Wootton St Peter's CE Primary School

Science Policy

Date Adopted by Governing Body: February 2022

Date to be Reviewed: February 2025

Signed Chair of Governors

Andrew Morgan

Signed Headteacher

Charles Pitt

Wootton St Peter's - Science Policy

At Wootton St Peter's we strive to achieve a level of excellence in all that we do. Providing high quality teaching and learning is the core purpose of our school.

In Science we want to provide a wide range of inspirational learning opportunities designed to enable the children to think, question, learn, explore and investigate the rapidly changing world we live in and beyond. There is a breadth of opportunity to develop scientific thinking and questioning skills through challenging investigations which are key to developing learning and understanding for all pupils and **encouraging pupils to believe they can become the scientists of the future.**

We strive to promote the love of learning science and for children to understand and be curious about the science within their everyday lives. We value the importance of an investigative approach through regular 'hands on' experiences wherever possible. It is our intention that by the end of each Key Stage, each child will understand a variety of scientific concepts and be able to confidently discuss them. We aim for all children to work scientifically during lessons and work collaboratively investigating different concepts and ideas.

Implementation

Children are encouraged to ask their own questions and we aim to engage and excite all learners, giving them a sense of wonder at the amazing world we live in. Children at Wootton St Peter's love *doing* Science and we plan our Science lessons in order to provide them with as many practical opportunities as possible to investigate and explore.

Each year group covers the Science topics for their specific year, as laid out by the National Curriculum. At Wootton with the mixed aged year groups we operate a two year programme of study. Taking a cross-curricular approach is encouraged to ensure that links across the curriculum are used to extend and maximise the coverage of Science.

Science is taught on a regular basis to ensure that children are experiencing Science in such a way as to build their skills and knowledge. This equates to a lesson a week but this may be delivered in blocks should teachers prefer to have `Science Weeks'.

Lessons are planned to **specifically** cover the objectives from the National Curriculum as set out for a particular year group.

The Science National Curriculum contains two strands:

- **Knowledge content** – things that children need to **know**
- **Working Scientifically** – things that children need to be able to **do** in order to engage in scientific enquiry.

Both of these strands are taught alongside each other with children using different enquiry types to answer scientific questions about the world around them. These enquiry types are:

- **Pattern seeking investigations**, for example: Do taller people jump further?

- **Fair and comparative tests**, for example: Which material is best to make a circus tent?

- **Observations over time**, for example: What do plants need in order to grow?

- **Classifying, identifying and surveying**, for example: How could you group a selection of different materials?

- **Research using secondary sources** such as books and the internet, for example: What is the gestation period of a range of different animals and does this correlate to their size?

The objectives of teaching science are to enable children to develop:

- A positive attitude towards science and an enthusiastic curiosity;
- An understanding of science through a process of enquiry and investigation;
- Confidence and competence in scientific knowledge, concepts and skills;
- An ability to reason, predict, think logically and to work systematically and accurately;
- An ability to communicate scientifically;
- The initiative to work both independently and in co-operation with others;
- The ability to use and apply science across the curriculum and real life.

Across a year of Science teaching, teachers ensure that their lessons provide the children with:

- experience all types of scientific enquiry

- focused coverage of all strands of the working scientifically objectives allowing them to develop their scientific skills

- opportunities to develop the knowledge to understand scientific concepts required by the National Curriculum

- explicitly teaching of the correct scientific vocabulary to enable children to explain their ideas and learning. Please look at the Science Progression document Appendix 1 to see how and when the National Curriculum objectives are taught at Wootton St Peter's, both in terms of knowledge and skills.

Science Curriculum Planning

Our Science teaching is enriched with visits from experts, including those from within the school community; and trips to, museums and science centres and visits from Science Oxford during our Science Week. At Wootton St Peter's, we are lucky to have some

excellent outdoor spaces within our school grounds, including wildlife areas, a pond and a Forest School Area. Teachers use this resource as much as possible in their teaching, encouraging children to understand the natural world around them and to take responsibility to look after it.

Teaching and Learning

Foundation Stage

In this phase children are:

- Developing the crucial knowledge, skills and understanding that help them make sense of the world.
- Involved in activities based on first-hand experiences that encourage exploration, observation, problem solving, prediction, critical thinking and decision-making and discussion.
- Experiencing a wide range of activities, indoors and outdoors, which include adult focused, child-initiated and independent play.
- Stimulated, interested and curious.
- Observed by adults and learning is recorded in a variety of ways.

Key Stage 1

The main focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and man-made world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning in science should be done using first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos. Children should read and spell scientific vocabulary at a level consistent with their reading and spelling knowledge at Key Stage 1.

Lower Key Stage 2 – Years 3 and 4

The main focus of science teaching in Lower Key Stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

‘Working scientifically’ must be taught through and clearly related to substantive science content in the programme of study. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing reading and spelling knowledge.

Upper Key Stage 2 – Years 5-6

The main focus of Science teaching in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically.

At Upper Key Stage 2, they should encounter ideas that are more abstract and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. Pupils should read, spell and pronounce scientific vocabulary correctly.

Impact

- Children enjoy Science lessons and all are able to actively engage and participate
- Science lessons build on previously learning, systematically developing children’s Scientific knowledge
- Children develop the Science skills they need in order to be able to investigate and explore Science concepts
- Children understand that Scientific questions can be answered by different types of enquiry
- Children are equipped with the vocabulary necessary for them to explain their learning
- Children will develop a life-long interest in the natural world, including their local environment and will have a commitment to caring for it, understanding that we can all make a difference
- By the time they leave Wootton St Peter’s Primary School, children will have sufficient Science knowledge, skills, and vocabulary to equip them for the next stage in their Scientific educational journey
- Children will understand that Science is important and relevant to their lives, now and in the future, and will consider STEM career

Assessment for Learning

- Science assessments are carried out using both summative and formative assessment procedures.
- Informal judgements as to children's progress in science are made through observations.
- Formative assessment is usually carried out at the start of a unit of work.
- Summative assessment takes place at the end of each unit of work.
- Assessments are used to inform planning and learning and teaching.
- Older children are encouraged to make judgements about how they can improve their own work.

Monitoring

- Monitoring for science is carried out in line with the school monitoring policy. Books are monitored and good practice shared. Plans are shred with Science Lead and lessons observed.
- Best practice for science will be identified and shared amongst teachers.

Resources

- All resources are stored centrally in the science cupboard in the Hall
- Resources are organised into topic boxes.
- Staff are responsible for informing the subject leader when extra resources are needed, when there are breakages and when consumables are running low.
- The Science Subject Lead will update and replenish resources when needed, budget permitting.
- Wootton St Peter's School has membership of Science Oxford where we can get 50% off kit loans.
- Wootton St Peters School is a also a member of the Abingdon Science Cluster that can loan Science resources we don't have in school.

Health and Safety

Health and safety is in accordance with the county policy for primary school science.
The safe use of equipment is promoted at all times.

February 2022
Michaela Hicks