



## **Edwards Hall Primary School Science Policy**

### **Introduction**

This document is a statement of the aims, principles and strategies for the teaching and learning of Science at Edwards Hall Primary School. Teaching staff and the school council were consulted about its contents before it was approved.

### **1. The importance of science in the 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.'  
National Curriculum 2014

### **2. The school aims to:**

- Stimulate and excite pupils' curiosity about changes and events in the world;
- Satisfy this curiosity with knowledge;
- Develop an understanding of big ideas and concepts in science through the specific disciplines of biology, chemistry and physics;
- Engage pupils as learners at many levels through linking ideas with practical experience;
- Help pupils to learn to question and discuss scientific issues that may affect their own lives;
- Help pupils develop, model and evaluate explanations through scientific methods of collecting evidence using critical and creative thought;
- Show pupils how major scientific ideas contribute to technological change and how this impacts on improving the quality of our everyday lives;
- Develop sound observational skills;
- Encourage perseverance.

### **3. Strategies for teaching and learning**

Science is a core subject of the National Curriculum and pupils undertake science activity in each half term in Key Stages 1 and 2 as part of a creative curriculum approach. Units of work are often delivered in blocks making best use of the timetable to thoroughly develop understanding. Pupils in the Foundation Stage develop their knowledge, understanding and skills through play activities in a highly stimulating environment and direct teaching developed in the moment.

## **Planning**

Planning in Key Stage 1 and 2 takes into account that the school places a high emphasis on the development of pupils' Working Scientifically skills. In the majority of lessons these skills are taught alongside the knowledge content of the curriculum. Assessment for Learning activities are embedded in planning so that teaching meets the needs of individual children. Objectives are taken directly from the National Curriculum, broken down where necessary to suit individual lessons.

### **At Key Stage 1**

Pupils experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They are encouraged to be curious and ask questions about what they notice. They begin to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions. They 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. Learning about science is through practical experience, Appropriate secondary sources, such as books, photographs and computing resources are also employed to further develop understanding.

### **At Key Stage 2**

In lower key stage 2 pupils broaden their scientific view of the world around them. They do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments. They also start to develop their ideas about functions, relationships and interactions. Pupils 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. They draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

In upper key stage 2 pupils 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; and analysing functions, relationships and interactions more systematically. Pupils begin to 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. Pupils are encouraged to select the most appropriate ways to answer science questions using different types of scientific enquiry. Pupils then 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.

### **At all Key Stages**

Different types of enquiry include including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.

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 for communicating their findings. (See appendix one – outlining how often whole investigations should be completed in each year group)

## **Learning Resources**

Every classroom has access to topic boxes which are in the store room opposite the staff room. Consumable resources are stored in the subject leader's classroom and the subject leader is responsible for the maintenance of these areas.

Teaching includes the safe and considerate treatment of animals and plants and the careful use of equipment. Pupils are taught not to be careless and to use consumables efficiently.

In the resource area most resources are organised in boxes, which are linked to areas of work. These resources should be returned in this way. Other larger items are stored separately.

A wide variety of science materials are stored in the school library or held by relevant year groups. Computing resources (in the form of computers and tablets) are available.

## **4. The learning environment**

Classrooms should have displays of current science topics being studied. Its profile should reflect its place as a core subject. Resources, for the unit of work being covered, should be accessible. Other sources of information should be available. Relevant scientific vocabulary being introduced in current units of work should be given prominence in these displays. Appropriate scientific vocabulary is available in the curriculum resources area of the server.

## **5. Assessment**

Assessment for Learning should be ongoing throughout the year and will be used to inform the planning. A variety of strategies, including observing children working, questioning, discussion, concept mapping and marking, are used in this process.

Assessment of Learning will be mainly through observation and questioning in Foundation Stage. Initial assessments are carried out and recorded electronically and used to inform planning. Summative assessment data is collected and is also stored electronically. In KS1 and KS2 formal, written assessment materials (including Rising Stars Assessment) may be used to support judgements. Results of these assessments should be available to the co-ordinator and are passed on to each cohort's subsequent teachers.

## **6. Health and Safety**

Safe practice must be promoted at all times. Each learning area has its own risk assessment and science learning has been considered as part of this. Any further activities which are not

considered as part of this will have their own risk assessment before being carried out. CLEAPSS information should be consulted where needed.

## **7. Inclusion**

Planning at all levels ensures that all pupils, including those with special educational needs, undertake the full range of activities. Educational support staff, when available, work as directed by the class teacher.

## **10. Science across the curriculum**

Science lessons are planned to make effective links with other curriculum areas and subjects, especially English, Maths and Computing and to enable the pupils to practise the skills related to these areas.

## **11. Role of the Co-ordinator**

- To be enthusiastic about science and demonstrate good practice.
- Develop, with the staff, a written policy document and scheme of work .
- Encourage and support staff in the implementation of the agreed documents.
- Co-ordinate assessment procedures and record keeping so as to facilitate progression throughout the school.
- Keep up to date with current curriculum development through CPD.
- Attend networking meetings and be aware of developments through reading.
- Provide appropriate, targeted, CPD for staff.

## Appendix One

How often should whole investigations be completed in each year group

Year One

- Shared writing of one full investigation a year with a teacher composed question.

Year Two;

- Shared writing of one full investigation a year with a teacher composed question
- In the summer term pupils write up one structured investigation from a teacher composed question.

Year Three and Four;

- Children formulate questions as a class – discussed with class teacher
- Two full investigations a year.

Year Five;

- Three full investigations a year (ideally one per term)
- Children formulate questions with support from Class Teacher.

Year Six;

- Three full investigations a year (ideally one per term)
- Children formulate questions as independently as possible.