Science

Intent

The intent for science is based on our curriculum driver: Be Brave. This driver underpins our approach to learning by providing opportunities for all our children to challenge themselves, take risks and build resilience. We will offer a range of engaging and intellectually stimulating activities and experiences through a key concept approach, which will lead to changes being made to the children's long-term memory. Our intent is that pupils:

- Develop a curiosity about the natural world and ask questions to deepen their understanding.
- Acquire foundational scientific knowledge and skills across key areas such as biology, chemistry, physics, and environmental science.
- Engage in hands-on, experiential learning activities that promote exploration, experimentation, and discovery.
- Foster an understanding of scientific concepts through real-life applications and experiences.
- Develop the ability to observe, predict, and analyse phenomena scientifically.
- Communicate their scientific ideas, observations, and findings effectively using a variety of mediums such as drawings, diagrams, and simple explanations.

Implementation

In Foundation 2, we follow the EYFS Statutory Framework and we introduce the subject of science through the specific area 'Understanding the World'. In Key Stage 1, we follow the National Curriculum. We have assigned key concepts to our curriculum which reflect ways of working that are fundamental to science. For science these are:

- To observe over time and notice patterns.
- To identify and group.
- To observe closely.
- To ask questions and find the answer.
- To perform comparative fair tests.

- To justify ideas and findings.

It is essential that key concepts are revisited as observations of plants and seasons, change in appearance throughout the year. To ensure correct identification, pupils should visit the same plants throughout the year gathering additional clues for identification. Similarly with seasonal changes, weather and the impact this may have on habitats. We gradually introduce knowledge and fundamental concepts, building upon children's prior experiences and understanding. Our curriculum has been carefully sequenced to enable the children to remember more and know more. Children will first learn to identify, name, and describe properties of materials, plants, and animals before enabling them to use this information to group, sort and classify these. Careful consideration has been given to what prior knowledge is required to enable our pupils to then develop and gain new knowledge. Throughout each term, children actively participate in hands-on experiences, observations, and investigations. Regular review sessions and reflective exercises are also seamlessly incorporated to strengthen learning and further promote retention.

Longitudinal learning is a fundamental part of the learning in science and underpins every lesson. It is incorporated into each science lesson and is supported by regular routines and activities. The longitudinal learning in science is, 'to observe over time and notice patterns'. This approach places significant emphasis on fostering inquiry skills and the confident use of scientific vocabulary.

At the start of each session, the children do a WIS Quiz which recaps on all the previous learning in science. The quality of teaching and learning in science is monitored and moderated throughout the year. Lessons are designed to promote collaborative and active learning using practical and meaningful experiences to enable opportunities for all children to succeed.

Impact

All children will be exposed to high quality teaching and learning that contributes to deep learning and changes being made to their long-term memory. We assess this against the science knowledge progression framework we have created for our school. As a school, we understand that deep learning takes place when subjects are revisited regularly. The children will be given the opportunity to apply their existing knowledge and skills. New learning will be taught all the time whilst revisiting prior learning. In this way, learning will take place over an entire Key Stage, enabling the children to revisit learning regularly whilst adding new ideas, knowledge and skills. By the end of their time at Woodthorpe Infant School, our children will have developed skills needed to be a scientist and understand how they can apply these in Key Stage 2 and in future careers.

Science and SEND

For pupils with SEND, adaptations may be made in science which are based on the child's individual needs. We ensure that pupils with SEND are appropriately challenged in science by:

- Using teaching methods which match the needs of children.
- Chunking content into smaller steps and ensuring the curriculum is designed to reduce excessive or unhelpful demands on working memory.
- Ensuring adaptations are based on individual needs and aim to retain ambition for pupils with SEND.
- Understanding that, for pupils with more complex SEND needs, it may be appropriate to have different curriculum expectations.