Science Subject Policy

Four Swannes Primary School

# 1. Aims and Objectives

1.1. Science teaches an understanding of natural phenomena. It aims to stimulate a child’s curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national and global level.

1.2. The aims of science are to enable our children to:

* Take part in activities that meet the requirements of the national curriculum in a way that is appropriate to the needs and interests of all pupils, and which challenge them to fulfil their potential
* Develop their scientific knowledge and understanding
* Develop their investigation and curiosity skills
* Develop their explanatory and communicative skills
* Work both collaboratively and independently on a variety of scientific tasks
* Develop a caring attitude to their environment and living things
* Develop an understanding of how to work safely and to take increasing responsibility when managing their own investigations
* Use scientific contexts to develop and consolidate the basic cross curricular skills of English, maths and ICT
* Know about and understand the life processes of living things
* Know about and understand the physical processes of materials, electricity, light, sound and natural forces
* Know about the nature of the solar system, including the earth.

# 2. Teaching and learning styles

2.1 We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children’s scientific skills through the teaching of subject specific content. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. Pupils have the opportunity to use scientific resources and a variety of data, such as statistics, graphs, pictures and photographs.

2.2 We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

* Setting common tasks which are open-ended and can have a variety of responses while providing different amounts of scaffolding to meet children’s needs.
* Providing resources of different complexity, matched to the ability of the child
* Differentiated activities where appropriate

2.3 Teachers will use a specific planning proforma for each lesson. This will allow teachers to ensure each lesson clearly highlights the scientific skills required and gives children the opportunity to;

* Engage - use explorify and discuss a question linked to lesson
* Explore - share what they already know/recap prior learning,
* Explain - Teach new subject knowledge
* Elaborate - Investigate/Explore) - photo evidence • Evaluate - record what they have learnt – tasks will be differentiated according to ability (Bronze/Silver/Gold).

# 3. Presentation

The way that the work is to be presented will clearly be identified in lesson plans and will relate to the ability of groups of pupils. These will clearly be marked as bronze, silver and gold on the plans and in books where appropriate. Neat presentation of all learning is very important.

Pupils will experience and be taught in a variety of styles of presenting or recording their work. Every lesson will have some form of recording. These could include:

* Verbal reports and discussions
* Annotated drawings, diagrams, charts and graphs
* Artistic and dramatic presentations including role play
* Written work in a variety of styles and for different audiences
* Using a range of ICT facilities

Work will be presented:

* In individual exercise books
* As wall or classroom displays
* By annotating activities or models
* As audio-visual displays and presentations
* Through class assemblies
* Using annotated photographs – cameras and Ipads.

# 4. Science Curriculum Planning

4.1 The school uses the national curriculum for science as the basis of its planning. There is also a strong emphasis on ‘Outdoor learning’ especially in EYFS and KS1.

4.2 Science planning is in three phases – long term, medium term and short term.

**The long-term plan** maps the scientific topics studied in each term during the key stage. The science subject leader work this out in conjunction with teaching colleagues in each year group to ensure coverage of the key objectives. Science is taught as a discrete subject. Our **medium term plans**, which we have based on the national scheme of work in science, give an overview of each unit of work for each term. The class teacher is responsible for writing plans for each lesson **(short term plans)**. These plans list the specific learning objectives of each lesson. The class teacher keeps these individual plans, and s/he and the science subject leader discuss them on an informal basis.

4.3 Topics in science build upon prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit. We also build progression into the science schemes of work, so that the children are increasingly challenged as they move up through the school.

4.4 The teaching of skills needs to be explicit in the short term plans.

# 5. Foundation Stage

We teach science in reception classes as an integral part of the topic work. It is covered during the year through Understanding of the world, following the ELG as set out in the EYFS curriculum.

# 6. Inclusion

This will be addressed through the school’s Inclusion Policy. Whenever possible, we use materials and artefacts in lessons that reflect a varied cultural dimension e.g. food, musical instruments and clothing.

# 7. Assessment, Recording and Reporting

Science is assessed and reported in the following ways:

* Science will be assessed in line with the schools assessment policy
* Class teachers are aware of the topics they are teaching their year group. At the end of each topic teachers will complete a RAG Rating spreadsheet which will clearly show where each child is within their learning. This also links with the ‘Easy Tracking system’ we are using as a school
  1. Red = working at Pre-Key Stage
  2. Yellow = Working Towards expected standard
  3. Green = Working at expected standard
* Summative records will be kept of individual achievement against key objectives. At the beginning of each unit children will use knowledge catchers displaying what they know about the topic. This can be used as a starting point for teachers and allow them to be aware of the areas within the topic they need to focus on more. At the end of the unit each class will attempt a quiz which will assess their knowledge of key learning and scientific vocabulary within each topic. They will also attempt the knowledge catcher again, using a different colour pen to when they started at the beginning. This can be used to assess whether the children understood the learning objectives.
* Information gained from pupil records, initial assessment tasks and discussions will be used to plan activities.
* Work will be marked regularly against lesson objectives shared with pupils.
* Where possible children will be encouraged to review their own progress.
* Photographs are taken of the children’s practical learning as a record and used to make judgements on progress.

# 8. Safety

* The school follows the advice published in ‘Be Safe’ as recommended by the LEA. Teachers need to make risk assessments as necessary.
* All teachers will be expected to refer to this publication (as appropriate) when planning activities and assessing for any risk to pupils.
* Pupils will be made aware of safety issues that arise in topics or activities and will be trained to use the appropriate equipment and to carry out tasks in a safe and responsible manner.
* Pupils will be increasingly required to identify safety considerations in their planning as they progress through the school.

**9 Resources**

* All Science resources have been organised into the key learning topics and equipment which will be needed to conduct science investigations.
* We keep these in a central store where there is a box of equipment for each unit of work. All topics clearly highlight what equipment is available and where exactly it is.
* The classrooms and the library contain a good supply of science topic books.
* Laptops and Ipads are available to classes when necessary.
* It is the responsibility of the teachers to check that they have the resources they need prior to starting a new topic. If the resources are unavailable they need to speak with the science co-ordinator in advance so that they necessary resources can be ordered.
* The school grounds, which include a pond and grass area, are to be used throughout the year to aid the delivery of Life Processes and Living Things section of the NC.

# 10. Monitoring and Review

10.1 It is the responsibility of the science subject leader to monitor the standards of children’s work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school.

10.2 Work and planning scrutiny will take place to check on coverage and attainment. A report will be prepared and shared, and feedback given on both strengths and areas for development.

10.3 Lesson observations will be carried out (when time allows), with a focus agreed by both the science leader, SLT and the class teacher.

10.4 A cross-section of pupils from each class will talk to the science leader (pupil voice) about their learning and next steps. We aim to do this termly.

George

(Science Co-ordinator)

January 2023

Review: September 2024