

# **Christ Church School, Hampstead**

## **Curriculum statement: Science**



The Governing Body of Christ Church Primary School, Hampstead adopted this statement for Science in May 2015 and it should be read alongside our Teaching and Learning Policy and the school's published curriculum overview.

### **The contribution of Science to the primary curriculum**

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. Through building up a body of 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 science can be used to explain what is occurring, predict how things will behave, and analyse causes.

### **Aims and objectives of teaching Science**

- To develop the children's scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- To develop the children's 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
- To equip children with the scientific knowledge required to understand the uses and implications of science, today and for the future

### **Aims and objectives of teaching Science**

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

### **The curriculum**

The National Curriculum sets out programmes of study year-by-year for both key stages. However, it is important to note that the school maintains the flexibility to move these programmes of study within a key stage following professional discussions with the teaching staff. The statutory requirements for each programme of study are to be reached by the end of the key stage and not the year group they may be currently assigned to by the National Curriculum. For a clear idea of the programmes of study taught within each year group, please consult the published curriculum overview.

### **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. 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.

### **EYFS**

In the Reception class the foundations for Scientific knowledge and skills are taught within the Knowledge and Understanding of the World area of the EYFS guidance.

### **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 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**

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.

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

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing reading and spelling knowledge.

### **Upper Key Stage 2**

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 should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically.

At Upper Key Stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should 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 should 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. Pupils should read, spell and pronounce scientific vocabulary correctly.

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

### **Additional Guidance and Planning outside the National Curriculum**

The National Curriculum (2014) forms the basis for all the planning in science, although teachers will naturally draw upon other sources for planning purposes. One useful resource that teachers are encouraged to use is “Resources for teaching the 2014 Curriculum – Primary Science” produced by TES Education. This document follows the National Curriculum Programme of study and links each area to useful websites, online investigations, SMART notebooks and more.

Other documents for teachers to draw upon are the Science unit overviews organised by key stage. This document provides useful links between the Science programmes of study, Design Technology and Art & Design.

### **Opportunities for Science outside the school’s curriculum**

The school offers access to a Science Club run by Mother Nature after school. The club is independent of the school and charges therefore apply. This club seeks to further KS2 children’s knowledge and understanding through practising their scientific skills.

### **Health and Safety in Science**

Careful consideration needs to be given to health and safety during Science sessions at Christ Church. Additional guidance is provided in the document “Safety in Science” by Hampshire Advisory Service which addresses risk assessments in science, responsibility for health and safety in science and it provides hazard guidance cards. The hazard guidance cards are specifically linked to particular topic areas in science and helps to highlight possible hazards and the precautions teachers could take.

### **Awards and Accreditations**

Christ Church was awarded the Primary Science Quality Mark (PSQM) in Autumn 2014 at a Silver Level.

### **Review**

This statement should be reviewed every three years to ensure it is a reflection of current best practice. Revised by the school’s Science subject leader – May 2015.