

LITTLE KINGSHILL COMBINED SCHOOL

Science Policy



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SCIENCE POLICY

This policy outlines the teaching, organisation and management of science taught at Little Kingshill Combined School. The school's policy for science is based on the new primary curriculum which became statutory in September 2014. The implementation of this policy is the responsibility of all teaching staff.

The importance of Science

The new National Curriculum 2014 states why we teach science in schools:

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the 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.

National curriculum in England, September 2013

Aims

At Little Kingshill Combined School we aim to:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- ensure children are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Objectives

At Little Kingshill Combined School, we believe that the best science teaching fosters and develops pupils' curiosity in the subject whilst also helping them to fulfil their potential. For our pupils to achieve well in science, they need to acquire the necessary scientific knowledge and also be able to enjoy the experience of engaging and purposeful scientific enquiry in order to help them to answer scientific questions about the world around them.

We strive to enable children to:

- understand the nature of "scientific method", involving meticulous observation, the making and testing of hypotheses, the design of fair and controlled experiments, the drawing of meaningful conclusions through critical reasoning, and the evaluation of evidence;
- become effective communicators of scientific ideas, fact, and data;
- begin to build up a body of scientific knowledge and understanding that will serve as a foundation for future enquiry;
- use relevant scientific language correctly.

Organisation and Management

Science is a core subject in the National Curriculum. The science curriculum at Little Kingshill Combined School follows the programmes of study for Key Stages 1 and 2. Nursery and Reception follow The Curriculum Guidance for the Foundation Stage. In the Early Years Foundation Stage, science is incorporated into topic work; at Key Stages 1 and 2 Science is taught as a separate subject.

Teaching and Learning Strategies

At Little Kingshill Combined School, teachers plan and deliver high-quality and engaging science lessons incorporating a range of teaching and learning styles. Teachers will provide opportunities for pupils to:

- Learn about science, where possible, through first-hand practical experiences;
- Develop their research skills through the appropriate use of secondary sources;
- Work collaboratively in pairs, groups and/or individually;
- Plan and carry out investigations with an increasing systematic approach as they progress through the school;
- Develop their questioning, predicting, observing, measuring and interpreting skills;
- Record their work in a variety of ways e.g. writing, diagrams, graphs, tables;
- Read and spell scientific vocabulary appropriate for their age.
- Be motivated and inspired by engaging and interactive science displays which include key vocabulary and relevant questions.
- Learn about science using the outdoor learning environment

Scientific activities will be organised using a variety of grouping strategies that are most effective to deliver the learning objectives for all abilities. Within this grouping the predominant mode of working in science is co-operative group work, although individual work, paired work and class teaching are used depending on the activity. Groups can be of mixed ability with differentiation by task or ability grouping, according to the needs of the children, the activity, and teacher requirements. Key vocabulary pertinent to each topic will be displayed and pupils will be encouraged to use technical vocabulary in all levels of communication.

In the early Years Foundation Stage, the curriculum is based on the Early Learning Goals for 'The World'. The learning environment provides opportunities for the children to talk about their observations, sometimes recording them, and to ask questions to gain information about why things happen and how things work. The emphasis is on the fundamental skills of observation and communication.

Planning

Science in the Early Years Foundation Stage is planned using the Early Years Curriculum 'Understanding of the World'.

Key Stage 1 and 2 teachers plan science lessons using the new National Curriculum (2014). All science lessons have focussed learning objectives, clear differentiation and success criteria to ensure that pupils make at least good progress.

'Working scientifically' is embedded throughout the areas of learning in key stage 1 and 2; this focuses on the key aspects of scientific enquiry which enable pupils to investigate and answer scientific questions.

Areas of learning within key stage 1 and 2 ensure that statutory requirements are being covered through the specific disciplines of biology, chemistry and physics (teachers may also

refer to the non-statutory guidance which provide additional support).

Monitoring and Evaluation

Planning and work book scrutiny as well as pupil voice questionnaires are carried out by the science subject leader and SMT and feedback is given to teachers at an appropriate time. The subject leader monitors the planning and teaching of science throughout the school, and uses staff meetings to share examples of effective planning and learning.

Staff meetings are used to review the provision for science and to ensure that continuity and progression are maintained.

Health and safety

Teachers must plan safe activities for science and complete a risk assessment if necessary. Teachers and teaching assistants need to be aware of health and safety procedures when using equipment/food in science lessons. Pupils must be aware of the need for personal safety and the safety of others during science lessons.

Cross Curricular Links

The Programmes of Study offer children the opportunity to develop their use of language. Links with other curriculum areas such as Numeracy (graph work), physical education (health education), ICT, geography and history are also made.

Assessment

Summative records will be kept of individual achievement against National Curriculum age expectations.

These will be updated at the end of each topic and will comment on both knowledge and Sc1 attainment. Formal assessment is carried out at the end of key stages 1 and 2 through the use of teacher assessments.

Feedback to pupils about their own progress in science is achieved through discussion between children and teacher while a task is being carried out, and, where appropriate, through the effective marking of work. Reporting to parents is done through parent teacher meetings and annually through a written report.

Inclusion

Teachers are expected to plan for differentiation within their short-term plans. Activities provided take into account individual differences and are appropriate to ability with a good level of challenge. The use of open-ended activities and skilled questioning help cater for different abilities. All children will be given the necessary support to access the curriculum and allow them to carry out tasks at their own level. Whenever possible, materials and artefacts used will reflect a varied cultural dimension e.g. food, musical instrument and clothing.

Resources

Specialised equipment and information packs are kept in the PPA room for Key Stage 2 and Science topic boxes are stored in the resource room at Key Stage 1 and in the Reception and Nursery classes. Resources kept in the classrooms include sets of materials relevant to the scheme of work for that class. The school grounds, which include an Environmental Garden and pond, are used throughout the year to aid the delivery of the Plants, Seasonal changes, Living things and their habitats and Light programmes of study in The National Curriculum. The library contains books on science based subjects which can be used by the children for reference and research. The subject leader must be informed of any changes regarding

science resources i.e. missing or broken resources and/or when new or replacement resources are required. The subject leader is responsible for replacing or introducing new resources as needed by class teachers.