



*Inspire Learning, Ignite Curiosity*

## **Marlow C of E Infant School Science Policy 2023**

***Then God said, "Let us make humankind in our image, in our likeness"***

***Genesis 1:26***

### **Rationale**

At Marlow Church of England Infant School our curriculum vision is to inspire learning and ignite curiosity, within a welcoming Christian and spiritual community. We embrace the uniqueness of everybody and are inclusive of all. Our values of respect, kindness, perseverance, forgiveness, thankfulness and service guide all that we do and our aim is for every child to feel nurtured, supported and safe.

Our belief is that every individual is created in God's image and therefore is precious and valuable. We believe in treating everybody with respect and dignity because we acknowledge everyone's God given value and unique identity.

We aim to achieve this by providing children with the opportunity to work towards achieving their full potential by:

- Embracing the uniqueness of everybody and be inclusive of all
- Empowering all to be enthusiastic learners
- Ensuring that every child feels nurtured, supported and safe
- Enriching learning through progressive teaching methods and technology
- Being responsible to and for society
- Being good citizens of the planet

As a school we support the rights of children and these rights are encompassed in the UN Convention of the Rights of the Child. This policy focuses on helping to realise Article 28 All children have the right to a good quality education

### **Science Curriculum Intent**

At Marlow C of E Infant School, children are encouraged to develop an enthusiasm and enjoyment of scientific discovery by ensuring that they are acquiring knowledge. They are given opportunities for hands on experience with exploratory learning and testing out answers to questions that they may have. Our children become independent learners by exploring possible answers for their scientific based questions.

Teachers immerse the children in rich scientific vocabulary that we expect all of our children to be able to use correctly for each topic and to remember it long after the topic is over. We plan high-level vocabulary that is suitable yet challenging for our children.

Developing a passion for science and the idea of discovery can be applied to all aspects of life. The desire to discover is what drives us to learn new things whether it be about our world, space or ourselves and we want to instil this confidence in enquiry in the children.

We expose children to high quality teaching and learning experiences to allow them to have the opportunity to explore the world they live in. This is achieved by presenting them with practical tasks and asking questions. We encourage the children at our school to explore their curiosity and want to ask questions of their own. Once they have learnt new and exciting things, we then teach them to analyse and explain what they have discovered.

We encourage children to be inquisitive and curious, in order to build on what they have learnt and to lead their own learning where possible. Every step and achievement they make, allows them to get closer to understanding the world around us. Our children develop a respect for the world around them, which is embedded in the ethos of the school as one of our school values.

By the time children leave Marlow C of E Infant School they will know different types of scientific enquiry and how to work scientifically with the support of symbols (Appendix 1 & 2). All children will have a clear understanding of the process of how-to carryout enquiry.



The development of the Science curriculum and focused work on implementing the curriculum, Marlow C of E Infant School gained the Primary Science Quality Mark Gilt in 2021.

### **Statutory Requirements**

Statutory requirements for the teaching and learning of Science are laid out in the National Curriculum (2014)

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/425618/PRIMARY\\_national\\_curriculum\\_-\\_Science.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/425618/PRIMARY_national_curriculum_-_Science.pdf)

and in the *Statutory for the Early Years Foundation Stage framework* (2021)

[EYFS framework - March 2021.pdf](#)

and in the *Development Matters in the Early Years Foundation Stage guidance document* (2012).

<https://www.gov.gq/CHttpHandler.ashx?id=104249&p=0>

### **Reception**

The Early Years Foundation Stage curriculum is founded on the principles and practice laid out in the Early Years Foundation Stage Framework (2021) document. The requirements for Science are in the Understanding the World section of Development Matters.

*“Understanding the world involves guiding children to make sense of their physical world and their community through opportunities to explore, observe and find out about people, places, technology and the environment.”*

### **Key Stage 1**

Statutory requirements for the teaching and learning of Science are laid out in the National Curriculum (September 2014) for KS1.

Science is a core subject in the National Curriculum which states that:

*“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.”*

During Key Stage 1 pupils should:

- be encouraged to be curious and ask questions about what they notice.
- 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.

- 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.
- use first-hand practical experiences as well as some use of appropriate secondary sources, such as books, photographs and videos.

Across Key Stage 1, pupils are taught to work scientifically. In this area of the statutory curriculum pupils are taught to use practical scientific methods, processes and skills including:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

Children will learn...

Year 1	Year 2
<ul style="list-style-type: none"> <li>• Plants</li> <li>• Animals, including humans</li> <li>• Everyday materials</li> <li>• Seasonal changes</li> </ul>	<ul style="list-style-type: none"> <li>• Living things and their habitats</li> <li>• Plants</li> <li>• Animals, including humans</li> <li>• Uses of everyday materials</li> </ul>

### **Progression, Continuity and Meeting the Needs of all Pupils**

Differentiation is provided in a number of ways: Teachers will meet the needs of the children initially through the use of quality first teaching and will consider the intended outcome, by adult support provided, and by scaffolding through tasks. Teachers differentiate in short term planning in the way which is considered most appropriate for the child, group or objective being taught.

Teachers will use the science knowledge progression document to ensure they are building on previously taught information. All teachers and children will use the symbols (Appendix 1 & 2) to support understanding of scientific approaches. They can be used as visual cues during lessons as well as on displays to allow all children to make the links between taught lessons and how they are linked to scientific enquiry and working scientifically.

### **Inclusion**

Marlow C of E Infant School is committed to providing effective learning opportunities for all pupils and applies the three principles for inclusion to planning and teaching. Suitable learning challenges will be set for all pupils with the aim of maximising achievement for all pupils at an appropriate level for each individual. Teachers will respond appropriately to pupils' diverse learning needs and be aware of the needs of differing genders, special educational needs, disability, as well as different cultural, social and ethnic backgrounds. We are committed to the principle of equality of opportunity and this will be reflected in the curriculum offered to pupils and in the conduct of staff and pupils.

### **Assessment, Recording and Reporting**

In Reception, teachers and teaching assistants make observations of children during focused and independent learning. Class teachers assess the children's progress against the Development Matters document and where relevant keep evidence in the children's learning journeys.

In Key Stage 1, class teachers assess the children's progress at the end of each unit of work. Teachers assess the children's work in science both by making informal judgements as they observe them during lessons and by doing formal assessments of their work, gauged against specific learning objectives set out in the National Curriculum.

It is anticipated that most children will have achieved the expected standards for their year group in KS1 and the early learning goal of 'Understanding the World' in Foundation Stage. Teachers update children's

progress against the 'I can statements' from the National Curriculum and Early Years foundation stage Framework on Learning Ladders.

Formal written reports are provided each year and this information is shared with parents. Additionally, two other meetings are held each year with parents to discuss progress informally.

### **Role of Governors**

Governors determine, support, monitor and review school policies. They support the use of appropriate teaching strategies by allocating resources effectively. They ensure that building and equipment are safe. They monitor pupil attainment across the school and ensure that staff development and performance management promotes good quality teaching.

### **Resources**

Scientific equipment for investigative work is stored in a cupboard in the staff room. The main science textbooks are also located in there. There is also a wide selection of non-fiction books to support children's scientific understanding available in the school library.

### **Health & Safety**

Staff are aware of the need to consider health and safety issues when planning science activities. Children will be taught the rules of safety when undertaking experiments and investigations. They will be taught to recognise hazards, assess consequent risks and take steps to control the risks to themselves and others. Teachers will ensure all adults are aware of safety implications with any science activity

### **Cross Curricular Links**

Science offers a range of opportunities for developing the children's skill across the curriculum including:

- English - writing in different styles and for different purposes.
- Maths - measuring, recording and interpreting data.
- Computing - recording results, producing tables and graphs. The Internet also offers a wealth of opportunities for the children to research information or take part in online activities.
- Design & Technology - investigative skills, understanding of forces, knowledge of materials.
- Music - exploring and describing sounds.
- P.E. - investigating health issues.

### **Equal Opportunities**

Please refer to the school's Equalities policy.

### **Staff development and training**

Staff development and training is provided in the following ways:

- School based INSET and twilight sessions.
- Liaison with appropriate county and national services.
- Working alongside other teachers or visiting other classrooms as an observer to share good practise.

### **The Role of the Science Leader**

The role of the subject leader is to:

- distribute resources appropriately and monitor their use across the school.
- offer advice on teaching methods and the use of resources to all members of the teaching staff, including incorporating ICT where appropriate.
- inform the staff of any new resources, if appropriate, or ideas in implementing the Science Curriculum.
- update the policy when necessary.
- organise and develop the portfolio of examples of work.
- research and organise possible visitors to school to enrich the science curriculum

- manage the science budget and order materials and equipment to enrich the school's provision for science.
- keep up to date with developments in science education and disseminate information to colleagues as appropriate.

### **Monitoring and evaluation of Science policy**

The effectiveness of the policy will be monitored during the year through:

- monitoring of teaching and learning by the science subject leader and the SLT.
- visits from the inspectorate or advisory team
- consultation with staff
- sampling of pupils' work

### **The following criteria can be used as a measure of success:**

- Have the learning targets been achieved?
- Have standards improved?
- Is there whole-school consistency?
- Has any part of the policy been difficult/ impossible to achieve?

Policy reviewed: January 2023

Review date: January 2026

**Appendix 1**  
**Scientific enquiry symbols**

**Comparative / fair testing**

Changing one variable to see its effect on another, whilst keeping all others the same.



**Research**

Using secondary sources of information to answer scientific questions.



**Observation over time**

Observing changes that occur over a period of time ranging from minutes to months.



**Pattern-seeking**

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



**Identifying, grouping and classifying**

Making observations to name, sort and organise items.



**Problem-solving**

Applying prior scientific knowledge to find answers to problems.



**Appendix 2**  
**Working scientifically symbols**

**Asking questions**

Asking questions that can be answered using a scientific enquiry.



**Making predictions**

Using prior knowledge to suggest what will happen in an enquiry.



**Setting up tests**

Deciding on the method and equipment to use to carry out an enquiry.



**Observing and measuring**

Using senses and measuring equipment to make observations about the enquiry.



**Recording data**

Using tables, drawings and other means to note observations and measurements.



**Interpreting and communicating results**

Using information from the data to say what you found out.



**Evaluating**

Reflecting on the success of the enquiry approach and identifying further questions for enquiry.

