Woodlands Primary School

Science Policy

Written by	Verity Thomas/Katie Taylor
Date for Review	March 2020
Signed – Headteacher	

This policy has been impact assessed by Kelly Powell in order to ensure that it does not have an adverse effect on race, gender or disability equality.

1 Introduction

1.1 This policy outlines the purpose, nature and management of the science taught and learnt in our school. Science is a core subject within the National Curriculum.

1.2 The school policy for science reflects the consensus of opinion of the whole teaching staff. It has been drawn up as the result of consultation with staff and has the full agreement of the governing body and teachers.

1.3 The implementation of this policy is the responsibility of all the teaching staff.

2 The Nature of Science

2.1 A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science 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. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes.

3 Entitlements

3.1 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 applicable to the children's developmental age and stage
- 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.

3.2 All children have an entitlement to access the programmes of study at an appropriate level.

3.3 All pupils at Woodlands have equal access to the science curriculum. The teaching of science avoids stereotyping and is sensitive to race, class and gender issues.

4 Implementation

4.1 The programmes of study set out in the National Curriculum form the content of the school's curriculum for science. In KS1 and KS2, 'Working scientifically' is described separately in the programme of study but is taught clearly relating to the substantive science content in the programme of study. In both Key Stages, pupils are expected to read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge.

4.2 Scientific Enquiry

4.2.1 KS1

Science is taught with an emphasis on pupils engaging with and experiencing observable phenomena, looking more closely at the natural and humanly-constructed world around them. Teachers use a range of strategies to encourage children to be curious and ask questions about what they notice. Children are 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. They 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. Most of the learning about science is done through the use of first-hand practical experiences, but there is also an emphasis on using books, photographs and videos to gather further information.

4.2.2 Upper and Lower KS2

Science is taught with an emphasis on the pupils engaging in practical enquiry to support and develop their understanding of scientific concepts and skills. Teachers use a range of strategies including: exploration, investigative enquiry and illustrative enquiry. Teachers try to ensure that the children's ideas are used as a basis for enquiry.

Children are encouraged to record their investigations using the relevant enquiry skills including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. These key enquiry skills are introduced in year 3, further developed in year 4 and fully utilised in years 5 and 6.

4.5 Knowledge and understanding

The principal focus of the science teaching in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They will explore and talk about their ideas; ask their own questions about scientific phenomena; and analyse functions, relationships and interactions more systematically. At Upper Key Stage 2, they will encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They will also begin to recognise that scientific ideas change and develop over time.

4.6 In KS1, Science is taught in every term and is taught as part of a topic.

In KS2, 5 to 6 units of work are taught per year group and the teaching takes place in 5 out of 6 terms for one afternoon per week or in blocks during a term, depending upon the topic.

4.7 Pupils also undertake visits to science shows or are involved in science projects with local secondary schools.

4.5 The National Curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. Pupils are assisted in making their thinking clear, both to themselves and others, and teachers ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions. Assessment and tracking of speaking and listening in science is recorded in Target Tracker.

4.3 In the Acorn and Oak buildings, age appropriate sources and teaching resources can be found: Acorn - in classrooms and central resource rooms.
Oak - in the science cupboards, the school libraries and in the staff PPA rooms.

4.7 Sources and resources are available for children of all abilities.

4.7.1 Children will be encouraged to bring items of interest to school to stimulate discussion and to display inside and outside the classroom.

4.7.2 All children will have the opportunity to use a range of ICT equipment to enhance their scientific learning. e.g. digital cameras to record investigations; data loggers for accurate measurements of temperature; and digital microscopes for close observation. Programmes such as Excel are used to create graphs and charts to record results.

4.8 All teachers are responsible for planning and teaching science. They are also responsible for ensuring that class helpers and teaching assistants are conversant with the Woodlands Primary science policy.

4.9 Activities within the classroom and further afield will comply with the guidelines in the school's health and safety policy.

4.10 Pupils at Woodlands Primary School will be taught science in their normal class groups and on occasions as a year group. Children with special educational needs will be given the opportunity to learn at their own level, either individually or in small groups with teaching support.

4.11 Children's work may be displayed in classrooms and/or the school. Children will, at times, be involved in the selection, evaluation and display of science work.

5. <u>Assessment</u>

5.1.1 In KS1 the children are assessed at the end of every topic using a science knowledge based assessment devised by the teachers. This is based upon the statements from Target Tracker. Steps are uploaded onto Target Tracker at the end of the year. End of unit assessments are recorded and kept in the children's Science books. Examples of Science assessments from each year group are kept as evidence in the Science Coordinator's file.

5.1.2 In KS2 two types of assessment are carried out for each unit taught throughout the year. Pupils undertake a scientific investigation which is assessed against the 'Target Tracker' statements relevant to the unit and based on the requirements of the new National Curriculum. Children are assessed at the end of every topic using a science knowledge based assessment devised by the teachers. Additionally, pupils may undertake a science knowledge-based assessment for each unit of work to support the completion of the teacher's assessment. Steps are uploaded onto Target Tracker at the end of the year. Results from these assessments show progress over time and examples of Science assessments from each year group are kept as evidence in the Science Coordinator's file.

5.2 On-going or end of year assessments linked to the units of study will be recorded about individual pupils using "Target Tracker", where children will be assessed against the "Target Tracker" statements as having 'met the expected standard' or 'not met the expected standard'. A child who has studied a concept can be marked as "working towards". At the end of each academic year, Target Tracker data showing levels of achievement will be available to the next teacher.

6 Reporting

6.1 Formal, individual reports to report pupils' progress are sent home at the end of each academic year.

7. Inset/Needs

7.1 Regular meetings between the science coordinator and staff and/or the Head Teacher provide the opportunity to identify any CPD needs and curriculum requirements.

8.0 Health and Safety

The LEA has adopted the ASE book 'Be Safe' as its model risk assessment; a copy of this can be found in the Planning Room and should be consulted when necessary. If an activity is not covered by 'Be Safe' then we will contact CLEAPSS (School Science Service Helpline 01895 251496) for further advice.

Reviewed by Verity Thomas and Katie Taylor March 2017

Signed: ……

Year	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
1	Woodlands and our community (animals and plants in our local environment)	The British Isles (Materials)	The Victorians (Materials)	Pole to Pole (animals and their environment) Investigations	A work of Art (Plants)	A Knight's tale (Materials)
2	Famous People (living things and their habitats/ plants)	Rainforests (living things in their habitats/animals)	Night/Day (living things in their habitats/animals)	London's Burning (Materials)	Japan (Humans and exercise)	Seaside (plants)
3	Rocks (fossil formation)		Forces & Magnets	Animals including humans. * (nutrition in all animals and skeletons/ muscles)	Plants	Light (shadows/reflection)

4	Electricity (simple circuits/ insulators and conductors)	States of matter (Solid, liquid & gases)	Sound *		Animals including Humans. (digestive system, teeth, and food chains)	Living things and their habitats (Classification/habitats)
5	Properties and changes of materials		Forces (gravity, drag force, air resistance, water resistance and friction)	Earth & Space	Animals including humans (circulatory system/ diet)	Living things and their habitats: Lifecycles/ reproduction in plants.
6	Electricity * (Part 2) Forces (old	**Materials** Materials – Mixing, Dissolving and Separating (old	Light * (How light travels)			Animals including humans (reproduction in plants and animals, changes in

	curric)	curric)				humans) *
	Living things and their habitats: classification ON HOLD				Evolution & inheritance (build on fossil work in Year 3) ON HOLD	

Year 3 topic Year 4 topic
Year 5 topic Year 6 topic