Sutton CE (VC) Primary School

Science Policy

October 2023

Vision

Through our school values of STRIVE we want our children to love science and have no limits to what their ambitions are. Our science curriculum fosters a healthy curiosity in children about our universe; creates a sense of awe and wonder about the world they live in and promotes the knowledge and understanding for the need to create a sustainable world.

Intent

We believe science is the acquisition of knowledge, concept and skills. Through the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills. We ensure that the 'working scientifically' skills are focussed on throughout children's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.

Our aim is that these experiences will help children to:

- Secure and extend their scientific knowledge and vocabulary
- Ignite their curiosity through scientific enquiry
- Develop transferable skills such as observation, communication and teamwork
- Connect knowledge through different aspects of Science as well as the rest of the curriculum.
- Be equipped to make informed decisions about new technologies, their health, the need for a sustainable world and the scientific opportunities around them.

Science Curriculum planning

Science is a foundation subject in the National Curriculum. We are using the 2014 National Curriculum framework to adapt and develop our current planning. As of September 2023 we have chosen to write our own scheme of learning that incorporates elements from a range of sources including CUSP, PLAN and White Rose Science. These resources address the aims of the curriculum, provide teachers with the necessary knowledge to adapt as needed to suit the needs of the pupils at our school. We carry out curriculum planning in science in two phases (long-term and medium term).

The long-term plan maps each of the topics studied in each term during each key stage; this is created collaboratively between the subject leader and year group teachers to ensure coverage of National Curriculum objectives; progression of knowledge skills and vocabulary; and avoidance of repetition. Within most units, there will be an opportunity to learn about scientists who have made a difference in society and think about the role they play in the real world. Within this there is opportunity for children to build on previous knowledge as well as ensure that any gaps in learning a filled.

Medium term plans for each subject area are created by teaching staff with an emphasis on the knowledge and skills that will be taught and how they will be taught, with each lesson having a National Curriculum link as well as a Working Scientifically link. Science is taught discretely but staff make meaningful links across subjects where appropriate. Prior knowledge is linked to new learning to deepen children's understanding and to ensure new concepts and skills are retained over time. Knowledge organisers are used to share planning

with the parents and pupils. Each lesson will also have knowledge strips for each child to support with understanding the vocabulary and content of the lesson.

Each class will ensure that the classroom environment contributes to the learning of the children in each Science topic. Vocabulary and key information will be displayed as well as the ongoing learning and links to the science in the real-world. Displays will be built over time and act as a resource to support learning as well as display work that the children have created.

Extra-Curricular and promoting Science Capital

At Sutton we strive to provide children with a range of memorable experiences that link to science. This includes the provision of activities outdoors and in our local community; links to other local secondary schools and the contacts within the worlds of science to engage children with the science industry.
Every year, the school participates in the National Science Week activities linked to the national theme. Children have the opportunity to explore, research and participate in hands-on experiences which broaden their scientific knowledge and encourage the development of an enquiring mind.

IMPLEMENTATION

Pedagogy

The key to the effective delivery of Science at Sutton Primary is the combination and balance of knowledge-based learning, combined with the understanding and practice of the working scientifically skills. All teachers have received training to understand its importance in both the planning and teaching stages.

Teaching Methods and Approaches

The teaching of science must contain the following:

Revisit: an opportunity to answer questions with the aim of recapping prior knowledge required for the lesson or topic.
'Sounding like a scientists': vocabulary instruction designed to equip the children with the scientific vocabulary they will need for the lesson. This includes approaches found in Word Aware to ensure each child has a clear understanding of the vocabulary being used within the lesson.
Main Activity: used to focus the pupils' attention on the key concepts and strategies that will be developed in the lesson. This is usually in the form of a practical activity such as an investigation, a fair test, a drama activity or dialogic discussion.
Independent written activity: this is to consolidate learning for the children and is used as an assessment tool for teachers. The written activities are completed in the children's Science books and can be recorded in many ways such as: annotated pictures/ results of an experiment, written explanations/ conclusions/ results displayed in tables/graphs/ charts, posters or information leaflets.
Assessment for Learning: At the end of the lesson and through the independent learning, the teacher will assess the learning that has taken place. This can be done through questioning, Quick Quizzes or live marking with them.

Early Years Foundation Stage

Science in the foundation stage is addressed through free-flow learning and exploring the world. EYFS teachers will encourage children to explore a chosen scientific area through the set-up of specific stations within the continuous provision. Children in Foundation Stage are encouraged to use and discover a variety of materials, tools and techniques, whilst making observations and exploring similarities and differences of objects and living things around them. It is important for EYFS pupils to show awareness of their own health and hygiene from a young age, including healthy eating habits and sleeping well.

The contribution of science to teaching in other curriculum areas

The teaching of science is more effective when developed in a holistic way. There are clear links to how science can be developed in other subjects for example maths, design technology and geography. Pupils across all year groups should be given opportunity to develop skills of working collaboratively to solve scientific problems and to ask questions in all areas of learning.

IMPACT

Assessment and recording

We expect most children to achieve age related standards or better in Science within each year group. We also look for pupils that show a greater depth of understanding. Children's progress and attainment per unit of study is tracked through the assessment framework on Pupil Asset on a half-termly basis.
The subject leader reports on:

- recent development work
- performance analysis
- pupil outcomes in relation to development priorities, their impact on teaching and learning, and future developments.

The Marking and Feedback policy is followed for practical and recorded work. This is an ongoing process until the completion of a unit of work.

Health and Safety:

Children will be taught to use scientific equipment safely during practical activities. Class teachers and teaching assistants will check equipment before use to ensure it is safe to use, all damages will be reported to the science lead and the defective equipment will be taken away from children.
Teachers use their professional judgement to determine if a formal risk assessment is required when carrying out activities. Any perceived hazards will be actioned appropriately.. Safe practice must be promoted at all times.