

Crofton Junior School



Science Policy

September 2019

Definition of 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 make about the world around us.

The importance of science in the curriculum

Science stimulates, excites and satisfies pupil's curiosity about phenomena and events in the world around them. Since science links direct practical experience with ideas, it can engage learners at many levels. Scientific method is about developing and evaluating explanations through experimental evidence and modelling. This is a spur to critical and creative thought. Through science, pupils understand how major scientific ideas contribute to technological change - impacting on industry, business and medicine and improving the quality of life. They learn to question and discuss science-based issues that may affect their own lives, the direction of society and the future of the world.

School aims:

- to stimulate and excite pupils' curiosity about changes and events in the world
- to satisfy children's curiosity with knowledge
- to engage pupils as learners at many levels through linking ideas with practical experience
- to help pupils to learn to question and discuss scientific issues that may affect their own lives
- to help pupils develop, model and evaluate explanations through scientific methods of collecting evidence using critical and creative thought
- to show pupils how major scientific ideas contribute to technological change and how this impacts on improving the quality of our everyday lives

Science Curriculum

At Key Stage 2 pupils learn about a wider range of living things, materials and physical processes. They make links between ideas and explain using simple models and theories. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday experiences as well as their personal health. They think about the effects of scientific and technological developments on the environment and in other contexts. They carry out more systematic investigations, working on their own and with others. They use a range of reference sources in their work. They talk about their work and its significance, using a wide range of scientific language, conventional diagrams, charts, graphs and computing to communicate their ideas.

Equal Opportunities

The teaching of science in our school takes consideration of our equal opportunities policy and inclusion. All children, irrespective of race, gender or ability, have access to the science curriculum and are expected to work and achieve to the best of their individual potential. We recognise children as individuals and base our teaching upon our knowledge of their specific needs. A range of teaching methods and resources allow children with a wide range of abilities to achieve their full potential.

Teaching and learning

All lessons have clear learning objectives (WALT) which are shared and reviewed with the pupils effectively. As a learning objective may be covered over a longer period of term, a question may be used instead. A variety of strategies, including questioning, discussion, concept mapping and marking, are used to assess progress in accordance of children SC1 Skills.

Science lessons are developed to 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...?". The set activities develop the skills of enquiry, observation, locating sources of information, selecting appropriate equipment and using it safely, measuring and checking results, making comparisons and communicating results and findings. Each lesson makes effective links with other curriculum areas and subjects, especially literacy, mathematics and computing. 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, carrying out activities safely and deciding on the best form of communicating their findings.

Planning

Planning is in-line with the requirements of the National Curriculum 2014. The school places a high emphasis on the development of pupils' skills of scientific enquiry (Sc1) also known as milestones. In the substantial majority of lessons, the skills for Sc1 are taught alongside the knowledge and understanding in life processes and living things (Sc2), materials and their properties (Sc3) and physical processes (Sc4). In this way there is an equivalent emphasis on Sc1 as there is on Sc2/3/4 together.

The Contribution of Science to other Aspects of the Curriculum

The teaching of literacy, maths and computing is promoted strongly in science as part of this school's drive to raise standards.

Literacy

The pupils are encouraged to develop their skills of writing to record their planning, what they observe and what they found out. In relation to science, they should be applying their literacy skills at levels similar to those which they are using in their English work. There is a key focus on the children produced the same standard of work (including sentence structure and spelling) through all areas of the curriculum.

Maths

At both key stages the pupils are expected to use their knowledge and understanding of measurement and data handling at appropriate levels. In science, they should be applying their maths skills at levels similar to those which they are using in their mathematics' lessons.

Computing

At both key stages this involves the pupils using computing to: locate and research information (CD ROM, internet); record findings (using text, data and tables); log changes to the

environment over time (sensing equipment); gain confidence in using calculators, cameras, and tape-recorder, as well as computers and other devices.

British Values

As with all areas of the curriculum, in science we have a focus on British Values. Within science this is seen as working collaboratively with others and using equipment and resources in and around school respectfully. Further to this, looking at science within the outside world may lead to field trips where we always act sensibly and politely around the local community and members of the public.

Spiritual Development

Spiritual development is encouraged through reminding pupils of the wonder of science and the effect of scientific discoveries on the modern world. Topical scientific issues are also discussed as appropriate.

Personal, Social and Health Education

Health education is taught as part of the units on ourselves, health and growing, teeth and eating, moving and growing, keeping healthy and life cycles.

The Learning Environment

Classrooms may have working walls of current science, including relevant vocabulary, in hand. The profile of science should reflect its place as a core subject. Resources for the unit of work being covered should be appropriately accessible. Other sources (I.E. SLS library books) of information should be available.

Safe practice

Safe practice must be promoted at all times. Teachers must also take into account all relevant Health and Safety issues. Please refer to schools' health and safety policy and specific risk assessments. Particular attention must be given to avoiding the use of anything that aggravates individual pupils' allergies.

Extra-curricular opportunities

Regularly within school, teachers plan to undertake fieldwork, visits to places of scientific interest and invite visitors to the school. This is a fantastic opportunity to support the children's learning within the classroom as well as increasing the WOW factor of science within the real world.

Learning Resources

Learning resources are kept in the school resource area centrally for all members of staff to access. Relevant equipment for a lesson is taken to the class by teachers. The scheme of work covers training the pupils in the safe and considerate use of equipment and materials. They are taught not to be careless and to use consumables efficiently.

Assessment and Recording

Teachers' assessment takes place on a regular basis throughout the programme of study. As a unit of work is taught, the children are assessed against the scientific enquiry milestones.

Year 3 and 4 are working towards milestones two and Year 5 and 6 working towards milestone three. With children's work presented in topic books and knowledge the teacher has gained from discussion with the child and peer to peer discussion, ongoing assessment tracking grids are completed. This gives the teacher an overall understanding of the level of development for each child, directly linked to their specific end of year age related objectives. Where appropriate, summative assessment may be used, at the end of a unit, to assess pupil's understanding of their enquiry skills. After each year, the teachers will complete the scientific enquiry assessment milestones in order to gain a view of whether a child is basic, advancing and deep within the milestones and share with next class teacher.

Monitoring

All teachers are responsible for monitoring standards using the scientific enquiry assessment grids. This is monitored by the Science leader and Head teacher termly. The science leader is also responsible for the production and implementation of the action plan. The subject leader monitors the standards of the teaching and learning of science through book scrutiny, professional dialogue and pupil interviews.

Policy Review

This policy will be reviewed every two years in line with the school's policy review programme. The Headteacher is responsible for reporting to the Governors' about the quality of its implementation and its impact on standards. In the light of this, policy amendments may be made.

Signed:

Date: September 2019

Date for review: September 2021