

Booker Avenue Infant School – Science Vision

Intent

Booker Infant School's science curriculum aims 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. Science is taught across the school from Nursery to Year 2 following the 'Understanding the World' and 'Health and Self-Care' strands of the 'Development Matters' document in Early Years and the National Curriculum in Key Stage 1. The Kapow Science scheme of work is followed in Key Stage 1 and Early Years. The children learn to work scientifically through hands on experiences which encourage finding the answer to enquires and learning about the world around them.

We intend for pupils to develop a knowledge of Biology, Chemistry and Physics, but also adopt a broad range of skills in working scientifically and beyond. The activities meet the requirements of the National Curriculum and enables pupils to meet the end of key stage attainment targets. We aim to ensure the work is inclusive and meaningful so all pupils may experience the joy of science.

Our curriculum aims to encourage critical thinking and empower pupils to question the hows and whys of the world around them, supporting their development of a growth mind set. Studying science in this way allows children to appreciate how new knowledge and skills can be fundamental to solving arising global challenges.

Our science curriculum, supported by the Kapow Science scheme, encourages a strong focus on developing knowledge alongside skills across Biology, Chemistry and Physics. We want our children to have curiosity and excitement about familiar and unknown observations. We aim to challenge misconceptions pupils may have and help develop their critical thinking by supporting their ability to ask perceptive questions and analyse evidence. The curriculum supports a development of scientific literacy using wide ranging, specialist vocabulary.

Implementation

The spiral curriculum, supported by the Kapow Primary Science scheme, is structured with essential knowledge and skills revisited with increasing complexity. This allows pupils to revise and build on their previous learning, ensuring new learning is approached with confidence.

Scientific knowledge and an understanding of Biology, Chemistry and Physics are at the heart of our curriculum alongside *Working Scientifically* skills supporting pupil to understand the processes and methods of science to help answer questions about the world. Additionally, we focus on *Science in Action* to help pupils understand the uses and implications of science in the past, present and for the future. Cross-curricular links are included throughout each unit allowing children to make connections and apply their Science skills to other areas of learning.

Each term our children will study one of the following key areas:

Plants

Animals, including humans

Living things and their habitats

Materials

Forces, Earth and Space

Pupils explore knowledge and conceptual understanding through engaging activities and an introduction to relevant specialist vocabulary. The Working Scientifically skills are integrated with a conceptual understanding rather than being taught discretely. We utilise practical activities that aid in the progression of individual skills and also provides opportunities for full investigations.

Lessons incorporate various teaching strategies from independent tasks to paired and group work, including practical, creative, computer-based and collaborative tasks. This variety means that lessons are engaging and appeal to those with different learning styles.

Impact

The impact of our science curriculum is constantly monitored through both formative and summative assessment opportunities. Each lesson includes an assessment of pupils against learning objectives and any relevant scientific enquiry skills. Teachers continue to assess throughout lessons on pupils' use of scientific vocabulary. Furthermore, at the end of each unit children will complete a short subject knowledge quiz to provide a summative assessment.

As pupils progress to Key Stage 2, they will have attained the requisite skills and knowledge throughout Key Stage 1 to succeed in Science allowing them to build on their existing strong foundation in the subject. They will have the necessary tools to confidently and meaningfully questions and explore the world around them as well as critically and analytically experiencing and observing phenomena. Pupils understand the significance and impact of Science in society.

The impact of our curriculum is that children will:

- Develop a body of foundational knowledge for the Biology topics in the National Curriculum: Plants; Animals, including humans; Living Things and their Habitats.
- Develop a body of foundational knowledge for the Chemistry topics in the National Curriculum: Everyday Materials; Uses of Everyday Materials and Properties and Changes of Materials.
- Develop a body of foundational knowledge for the Physics topics in the National Curriculum: Seasonal Changes; Earth and Space.
- Be able to evaluate and identify the methods that 'real world' scientists use to develop and answer scientific questions.
- Identify and use equipment to effectively to accurately gather, measure and record data.

- Be able to display and convey data in a variety of ways, including graphs.
- Analyse data in order to identify, classify, group and find patterns.
- Use evidence to formulate explanations and conclusions.
- Demonstrate scientific literacy through presenting concepts and communicating ideas using scientific vocabulary.
- Understand the importance of resilience and a growth mindset, particularly in reference to scientific enquiry.
- Meet the end of key stage expectations outlined in the National Curriculum for Science.

At Booker Avenue Infant School, time is allocated for the subject lead to carry out lesson monitoring and learning walks and the subject lead will collaborate with Senior Leadership to monitor science provision. Book trawls help to inform all staff about progression and can provoke teacher discussions around good practice and improvement. Internal and external moderation takes place to ensure standards are consistent within the school and alongside other schools. Teachers regularly report children's progress to parents through Parents' Evenings and a written report in the summer term.