

# St Margaret's Collier Street

## SCIENCE POLICY

### Rationale

Science aims to excite and inspire curiosity. It encourages children to question what they see and experience and to become increasingly more confident in investigating and explaining these phenomena using the scientific knowledge they have gained. Pupils should become more aware of the uses of science in everyday life and the jobs and careers that utilise it.

### Aims

- To develop enjoyment and interest in science and its contribution to everyday life
- To build on pupils' curiosity and sense of awe of the natural world
- To use a range of investigations and practical activities to further understanding of science
- To use an increasingly wide range of scientific language and vocabulary
- To develop pupils' ability to communicate scientific findings
- To use computing to effectively support and enhance science
- To develop pupils' basic practical skills and their ability to make accurate and appropriate measurements

### Objectives

The following objectives derived from the above aims will form the basis of our decisions when planning a scheme of work.

#### **To develop enjoyment and interest in science and its contribution to everyday life**

- To develop a knowledge and appreciation of the contribution made by famous scientists to our knowledge of the world. This will include scientists from different cultures.
- To encourage pupils to relate their scientific studies to applications and effects within the real world and embed real world examples into explanations.
- To develop a knowledge of the science contained within the Programmes of Study of the National Curriculum.

#### **To build on pupils' curiosity and sense of awe of the natural world.**

- To develop in pupils a general sense of enquiry which encourages them to question and make suggestions.
- To encourage pupils to predict the likely outcome of their investigations and practical activities.
- To allow opportunities for pupils to generate their own investigations through investigation lessons and whole school science projects.

### **To use a range of investigations and practical activities to further understanding of science**

- To plan investigations and activities that develop knowledge and understanding of biology, chemistry and physics.
- To provide pupils with a range of specific investigations and practical work which gives them a worthwhile experience to develop their understanding of science.
- To develop progressively pupils' ability to plan, carry out and evaluate simple scientific investigations.
- In KS1, investigations will predominantly involve pupils sorting and classifying, identifying and describing objects and processes. In KS2, pupils develop further in science so that they will be explaining and comparing phenomena.

### **To develop pupils' ability to communicate scientific findings**

- To introduce pupils to the language and vocabulary of science
- To give pupils regular opportunities to use the scientific terms necessary to communicate ideas about science
- To develop pupils' basic practical skills and their ability to make accurate and appropriate measurements using a range of different equipment
- Within practical activities pupils are given opportunities to use a range of simple scientific measuring instruments such as thermometers and forcemeters and develop their skill in being able to read them

### **To use computing to effectively support and enhance science**

- To give pupils opportunities to use a range of computing equipment and programmes to record and enhance their science work such as recording software and data loggers.
- To give pupils the chance to obtain information from a range of online sources using the Internet.

### **Principles of Teaching and Learning**

Science will be taught in a variety of ways appropriate to each child's ability:

- In planning – by organising tasks to meet the learning needs of individuals or groups
- By outcome – through open ended tasks allowing a variety of responses at different levels
- By using varied recording methods to allow pupils to demonstrate scientific understanding
- By task – providing an initial task which can be extended to different points
- By support – varying degrees of adult support to enable the child to complete the task

### **Breadth and Balance**

Long term planning in both key stages will set out when different topics from the National Curriculum will be taught.

In KS1, science will be taught on a 3 year rolling programme,

In KS2, pupils will be taught on a 2 year rolling programme with different topics taught in lower and upper key stage 2.

### **Variety**

Pupils will be involved in a variety of structured activities and more open-ended work:

- activities to develop good observational skills
- practical activities using measuring instruments
- structured activities to develop understanding of a scientific concept
- open ended investigations
- on some occasions pupils will carry out the whole investigative process themselves or in small groups.
- science challenges such as designing boats and protection vehicles for different purposes.
- homework tasks will also be used where appropriate to support or promote science.

Science knowledge and understanding will also be promoted through role play areas, visitors to school such as doctors and nurses and through other curriculum areas such as PSHE and PE.

### **Relevance**

Wherever possible science work will be related to the real world and everyday examples will be used.

### **Continuity and Progression**

Science is a core subject and the allocated time reflects this. Pupils in Foundation and KS1 will be introduced to science through focused observations and explorations of the world around them. These will be developed into KS2 through supported investigations and more independent work. By upper KS2, pupils will develop deeper understanding. They will ask scientific questions, select the most appropriate way of answering them and draw conclusions about their findings.

The knowledge and content prescribed in the National Curriculum will be introduced throughout both Key Stages in a progressive and coherent way.

Children will use a range of recording strategies to communicate ideas and findings. Where appropriate KS2 will record their science investigations using the following headings:

Aim

Prediction

Equipment

Method, including ways to ensure the test is fair and accurate

Results

Conclusion

Sometimes it may be more appropriate to record through drawings, photographs, videos and other more creative methods.

### **Equal Opportunities**

Planning will ensure that all pupils have an equal opportunity to take part in the whole scheme of work. Where appropriate work will be adapted to meet special needs, including extension activities for the most able. Gender and cultural differences will be reflected positively.

### **Health and Safety**

A simple risk assessment will be carried out for practical activities. The LA has adopted the ASE book 'Be Safe' as its model risk assessment and therefore this should be consulted when necessary.

### **Assessment Recording and Reporting**

At the end of each theme or unit of work children will be assessed against expectations from the National Curriculum. Thorough and formative marking will also guide teachers' judgements. These assessments will be used to inform future planning. Where appropriate, whole school challenges will also form part of the assessment process and allow opportunities for staff across the school to moderate their judgements.

### **The Role of the Subject Leader**

The subject leader will provide professional leadership and management for science and will ensure that it is managed and organised so that it meets the aims and objectives of the school. The subject leader will monitor teaching and learning within the subject through classroom observations, books and discussions with children and staff. The subject leader will manage the resources for science and will maintain the stock to meet the needs of the curriculum.

### **Resourcing**

In order to encourage an investigative approach to learning, our school should contain sufficient basic equipment to allow simple investigations, observations and measurements to be carried out in small groups. The science subject leader will see that this level of resourcing is maintained and will administer the allocated budget for science.

The science section of the school library is continuously being developed to reflect curriculum and teaching needs.

The effectiveness of the science curriculum will be evaluated in discussions with the headteacher, staff and the link Governors who receive regular updates. Priorities for in service support and external review will be established.

This evaluation will form the basis for an action plan which will then inform the School Plan.