Science

Intent

At Westfields Infant School, we want children to develop the knowledge, skills and competencies to access the next stage in their learning. In addition to this, we actively encourage and motivate the children to develop positive attitudes, skills and habits so that they are well equipped for the future.

Our intent in science is to provide a stimulating and supportive environment that ignites a lifelong passion for inquiry, exploration and understanding of the world in which they live. We aim to develop positive attitudes towards science, providing the children with the skills and confidence so they are well equipped for the future.

Science is vital to the world's future prosperity and has changed our lives by developing new technologies and understanding of our world. Our curriculum incorporates real-world applications of scientific concepts, helping children understand the relevance of science in their daily lives and the broader global context.

Science learning helps children to become analytical problem solvers, developing the power of rational explanation and a sense of excitement and curiosity about natural phenomena. Through experimentation and problem-solving, children will develop resilience and perseverance in the face of scientific challenges.

We encourage collaboration and communication developing children's ability to work effectively as part of a team. Through group investigations and discussions, children learn to articulate their ideas, listen to others and collectively construct knowledge, develop understanding and improve scientific skills.

At Westfields Infant School, our science curriculum has been developed based on the Statutory Framework for the Early Years Foundation Stage where the foundation of scientific knowledge and skills are evident in 'Understanding the World' and the National Curriculum for Science.

The National Curriculum for Science aims to ensure that all pupils:

- 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;
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Implementation

At Westfields Infant School, we stimulate and excite children's natural curiosity about the world around them. We value direct practical experience to engage the children and bring their learning to life. This begins in Reception with the open-ended exploration through play and first-hand

experiences in nature and exploring the world around them. In all year groups there is a focus on exploring the school grounds and observing seasonal changes in the trees, plants and animals.

In Key Stage 1, there is a carefully designed curriculum with weekly science lessons dedicated to providing hands-on, practical experiences that ignite children's natural curiosity and encourage active exploration of the world around them. These lessons emphasise the building of both substantive and disciplinary knowledge. Children are encouraged to ask questions, make predictions and engage in scientific experiments, enabling them to develop a solid understanding of scientific principles. The lessons promote a deeper comprehension of concepts through active participation. This develops their problem-solving skills, encouraging them to question things in the world around them. The practical experiences provide meaningful contexts where children can find out about life, materials and physical processes within the world around them.

In Year 1, children learn to name and describe the properties of materials, explore different ways of grouping and classifying animals, finding out about their habitats and exploring how plants grow. There is an emphasis on practically sorting, classifying and observing and an introduction into scientific recording e.g. Venn diagrams.

In Year 2, children learn how different materials are suited to different jobs, animal life cycles, how humans survive, how to grow new plants and they are introduced to simple forces (pushes and pulls). Children use their learning to begin to design their own experiments, start to think about designing a fair test and recording their result with more independence.

Throughout EYFS and KS1 there is a strong focus on developing children's scientific vocabulary so that they can explain and describe their predictions, ideas and conclusions about all they observe. Teachers play a crucial role in scaffolding language development, providing regular opportunities to revise and review key vocabulary, ensuring that learners can express their ideas with clarity and precision.

Children are offered a wide range of extra-curricular clubs and trips with a science focus throughout their time at Westfields Infants School. These include Nature Ninjas Club and trips to Wisley and Wellington Country Park. We also plan a Science Week each year, in line with British Science Week, to promote the subject and inspire scientists of the future.

Impact

The impact of our science learning can be seen within books, on classroom and whole school displays and by speaking to the children themselves. We measure the impact regularly through:

- Whole class and verbal feedback
- Recapping prior learning at the beginning of each lesson and plenary activities
- Teacher assessment, self-assessment and peer assessment of learning
- Completion of the Science Subject Assessment document at the end of each unit, identifying children not achieving expected standard and those exceeding
- Subject monitoring e.g. pupil conferencing, book monitoring and planning monitoring

By the time our children leave Westfields Infant School, they will have successfully engaged in high-quality learning that provides them with the foundations and knowledge for understanding the world around them with an ability to ask questions. Children will have learnt through first-hand experiences, working collaboratively with practical, in class and outdoor activities which will equip them to continue working scientifically as they move into Key Stage 2. Exposing children to a range of scientific knowledge, skills and famous scientists and their impact, the children will leave us with a thirst for more knowledge which will stay with them well into the future, with a richer vocabulary which will enable them to articulate their understanding of taught concepts.