

Science

Intent

At Kings infant school we choose relevant topics linked to new science such as climate crisis to help our children learn about the world around them. We aim to stimulate pupils' interest in scientific phenomena and to foster a sense of awe and wonder. Through this delivery we provide children with the foundations for understanding the world.

We aim to provide the foundations for understanding the world through a concept based approach throughout the school. Children build up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena.

Children are encouraged to be curious and ask questions about what they notice. They develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. Through the use of simple scientific language they are able to use their communication skills to discuss what they have found out and communicate their ideas. We teach science using first-hand practical experiences as well as appropriate secondary sources, such as books, photographs and videos.

Implementation

They are encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. The national curriculum for science aims to ensure that all pupils develop scientific knowledge and conceptual understanding. Additionally, children will develop an understanding of the processes and methods of science through different types of science enquiries.

Children experience first hand practical experiments and experiences which ensure they develop their Scientific reasoning skills as well as their scientific knowledge in a fun and relevant way. Many of our school trips are based around our work in science which helps to develop curiosity and engage with science such as their visits to the Botanical Gardens and the Nanoespacio Museum.

STEAM week - enrichment/highlighting the importance of these areas. Representing marginalised groups in science.

Working Scientifically

The skills required to work scientifically are embedded into a range of lessons across the curriculum to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching.

Teachers demonstrate how to use scientific equipment, and the various working scientific skills in order to embed understanding and confidence. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning environments, the Green Atelier and workshops with experts.

Children visit our Green Atelier in order to develop their enquiry skills using observations to compare and contrast results. During these sessions, children are able to identify and group information, for example: learning to ask and answer questions by planning experiments, conducting and evaluating the outcomes (collectively, individually and in groups). Additionally, the children use this space to grow, care for and study a variety of living things.

We aim to develop children's knowledge, understanding and use of the correct terminology and vocabulary relevant to concepts and scientific enquiry., e.g. methods, hypothesis, results, conclusions, predictions, evaluation, variables, etc.

Scientific Knowledge and Understanding

For Early years this includes elements of the different learning areas including: Understanding the world around them, communication and language (asking questions and offering explanations) and Personal, Social and Emotional development as they develop their own ideas and become aware of their skills.

Science at King's Infant School is spiralled from Pre-Nursery to Year 2 with three main concepts being revised and revisited each year. The importance of cross curricular links and skills for other areas of the curriculum. This allows the children to develop strong retrieval of skills and become more confident learners in their knowledge and understanding of the world around them. As the children's knowledge and understanding increases, they become more proficient in selecting, using scientific equipment, collating and interpreting results and come to conclusions based on real evidence.

Growth and Change in Natural world

- Animals including Humans
- Plants
- Living things
- Life cycles

Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat. They understand how to take care of animals taken from their local environment and the need to return them safely after study. Pupils should become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets.

Senses and the Human Body

- 5 senses
- Body parts (internal and external)
- Healthy eating

Pupils have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes

Materials and their properties

- Forces
- Using materials for a purpose
- Similarities and differences

Using materials for a purpose, natural and manmade including the sustainability of these items,, similarities and differences, forces and motion testing objects.

Recognise a variety of materials and their properties. Experiment with the uses of different materials and evaluate effectiveness. Sort and compare based on different needs. Build, experiment and create.

Impact

The success of Science at King's Infant school is the way it is delivered through a fun, engaging, high-quality science curriculum that provides children with the foundations for understanding the world. Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them. Much of our science lends itself to outdoor learning and so we provide children with opportunities to experience this. Pupil voice is used to further develop the Science curriculum, through questioning of pupil's views and attitudes to Science to support the children's enjoyment of science and to motivate learners.

Science attainment and progress tracked individually across the school with teachers using continual assessment strategies including performance-based assessment in science projects and investigations, science journal writing, concept maps, portfolios,

and questions and answers. By engaging in meaningful dialogue with the children in their everyday environment and encounters with us we can observe their acquisition of skills and knowledge in Science.