Melsonby Methodist Primary School Science policy

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AIMS OF SCIENCE POLICY

Our Science Policy follows The Primary Curriculum 2014 for 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 for the future.
- Developing observational skills through observing changes over time

PURPOSE OF STUDY-WHY TEACH SCIENCE?

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 to use and apply science across the curriculum and real life.

PLANNING

School curriculum

Class 1 on a 3 year sequence and Class 2 on a 4 year sequence

The programmes of study for Science are set out year-by-year for Key Stages 1 and 2. We are however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, School has the flexibility to introduce content earlier or later

than set out in the programme of study and may introduce key stage content during an earlier key stage if appropriate.
Teachers will base their planning on the programmes of study for their relevant year groups.

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 and extend a specialist vocabulary alongside creating their own predictions and investigations. 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.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1

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 are encouraged to be curious and ask questions about what they notice. They are supported in developing 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. The children 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 is 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.

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 do this through exploring, discussing, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments. They also begin to develop their ideas about functions, relationships and interactions. The children 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. Drawing simple conclusions and using some scientific language, first, to talk about and, later, to write about what they have found out is essential within our science lessons

'Working scientifically' must **always** be taught through and clearly related to substantive Science content in the programme of study.

Upper Key Stage 2 – Years 5-6

The main focus of Science teaching in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; as well as analysing functions, relationships and interactions more systematically.

At Upper Key Stage 2, they encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They also begin to recognise that scientific ideas change and develop over time. They select the most appropriate ways to answer Science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out fair tests and finding things out using a wide range of secondary sources of information. Pupils draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

'Working and thinking scientifically' must **always** be taught through and clearly related to substantive Science content in the programme of study.

ASSESSMENT

This is achieved through:

- discussion with pupils;
- observation of pupils;
- marking work;
- half termly assessment tests from Years 1 – 6 [assessments recorded in school tracking system].

MONITORING AND EVALUATION

Monitoring and review:

The Science Subject leader and class teacher is responsible for monitoring the standard of the children's work and the quality of teaching in Science. The Science Subject leader is responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The Science Subject leader will present an annual report to the Headteacher in which they evaluate the strengths and weaknesses in the subject and indicates areas for further improvement. The Science Subject leader must therefore make full use of non-contact time to undertake monitoring of science across the whole school.

MARKING WORK

Refer to the whole School Marking Policy.