complex knowledge of Biology, Chemistry and Physics, but also adopt a broad range of skills in working scientifically and beyond.

We ensure our Science lessons are inclusive and meaningful, so all pupils may experience the joy of science and make associations between their science learning and their lives outside the classroom.

Studying science allows children to appreciate how new knowledge and skills can be fundamental to solving arising global challenges.

Our curriculum aims to encourage critical thinking and empower pupils to question the hows and whys of the world around them. We encourage:

- A strong focus on developing knowledge alongside scientific skills across Biology, Chemistry and Physics.
- Curiosity and excitement about familiar and unknown observations.
- Challenging misconceptions and demystifying truths.
- Continuous progression by building on practical and investigative skills across all units.
- Critical thinking, with the ability to ask perceptive questions and explain and analyse evidence.
- Development of scientific literacy using wide-ranging, specialist vocabulary.

Implementation

In order to meet the aims of the National curriculum for Science and in response to the Ofsted Research review into Science, we have identified the following key strands:

- Scientific knowledge and understanding of:
 - Biology - living organisms and vital processes.
 - Chemistry - matter and its properties.
 - Physics - how the world we live in 'works'.
- Working scientifically - processes and methods of science to answer questions about the world around us.
- Science in action - uses and implications of science in the past, present and for the future.

We use Kapow's Primary Science scheme which is a spiral curriculum, with essential knowledge and skills revisited with increasing complexity, allowing pupils to revise and build on their previous learning. A range of engaging recall activities promote frequent pupil reflection on prior learning, ensuring new learning is approached with confidence. The Science in action strand is interwoven throughout the scheme to make the concepts and skills relevant to pupils and inspiring for future application.

Cross-curricular links are included throughout each unit, allowing children to make connections and apply their Science skills to other areas of learning.

Each unit is based upon one of the key science disciplines; Biology, Chemistry and Physics and to show progression throughout the school we have grouped the National curriculum content into six key areas of Science:

- Plants
- Animals, including humans

- Living things and habitats
- Materials
- Energy Forces
- Earth and space

Pupils explore knowledge and conceptual understanding through engaging activities and an introduction to relevant specialist vocabulary.

As suggested in Ofsted's Science research review (April 2021), the 'working scientifically' skills are integrated with conceptual understanding rather than taught discretely. This provides frequent, but relevant, opportunities for developing scientific enquiry skills.

The scheme utilises practical activities that aid in the progression of individual skills and also provides opportunities for full investigations.

Each year group has an exploratory 'Making connections' unit that delves beyond the essential curriculum, assimilating prior knowledge and skills to evoke excitement and to provide an additional method of assessing scientific attainment as well as links to STEM learning.

We are an inclusive school and adapt all our lessons to enable children to access and present learning in an appropriate way for them. Individual learning is recorded in individual workbooks.

Strong subject knowledge is vital for staff to deliver a highly effective and robust Science curriculum. Each unit of lessons includes multiple teacher videos and resources to develop subject knowledge, target fundamental misconceptions effectively and support ongoing CPD.

Impact

The impact of Science can be constantly monitored through both formative and summative assessment opportunities. Each unit has a unit quiz and a knowledge and skills catcher, which is used at the beginning and end of the unit to provide a summative assessment. Opportunities for children to communicate using scientific vocabulary will also form part of the assessment process in each unit.

Regular monitoring reviews by the subject lead by: looking at workbooks, talking to children and learning walks, will provide whole school next steps.

Pupils should leave our school equipped with the requisite skills and knowledge to succeed in Key Stage 3 Science. They will have the necessary tools to confidently and meaningfully question and explore the world around them as well as critically and analytically experiencing and observing phenomena.