Middleforth Church of England Primary School

Science Policy	
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Let Your Light Shine – Matthew 5:16

Through the Science Policy, the school will promote and teach the values we learn based on the example of the Christian faith:

- Forgiveness
- Respect for self and others
- Reconciliation and redemption
- Truth and honesty
- Trust and fairness
- Tolerance and compassion
- Self-discipline
- Respect for property and the environment
- Politeness

Such values, in turn, promote not only the Christian ethos and aims of Middleforth Church of England Primary School, but assist in the preparation of the children for the responsibilities and duties of adult life.

Vision

As a caring, Christian community, we aspire to 'let our light shine'. We will open up the world to celebrate God's wonderful creation and foster a sense of awe and wonder.
We will nurture our God given talents to ensure that everyone reaches their full potential academically, socially and spiritually.
'Let your light shine Matthew 5.16'

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1. INTRODUCTION

At Middleforth, our aim is to help children make greater sense of the world around them. We aim to provide a hands-on approach to Science, encouraging children to ask questions and follow their own lines of enquiry. Practical investigations are carefully planned so as to develop children's scientific skills, including - observing, measuring, predicting, hypothesising, recording, interpreting and communicating.

2. 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.

3. CURRICULUM AND SUBJECT CONTENT

The programmes of study for Science are set out for each year group for key stages 1 and 2 in the National Curriculum. Class teachers are responsible for ensuring that all of the relevant statutory content is covered within the school year. The school's Long-Term Overview outlines the units to be taught. The National Curriculum lists the statutory content which should be taught within each unit. Non-statutory guidance is also provided which staff members are encouraged to use.

Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	Humans	Materials	Electricity	Plants	Animals, excluding Humans	Forces
Reception	Materials Including Changing Materials		Living Things and Their Habitats (Plants)	Humans	Light	Animals Excluding Humans
	Seasonal Change					
Year 1	Animals Including Humans		Plants		Everyday Material Properties	
	Seasonal Change					
Year 2	Uses of Every day Materials	Plants	Living Things and Their Habitats		Animals Including Humans	
Year 3	Plants	Light	Forces and Magnets		Rocks	Animals Including Humans
Year 4	Electricity	Sound	States of Matter		Animals, Including Humans	Living Things and Their Habitats*
Year 5	Earth and Space	Forces*	Properties and Changes of Materials		Living Things and Their Habitats	Animals including Humans (taught alongside PSHE) *
Year 6	Electricity	Light	Living Things and Their Habitats		Animals Including Humans*	Evolution and Inheritance

4. WORKING SCIENTIFICALLY WITHIN THE CURRICULUM

Class teachers must ensure that there are frequent opportunities for pupils to 'work scientifically' within the curriculum. 'Working scientifically' specifies the understanding of the nature, processes and methods of Science. Pupils are required to work scientifically within all areas of the Science curriculum. At Middleforth, teachers follow the 'PLAN' documents which identify opportunities to work Scientifically in each unit.

The following skills are statutory:

Year 1 and 2

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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.

Year 3 and 4

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer
- them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate
- measurements using standard units, using a range of equipment, including thermometers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations
- displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings.

Year 5 and 6

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.

5. STAFF TRAINING

The Science subject leader is responsible for ensuring that all staff are adequately trained so that they are able to deliver the curriculum effectively. This will include: organising CPD; leading staff meetings; sharing resources for planning and teaching; supporting colleagues.

6. PLANNING

Middleforth 'topic' planning format to be used for planning. Plans will follow sequence of learning taken from the overview documentation which follows PLAN documentation.

Science is to be taught weekly.

Science should be taught discretely in most cases but teachers are encouraged to make links to themes across the curriculum.

Teachers follow *PLAN* documentation to plan lessons. PLAN documents can be found on the shared drive in the Subject Leader folder.

- Long Term Planning:

The curriculum map (see above) outlines the units which are taught in each year group. A progression map of knowledge has also been created by the subject leader (see website)

- Medium Term Planning:

A medium term plan for all units of work has been created and shows progression from Nursery through to Year 6. Medium term plans provide an overview of each unit of study. The National curriculum statements for each unit can also be found in this document.

PLAN documentation for each year group provides suggestions for teaching and learning activities – these may serve as a good resource for all medium-term planning.

- Short Term Planning:

Short term planning is the responsibility of individual teachers, who build on medium-term planning by taking account of the needs of children in their class and identifying the way in which ideas might be taught. These plans are solely for the benefit of the class teacher and do not need to be shared with the subject leader.

7. TEACHING APPROACHES

A variety of teaching approaches are presented to children throughout their Science lessons. These include:

- Teacher guided sessions, where information is provided.
- Mixed ability group work where the children discuss problems in small groups.
- Class discussion lessons where members are encouraged to join in with their personal opinions.
- The use of differentiated tasks allowing children of different ability levels to work at their appropriate pace.
- The use of audio-visual aids in presenting material to the children.

- The use of fieldwork where possible so that children gain first-hand experience of local and contrasting environments.
- The integrated use of ICT within Science lessons.

8. STRATEGIES FOR RECORDING LEARNING

The children's work is viewed as an on-going record of their progress and attainment in this subject.

- Science books

Every child in school has an A4 Science book. The purpose of these books is to: record work from classroom-based tasks; write short self-reflections about their learning; record and annotate photographs of learning or specific achievements.

Learning should be recorded in these on a regular basis. Occasionally, the subject leader will request to view a range of Science books from different year groups so that good practice can be shared and teaching can be developed.

KS1 children also have a nature journal to record outdoor work in. This work may not be there to be marked, but to evidence outdoor work and reflection.

- Canva

Practical Science can be recorded and evidenced on a whole school Canva document. This is where staff should evidence examples of 'Working Scientifically'.

9. PROCEDURES FOR ASSESSMENT AND REPORTING

Teachers assess each child at the end of each unit of work, using the following descriptors:

- Working below age related expectations
- Working at age related expectations
- Working above age related expectations

These grades are based on the expectations for children in that year group. To support class teachers in making their assessments, staff can use the Knowledge Matrices from PLAN documentation as well as the Lancashire Science Assessment documents.

10. EQUAL OPPORTUNITIES

We aim to create equality of opportunity for all our children, whatever their gender, abilities or background and give them chance to demonstrate what they know, understand and can do.

11. SPECIAL EDUCATIONAL NEEDS:

The School's Policy document for Special Educational Needs explains in full the procedures which are in place for providing for pupils with Special Educational Needs. Within Science, tasks are differentiated to ensure access to the National Curriculum and to offer activities which are relevant to the development of the child.

MORE ABLE PUPILS:

Pupils with above average ability are to benefit from a curriculum which offers challenge and opportunities for investigation in order to extend their learning.