



Vision

Our aim at Oak CE Primary School is to provide children with the foundations they need to recognise the importance of Science in every aspect of daily life. We want to foster children's scientific curiosity, their experimentation skills and their ability to conclude and evaluate.

A high-quality Science education provides the foundations for understanding the world through the specific disciplines of Biology, Chemistry and Physics. We want our children to develop a love of Science and have no limits to what their ambitions are. They are encouraged to understand how Science can be used to explain what is occurring, predict how things behave, and give reasons for the outcome.

Our curriculum is constructed upon the fundamental principles outlined in the EYFS Framework and the National Curriculum. In EYFS, Science is taught through the Understanding the World area of learning. Scientific exploration, as an integral part of play based learning, offers our children opportunities to be inquisitive and develop their confidence to learn and independently explore the world around them. Science in Key Stage One and Two follows the National Curriculum aims and objectives.

We teach our children to:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of Science through different types of Science enquiries that help them to answer scientific questions about the world around them
- be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future.

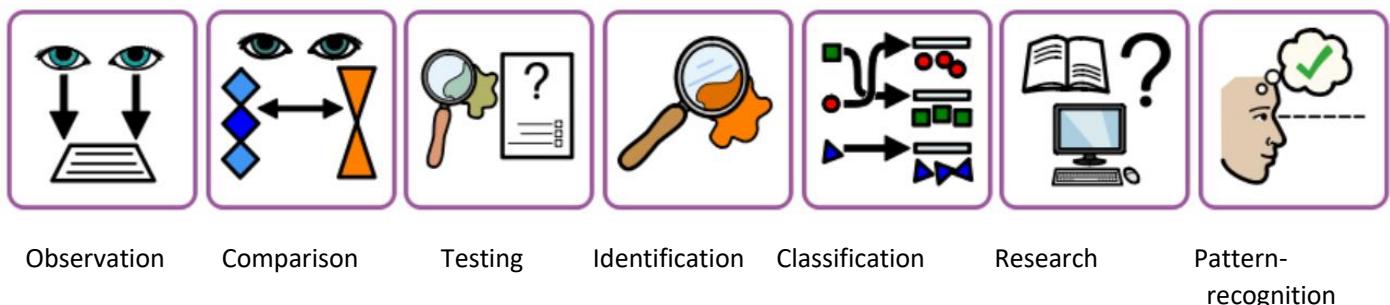
Teaching and Learning

At Oak Primary School, Science is taught weekly. We use the Rising Stars scheme of work as basis for our progression of knowledge and skills and adapt and develop learning sequences so they are tailored to meet the needs of our children. Each year group has six half-termly units of work, linked directly to the corresponding programmes of study from the National Curriculum, with the final unit going beyond the expectations of the curriculum to provide further opportunity to consolidate children's scientific enquiry skills. Learning is sequenced in order to allow year groups to build upon prior knowledge and recall this into their working memory and develop depth of understanding and progression of skills.

Each unit begins with a 'Get Started' opener to activate and elicit prior learning and remind children of previous activities whilst making explicit links to personal experiences. There are also a range of 'Think like Scientists' questions posed to engage learners, activate critical thinking and encourage research; these are revisited at carefully planned points of the learning sequence to extend and challenge pupils. To ensure the children at Oak retain new knowledge, we utilise and ensure vocabulary is taught and explored as the unit progresses. We provide knowledge organisers for the children's books, which allows the children to view knowledge from previous year groups and how this links to the new learning. Children accessing this information enables them to facilitate new knowledge. During Science lessons, teachers cover learning links from previous lessons or year groups.

Teachers will encourage our children to have skills of observation, discussion, debate and research. 'Working scientifically' emphasises minds-on as well as hands-on activity, so some Science enquiries are facilitated through secondary sources of information and not involve any practical work. We aim to ensure our children understand that working scientifically is more than just conducting experiments. We aim to make Science tests meaningful and relevant and relatable for both their own experience and the wider world. We use a multitude of approaches to enquiry.

Our Enquiry Approaches:



At Oak we use the national curriculum for Science as the basis of curriculum planning and the Switched on Science scheme of work to ensure robust progression of knowledge and skills in line with the high ambitions we have for pupils. We refine and tailor this in line with rigorous school improvements to ensure key knowledge is taught and pertinent skills are developed and refined to raise outcomes for our children. We carry out our curriculum planning in three phases. The long term plan maps the scientific topics studied in each term during the key stage. Our medium term planning follows the national curriculum and Switched on Science scheme of work. Teachers plan each unit of work for each term. The topics in Science build upon prior learning. We ensure that there are opportunities for children to develop their skills and knowledge in each unit and we also build progression into the Science planning, so children are increasingly challenged as they move through school.

Progression in Science falls broadly into two categories: progression in concepts and progression in scientific working. Progression in concepts is developed as children continue through school by expanding and building upon their bodies of knowledge in the three disciplines of Science, with 'Big Ideas' running through to show where knowledge is linked and progressive. In line with the statements from the curriculum, these are not always linear and as children's bodies of knowledge expand, multiple concepts are considered simultaneously to facilitate understanding.

Progression in scientific working is interwoven throughout all units of work and this forms a continuum as children develop and refine their skills. This is progressive throughout individual units, year groups and key stages, as well as across the Science curriculum.

Early Years Foundation Stage

In EYFS, Science is taught through Understanding the World, broken down into three elements: the natural world, people places and communities, and past and present. Scientific exploration, as an integral part of play based learning, offers our children opportunities to be inquisitive, recognise patterns, conduct tests and develop their ability to purposefully explore the world around them. Children are encouraged to ask questions about the world, phenomena and processes, in a stage-appropriate manner. The teachers then provide children with practical opportunities to investigate this and develop their understanding.

Inclusion

At Oak Primary we teach Science to all children, whatever their ability and individual needs.

We strive hard to meet the needs of those pupils with special educational needs and those learning English as an additional language, through adaptive teaching. This can be through additional scaffolds, targeted support, differentiated task and simplified concepts. Lessons are fully inclusive and facilitate learning in an age and stage appropriate manner. Vocabulary is developed and supported through a progressive ladder of carefully chosen tier 2 words and the use of imprint symbols. Enquiry questions can be simplified where appropriate to ensure fundamental understanding.

Assessment

We assess children's work in Science by making formative judgements through observations and learning outcomes within lessons. At the end of each half-term, teachers complete a tracking sheet stating if the child is working towards the expected standards, at the standard or at greater depth, using specific, measurable criteria from the units studied. This also enables the teacher to make an annual assessment of progress for each child, as part of the child's end of year report to parents. For the purpose of monitoring and school improvement, this data is used by the subject leader to inform next steps and subject/curriculum development.