

Science Intent, Implementation and Impact Statement

Oak Meadow Primary School

Intent

At Oak Meadow Primary School, we believe that a high quality science education provides the foundations for understanding the world through the three key areas of biology, chemistry and physics. We strive to allow our pupils to acquire specific skills and knowledge to enable them to think scientifically, to gain an understanding of scientific processes and also provide them with an understanding of the uses of science for both today and in the future. Through our curriculum provision, we endeavour to embrace a child's natural curiosity about the universe around them, whilst simultaneously promoting a respect for all living organisms and the environment. Through our school's five core values, we aim to unlock every child's intellectual, emotional, social, physical, artistic, creative and spiritual potential. Our science curriculum allows us to achieve this through creating awe and wonder, underpinning one of our core values of 'I see, I wonder'. Our science curriculum also encompasses aspects of our other four core values which are; express yourself, healthy body, healthy mind, more than me and rise to the challenge.

At Oak Meadow Primary School, in line with the aims of the National Curriculum, our science teaching offers opportunities for children to –

- Develop scientific knowledge and understanding within the three disciplines of biology, chemistry and physics.
- Develop an understanding of the nature, processes and methods of science through different types of enquiries that enable them to answer scientific questions about the world around them.
- Be equipped with the scientific knowledge required to understand the different uses of science.
- Develop essential scientific enquiry skills to deepen their scientific understanding.
- Describe key processes and characteristics of science using technical terminology accurately and precisely.
- Use a range of methods to present scientific information, for example ICT, diagrams, graphs, tables etc.
- Develop a respect for the materials and equipment they handle with regard for their own, and other children's safety.
- Develop an understanding of how science can be used to explain what is occurring, predict how things will behave, and analyse causes.
- Develop an enthusiasm and enjoyment of scientific learning and discovery.

Within school, we have designed a creative curriculum that allows us to make cross-curricular links between science and the wider curriculum. Where the science curriculum allows, we have linked our science work to our overarching topics for each term in order to create an engaging science curriculum for all and promote a love of learning within the science subject area. At Oak Meadow, we provide the children with 'hands-on' scientific experiences as we believe that this is fundamental in developing a child's scientific enquiry and thinking. Each class has their own science floor book, where evidence of our pupils acquiring these scientific skills can be found. We aspire to ensure that our science curriculum provides children with the confidence and ambition to develop their skills within the subsequent stages of their education and forthcoming life experiences.

Implementation

At Oak Meadow Primary School, within Key Stage One and Key Stage Two, children have weekly science lessons over one afternoon, allowing them the required time to develop their scientific skills and build upon their prior knowledge. Within the Early Years Foundation Stage, science is taught through 'Understanding the World', allowing all pupils to start gaining scientific experiences from the beginning of their school journey. This allows children to consistently experience high quality



science lessons, which advance their expertise and understanding throughout the entirety of their primary school education.

Across Years 1-6, Science is taught in explicit units, in line with the National Curriculum. Where feasible, cross-curricular links are made to the year group's topic for each term and staff have created their own medium term plans to match their children's interests and abilities, as well as to incorporate a wide range of investigative activities. At Oak Meadow Primary School, science is also taught discretely throughout other aspects of the curriculum allowing children to access a broader curriculum, with examples of this including biographies about famous scientists in English, as well as sketching and observing plants in Art. As a school, we also conduct a 'three o'clock read' every day to expose children to a wide range of text genres and within this, we encourage the sharing of non-fiction texts linked to the various disciplines of science. Furthermore, to promote reading within science, each teacher plans a half-termly cross-curricular guided reading lesson linked to their science topic for the term. For example, when studying rocks and fossils, Year 3 are given the opportunity to explore facts and information about the extinction of woolly mammoths.

Our science curriculum is designed to provide children with the opportunity to work scientifically and acquire the necessary skills to problem solve and work collaboratively to conduct a range of investigative activities. When conducting investigations, children are encouraged to think like scientists and make predictions using their previous knowledge and experiences to support their theories. Teachers model the use of vocabulary, various scientific equipment and the working scientifically skills needed in order to embed scientific understanding. To underpin this, scientific vocabulary is enhanced through the introduction of a 'Science Word of the Week.' The word is defined and displayed within the classroom and children are encouraged to incorporate the word of the week into their discussions and independent work. A vocabulary progression is also implemented at Oak Meadow, allowing all children to build up a rich scientific vocabulary as they explore the science curriculum during their academic journey. As a school, we collectively recognise the importance of providing our children with the chance to develop their scientific vocabulary and these aforementioned strategies are the way in which we aim to achieve this.

Throughout the school year, regular events such as Science Week and STEM days are implemented across the school in order to broaden the provision pupils receive to allow them to gain more and apply scientific skills within a new context. These events have previously involved the wider community through the implementation of parent workshops and forming external links with the University of Wolverhampton, as we believe that family and community engagement is key and we endeavour to make the families of our pupils feel involved within their children's learning journeys. Children also have the opportunity to attend a STEM club as an extra-curricular activity and some children have been elected to be a part of the Junior STEM Team, giving pupils a voice within their science education.

To monitor the progress made within science lessons, all teachers are required to assess the units taught in line with the moderation materials provided by the Wolverhampton Authority. Each unit covered within science is summatively assessed to ascertain each individual child's progress and formative assessment is used during and at the end of each individual lesson taught. The science co-ordinator is responsible for monitoring the subject, including the development of medium term and short term planning, as well as the standards within the science books. Throughout the year, regular INSET training is provided in order to disseminate new information, ensuring all staff are updated with relevant changes within science, resulting in teachers delivering the best science provision for all pupils in their care.

Impact

Our science curriculum is carefully planned by our staff, in line with our skills progression and it is tailored to suit the individual needs of each year group. This allows us to ensure that all children are keeping up with the curriculum, therefore making good progress. We measure the impact of our science curriculum through rigorous assessment, keeping track of all children's progress across each scientific unit as they move throughout the school. Our skills progression enables us to ensure that children's scientific understanding is consistently being built upon, as it provides clear, differentiated structure



for our science curriculum. At Oak Meadow Primary School, our curriculum is fun and engaging to encourage all learners to gain the foundations they require to better their understanding of the world around them and by implementing a range of investigative activities, children are learning through first hand experiences. Children are able to learn about the career opportunities science encompasses through the links made with the wider community and the opportunities given to them at school.

As a school, we want to ensure that all are children are equipped with the following from our progressive science curriculum –

- A wider variety of skills linked to both scientific knowledge and understanding, as well as scientific enquiry and investigative skills.
- A rich vocabulary that will enable all children to articulate their understanding of taught concepts.
- High aspirations which will see them through to further study and a successful adult life.
- The ability to apply their scientific understanding to make the best decisions for the right reasons and in the best interests of their community and the wider world.

From tiny acorns **mighty oaks** grow...

