



Science Policy

Date of document: September 2021
Date for review: September 2023
Lead reviewer: Helen Doherty
Approval by: governing body

Science Policy

Purpose of Policy

This policy outlines the guiding principles by which this school will implement Science in the National Curriculum (2014) in England - or its equivalent in Wales or Northern Ireland. It is reviewed bi-annually.

Intention

Philosophy:

Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying processing skills. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. We believe that a broad and balanced science education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability.

“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.” **National Curriculum 2014**

Objectives:

Through the teaching of Science our objectives are:

- Preparing our children for life in an increasingly scientific and technological world.
- Fostering concern about, and active care for, our environment.
- Helping our children acquire a growing understanding of scientific ideas
- Helping develop and extend our children's scientific concept of their world.
- Developing our children's understanding of the international and collaborative nature of science.

Attitudes

- Encouraging the development of positive attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work cooperatively with others.
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills.
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Developing the use of scientific language, recording and techniques.
- Developing the use of ICT in investigating and recording.
- Enabling our children to become effective communicators of scientific ideas, facts and data.

Teaching

- Teaching science in ways that are imaginative, purposeful, well managed and enjoyable.
- Giving clear and accurate teacher explanations and offering skilful questioning.
- Making links between science and other subjects.

Implementation

Teaching and Learning:

Science is a core subject in the National Curriculum for England, Wales and Northern Ireland. Science teaching in our school is about excellence and enjoyment. We adapt and extend the curriculum to match the unique circumstances of our school. KS1 and Foundation stage teachers should be teaching science for a minimum of one hour each week. KS2 teachers should be teaching science for a minimum of two hours per week. In KS 1/Foundation stage, a minimum of one third of lessons overall should include practical scientific enquiry. In KS 2, a minimum of 50% of lessons overall should include practical scientific enquiry.

The 2014 Revised Curriculum for Science clearly states that the children should be encouraged to Work Scientifically using the 5 Key Skills of Science:

- 1) observing changes over a period of time,
- 2) noticing patterns,
- 3) grouping and classifying things,
- 4) carrying out simple comparative tests,
- 5) finding things out using secondary sources of information

through the study of biology, chemistry and physics. Our programmes of study will introduce the children to inspiring and engaging scientific areas which will encourage independent thinking and questioning, and teach the key skills they will need to make their own enquiries and conclusions about the world around them.

“The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed 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 about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.” **National Curriculum 2014**

“The principal 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 comparative and 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.”

National Curriculum 2014

Areas of Study for each year group can be found in the Science Overview document which is available on the website.

Each year group will organise at least one trip, or in school experience, with a Scientific focus during each academic year.

Impact

Assessment:

We use assessment to inform and develop our teaching. Topics commonly begin with an assessment of what children already know. Children are involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve. Activities during, and at the end of, each topic record achievement and celebrate success. We mark each piece of work positively, making it clear verbally, or on paper, where the work is good, and how it could be further improved in line with the school’s marking policy.

Once a year, we moderate work together to ensure that our levelling is consistent. Assessment records are reviewed annually. We have a tracking system to follow and accelerate children’s progress. The school science coordinator monitors progress through the school by sampling children’s work at regular intervals. Children who are not succeeding, and children who demonstrate high ability in science, are identified and supported. The school uses commercial end-of-unit tests to assess learning and highlight areas where remedial work is needed. Equally important is the continuous assessment of children’s work, much of which is informal. This assessment is used to inform teaching throughout the school. The Y2 staff assess children’s level of attainment at the end of the KS1 programme of study. This teacher assessment is based on assessment records and work samples. Reports to parents are made verbally in Autumn and Spring term during Parent Review

Meetings, and written once a year, describing each child's attitude to science, his/her progress in scientific enquiry and understanding of the content of science.

Responsibilities

Science Co-ordinator: Helen Doherty

The subject co-ordinator is responsible for ensuring the quality of teaching and learning is maintained across the school. This is done with regular observations of lessons, tracking of planning and collection of examples of work for comparison. Consultation with the full staff at points throughout the year ensure that everyone feels included in the school's overall approach to Science and that planning/assessment are carried out in a consistent way. The co-ordinator is also responsible for ensuring that Science is appropriately resourced and that staff CPD is offered and supported whenever it is required.

Link Governor: Mr Rolton

The Link Governor liaises with the subject co-ordinator and SLT to ensure that the Science Curriculum is delivered appropriately at our school and reports back to the Governing Body. They are involved in decisions about science on the School Action Plan.

SLT

The SLT are responsible for supporting the subject leader and enabling them to complete their responsibilities in an effective and timely manner. They provide advice and monitor the implementation of the subject in conjunction with the subject co-ordinator.

Whole staff

Teaching staff are responsible for planning interesting and effective units of work and assessing the progression of the children in their class. They are included in whole school discussions about Science planning and assessment, science trips and resources.

