Science

Date:	April 2018	**Review Date:**	April 2019

Our school is a Church of England School and works in partnership with our two local parish churches, St Mary with St Albans and St Peter and St Paul's. We aim to reflect the values, traditions and beliefs of the Christian Faith and therefore our Spiritual Values underpin everything that we do.

"We believe high standards of care and love are an integral part in the quality of teaching and learning across the whole curriculum. Our school Christian vision of 'Life in all its fullness' applies to all areas of our school, including our teaching of Science. The two great commandments given by Jesus will underwrite the life of our school; they are to 'love God' and to 'love your neighbour as yourself'. It is our aim for both of these instructions to be evident in the whole life of the school, in the relationships between all members of the community, pupils, staff and parents, and also in our safeguarding responsibilities.

St Mary's and St. Peter's school fully recognises its moral and statutory responsibility to safeguard and promote the welfare of all pupils. Our Science policy is one of a range of documents which include our safeguarding responsibilities of the school. We wish to create a safe, welcoming and vigilant environment for children where they feel valued, protected and have a great opportunity to deepen their understanding of the world around them.

Science stimulates and excites pupils' curiosity about phenomena and events in their world. It links ideas and knowledge with direct practical experience and can engage learners at many levels. Scientific method develops and supports inquiry through experimentation and proposition. It develops creativity in thought and analysis in practice. Children learn to develop the scientific skills of observing, predicting, hypothesising, recording and drawing conclusions.

In studying Science, pupils gain understanding about how ideas contribute to scientific change – impacting on industry, business, looking after our world's resources and medicine and improving the quality of life. As part of our "Life in all its fullness" ethos, children gain wisdom, knowledge and skills in order to learn to question and discuss issues that may affect their own lives, our community and the future of the world.

Aims

- To engage pupils as learners at many levels through linking ideas with practical experience, where possible.
- To stimulate and excite pupils' curiosity about changes and events in the world and to enable them to satisfy this curiosity with understanding.
- To link pupils' understanding with scientific thought and thus develop a greater understanding of the world in which we live and their responsibility to ensure its sustainability

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Objectives

- To help pupils develop, model and evaluate experiments using critical and creative thought.
- To develop pupils' questioning and analytical skills.
- To develop pupils' understanding of how major scientific ideas contribute to technological change and how this impacts on improving the quality of our everyday lives.
- To provide a rich and varied science curriculum that will stimulate and interest all pupils.
- To ensure teaching styles and methods in science vary to suit the type of learning and the pupils' differing learning styles and abilities.
- To provide appropriate and sufficient scientific resources for all pupils that will support effective learning and teaching.
- To develop a variety of skills, including those of fair testing and making comparisons, identifying and classifying things, looking for patterns and relationships, researching and using secondary sources, observing changes over time and different means of presentation in a cross-curricular way.
- To develop a responsible attitude towards safety and understand how to use appropriate tools and equipment with accuracy and care.

Teaching Guidelines

Science is a core subject of the National Curriculum.

Pupils in Reception develop their knowledge, understanding and skills through play activities and direct teaching, which begin to develop the skills needed for further scientific enquiry. The work covered at Key Stage 1 builds on the Early Learning Goals for Knowledge and Understanding of the World.

Lessons all have clear learning objectives, which are shared with and understood by the children. Each lesson should have a knowledge and understanding learning objective and a Thinking Scientifically learning objective. Children are at all times aware of what they are going to learn through the activity, and what skills the teacher is looking for in their learning.

Teachers use a range of learning and teaching styles, incorporating individual, pair, class and group work into lessons. Children are taught through discussion, practical activity, games, investigations, problem solving, recording and practice, consolidation, and regularly use computers and other technology, such as data loggers, to record and support their work. The teaching style and methods are varied according to the subject matter and the pupils being taught.

Planned activities inspire the pupils to experiment and investigate the world around them. They are encouraged to raise their own questions such as

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"Why…?", "How…?" and "What happens if…?". Practical work develops the skills of enquiry, observation, research, experimentation, use of apparatus, measuring and checking results, making comparisons and communicating results and findings. Activities are challenging, motivating and extend pupils' learning.

Pupils have frequent opportunities to develop their skills in planning investigative work, selecting relevant resources from a range provided, making decisions about sources of information, carrying out activities safely and deciding the best form of communication for their findings. They are encouraged to take responsibility for their own learning as far as possible for their ages and abilities.

Where possible, science activities are linked to topic work, especially in history, geography, design and food technology and art. Computing and mathematics may also be used to support science teaching. As children progress through school, science may be taught as a discrete subject when there are no obvious cross curricular links or where complex concepts are being taught. Programmes of Study, follow the advice set out in the 2014 Curriculum and topics are taught in a cyclical way with opportunities for revision, consolidation and extension.

Science teaching mostly takes place in the classroom' but the school grounds and the local environment are used when appropriate. Visits to supplement science work take place as identified in schemes of work.

Curriculum Planning

This is organised in three stages:

Long Term Planning - This is based on the 2014 National Curriculum for science, which details what is to be taught over the Key Stages and provides the topic basis for planning science activities for each year group. This is undertaken by the Science Coordinator and varies little from year to year, unless there are changes to the National Curriculum.

Medium Term Planning - This planning is more detailed and the objectives are more specific in nature. This planning is developed by the year group teachers together, who respond to the needs of their pupils. It also ensures a balanced distribution of work is undertaken across each term and that cross curricular link can be made where appropriate.

Short Term Planning - Lessons are planned in detail and specific class objectives are set, in accordance with the needs of the pupils. Plans show various forms of differentiation and sometimes Individual learning goals might also be set for pupils in some lessons. The teachers collaborate on the planning of science to ensure parity in provision and to share expertise.

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Monitoring and assessment

The science curriculum is monitored by the science coordinator, who examines pupils' work, monitors classroom practice and planning and ensures parity of entitlement for all pupils across the school. Moderation is carried out annually with specific focuses and the Science coordinator and other teachers are involved in Moderation sessions with other schools.

Assessments in the Foundation Stage are recorded through observations, 80% of which are carried out when children have initiated their own activities. These observations are recorded in EYFS Tracker and continuously inform teacher's judgments as to whether Early Learning Goals have been achieved or not.

In KS1 and KS2, children complete a Rising Stars tests to support teachers make a judgement about weather a child is working towards, has achieved or has mastered each part of the Science Curriculum being taught. Target tracker is then updated at least termly, with this information. In Year 6 past SATs paper style questions may also be used to assess children. At the end of the academic year, all year groups record a single overall level (b, b+, w, w+) for each child for science.

Effectiveness

We believe this policy will be effective only if we ensure consistency across the school by regular monitoring.

Headteacher:		**Date:**	
Chair of Governing Body:		**Date:**	

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