



Individual Year Group Plans

Science



Co-op Academy
Brownhill

Intent

At Co-op Academy Brownhill, we strongly believe that, as a core subject, Science holds a place at the heart of the curriculum. We feel that children need to be taught the importance of science in understanding the world around them. We want our children to have a broad scientific vocabulary and be able to use this in explaining and understanding scientific concepts and discovery. Children will be taught about the products and practices of science in equal measures understanding; the importance of scientific discoveries in our world today; the importance of scientific procedures: the importance of asking questions and challenging findings and the importance of giving scientific explanations. Through this we want our pupils to develop a sense of excitement and curiosity about natural phenomena and be engaged in exploring it.



Implementation

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;

- Science will be taught for 1 hr weekly. This allows for time to build on previous knowledge and develop deep understanding of the core knowledge.
- Existing knowledge is checked at the beginning of each topic. This ensures that teaching is informed by the children's starting points and that it takes account of pupils' prior knowledge and ensures teaching does not overload the working memory but builds on existing understanding.
- Misconceptions in science are planned for and addressed throughout pupils' learning.
- Through our planning, we involve key questions and problem-solving opportunities that allow children to apply their knowledge, and find out answers for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up. Tasks are adapted and designed to provide appropriate challenge to all learners, in line with the school's commitment to inclusion.
- We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are embedded into lessons to ensure that skills are systematically developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.
- Children are offered a wide range of extra-curricular activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class. Quality texts are used effectively to strengthen pupil's understanding of science research and knowledge.
- At the end of each topic, key knowledge is reviewed by the children and key questions are answered to ensure knowledge has been retained and is able to be applied.

Impact

- Children will become increasingly critical and analytical within their thinking. Asking questions and making scientific judgements from real life experiences and experiments.
- Children will develop the ability to reach clear conclusions and develop a reasoned argument to explain findings.
- Children will develop their ability to work scientifically, using a variety of skills and techniques to explore and explain different subject areas.
- Children will have a sound and developed knowledge of the different scientific areas and the careers that these could lead to.
- Children will build an increasing understanding of scientific terminology and language.
- Children will become increasingly aware of how science has shaped the world around them.
- Children will develop enquiry skills to pursue their own interests within a topic and further questioning.
- Where applicable, children will have encountered or participated in high-quality visits/visitors to further appreciate the impact of Science.

