Wincanton Primary School

Science Policy

Approved on April 2024

Propose Date of Future Review: April 2026

Signed Graeme Wilcox. **Headteacher**

1 Aims and Objectives

Science is a methodology, a practical way of finding answers to questions we may ask about the world around us. It teaches an understanding of natural phenomena and aims to stimulate a child's curiosity in finding out why things happen in the way they do. The best Science teaching scaffolds learning to develop methods of enquiry and investigation that stimulates creative thought. Children learn to ask scientific questions and begin to appreciate the way Science will affect their future on a personal, national, and global level.

The National Curriculum 2014 states that:

'A high-quality Science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics... 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.'

The aims and objectives of Science are to:

• Enable children to ask and answer scientific questions that develop and extend their scientific concepts of the world • Encourage the development of positive attitudes to Science
• Deliver the requirements of the National Curriculum for Science in ways that are imaginative, enthusiastic, well managed and inspiring, bearing in mind the learning needs and styles of individual children
• Use scientific contexts to establish, develop and consolidate purposeful cross curricular skills, in particular with English, Maths and Computing
• Develop pupils' ability to work scientifically and involve pupils in planning, carrying out and evaluating investigations; observing, measuring, predicting, hypothesising, experimenting, communicating and interpreting
• Ensuring that all pupils are appropriately challenged to make good progress in Science
• Enable children to think creatively about Science and enjoy trying to make sense of phenomena
• Develop language skills through talking about their work and presenting their ideas using writing of different kinds
• To encourage children to explore values and attitudes through Science o Working with others, listening to their ideas and treating these with respect
o Developing a respect for the environment and living things
o Developing responsibility for their own health and safety and that of others when undertaking scientific activities

Teaching and Learning

• The time spent on Science may vary from term to term and in each topic that is taught
• Teaching staff choose, at their own discretion, how they allocate the amount of time needed to cover the strands of the National Curriculum. This may take place out of topics, as stand-alone lessons or as blocked periods
• The responsibility for ensuring adequate coverage of the National Curriculum for Science lies first with the Science Co-ordinator, but ultimately the individual teacher
• The children benefit from whole-class or group teaching as well as being encouraged to work individually: finding out information, practising skills, or thinking scientifically by themselves
• A variety of teaching and learning styles are used in Science lessons, including practical, hands-on, investigatory learning
• Children are given opportunities to build on their substantive knowledge by applying disciplinary knowledge through "Big Questions" and pattern seeking
• Children should be exposed to a variety of scientists and look at their legacies in detail
• 'Working scientifically' is embedded throughout the areas of learning in Key Stage 1 and 2. This focuses on the key aspects of scientific enquiry which enable pupils to investigate and answer scientific questions developing their own investigations by using this knowledge to discover more
• Children are encouraged to ask, as well as answer, scientific questions and have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs, to help understand and analyse scientific discovery
• The use of technology in Science lessons is encouraged to enhance learning
• Wherever possible, the pupils are involved in 'real' scientific activities, for example, researching a local environmental problem or carrying out a practical experiment and analysing the results. They take part in discussions and engage in a wide variety of problem-solving activities
• Within the Units of Work, learning activities are sequenced to ensure progression, and taught through direct teaching, providing pupils with real experience
• Suitable learning opportunities are provided for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

o Setting common tasks which are open-ended and can have a variety of responses o Setting tasks of increasing difficulty (we do not expect all children to complete all tasks)
o Grouping children in a range of ways to facilitate learning, including ability groupings o Providing resources of different complexity, matched to the ability of the child
o Using classroom assistants to support the work of individual children or groups of children 3

Science Curriculum Planning

• Key Stage 1 and 2 teachers plan Science lessons using the National Curriculum (2014), following the medium-term plan which detail the specific areas of learning covered in each year group over the year

• This planning ensures that statutory requirements are covered through the specific disciplines of biology, chemistry and physics (teachers also refer to the non-statutory guidance which provide additional support)

• Class teachers are responsible for writing lesson plans for each lesson (half-term plans), using the intent documents to support this

• These plans list the specific learning objectives (such as the scientific skills) of each lesson and are kept by the class teacher

• All teachers follow the National Curriculum objectives. Mediumterm planning should also cross-curricular links with technology, the wider curriculum and differentiation for SEN and higher achieving pupils.

• Planning is used to:

o Set clear, learning objectives and achievable goals

o Ensure work is matched to pupils' abilities, experience and interests

o Ensure progression, continuity and subject coverage throughout the school

o Develop assessment procedures to provide criteria for evaluation of teaching and learning involving all staff

Foundation Stage

• Science in the Foundation Stage is taught as an integral part of the Learning Experience work covered during the year

• As this is part of the Foundation Stage of the National Curriculum, scientific aspects of the children's work are related to the objectives set out in the Early Learning Goals (ELGs), which underpin the curriculum planning for children aged three to five (e.g. Science is not taught as a specific lesson for this age group)

• Science makes a significant contribution to the objective in the ELGs of developing a child's knowledge and understanding of the world, (e.g. through investigating what floats and what sinks when placed in water) and prepares the children to access science in the Year 1 curriculum

Assessment and Recording

• Children's work in Science is assessed through informal judgements observed during lessons
• Completed pieces of work are marked in accordance with the Marking Policy
• At the end of a unit of work the teacher makes a summary judgement about the work of each pupil in relation to the National Curriculum
• The teacher records the progress of each child in all Science topics. These records are used as the basis for assessing the progress of each child; information which is passed on to the next teacher at the end of the year
• The Science Co-ordinator keeps samples of children's work in the Science Co-ordinator's File and uses these to demonstrate what the expected level of achievement is in Science for each age group in the school

Resources

• Resources are being developed in line with the new National Curriculum requirements
• These are centrally stored in the computing cupboard organised in subject areas
• The library contains a good supply of Science topic books
• Teachers (or support staff) collect resources as needed and ensure they are returned after use • Staff should notify the Science Co-ordinator of any extra resources required, of any breakages or losses that occur and of any new materials, that might prove useful
• Unsupervised children should not be allowed to collect resources

Monitoring and Review

• Monitoring of the standards of children's work and of the quality of teaching in Science is the responsibility of the Science subject leader Science Policy • The Science Co-ordinator also supports colleagues in the teaching of Science, maintains an overview of current developments in the subject and provides a strategic lead and direction for the subject in the school • An annual summary of Science is made, in which strengths and weaknesses in the subject are evaluated

The role of the Science Co-ordinator is:

• To purchase and organize and audit all Science resources, ensuring they are readily available and well maintained
• To facilitate parental involvement
• To be aware of national and local developments through reading relevant materials and attending courses as appropriate
• To co-ordinate the teaching of Science within the school
• To monitor the use of the policy and scheme of work and to make changes to the policy and scheme of work if necessary
• To ensure continuity and progression of the teaching and learning of Science across the key stages and the school
• To order and maintain resources
• To make staff aware of changes / thinking in Science and provide CPD to all staff
• To make staff aware of Science courses on offer and encourage them to attend
• To show examples of good Science practice

Special Needs Provision / Enrichment and Challenge

As an inclusive school, we recognise the need to tailor our approach to support children with Special Educational Needs as well as those who are identified as benefitting from further enrichment and challenge. We teach Science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Our work in Science takes into account the targets set in the children's Individual Education Plans (IEPs).

Health and Safety

• Potential areas of hazard include:

1. Storage and use of chemicals and equipment
2. Fire hazards where heating is required
3. Transport of materials
4. Electrical hazards
5. Ponds and water courses
6. Hazards associated with the care and maintenance of animals
7. School visits for environmental studies

• Teachers should ensure that activities comply with the Health and Safety procedures and have been reviewed / practised prior to the lesson if necessary

• Children should always be encouraged to consider safety for themselves, others, the environment and the resources they use, when undertaking scientific activities. Safety hazards should be pointed out to the children at the beginning of any work

• Any completed Risk Assessments should be stored in the School Office

Equality, Diversity and Inclusion At Wincanton Primary School, we aim to ensure that no pupil experiences harassment, less favourable treatment or discrimination within the learning environment because of their age; any disability they may have; their ethnicity, colour or national origin; their gender; their religion or beliefs. We value the diversity of individuals within our school and do not discriminate against children because of 'differences'. We believe that all our children matter and we value their families too. We give our children every opportunity to achieve their best by taking account of our children's range of life experiences when planning for their learning. The planning and organising of teaching strategies for each subject is consistently reviewed to ensure that no pupil is disadvantaged. This is in line with our Equality, Diversity and Inclusion Policy.

Policy Review

This policy will be reviewed in keeping with the Policy Review Cycle. This planned programme of review puts subjects together that have common strands of learning, and is included in the annual School Improvement Plan, published in the Spring Term of each year.