



UNITED SCHOOLS BIG HUB KINGSTEIGNTON SCHOOL



SCIENCE POLICY

We are Rights Respecting Schools. Under the UNCRC, all children should have access to and awareness of their rights.

Article 29: Education must develop every child's personality, talents and abilities to the full.

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. (National Curriculum 2014)

There are four main purposes to this policy:

- To establish an entitlement for all pupils
- To establish expectations for teachers of this subject incorporating the National Curriculum and EYFS Curriculum
- To promote continuity and coherence across the school and federation.
To state both the school's and the United Schools Big Hub's approach to this subject in
- order to promote public, and particularly parents' and carers', understanding of the curriculum.

The aims of science and how these contribute to the school's aims

The school aims to:

- stimulate and excite pupils' curiosity about changes and events in the
- world; satisfy this curiosity with knowledge;
- engage pupils as learners at many levels through linking ideas with practical
- experience; help pupils to learn to question and discuss scientific issues that may affect their own lives;
- help pupils develop, model and evaluate explanations through scientific methods of collecting evidence using critical and creative thought;
- show pupils how major scientific ideas contribute to technological change and how this impacts on improving the quality of our everyday lives;
- help pupils recognise the cultural significance of science and trace its development;
- build opportunities for spiritual development within our science teaching.

Expectations

By the end of EYFS, Key Stage 1 and then the end of Key Stage 2, the performance of the great majority of the pupils should be within the age-related expectation (ARE). (For EYFS, this means attainment of the "World" Early Learning Goal of "Understanding the World".)

Strategy for implementation

Entitlement and curriculum provision

Science teaching across the school (for KS1 and KS2) follows the Learning Challenge Curriculum (LCC) units of work. This provides children opportunities to extend and develop their learning as they move through the school and offers experiences across the federation to share learning and a continuity of experiences for all children. Pupils in the Foundation Stage begin to develop their knowledge, understanding and skills of science through play activities and direct teaching from which the pupils undertake planned tasks. This area of learning in the Early Years Foundation Stage Curriculum is called 'Understanding the World' and is built on in Key stage 1.

Their learning is supported through offering opportunities for them to use a range of tools safely; encounter creatures, people, plants and objects in their natural environments and in real-life situations; undertake practical 'experiments'; and work with a range of materials. We use the Development Matters document; this non- statutory guidance material supports practitioners in implementing the statutory requirements of the EYFS.

Teaching and learning

The national curriculum for science aims to ensure that all pupils:

- 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
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

All lessons have clear learning objectives which are shared and reviewed with the pupils effectively.

A variety of strategies, including questioning, discussion, concept mapping and marking, are used to assess progress. The information is used to identify what is taught next. Teachers use an Elicitation Task at the start and an Assessment Task at the end using a sequenced approach.

Activities inspire the pupils to experiment and investigate the world around them and to help them raise their own questions such as "Why...?", "How...?" and "What happens if...?" Staff to refer to Bloom's Taxonomy.

Activities develop the skills of enquiry, observation, locating sources of information, selecting appropriate equipment and using it safely, measuring and checking results, and making comparisons and communicating results and findings.

Lessons make effective links with other curriculum areas and subjects, especially literacy, numeracy and ICT.

Activities are challenging, motivating and extend pupils' learning. Pupils have frequent opportunities to develop their skills in, and take responsibility for, planning investigative work, selecting relevant resources, making decisions about sources of information, carry out activities safely and decide on the best form of communicating their findings.

Assessment and recording

Children's attainment and progress are monitored through continual teacher assessment and monitoring children's work.

Teachers in the Foundation Stage use these ongoing observations and assessments to monitor children's progress through the EYFS curriculum and to complete the Foundation Stage Profile at the end of Reception. Children in both KS1 and KS2 undertake an elicitation task at the beginning of a new LCC unit and complete an assessment at the end of the unit. Teachers use these to assess pupils' attainment and progress to ensure children are working in line with National Curriculum expectations.

The Science subject lead will also sample pupils' work and undertake pupil conferencing with groups of children once a year.

Continuity and progression

Long term planning ensures that pupils meet new knowledge, gain more understanding and develop new skills appropriately. The science curriculum is taught through the LCC. All staff to refer to the US progression of skills documents and the curriculum/progress pathways.

Inclusion

Every effort is made to ensure that science activities and investigations are equally interesting for both boys and girls, that working groups are well managed and that multicultural issues are addressed as necessary.

Children with special educational needs are involved in all work planned from the medium term planning and short term planning at an appropriate level which will help them reach their full potential. Activities in science have characteristics which will help children with special needs achieve success:

- Emphasising first-hand experience.
- Developing knowledge and skills in small steps through practical activities, helping concentration.
- Capturing the imagination through investigations that may help reduce behavioural problems.

Teachers need to adapt or extend the short term planning, to suit the needs and abilities of the children in their class.

Organisation

It is important that the teacher identifies the most appropriate teaching strategy to suit the purpose of a particular learning situation.

There are a variety of ways in which the teaching may be effective and our schools have a tradition for encouraging learning through investigation, with an emphasis on first-hand experience. It is, however, frequently acceptable to use demonstration, research, exploration and teacher-led investigations when circumstances, resources and the needs of individuals and groups allow.

“Scientific enquiry” will be encouraged in every investigation or activity, when appropriate. They will become an essential part of science planning, being integrated into the scheme of work. 5 types of science investigation (inset documents available for all US)

Learning resources

The subject leader is responsible for the maintenance of these areas. Pupils should be taught to look after resources and use them safely.

The learning environment

Classrooms should have general LCC displays. Resources for the unit of work being covered should be appropriately accessible. Other sources of information should be available.

All classrooms should display prominently the relevant scientific vocabulary being introduced in current units of work.

In EYFS, continuous provision activities provide scientific investigation and exploration and scientific concepts are taught through topic related teaching inputs.

Safe practice

Safe practice must be promoted at all times. Teachers must take into account the school's Health and Safety policy. Particular attention must be given to avoiding the use of anything that aggravates individual pupils' allergies. Safety issues have been identified in medium-term planning and risk assessments must be completed in weekly planning, when activities are identified that are unusual and beyond the scope of normal safety practice.

The role of parents and carers

Parents and carers have an important role to play in helping their pupils learn about science. Their role is enhanced by the use of science displays around the school to raise their interest and the interest of their children in the subject. Matters of topical scientific interest are raised for parents and their children to investigate or observe together. The importance of science relative to other subjects will be explained to parents when their children join the school and teachers should take the opportunity of reinforcing this appropriately during interviews with parents.

Leadership and management

Staff development and training opportunities

The subject leader will Babcock science conferences. The subject leader is responsible for using the budget allocation for purchase of relevant and up-to-date resources and information.

Leadership and management roles

The science subject leader is responsible for the direction of the subject across the school. Time is allocated for the subject leader to monitor standards and quality across the school, through annual action plans. The subject leader is expected to keep the curriculum under review and keep the Principal informed about changes to requirements and the national and local levels. The subject leader needs to keep the Curriculum trustee informed about developments too and provide an annual report.

How the subject is monitored and evaluated

All teachers are responsible for monitoring standards but the subject leader, under the direction of the Principal, takes the lead in this.

Monitoring activities are planned across the year. In summary these are:

- staff meeting to analyse samples of pupils' science work to evaluate standards (attainment and progress);
- subject leader monitors ongoing displays and work in hand in classrooms by regular visits, outside of lesson time;
- subject leader to prepare a short summary for the Governors once per year;

Review

This policy will be reviewed every 3 years in line with the School's policy review programme. The subject leader is responsible for reporting to the Board of trustees about the quality of its implementation and its impact on standards. In the light of this, policy amendments may be made.

Reviewed January 2022 Review: January 2025