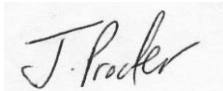


Science Policy

Review cycle	1 / 2 / 3 years	Date: September 2023
Approved by	Executive Headteacher	
Changes made in this review cycle		
Linked policies	Early years Teaching and learning Subject leadership	
Signed		Date: September 2023
Position	Executive Headteacher	
Date of next Review	September 2024	

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Date: Sept 23
Review: Sept 2024
Co-ordinator: Erin Mackarness

Intent

Our intent in Science is that all children of all abilities will experience a curriculum which provides the children with the opportunity to investigate Science through practical experiences in real life contexts. They will have the opportunity to learn scientific enquiry skills as develop their scientific knowledge. Scientific language will be developed through the topics and activities will encourage their naturally inquisitive minds and offer them opportunities to stimulate their natural curiosity.

Implementation:

Lessons will:

- Develop scientific language. Word mats link to vocabulary.
- Incorporate key scientific enquiry skills within topics.
- Teach specific knowledge linked to the topic building on prior learning.
- Offer activities to promote questioning and curiosity.
- Deepen their scientific understanding through carefully planned sequences of lessons.
- Make links to the real world and encourage children to think about the purpose of science (engineering, medicine, scientific jobs and make links to STEM)
- Learning is accessible to everyone including coloured backgrounds, font size, small chunks of information relevant to the reading ages and individual interests/neurodiversity needs taken into account in planning.
- Physical equipment might need to be adapted to provide reasonable adjustments.
- Alternative options to be offered for children to access learning eg practical, verbal quotes to show understanding.
- Risk assessments made to assess safety when using physical resources.

Impact:

By the end of primary school children will have gained a range of scientific knowledge and be will confidently use scientific vocabulary when taking about different topics. They will have a good understanding of the individual skills needed for scientific enquiry and be able to use these to investigate. They will have developed curiosity and questioning skills about different theories in science and the world around them. The children will be able to link their scientific knowledge to real life situations in the outside world.

Introduction/Philosophy

Science in our federation aims to provide the children with the opportunity to investigate Science through practical experiences in real life contexts. The children will become competent scientific thinkers who will experience awe and wonder through scientific investigative experiences and approaches. The curriculum will offer links between subjects, including Forest School, to enable the children to apply the skills and knowledge in their learning. Science in our federation will enable to children to think deeply about scientific concepts, question these and then apply them to the outside world and their future.

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Why We Teach Science

Science makes an extremely valuable contribution to all aspects of life. Children are naturally fascinated by everything in the world around them, and Science makes a valuable contribution to their understanding. We must encourage their naturally inquisitive minds and offer them opportunities to stimulate their natural curiosity.

Aims Of Our Science Teaching

- Achieve the best possible standard from their own personal starting point.
- Teach the children a broad and engaging curriculum focusing scientific skills and scientific knowledge.
- Develop and deepen pupils' ability to use scientific methods of investigation.
- Build on our children's natural curiosity by asking them what they know and what they want to find out before topics are taught.
- Develop an understanding of scientific ideas and concepts in the real world.
- Stimulate our children to investigate and question.
- Cultivate positive, personal qualities and attitudes.
- Understand that Science is relevant to everyday living and a lifelong skill, by solving problems that are set in a real life context.
- To develop critical thinking and the confidence to question ideas in order to deepen their understanding
- Develop a critical awareness of the role of Science in society and in their own futures
- Encourage pupils to enjoy Science and see Science as an interesting, exciting and stimulating way of learning.
- To teach and develop scientific vocabulary and enable the children to use this in their discussions and written science work.

Through our aims we intend to develop the following skills in Science:

Predicting
Hypothesising
Recording information and collecting data
Discussion – reporting to others
Raising questions
Observation
Comparing, sorting, classifying
Making a plan
Estimating and measuring
Controlling and manipulating variables

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Handling equipment
Interpreting information
Making conclusions

National Curriculum 2014

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved. Within our school curriculum framework we will cover all the expectations of the National Curriculum which will with planning and help to ensure progression.

Organisation

The Science Co-ordinator will ensure that there is a balance of Science in the timetables and that all areas of the National Curriculum Science Orders are being covered through chosen topics. They will also resource the Science equipment and order new equipment when necessary.

There should also be a variety of books available for the children to investigate and extend their knowledge of given Science topics. Children are encouraged to extend their work and interests by bringing things in from home, performing set tasks, using forest school to enhance learning, school trips, listening to outside speakers or having visitors in their classrooms to support current topic work.

Planning

Planning is based around investigative skills and knowledge within Science. Each year group teaches science within their different topics. Lessons are based around the knowledge and understanding and investigative/scientific enquiry. Science teaching may also take place within topics, as stand-alone lessons or as blocked periods. The Science coordinator ensures continuity and coverage throughout the different year groups. This is shown through the science school overview on the planning cycles.

Continuity and Progression

A continuous thread runs through all the Science by the strong emphasis put on scientific enquiry and investigation. Assessments made are based on the progression of skills in scientific enquiry/investigations. They build on the individual skills for each year group. Assessment of children's knowledge/theory in the different areas also contribute to overall assessments made. Monitoring through looking at children's work and lesson observations ensures the continuity and progression throughout the school.

Teaching Methods

The majority of Science is taught through termly topics. This cross-curricular approach provides an interesting and relevant focus to our Science teaching. Science is taught to children in a variety of ways, creating a balance of approaches and methods, depending on the Science activity. It may be:

1. Individual/paired work

2. Small groups
3. Large groups (half class)
4. Whole class

Science lessons involve the use of a variety of practical equipment. The emphasis is always on first-hand experience. Children are encouraged to 'do' and 'have a go' at Key Stage 1 and Key Stage 2. As the children progress through the school they are encouraged to record their work in detail. It is expected that all children are able to apply their scientific vocabulary and start to record within science books. The investigations are assessed using focused success criteria building on the individual enquiry skill.

Information and Communication Technology

Technology will be used to support teaching and learning. The children will make links to their topics using technology. Purple Mash is used to record data and the children use this to enhance their investigations. Teachers are encouraged to source appropriate technology for supporting their current scientific topic.

Equal Opportunities and Differentiation

Children of all abilities and gender can access Science within our federation. Where appropriate adaptations to the learning will be made and support will be given. The teaching system within our school (see Teaching and Learning Policy) allows for variation of ability between children within the existing Science Curriculum. Science taught is interesting and exciting, and we aim to create an environment that offers everyone the same opportunities, as well as offering support of extension to those pupils who need it. Each science unit taught will take into account the prior knowledge of each individual child with pre assessments, enabling the planning to reflect the needs of the child.

Resources

It is important that the children have access to, and are aware of, the resources available to them. The children are taught how to safely use the equipment. We encourage scientific observation by individual children. The Science Co-ordinator is responsible for ordering resources when needed, as well as individual teachers obtaining resources for specific topics. Audits within schools are completed in line with the action plan.

Safety In Science Activities

We accept a responsibility to plan safe activities for Science. Teachers and support staff are aware of the Primary Curriculum Risk Assessments which are reviewed and revised by the Health and Safety Coordinator or the school.

Assessment and Record Keeping

Teachers assess the children through scientific enquiry investigation books alongside assessing the children's knowledge. Each child has a science book, every term skills will be assessed using a whole school scientific

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enquiry system. Assessments made through pupil comments, written and drawn investigations and practical investigations will contribute towards an overall level. Children are also assessed in their subject knowledge at the end of a unit. Target tracker is used to record assessments.

Role of the Headteacher and the Science Co-ordinator

The Headteacher and the Science Co-ordinator will liaise between the Key Stage 1 and Key Stage 2 departments, as well as with their secondary feeder schools. The Science Co-ordinator will support colleagues who are planning Science activities, as well as being available when needed to implement those activities. The Science Co-ordinator will attend relevant Science Courses and report back to staff. The Headteacher has a vital role in encouraging colleagues to teach effective Science and ensuring that the National Curriculum for Science is being delivered to the children.