

Perton First School



Science Policy 2020

<u>Overview</u>

Aims & Objectives

Our Science Policy follows The National Curriculum 2014 Science Guidelines and 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 in the future.

<u>Intent</u>

A high-quality Science education provides foundations for understanding the world. Science has changed our lives and is vital to the world's future prosperity. Through building 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 key knowledge and concepts can be used to explain what is occurring, predict how things will behave, and analyse causes. This understanding should be consolidated through their appreciation of applications of Science in society and the economy.

In teaching Science, we are developing in our children:

- a positive attitude towards Science and an awareness of its fascination
- an understanding of Science through a process of enquiry and investigation
- confidence and competence in scientific knowledge, concepts and skills
- an ability to reason, predict, think logically and to work systematically and accurately
- ✤ an ability to communicate scientifically
- the initiative to work both independently and in co-operation with others
- the ability and understanding to use and apply science across the curriculum and real life

Planning the School Curriculum

The programmes of study for Science are set out year-by-year for Key Stages 1 and 2. Teachers will base their planning on the programmes of study for their relevant year groups. Where possible, Science will be linked to class topics. Science will also be taught as discrete units and lessons where needed to ensure coverage. Teachers plan to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available.

Scientific Knowledge and Conceptual Understanding

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary.

The Science curriculum reflects the importance of spoken language in pupils' development. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, for both themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

They should also apply their mathematical knowledge to their understanding of Science, including collecting, presenting and analysing data.

The Nature, Processes and Methods of Science

'Working scientifically' specifies the understanding of the nature, processes and methods of Science for each year group. It should not be taught as a separate strand. 'Working scientifically' should be taught through and be clearly related to substantive Science content in the programme of study.

Implementation

EYFS

Science is taught through the strand of, 'Understanding the World'. Science teaching and learning is also linked to the other strands of The EYFS framework for learning, 2014.

Teachers and teaching assistants support pupils to develop a solid understanding of things occurring around them in their day-to-day lives. Children are encouraged to be creative and inquisitive as they participate in activities. Pupils are encouraged to use their natural inquisitiveness, while taking part in exploratory play in specific scientific areas as well as areas that link across the EYFS framework.

<u>Key Stage 1</u>

The main focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests and finding things out using secondary sources of information.

They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about Science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos. Pupils should read and spell scientific vocabulary at a level consistent with their reading and spelling knowledge at Key Stage 1.

Lower Key Stage 2 - Years 3 and 4

The main focus of Science teaching in Lower Key Stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions.

They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing reading and spelling knowledge.

<u>Cross-curricular Science Opportunities:</u>

Teachers will seek to take advantage of opportunities to make cross-curricular links. They will plan for pupils to practise and apply the skills, knowledge and understanding acquired through Science lessons to other areas of the curriculum.

The Use of Computing:

We recognise the important role computing skills have to play in the development of scientific skills. We also recognise the importance of being computer Literate. Computing skills are used on a daily basis to enhance teaching and learning of science and to give all children the opportunity to use computing to research, collect, analyse and present scientific findings.

<u>Assessment</u>

This is achieved through discussion with pupils, observation of pupils, marking work. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expectations.

Monitoring & Evaluation

The Science Subject Leader will monitor and evaluate the teaching and learning of Science through monitoring and evaluation of pupils' work, lesson observations and monitoring of data.

<u>Health & Safety</u>

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers, Teaching Assistants and the Subject Leader will check equipment regularly and report any damage, taking defective equipment out of action. Teachers will ensure the School Policy for Health and Safety is integrated into Science teaching.

Equal Opportunities and Inclusion

We ensure that the school meets the needs of all, taking account of gender, ethnicity, culture, religion, language, sexual orientation, age, ability, disability and social circumstances. It is important that in this school we meet the diverse needs of pupils to ensure inclusion for all and that all pupils are prepared for full participation in a multi-ethnic society.

Access to the Curriculum

All children have an entitlement to a broad and balanced curriculum, which is differentiated to enable children to understand the relevance and purpose of learning activities and experience levels of understanding and rates of progress that bring feelings of success and achievement. Teachers use a range of strategies to meet children's special educational needs.

<u>Parental Involvement:</u>

We aim to involve parents directly in the life of the school, and thus in the development of children's skills, knowledge and understanding in Science. There are opportunities each term when parents can discuss their children's progress with their teacher. Parents may receive a Marvellous Me message to celebrate their child's learning in Science if their teacher feels as though they have put in an exceptional amount of effort into a specific science task.

Science Policy Adopted: Summer Term 2020