

# Bampton CE Primary School and Nursery

*Learning together with Respect, Friendship and Perseverance*



## ***School Vision Statement***

*We endeavour to enable all individuals in our school community to learn together, grow in respect, tolerance and understanding of the world in which we live and embrace Christian values, to be the best that we can be.*

<b>Title of Policy</b>	<b>Science Policy</b>
<b>Date Adopted by the Governing Body</b>	<b>March 2020</b>
<b>Review Date</b>	<b>March 2023</b>
<b>Signed by the Chair of Governors</b>	

***Our Christian vision for Bampton CE Primary School reflects a passionate commitment to learning and recognition of the uniqueness of individual learners. Guided by our Christian values, we are driven by our desire to offer the best possible education for our pupils in partnership with parents, ODST, Burford Partnership of schools, the Church and the local community.***

## **National Curriculum Science**

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.

Children should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

### **Aims**

The National Curriculum for Science aims to ensure that all pupils:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

### **Scientific knowledge and concepts**

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content. Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study Science.

### **The nature, processes and methods of science**

'Working scientifically' specifies the understanding of the nature, processes and methods of Science for each year group. It should not be taught as a separate strand but should focus on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data.

## Inclusion

We provide an inclusive curriculum which will meet the needs of all pupils, where the teaching and learning, achievements, attitudes and well-being of every learner matters. All children have equal access to the curriculum regardless of their gender or background. This is monitored by analysing pupil performance throughout school to ensure that there is no disparity between groups (including those with SEND, EAL and Disadvantaged Pupils).

Children with SEND are taught within science lessons, and are supported to access learning in all lessons. Where applicable, children’s Pupil Profiles incorporate outcomes which reflect objectives from the National Curriculum.

## School Curriculum Intent

- Children are taught skills in order to work scientifically; these include use of spoken language and the use of scientific vocabulary, use of technology, collaborative working and resilience.
- Children learn a breadth of scientific knowledge in order to make sense of the world in which they live

## School Curriculum Implementation

### **Early Years Foundation Stage**

- Science is included within the “Understanding of the World” section of the EYFS curriculum.
- Hands on, first hand experiences underpin children’s learning
- Each term opportunities are planned for children to develop working scientifically skills and carry out investigations.

Science			
30-50 Months	Physical Development	Health and Self-Care	<ul style="list-style-type: none"> <li>• To observe the effects of physical activity on their bodies.</li> </ul>
	Understanding the World	The World	<ul style="list-style-type: none"> <li>• To comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world.</li> <li>• To talk about some of the things they have observed, such as plants, animals, natural and found objects.</li> <li>• To talk about why things happen and how things work.</li> <li>• To develop an understanding of growth, decay and changes over time.</li> <li>• To show care and concern for living things and the environment.</li> </ul>
	Expressive Arts and Design	Exploring and Using Media and Materials	<ul style="list-style-type: none"> <li>• To begin to be interested in and describe the texture of things.</li> </ul>
40-60 Months	Physical Development	Health and Self-Care	<ul style="list-style-type: none"> <li>• To eat a healthy range of foodstuffs and understand a need for variety in food.</li> <li>• To show some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.</li> </ul>
	Understanding the World	The World	<ul style="list-style-type: none"> <li>• To look closely at similarities, differences, patterns and change.</li> </ul>
ELG	Physical Development	Health and Self-Care	<ul style="list-style-type: none"> <li>• To know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe.</li> </ul>
	Understanding the World	The World	<ul style="list-style-type: none"> <li>• To know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another.</li> </ul>

## Primary Phase

- The scientific knowledge, as defined in the National Curriculum, is set out as scientific topics to be taught in each year group. (see Target Tracker Science statements for each year group)
- Work is evidenced in a Science book which is passed on through each Key Stage.
- Planning places a focus on practical and hands on experiences to strengthen conceptual understanding.
- Learning subject knowledge is supported by the revisiting of science topic areas which build on previous learning.
- Each unit of work starts with a simple assessment of what children already know.
- The skills needed for working scientifically are planned to build progressively each year.
- Maths skills are applied through working scientifically elements and to support recording in science.
- Technology is used appropriately to support investigating, recording and reporting.
- Science topic work may be used to support a writing learning focus.
- Working scientifically skills are broken down and taught explicitly and care is taken to ensure the learning focus is clearly defined to focus on the skills being developed. This ensures pupils science skills and knowledge are able to be demonstrated and not hindered by unnecessary writing or recording.
- There are at least two planned opportunities to apply working scientifically skills each term.
- Learning is delivered either in weekly 2 hour lessons or blocked each half term to allow the same amount of curriculum time coverage but allow extended periods of time to develop learning. The decision on how to deliver each unit is based on the unit content and how this is best delivered to maximise impact on learning (e.g. seasonal learning in on going through the year and therefore not blocked but a day may be spent developing working scientifically skills alongside subject knowledge)
- Visits and workshops are planned (at least once in each year) to support specific science topics to provide children with enhanced learning opportunities (e.g. Science Dome in school to deliver workshops, class trip to Oxford Science centre)
- Age appropriate and subject specific technical vocabulary is explicitly taught as part of each unit of work. (e.g. STEM vocabulary sheets)
- Each topic is started with a subject specific essential information sheet which is stuck in pupil's science books
- Each term the science display in classrooms supports the teaching and learning of the unit of work.
- Learning objectives are linked clearly to expected outcomes and marked in line with the marking policy to identify pupils' success and areas for development.
- At the end of each unit of work teachers assess pupil's attainment and this information is recorded on the school Target Tracker system.

## School Curriculum Impact

- Progress is measured through a child's ability to know more, remember more and explain more. This can be measured in different ways in our units of work.
- The subject leader uses Target Tracker attainment data to analyse outcomes against age related expectations. Pupil progress is tracked by the science leader to ensure children are making expected progress from their starting points.
- Teachers use Target Tracker data to identify prior learning to support future planning.
- Work scrutiny and pupil voice monitoring activities are led each long term by the science leader to monitor the quality of teaching and learning and the impact it has on children.
- Moderation is undertaken between staff and with partnership schools to verify and agree shared expectations
- Areas of curriculum strengths and weaknesses are analysed by the subject leader and actions planned, with the agreement of SLT, to address areas for improvement.

- The impact of using the full range of resources included in the science units will also be seen across the school with an increase in the profile of science.
- The learning environment across the school will be more consistent with science technical vocabulary displayed, spoken and used by all learners.
- Whole-school and parental engagement will be improved through the use of science-specific home learning tasks and curriculum enrichment activities.
- Children who feel confident in their science knowledge and enquiry skills will be excited about science, show that they are actively curious to learn more and will see the relevance of what they learn in science lessons to real-life situations and also the importance of science in the real world.

### **Monitoring and review**

As part of the annual ongoing self-evaluation process:

- The science leader reports termly to SLT and annually to the Governing Body
- CPD needs of Teachers and Teaching Assistants are regularly reviewed and training opportunities planned as appropriate.