	Offley Endowed Primary School and Nursery	**Review date:**	Sept 2023
		Next Review:	Sept 2025
Policy Title:	**Science**	***Users:***	Staff, Governors

Introduction:
This policy outlines the teaching of science at our school. The implementation of this policy is the responsibility of teaching staff. The science subject leader is responsible for monitoring and review.

Intent:
A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Through the teaching of science at Offley School we aim to:

- foster a positive attitude to science as an interesting and exciting part of the curriculum.
- foster in children the confidence to apply their knowledge, skills and ideas in real life contexts, both within and outside the classroom and become aware of the uses of science in the wider world.
- provide children with scientific experiences that develop their understanding of themselves and the world in which they live.
- develop the enquiry skills of predicting, asking questions, making inferences, concluding and evaluating based on evidence and understanding and use these skills in investigative work.
- develop the ability of pupils to communicate their ideas using appropriate scientific vocabulary.
- ensure safe practice in all areas of science.

Implementation:
Curriculum
Science is a core subject in the National Curriculum for England and Wales. The fundamental skills, knowledge and concepts of the subject are set out in the Programme of Study. They are categorised into the following areas:

- Working scientifically
- Living things and their habitats
- Everyday materials
- Seasonal changes
- Light
- Forces and Magnets
- Evolution and Inheritance
- Earth and Space
- Animals, including humans
- Sound
- Electricity

Planning and Delivery

Science teaching is planned using a range of sources including: Hamilton Trust, Plan Bee and the Plymouth Science program, which are adapted by staff. In KS2, the curriculum is taught in a two-year rolling programme.

We encourage a development of attitudes which promotes scientific thinking, including open-mindedness, perseverance, objectivity, a positive approach to problem solving and a recognition of the importance of collaboration. Active, rather than passive, learning is promoted, with the use of practical, collaborative work as frequently as possible. The time allocation for discrete Science teaching is between 60 minutes and 90 minutes each week. Teachers use a variety of interactive teaching methods to deliver the curriculum and achieve set learning objectives.

Key features of science lessons includes:

- Making science interesting and meaningful by encouraging links with pupils own interests and events in the media.
- Clear learning intentions and success criteria, differentiated appropriately.
- Regular opportunities for pupils to think for themselves and plan, predict, investigate and evaluate different types of practical activities.
- Links to pupils' prior learning.
- An appropriate pace of learning with high expectations maintained.
- High standards of presentation from the pupils.
- Effective use of a wide range of suitable resources.
- Providing specific learning support where required.
- Giving the pupils extended opportunities to explain, either orally or in writing, their understanding of the science behind the activities they are doing.
- Grouping children by ability to allow resources and practical activities to be pitched at a level that challenges each member of that group.

Cross curricular links

Explicit cross-curricular links in Science are developed, including Literacy (e.g. texts on Science topics), Numeracy (e.g. data handling, measuring), Design and Technology (e.g. properties of materials), Art (e.g. observational drawings), PE and PSHCE (e.g. healthy lifestyles).

ICT

Pupils are given the opportunity to use ICT as a means of data handling, presenting information and carrying out research. Videos, DVDs, CD Roms and relevant websites, and hardware, such as digital microscopes, are used by pupils.

Spiritual, moral, social and cultural development

Science teaching enables pupils to consider some of the fundamental questions in life, such as how the world was created. Through many of the amazing processes encountered in Science, children develop a sense of awe and wonder. Science also raises many social and moral questions, promoting discussion of issues such as smoking. Pupils also reflect on the importance of people caring for the planet and managing the earth's resources. Science also teaches pupils about why we are different and promotes respect for others through understanding of physical and environmental factors.

Inclusion

By providing differentiated teaching, we ensure that the interest of all pupils is maintained and that the Science curriculum is accessible to all pupils. In particular all pupils will be given time to complete work set, especially if it is a practical investigation. This may lead to some pupils continuing with the activity in the next lesson, with different starting points for different pupils depending on the progress they have made previously.

Resources

Science equipment is stored centrally. New stocks are ordered by the subject leader when necessary. Pupils are taught to work with care and attention, learning to use and look after equipment effectively.

Environment

We are fortunate insofar as the rural setting of Offley School provides a variety of habitats in the school grounds and surrounding areas, which offer direct experiences. We aim to foster respect for the environment and a responsible attitude to the natural world and its resources.

Health and Safety

The QCA Programme of Study provides teachers with initial health and safety guidance. However, it is up to the professional judgement of individual teachers to ensure that appropriate risk assessments are made. Pupils are always supervised and are encouraged to develop their own awareness of the need for safety and to handle equipment responsibly and with confidence.

Impact:

Assessment of pupils' progress and understanding takes place in a variety of ways.

- Targets are set explicitly for scientific knowledge and scientific skills at the beginning of each unit. These are used by the teachers to monitor progress and for the children to self-assess against.
- Investigative work is carried out in pairs or small groups, providing an opportunity for formative assessment, informing future planning.
- Pupils are given time to reflect on their work, as tasks are regularly and effectively marked. Through 'pink' and 'green' marking pupils will be able to recognise what they have done well and areas for development. A next step may be given for pupils to complete.
- Feedback may be given to pupils verbally.
- Effective questioning either orally or written that demands extended responses from pupils is used.
- Peer and self-assessment is also used to consolidate and extend learning.
- A differentiated assessment activity is set at the end of each unit. This may be in the form of a quiz, a mindmap, testbase questions or other assessment activities from HFL.

Teacher assessments are recorded at the end of Key Stage 1 and Key Stage 2. 'Working scientifically' assessments are carried out by each teacher at the end of each school year.

The subject leader monitors planning, reviews samples of pupils' work and maintains a subject leader's file.