Springcroft Primary School

Science Policy

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Approved	Signature	Date

Our Mission Statement:
The place to learn, the place to succeed, the place to make friends, the place to grow.

"SCIENCE IS THE REFINEMENT OF EVERYDAY THINKING"

Einstein

Our rationale for teaching science

Science is a body of knowledge built up through experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills.
We believe that a broad and balanced science education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability.

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 local and global environment.
- Enabling learners to appreciate every day and technological applications of science, both positive and negative.
  - ❑ Helping develop and extend our children's scientific concept of their world.

Our teaching aims in teaching Science include the following

- To teach science in ways that directly involves our learners and is imaginative, purposeful, well managed and enjoyable.
- To encourage our children to ask, as well as answer, scientific questions.
- To give clear and accurate explanations and offer skilful questioning.
  - ❑ To make links between science and other subjects.
  - ❑ Giving our children an understanding of scientific processes.
  - ❑ Helping our children to acquire practical scientific skills.
  - ❑ Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, pattern seeking, explaining and evaluating.
  - ❑ 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.

How science is structured through the school

Science is a core subject in the National Curriculum - Children are taught to work scientifically through science content, which is delivered and assessed over the key stages.

Planning for science is a process in which all teachers are involved in, to ensure that the school gives full coverage of National Curriculum Science. Science teaching in the school is about excellence and enjoyment. We adapt and extend the curriculum to match the unique circumstances of our school.

Children in Key Stage 1 are taught science for a minimum of six hours per half term.

Children in Key Stage 2 are taught science for a minimum of ten hours per half term. The emphasis should be on practical scientific enquiry and discovery.

Science days and afternoons are an alternative way to prepare and organise the science lessons, on days out to locations or in school.

The school follows the National Curriculum Guidance. The topics of the Scheme of Work are taught as described below, agreed after whole-staff discussion. This ensures progression between year groups and guarantees topics are revisited. Teachers are expected to adapt and modify their planning to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available. Generally, one unit is taught in each half term.

The Teaching & Learning of Science

EYFS

Children in The Early Years Foundation Stage are building the prerequisite skills for science within the national curriculum. The focus is on fostering curiosity and encouraging children to make comments about what they have heard or seen and ask questions to clarify their understanding. Children will explore the natural world around them, making observations, identifying similarities and differences and drawing on their own experiences. Children will experience some important processes and changes in the natural world around them, including the seasons and changing states of matter. They will also be encouraged to manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.

KS1

Children in Key Stage 1 develop their scientific understanding of the natural and humanly-constructed world around them through observing and the use of first-hand practical experience. They are encouraged to be curious and ask questions about what they notice and use 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 also begin to use simple scientific language to talk about what they have found out and communicate their findings.

KS2

Children in Key Stage 2 broaden their scientific understanding of the world around them, through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They are encouraged to ask their own questions about what they observe and make some decisions

about which equipment to use and which types of scientific enquiry are likely to be the best ways of answering them, 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 will draw conclusions based on their data and observations and use some scientific language and vocabulary with growing confidence.

Our approach to the teaching of the science curriculum

The essential elements describing how science is taught in our school are described below.

- Science raises many social and moral questions. We use science to offer our children opportunities to examine some of the fundamental questions in life, for example, the evolution of living things. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.
- We encourage children to ask and answer their own questions as far as is practical.
- We encourage children to risk assess and work in a safe manner.
- We use ICT where appropriate in science. Children are given the opportunity to practice science skills and enhance their presentation using carefully chosen software and hardware including animation packages, digital cameras, microscopes, sound recording equipment and data loggers.
- Other resources include books, wallchart resources, short video sequences and other teaching resources for interactive-whiteboard use.
- The majority of resources for investigative science are stored in the Science Cupboard.
- We use cross-curricular links to science with, for example, Geography topics. Children use their maths skills in science for measures, calculations and data handling and their writing skills for reports, letters, explanations and instructions.
- All teaching staff must be made aware of any risk during lessons or field trips. Advice must be sought when writing risk assessments. Copy of BAALPE book in office. Children with special needs must be supported to access the curriculum.

Assessment and recording in science

We use assessment to inform and develop our teaching.

Evidence of science work will be in books, on displays, in class photographs, on the i-pad, as photographs or films. Evidence will also be gathered on learning walks, through pupil voice discussions, as well as discussions and moderation meetings between teachers.

The Science Coordinator will monitor evidence and work with class teachers to support effective teaching and learning.

Teachers make assessments of children's prior knowledge and explore what they would like to know to involve them in the learning process. This may be written or verbal.

We assess for learning (AfL). Children are involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve. Activities during each topic record achievement and celebrate success.

We mark work with reference to the learning objective, making it clear verbally, or on paper, where the work is good, and how it could be further improved and by asking questions designed to extend and scaffold further learning.

Children's investigative skills and work is assessed, in class, through discussions and questioning, by teachers and teaching assistants. This assessment is used to inform teaching throughout the school.

At the end of each unit, children complete an independent activity, for example a report, investigation or questionnaire, in order to demonstrate the key knowledge and skills they have learnt throughout the unit.

All year groups will be assessed as to whether they are working at age related standards (ARE), or working towards age related standards (WTS). This teacher assessment is based on assessments made throughout the topics, throughout the year and will be recorded on DCPro at the end of the year.

Reports to parents are made verbally each term, and written once a year, describing each child's attitude to science, his/her progress in scientific enquiry and understanding of the content of science.

Equal opportunities in science

Science is taught within the guidelines of the school's equal-opportunities policy.

- We ensure that all our children have the opportunity to gain science knowledge and understanding regardless of gender, race, class, physical or intellectual ability.

Our expectations do not limit children's achievement and assessment does not involve cultural, social, and linguistic or gender bias.

We aim to teach science in a broad global and historical context, including the contributions of people of many different backgrounds.

- We value science as a vehicle for the development of language skills, and we encourage our children to talk constructively about their science experiences.
- We recognise the particular importance of first-hand experience for motivating children with learning difficulties and ensure tasks are differentiated to support all learners.
- We recognise that science may strongly engage our gifted and talented children, and we aim to challenge thinking through research, investigation and discussion.

We exploit science's special contribution to children's developing creativity; we develop this by asking and encouraging challenging questions and encouraging original thinking in class.

Monitoring and Review

The subject leader will oversee the continuity and progression through long-term and medium-term plans. They will monitor the quality of teaching and learning through lesson observations, pupil voice and book scans. They will review resources and support colleagues where necessary.