Science at Coldfall

Intent

Science at Coldfall provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Through the Coldfall Scheme of Work, children learn about how Science has changed our lives and is vital to the world's future prosperity. All pupils will be taught essential aspects of the knowledge, methods, processes and uses of science. We aim to equip children with the necessary skills to be global thinkers, who can make a real difference and respond to an ever-changing world. Children at Coldfall will build knowledge and concepts, through using scientific vocabulary and oracy to explain their reasoning. They will learn about nature by exploring our extensive grounds, and exploring the different processes and methods of science, which create a sense of excitement and curiosity about the world around them. Through practical experiments, observations and recordings, children will develop an understanding, year on year, of how science can be used to explain what is occurring around them, predict how things will behave, and analyse causes.

Our children are encouraged to be scientific thinkers, who pose questions and seek answers. Children will learn the skills of scientific enquiry to become independent and inquisitive learners. Our science curriculum inspires children to look closely at the world around them and develop the skills necessary to be able to interpret what they see. We want science to be experimental, relevant and to create a sense of awe and wonder.

As such, we seek to develop the child's conceptual understanding by 'working scientifically' both inside the classroom, and through the outdoor learning environment.

We seek to broaden children's real-life experiences both inside and outside of school through educational visits, visitors, fairs and workshops. We encourage the use of cross curricular links, encompassing the use of subjects such as Maths, Art, Computing, and D&T, whilst providing opportunities to develop their literacy skills.

We are fortunate to live in a community that is rich in culture and diversity, and we embrace the opportunities this affords us.

Through the teaching of science, and our Values-based Education, we want to encourage our pupils to be scientific thinkers with a global outlook, who have an awareness of the world they live in and the positive impact they can have on others and the world around them.

Implementation

Our Science curriculum is shaped by our school vision which aims to enable all children, regardless of background, ability, additional needs, to flourish and become the best that they can be. We deliver a program of study using the Early Years Foundation Stage Framework (2021) and the National Curriculum.

Our curriculum is sequenced by a clear progression of skills, which enhance children's knowledge and understanding, and that are built upon year on year ensuring the full coverage that is needed for all our children to leave Coldfall confident learners in Science. We develop the children's substantive knowledge (scientific knowledge and conceptual understanding) alongside the disciplinary knowledge ('working scientifically' and knowing how to carry out practical procedures), so that the children know how the two are not isolated, rather wholly linked. ***This ensures that pupils not only know 'the science'; they also know the evidence for it and can use this knowledge to work scientifically.*** (**https://www.gov.uk/government/publications/research-review-series-science/research-review-series-science)**

We plan for problem solving and real-life opportunities that enable children to explore and find out for themselves. Children are encouraged to ask questions, and are given opportunities to use their scientific skills to research and

discover the answers. Planning is created so that curiosity is encouraged through practical and engaging lessons with opportunities to assess children's conceptual knowledge and skills regularly. New scientific concepts and subject-specific vocabulary is taught through direct teaching, and the skills are embedded into the lessons to develop children's scientific knowledge and understanding. Accessing outdoor learning is important for children to get a better grasp of the scientific concepts, and we are so fortunate to have the outdoor learning spaces that we do here at Coldfall, and as teachers, we utilise them as much as we can.

Impact

Our children leave Coldfall Primary School with a strong foundation; detailed knowledge and skills across the Science Curriculum and, as a result, achieve well and are ready for their next stage of learning. In addition, children are confident with the five different types of enquiries: observing, identifying and classifying, pattern seeking, research and fair testing to enable them to thrive in their science education. Our children know how they can care for their world and how their actions can make an impact on the future.

'Thinking Like a Scientist'

To think like a scientist, you must be able to ask questions, make detailed observations, develop a hypothesis, find answers using tests, and to then question your answers. We encourage this approach within our science curriculum so as to challenge our children's thinking in order to deepen their understanding. Our science curriculum has a clear year-on-year progression of skills that allow for the broadening of conceptual knowledge and understanding***. As pupils learn science, they also learn about its uses and significance to society and their own lives***.
(https://www.gov.uk/government/publications/research-review-series-science/research-review-series-science)