

SLADEFIELD INFANT SCHOOL

Science Policy

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Introduction

This policy outlines the teaching, organisation and management of Science at Sladefield Infant School. The school's policy for Science is based on the National Curriculum 2014. The policy has been drawn up by the Science Lead and the implementation of this policy is the responsibility of all the teaching staff.

The Nature of Science

Science is an important part of the education of children at Sladefield Infant School. A high-quality Science education provides the foundations for understanding the world around us.

The principal focus of Science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. Children are encouraged to be curious and ask questions about what they notice. They are equipped with the scientific knowledge required to understand the uses and implications of Science. 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 objects; carrying out simple comparative tests and finding scientific information using secondary sources. They also 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 use of first-hand practical experiences, but there is also be some use of appropriate secondary sources, such as books, the Internet, photographs and videos.

Our aims in teaching science include the following:

- Preparing our children for life in an increasingly scientific and technological world.
- Fostering concern about, and active care for, our environment.
- Helping our children acquire a growing understanding of scientific ideas.
- Helping develop and extend our children's scientific concept of their world.
- Developing our children's understanding of the international and collaborative nature of science and the contribution scientists make to our lives.

It is the aim that children adopt the following by the end of KS1:

Attitudes

- Encouraging the development of positive attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.

- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work co-operatively with others.
- Providing our children with an enjoyable and aspirational experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills (working scientifically).
- Developing the skills of investigation - including observing, measuring, experimenting, communicating, interpreting.
- Developing the use of scientific language, recording and techniques.
- Developing the use of ICT in investigating and recording.
- Enabling our children to become effective communicators of scientific ideas, facts and data.
- Providing frequent opportunities for pupils to apply scientific understanding in a cross-curricular context; for example, in Design & Technology, Geography, History and Art.

Aims and Objectives

At Sladefield, we teach Science through a range of practical experiences aimed at explorations and investigation.

In the Foundation Stage, children are taught key early skills through the delivery of Knowledge and Understanding of the World skills such as:

- looking at similarities, differences, patterns and change
- finding similarities and differences in relation to places, objects, materials and living things
- make observations of animals and plants, explain why some things occur and talk about changes.

During Year 1 and 2, pupils are being taught to use practical, scientific methods, processes and skills through:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying objects
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

Children are taught to use and apply these skills through the following topics:

Year 1

- Plants
- Animals, including humans
- Everyday Materials
- Seasonal Changes

Year 2

- Living Things and their Habitats
- Plants
- Animals, including humans
- Uses of Everyday Materials

These topics are not taught chronologically; they are addressed according to the topic being taught at the time to tie in with our cross-curricular approach. However, some topics are taught discretely and over a minimum of 1 hour per week.

Planning

- In Key Stage One, teachers use medium-term planning provided by the Science Lead in order to plan short-term lessons. Teachers are expected to adapt and modify the model plans to suit their children's needs, their own teaching style, the use of support staff and resources available.
- Foundation Stage colleagues will ensure that all children are given the opportunity to achieve the Early Learning Goal for Understanding of the World through their planning linked to Topic work.
- Trips and visits will be arranged to link with units of work and topics where appropriate.
- Local fieldwork can be undertaken within school grounds in our gardens, including the rooftop garden, as well as through visits to Ward End Park, within a 15-minute walk of the school's location.

Enriching Science Learning

Resources

Science teaching and learning is supported by a range of resources which are managed and maintained by the Science Lead. These are audited, replenished and added to, to ensure they are up-to-date and in good working order. They include both practical resources and IT resources.

Discreet Science lessons are supplemented by visitors, events and trips. These include:

- Science-themed assemblies.
- Science-focussed trips to venues such as Thinktank, Castle Bromwich Hall Gardens, Dudley Zoo and the Nature Centre.
- Science visitors and experts such RSPB Outreach and the 'Animal Man'.
- Participation in an annual Great Science Share, where children share their science experiments with other audiences.

Equal Opportunities and Inclusion

Sladefield Infant School provides equal entitlement for all children irrespective of ethnicity, gender, social background and specific need. As part of this commitment, the Science curriculum aims to deliver effective learning opportunities for every pupil to achieve high standards of success in their learning.

The statutory Inclusion statement sets out 3 principles which we are following:

- A) Setting suitable learning challenges by differentiating teaching content to match ability levels
- B) Responding to pupils' diverse learning needs by being aware of race, gender and disability issues and taking specific action to respond to diversity
- C) Overcoming potential barriers to learning and assessment for individuals and groups of pupils by supporting children with special educational needs, pupils with disabilities and for those whom English is an additional language

(see Equal Opportunities- Race Equality, EAL and Special Needs policies)

Differentiation

There are four main strategies for differentiation:

- 1) By task – different tasks given to different groups or individuals, stepped tasks, or a main task with modifications or extensions
- 2) By outcome – same task to all children, but one that allows a variety of responses at different levels
- 3) By support – teacher or teaching assistant support; specialist learning support; other children as partner; use of technology
- 4) By resources – variety of resources available, chosen by the individual that would enable them to access the learning at an appropriate level

Assessment and Recording in Science

Assessment is ongoing and part of every lesson. We assess the children's work in Science by making informal judgements as we observe the children during lessons. Topics can begin with an elicitation task, identifying misconceptions and assessing what children already know. Discussion and/or practical lessons can be evidenced

through pupil responses and through the use of a class checklist against which Working Scientifically criteria are being assessed. Their written work is filed into children's individual Science folders. Assessment will be carried out half termly based on statements from the most recent National Curriculum Programme of Study for Science (2014) using assessment provided by Outstanding Science. A summary judgement of the work and learning of each pupil is provided for parents in the annual report. This information is also passed onto the next teacher at the end of the year.

Monitoring

Monitoring of Science is linked to the School Improvement Plan and is the responsibility of the Science Lead and the Senior Leadership Team. The Science Lead monitors the teaching, learning and assessment of Science that has been completed by class teachers who have indicated whether individual children are at the expected standard for individual objectives, as well as monitoring children's Science folders. The school's monitoring schedule sets out how often monitoring will take place, usually termly. The Science Co-ordinator monitors data, analysing gaps and communicating these where appropriate with the SLT and class teachers to be addressed.

Leadership of Science

The role of the Science Lead includes:

- Monitoring of teaching and learning through reviewing of planning, book scrutiny and lesson observations.
- Supporting teachers with guidance, resources and shared-teaching.
- Identifying opportunities for teachers to attend CPD and leading teacher Inset within school.
- Keeping up to date with best-practice through membership of the ASE and attending CPD and Science Network meetings.
- Taking advantage of opportunities to engage and enthuse our pupils in science, maintaining outstanding teaching and learning in the subject.

Review

This policy will be reviewed every two years by the Science Lead.

Date of review: January 2020
To be reviewed: January 2022