Science Policy

May 2024

Document control and record of amendments

Version	Reason for amendment	Sections amended	Amended by/date	Reviewed by/date	Approved by /date
1.0	New format	All	Rebecca Wiggins February 2012	EJS Staff 30.4.12 Curriculum Committee 1.5.12	Governing Body 15.5.12
2.0	Scheduled review	All sections	Rebecca Wiggins February 2015	EJS Staff 9.3.15 Curriculum Committee 15.6.15	Governing Body 29th June 2015
3.0	Make appropriate for Primary School	All sections	Rebecca Wiggins June 2017	EJS Staff Curriculum Committee 15.11.17	Governing Body 20th November 2017
4.0	New Format	All sections	Rebecca Wiggins September 2021	December 2021	January 2022
5.0	Amendments to cross-curricular		Rebecca Wiggins and Melanie Richards	EPS Staff May 2024	SLT May 2024

Date for Review: May 2027

Contents

1. Curriculum Intent

This subject policy is designed to support the overall curriculum intent of Elmbridge Primary School. This is summarised as:

- The Elmbridge curriculum will evolve to reflect the knowledge and skills needed for life in the 21st Century
- Our pupils will be confident to embrace the next stage of their learning
- Pupils will have enquiring minds, be independent and resilient
- Pupils will value the importance of reading and be able to communicate ideas effectively
- Staff and pupils will know how to look after their physical and mental health
- Staff and pupils will show respect, tolerance and compassion for each other

Science Curriculum Intent

Science is important because it is fundamental to our understanding of the world around us and its study develops curious children. Our school wants to nurture confident scientists who feel that science is a subject for people like them/us.

Pupils will learn about 4 key areas in Science; they will revisit these areas during every year at Elmbridge Primary, with each unit of work building upon previous learning. Outdoor learning will be used to support the learning in all year groups. The 4 key areas are:

- Working scientifically: learning and applying scientific methodology
- Biology: the study of living organisms
- Chemistry: the investigation of materials properties and reactions, and the use of such reactions to form new substances.
- Physics: the physical properties and phenomena of something

2. Implementation

The progression of objectives document outlines how the curriculum is progressive from Reception to Year 6.

Early Years
The teaching of science in EYFS is in accordance with the EYFS statutory framework. It is incorporated in the Early Learning Goal 'Knowledge & understanding of the world' in which pupils are guided to make sense of the world they live in. They are provided with opportunities to observe, explore, investigate, ask questions and gain knowledge and understanding through practical experiences. Pupils are introduced to scientific vocabulary to extend their familiarity with words and to support later reading comprehension.

Key Stage 1
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. 'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Science lessons are timetabled for 2 hours per week, which gives pupils enough time deepen their learning.

Key Stage 2
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. 'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary correctly.

Science lessons are timetabled for 2 hours per week, which gives pupils enough time deepen their learning.

3. Methodology

Planning
Each Subject curriculum has been planned to ensure there is progression form early years to Year 6 and so that lessons follow a deliberate sequence; this will enable pupils to build on previous learning and revisit areas of the subject in order to deepen their learning. Overall curriculum objective planning is used to create medium term plans in each year group. Lessons are taught from medium term plans, but with the flexibility to respond to pupils' needs, as well as the contributions they bring to the classroom.

Teaching (see teaching and learning policy)
Science lessons may be driven by a statement, question or learning outcome. Also, a range of stimuli and experiences may be employed, which are designed to engage the pupils and broaden their knowledge and skills. There will be explicit reference to previous learning when this is pertinent. Wherever possible, this will include practical activities that link with the working scientifically objectives.

Recording
Pupils will have a variety of opportunities to demonstrate their learning. This may include:

- Dialogue between pupil and teacher/teaching assistant
- Models, photographs, video recordings
- Written work, drawings and diagrams

Supporting Reading at Elmbridge primary School
At Elmbridge Primary School, Reading is everything. Science will support reading by:

- Use of current news/magazine articles on latest issues
- Use of school and other library books
- Internet research

Enrichment and Cultural Capital
- Outdoor learning and garden school (Whole school)
- Green day (Whole school)
- Cheltenham Science festival (y3)
- Residential (Y6)
- Day trips - We are the curious (Y5), Cotswold wildlife park (Reception), Bristol aerospace museum (Y2)
- In school experiential days – Zoo lab (Y1)
- Field work with local secondary school (Y5 & Y4)

4. Impact

Formative and Summative assessment

The school uses the principles of on-going formative assessment, which helps them understand what a pupil has learned and will help dictate the next steps. Teachers may use lesson tasks, quizzes and short tests to help determine pupil attainment. Pupil attainment against the curriculum strands will be recorded to help identify any gaps in learning.

Monitoring

Subject leaders are responsible for monitoring the standards in their subject. They should aim to formally monitor their subject 3 times per year and complete a monitoring report form, which is then shared with the SLT. The Monitoring should link to the subject action pan and may, in turn, lead to new action points being set. The subject Governor should be invited to support the monitoring at least once per year (see T&L policy).

Moderation

Part of the role of the subject leader is to organise moderation across the different classes and year groups (this could be as part of a staff meeting or during PPA time). They may decide to keep a portfolio of exemplars in order to help staff understand the standards in each particular year group. The subject leader should also aim to make links with other schools, so standards can be judged against those in other settings.

5. Continuing Professional Development

The subject leader should aim to keep up to date with their own subject knowledge and skills, as part of their on-going appraisal. They should, in turn, ensure that teachers have the relevant knowledge and skills they need to deliver high quality geography lessons. They may decide to:

- Audit staff knowledge in order to identify gaps
- Deliver training during staff meeting, Twilight or INSET
- Invite external experts to deliver training

6. Equal opportunities

All children have an entitlement to access the Science curriculum and all children will have access to the resources within the school. All children will be given the opportunity to participate in all activities regardless of gender, race or ability. This will be supported by:

- Providing differentiated work when needed
- Using TA/Teacher support and/or interventions for pupils who need to catch up
- Referring to MY PLANS or EHCP targets for SEND pupils
- Supporting families so all pupils are able to take part in trips and visits
- Supporting EAL pupils with resources available in school
- Monitoring the progress and attainment of disadvantaged pupils

7. Spiritual, Moral, Social and Cultural Development

As a school, we **work together** to enable our pupils to be:

Ready, Respectful, Safe

Spiritual development

Science provides an opportunity for children to develop curiosity and an enjoyment of the world around them. Skills learnt in science give children important tools that will prepare them for life. Pupils are encouraged to explore and experiment to be able to come up with creative solutions. Scientific theories are taught allowing space for children opportunity for discussion and spiritual debate.

Moral

In science, various moral dilemmas present themselves throughout the curriculum e.g. drug trials and future developments, such as AI, provide an opportunity for debate and discussion. Science develops an understanding of actions and consequences.

Social

Science is increasingly a collaborative discipline so pupils are provided with a range of opportunities to work together. This might be when carrying out an experiment, during presentation of results or problem solving. Children are encouraged to understand that science is for everyone. The Elmbridge curriculum reflects the diversity seen in Britain today. Science is a subject that brings the whole school community together through our love of the outdoors and events such as Green Day. We welcome members of the community to support our curriculum, as well as enriching the curriculum with trips.

Cultural

Science is a subject that embraces cultural differences and neurodiversity. It appreciates that to move forward, a range of perspectives must be valued. It is with this philosophy that science at Elmbridge has at its core this ethos. The scientists and science that we study reflect a broad demographic including scientists of local, national and international importance.

8. Links to other Policies

- Teaching and Learning
- SEND
- Staff Development
- Assessment & Feedback
- SMSC Development
- Off-Site Visits
- Pupil Premium

9.Links to other subjects

Links to other subjects

Connections to other subject areas may be made when teaching Science, if they help a pupil develop their knowledge and understanding of Science. These may include:

- Reading non-fiction texts or exploring scientific principals referred to in stories.
- Creating and interpreting graphs and charts that have been taught in maths.
- Writing structures learnt in English
- Explaining scientific phenomena that impact Geography e.g. role of carbon dioxide in climate change.
- Learning about scientific discoveries and important people using historical skills
- Scientific drawing.