



## **Policy: SCIENCE**

### **Introduction/Philosophy**

Science “offers practical opportunities for careful observation, measurement, communication in a variety of forms, predictions from perceived patterns and regulations, appreciation of the relationship between cause and effect, and for the solving of problems in the everyday context”.

*Science 5-16 ‘A Statement of Policy’*

Science in our federation aims to provide the children with the opportunity to investigate Science through practical experiences.

### **Why We Teach Science**

Science makes an extremely valuable contribution to all aspects of life. Children are naturally fascinated by everything in the world around them, and Science makes a valuable contribution to their understanding. We must encourage their naturally inquisitive minds and offer them opportunities to stimulate their natural curiosity.

### **Aims Of Our Science Teaching**

- Teach the children scientific skills and scientific knowledge.
- Develop pupils’ ability to use scientific methods of investigation.
- Build on our children’s natural curiosity.
- Develop an understanding of scientific ideas.
- Stimulate our children to investigate and question.
- Cultivate positive, personal qualities and attitudes - in particular,
- Develop a critical awareness of the role of Science in society.
- Encourage pupils to enjoy Science and see Science as an interesting, exciting and stimulating way of learning.

Through our aims we intend to develop the following skills in Science:

Prediction  
Hypothesising  
Recording information and collecting data  
Discussion – reporting to others  
Raising questions  
Observation  
Comparing, sorting, classifying  
Making a plan  
Estimating and measuring



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Controlling and manipulating variables  
Handling equipment  
Interpreting information  
Making conclusions

### **National Curriculum 2014**

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved. Within our school curriculum framework we will cover all the expectations of the National Curriculum which will with planning and help to ensure progression.

### **Organisation**

The Science Co-ordinator will ensure that there is a balance of Science in the timetables and that all areas of the National Curriculum Science Orders are being covered through chosen topics. They will also resource the Science equipment and order new equipment when necessary.

There should also be a variety of books available for the children to investigate and extend their knowledge of given Science topics. Children are encouraged to extend their work and interests outside school by bringing things in from home, performing set tasks, homework, listening to outside speakers or having visitors in their classrooms to support current topic work.

### **Planning**

Planning is based around skills within Science. Each year group teaches science within the different topics. Lessons are based around the knowledge and understanding and investigative/scientific enquiry. Science teaching may also take place within topics, as stand-alone lessons or as blocked periods. The Science coordinator ensures continuity and coverage throughout the different year groups. This is shown through the science school overview.

### **Continuity and Progression**

A continuous thread runs through all the Science by the strong emphasis put on scientific enquiry and investigation. Assessments made are based on the progression of skills in scientific enquiry/investigations. They build on the individual skills for each year group. Assessment of children's knowledge/theory in the different areas also contribute to overall assessments made. Monitoring through looking at children's work and lesson observations ensures the continuity and progression throughout the school.



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### **Teaching Methods**

The majority of Science is taught through termly topics. This cross-curricular approach provides an interesting and relevant focus for our Science teaching. Science is taught to children in a variety of ways, creating a balance of approaches and methods, depending on the Science activity. It may be:

1. Individual/paired work
2. Small groups
3. Large groups (half class)
4. Whole class

At all stages the Science lessons involve the use of a variety of practical equipment. The emphasis is always on first-hand experience. Scientific discoveries are initially child-oriented with results and conclusions drawn up by the children and teachers. Children are encouraged to 'do' and 'have a go' at Key Stage 1 and Key Stage 2. As the children progress through the school they are encouraged to record their work in detail. It is expected that by the end of Key Stage 2 a precise and formal method of recording is achieved by most of the children within investigation books. The investigations are assessed using focused success criteria building on the individual enquiry skill.

### **Information and Communication Technology**

ICT will be used in various ways to support teaching and learning. ICT will involve the computer and other audio-visual aids. The interactive whiteboard (IWB) is a useful tool for delivering a range of teaching aids and can be used to support activities and enhance the learning of scientific concepts are detailed in teachers' medium term plans for science.

In addition, teachers may use some of the freely available resources on the internet which allow for effective teaching of Science, including virtual experiments, interactive games and multimedia clips to enhance their lessons.

### **Equal Opportunities and Differentiation**

Children of all abilities and gender can benefit from the study of Science. The teaching system within our school (see Teaching and Learning Policy) allows for variation of ability between children within the existing Science Curriculum. The Science taught is interesting and exciting, and we aim to create an environment that offers everyone the same opportunities, as well as offering support of extension to those pupils who need it.

### **Resources**

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Date: Sept 2019

Review: Sept 2020

Co-ordinator: Erin Mackarness



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Science resources are kept in the central Resources Room. It is important that the children have access to, and are aware of, the resources available to them. This encourages scientific observation by individual children. The Science Co-ordinator is responsible for ordering resources when needed, as well as individual teachers obtaining resources for specific topics.

### **Safety In Science Activities**

We accept a responsibility to plan safe activities for Science. Teachers and support staff are aware of the Primary Curriculum Risk Assessments which are reviewed and revised by the Health and Safety Coordinator or the school.

### **Assessment and Record Keeping**

Teachers assess the children through scientific enquiry investigation books alongside assessing the children's knowledge. Each child has an investigation book in ks2 linked to their topic, every term skills will be assessed using a whole school scientific enquiry system. Assessments made through pupil comments, written and drawn investigations and practical investigations will contribute towards an overall level.

### **Role of the Headteacher and the Science Co-ordinator**

The Headteacher and the Science Co-ordinator will liaise between the Key Stage 1 and Key Stage 2 departments, as well as with their secondary feeder schools. The Science Co-ordinator will support colleagues who are planning Science activities, as well as being available when needed to implement those activities. The Science Co-ordinator will attend relevant Science Courses and report back to staff. The Headteacher has a vital role in encouraging colleagues to teach effective Science and ensuring that the National Curriculum for Science is being delivered to the children.