



Science Policy

Falconhurst School

Approved by TLS Governors: June 2020
Review due June 2022

This policy will clearly define how the procedures and opportunities in school will enable all children to achieve our vision.

Together we encourage children to take ownership of and responsibility for their learning, so they have the confidence and curiosity for life-long learning.

Together we strive for success in academic, creative, sporting and personal accomplishment.

Together we care for each other through the kind and positive choices we make.

Together we are proud of the inspiring and supportive environment we create for children, families and staff.



1. Science at Falconhurst School

At Falconhurst School, we teach Science as a discrete subject and it is linked to our pathway work. We study a varied curriculum, which is planned to build on knowledge year by year and covers the three scientific disciplines of Biology, Physics and Chemistry.

We encourage our children to develop an enquiring mind, to think independently, raise questions about working scientifically and to develop their knowledge and skills through an interesting and relevant enquiry-based science curriculum. The children will undertake practical work in a variety of contexts, including fieldwork.

Science continues to change our lives in many different ways and learning about scientific knowledge, methods, processes and uses, will help ensure a passion for science and its application in past, present and future technologies and provide the foundations for understanding the world in which we live, today and for the children building their aspirations for the future.

2 Teaching and learning style

2.1 We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes we do this through whole class teaching, but wherever possible we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to compile and use a variety of data, such as statistics, graphs, pictures, and photographs. They use ICT in science lessons where it enhances their learning. They take part in discussions and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in 'real' scientific activities, for example, researching a local environmental problem related to their learning theme.

2.2 We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- grouping children by ability in the room and setting different tasks for each ability group or tasks being completed in mixed ability groups.
- providing resources of different complexity, matched to the ability of the child;
- using teaching assistants to support the work of individual children including pre-teaching where appropriate.

3 Science curriculum planning

3.1 Falconhurst School uses the Chris Quigley Scheme of Greater Depth in Science, which is aligned to the National Curriculum scheme of work for science as the basis of its curriculum planning. We make use of the local environment in our fieldwork and other localities where the physical environment differs from that which predominates in our immediate surroundings.

3.2 This scheme enables teachers to understand the concept of greater depth in science, helps teachers to plan activities that will lead to progression from fundamental foundations to greater depth, provide opportunities for pupil's work to show deep learning and to help teachers assess progress.

The Science curriculum is mapped out to show the coverage of science across the school. **(See appendix 1)**

Science will be taught as a discrete subject through the Pathways. If any areas of science do not link to the current or forthcoming pathways it must be covered as a standalone topic, or the year group/s can teach it by having a science week.

3.3 Our Science curriculum is taught through the Chris Quigley Milestones.

Milestone 1 is for Years 1 and 2, Milestone 2 is for Years 3 and 4 and Milestone 3 is for Years 5 and 6. Within each Milestone, there are three areas for each statement of the National Curriculum. The three areas are Basic, Advancing and Deep. The Basic section is taught to Years 1, 3 and 5, Advancing and Deep sections are to be taught to Years 2, 4 and 6. This is a mastery curriculum, where the repetition of content is just as important as the fundamental foundations. It ensures that pupils, retain knowledge, gain a gradual, growing understanding of key concepts over time, rather than in a fixed block of time and allows the revisiting of the same knowledge, deepening understanding each time, through carefully planned activities that advance their understanding.

3.4 The class teacher is responsible for planning the lessons for each Milestone. Not all science lessons will be recorded in books, e.g. a practical lesson, but must be recorded on the Seesaw platform as evidence. All plans should include a learning objective and success criteria with a challenge where appropriate.

4 Foundation Stage

4.1 Science in nursery and reception classes is taught through our pathways. As these year groups follow the Foundation Stage of the National Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the objective in the ELGs of developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water.

5 Contribution of science in other curriculum areas

5.1 English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information. Scientific vocabulary is picked up by the class teacher if errors are made, both speaking and spelling.

5.2 Mathematics

Science contributes to the teaching of mathematics in a number of ways. The children use weights and measures and learn to use and apply number. Through working on investigations they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.

5.3 Information and communication technology (ICT)

Children use ICT in science lessons where appropriate. They use it to support their work in science by learning how to find, select, and analyse information on the Internet and on CDROMs. Children use ICT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

5.4 Personal, social and health education (PSHE) and citizenship

Science makes a significant contribution to the teaching of personal, social and health education. Within the Jigsaw scheme for PSHE the last unit 'Changing Me' introduces the children to changes to their body. Foundation stage will learn the names of their body parts. Year 1 and 2 will learn about the body parts that make boys and girls different and will learn the correct biological terms. Year 3 will learn about inside and outside changes and how babies grow. Year 4 will learn how to label the internal and external parts of male and female bodies that are necessary to make a baby and puberty for girls including the menstrual cycle. In Year 5, the children will learn about puberty for boys, girls, and sexual intercourse and in year 6 they will continue to learn about puberty, body hygiene, how babies develop during pregnancy, understanding first relationships and having boyfriends and girlfriends and the emotions that come with that.

Citizenship is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. They organize campaigns on matters of concern to them, such as helping the poor or homeless. Science promotes the concept of positive citizenship.

5.5 Spiritual, moral, social and cultural development

Science teaching offers children many opportunities to examine some of the fundamental questions in life, for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living

things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet and how science can contribute to the way we manage the earth's resources. 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.

6 Teaching science to children with special needs

6.1 We teach science to all children, whatever their ability. Science contributes to the school curriculum to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Our work in science takes into account the targets set in the children's Education Health Care Plans (EHCPs).

7 Assessment and recording

7.1 At the start of a topic, the children will complete a knowledge quiz to see what they already know and will retake this quiz at the end of the topic to ensure any misconceptions have been addressed and to assess how much learning the children have remembered. The children will also complete Proof of progress tasks (PoP tasks) which are from the Chris Quigley scheme of work. **(See appendix 2)**

These show teachers how to plan for and assess progress from fundamental foundations to greater depth. There are Pop tasks for each National Curriculum statement in all areas of science. The PoP tasks are either Basic, Advancing or Deep. A Year one child would complete a Basic PoP task and a Year 6 would complete a Deep task. Teacher judgement and a child's ability in science would determine which PoP task they would complete.

The Pop Tasks are used as an assessment tool for all year groups.

We also assess children's work in science by making informal judgements as we observe them during lessons. On completion of a piece of work, the teacher marks the work according to the feedback and marking policy.

7.2 Science at the end of Key Stage 2 is tested according to a sampling system, so not all children or school's will sit a Science SAT's test. Teachers will assess the children's effort and progress in science at the end of each year and this will be explained to parents in the end of year reports.

7.3 The science subject leader conducts pupil interviews, monitors planning and coverage and keeps samples of children's work in the Subject Leader's File. **(Appendix 3- examples of work)**

8 Resources

8.1 The library contains some science topic books to support children's individual research. Staff's laptops and children's chrome books can access the internet for on-line resources and there are Science resources cupboards located in the Science subject leader's classroom.

9 Monitoring and review

9.1 Monitoring of the standards of children's work and of the quality of teaching in science is the responsibility of the science subject leader. The work of the science subject leader also involves supporting colleagues in the teaching of science, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.