St Mary's Fields Primary School

SCIENCE POLICY

Print Name……(Chair of School Improvement Committee)

Signature……. Date ……..….

Print Name…….(Chair of Governors)

Signature……. Date …….

Print Name…….(Headteacher)

Signature……. Date …….

SCIENCE POLICY
ST MARY'S FIELDS PRIMARY SCHOOL

Contents

1 Introduction and context

1.1 The position of Science within the primary curriculum

The National Curriculum states the following:

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics…all pupils should be taught essential aspects of 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.

1.2 Purpose of this policy

The purpose of this policy is to outline a consistent whole school approach to the planning, teaching and assessment of Science at St Mary's Fields Primary School. The policy ensures that all staff are providing equally high quality opportunities for our pupils to develop their scientific knowledge, skills and interests. Alongside the Curriculum Overview, the policy ensures that particular areas of learning are not missed or unnecessarily duplicated as children progress through the school. The

final purpose of the policy is as a clear communication to parents and outside agencies of what they should expect of the science provision being provided to the children in the school's care.

All schools are required to set out their school curriculum for science on a year-by-year basis and make this information available online.

This policy should not be read in isolation. It should be viewed in conjunction with many of the other school policies, the most relevant including:

- Teaching and Learning Policy
- Health and Safety Policy
- More Able Policy
- Special Educational Needs Policy

1.2 School aims and objectives

The table below demonstrates some of the ways in which science teaching within the school consistently supports the aims for our pupils outlined in our vision statement:

Reflective learners	At the beginning of each unit of work children are encouraged to reflect on what they already know and what they want to find out. At the end of the unit they revisit this to reflect on what they have learnt.
Team players	Most investigation work is carried out in small groups. Children are encouraged to take different responsibilities within the group and share the responsibility of reporting their findings. All lessons involve discussion work which is often done in 'talk partners'.
Self-motivators	Children are encouraged to read around, research or ask questions at home about their science topic.
Independent learners	Through science lessons children are taught be investigative and independent thinkers and problem solvers. They are constantly called upon to apply their knowledge.
Creative thinkers	Much of the learning in science is done through practical investigations. Often children are given a problem and need to design a way to investigate or test a theory.
Effective participators	Science teaching within the school helps children to develop a better understanding of the world around them. They are encouraged to think about the impact of human actions upon the environment and how science can be used to improve our lives.

2 National Curriculum coverage

We follow the National Curriculum for science to ensure that all pupils:

- develop scientific knowledge and conceptual understanding;
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them 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.
- use technical terminology accurately and precisely, building an extended specialist vocabulary;
- apply their mathematical knowledge to their understanding of science, and seek answers to questions, by collecting, presenting and analysing data;

- ‘work scientifically’ by focusing on the key features of scientific enquiry so they learn to use a variety of approaches to answer relevant scientific questions. Types of scientific enquiry include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources.
- develop a secure understanding of each key block of knowledge and concepts in order to progress to the next stage.

We follow the Statutory Framework for the Early Years Foundation Stage to ensure that pupils:

- develop an understanding of the environment and living things;
- explore the properties of materials and their purposes;
- become familiar with scientific concepts;
- find out about and use everyday technology.

Year 1	Working Scientifically	Animals including humans	Seasonal changes	Plants	Everyday materials				
Year 2		Animals including humans	Living things and their habitats	Plants	Uses of everyday materials				
Year 3	Working Scientifically	Animals including humans		Plants		Light		Forces and magnets	Rocks
Year 4		Animals including humans	Living things and their habitats		States of matter	Sound	Electricity		
Year 5	Working Scientifically	Animals including humans	Living things and their habitats		Properties and changes of materials			Forces	Earth and space
Year 6		Animals including humans	Living things and their habitats			Light	Electricity		Evolution and inheritance

As illustrated in the chart above, some areas of the curriculum are revisited and developed throughout a child’s time at primary school.

3 Delivery

3.1 Planning

It is expected that each science unit will be planned jointly by year group teaching partners. An overview of each unit appears on the termly medium term plan which is communicated to parents via the school website. Teachers should consider any possible or commonly held misconceptions in their planning and address these directly in lessons. Teachers are encouraged to make use of online

schemes of work to support their planning. These include: twinkl, Hamilton, Education city and resources provided by Leicestershire Library Services.

3.2 Teaching

A wide variety of methods should be used to ensure that consideration is given to the aims in the school vision statement (section 1.2). A wide variety of questioning should be used in class to continually assess. Work and evidence should be collated in children's blue Science books. Each unit should start with a unit cover sheet, meaning that all the objectives can be ticked off to aid assessment.

Each science unit should contain at least one opportunity for practical investigation in order to fulfil the 'Working Scientifically' objectives. There should also be an opportunity within each unit to produce one piece of extended writing.

3.3 Resources

All children have a discrete science book. This book is an A4, blue book and each page is split into a blank half page following by half a page of lines. The Science Coordinator has provided unit cover sheets for each unit of work. These contain the objectives for the unit, key vocabulary and space for a picture.

Science resources are stored centrally in the science resources cupboard in the studio. The maintenance of these resources is the responsibility of the Science Coordinator, although it is the responsibility of all teaching staff to ensure that the area is kept tidy and that resources are returned to the correctly organised boxes/area. It is the responsibility of the Science Coordinator to order equipment and resources requested by teaching staff to support their planned activities. These resources come from the science budget. For some areas of the curriculum, teaching staff may be required to order perishable resources online.

3.4 Off-site activities

Each year group is encouraged to engage in scientific learning outside of the classroom. The programme below is a suggestion of how each year group currently provides scientific learning outside of the classroom:

Year group	Curriculum area/s	Off-site opportunity
EYFS		Abbey Park Gorse Hill City Farm
Year 1	Seasonal changes	Beaumanor Hall Brocks Hill Country Park
Year 2		
Year 3	Rocks	Bradgate Park
Year 4		

Year 5	Earth and Space	Space Centre sleepover
Year 6	Electricity Animals including humans (effects of drugs, alcohol and diet)	Warning Zone

The Science Coordinator maintains a folder of trip opportunities relating to the science curriculum and is able to advise teachers on suitable off-site opportunities.

4 Assessment

Teaching staff must assess children's scientific knowledge and understanding at three points during the school year. These assessments should take place in the first half term, the final half term and at one point in between. The children are assessed as being: below age related expectations, working towards age related expectations, working at age related expectations or exceeding age related expectations. These levels are reported to the Science Coordinator for monitoring.
Methods of assessment are at the discretion of the class teacher but should represent a mixed approach which includes work in Science books, oral participation during class activities and independent tasks/written tasks. All year groups are provided with 'Mini SATS' written assessments to match the 2014 National Curriculum. These can be used as class activities, independent worksheets or tests to aid teacher assessment.

5 Inclusion

All pupils at St Mary's Fields are entitled to effective learning opportunities in science whatever their specific needs. It is the aim of all teachers to provide an inclusive curriculum by giving every pupil the opportunity to experience success in learning, and to achieve as high a standard as possible. For further information please refer to the SEN Policy.

Lessons are planned to ensure that there are no barriers to learning in order to enable every child to make progress and achieve. Any difficulties or barriers to learning presented from disabilities or SEN will be identified by teachers and addressed at the outset as far as is possible. The needs of those with English as an additional language (EAL) will be considered by teachers. Progress of children who are not fluent in English will be monitored and take account of the age, length of time in the country, previous educational experience and abilities in other languages. Teachers will plan opportunities to help develop English understanding and vocabulary choices in science and will aim to support pupils to take part in scientific activities.

6 Inset and professional development

It is the responsibility of the Science Coordinator to inform teaching staff of developments surrounding the delivery of the Science Curriculum. This may be done via email, printed resources or

through staff meetings. The Science Coordinator regularly attends local Coordinator network meetings and disseminates relevant professional development opportunities to other school staff.

It is the responsibility of all teaching staff to ensure that both they and any adults working with children in their classroom have a secure knowledge of the areas of the curriculum that they are required to deliver. Staff concerned about gaps in their knowledge or wishing to develop particular skills should liaise with the Science Coordinator. Staff are also encouraged to engage in online professional development tools such as Reach Out cpd.

7 Monitoring

Teaching Assistants / volunteers / adults leading small group work

It is the responsibility of these people to question children during activities in order to gauge and develop their understanding. Observations should be reported to the class teacher. Where appropriate, notes should be made on children's work/ in their books.

Teachers

Class teachers are responsible for:

- Planning and delivering engaging lessons that meet the objectives of each unit within the National Curriculum for Science.
- Appropriately differentiating lessons as needed to ensure that all children are able to access the learning taking place.
- Effectively questioning children throughout each lesson to assess understanding.
- Providing opportunities for each child to develop to meet the aims of the school vision statement (1.2)
- Reporting any resources which are required to the Science coordinator.
- Ensuring that children's books show a wide variety of evidence of their learning and development.
- Reporting assessment levels to the Science Coordinator three times a year.

Science Coordinator

The subject coordinator holds the following responsibilities:

- Providing unit cover sheets for each area.
- Monitoring what subject areas are being covered in each year group. With the Curriculum Coordinator ensuring that there is no unnecessary duplication across year groups.
- Monitoring the overall progression and attainment of children using data supplied by the class teachers 2-3 times a year.
- Monitoring evidence available in children's science books through written work, diagrams, charts, pictures and photographs.
- Ensuring that sufficient resources are available to teach high quality science lessons
- Ensuring that reliable and useful assessment material is available to help class teachers monitor pupil progress.
- Coordinating whole school initiatives such as National Science Week, parental engagement events, class swap opportunities, extracurricular activities and ensuring that all staff and children are kept abreast of important and relevant developments in Science (eg. space launches).

8 Health and Safety

Practical work within Science lessons in carried out with reference to and within the health and safety policy. Where appropriate a teacher may be required to complete a risk assessment form on Evolve to cover a particular activity.

This policy was agreed by staff and governors Summer Term 2017