

## Rationale (The value of the subject in the child's education):

Science is a systematic investigation of the physical, chemical and biological aspects of the world we live in and beyond. It relies on first hand experiences and on other sources of information. Scientific processes and problem solving activities will be used to develop pupils' understanding of fundamental concepts. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum.

## Aims (What skills, knowledge and understand the subject provides):

- To develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.
- To build on pupils' curiosity and sense of awe of the natural world.
- To introduce pupils to the language and vocabulary of science.
- To 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.
- Children equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- To develop pupils' use of information and communication technology (ICT) in their science studies.

## Organisation (How the teaching and learning will be delivered):

### **Differentiation**

The study of science will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. The Rising Stars scheme of work will be used by teachers to plan this includes three differentiated activities and challenges to challenge children of different abilities.

### **Equal Opportunities**

Curriculum planning will ensure that all pupils have an equal opportunity to take part in the full scheme of work and its associated practical activities regardless of gender or cultural background.

Gender stereotypes are challenged when they arise and the context in which science is taught is monitored to ensure the interests of boys and girls are maintained.

Contexts used in teaching will also be sensitive to different ethnic backgrounds and both gender and cultural differences will be reflected positively in the teaching materials used.

### **Additional Educational Needs (Including SEN)**

For pupils with SEN the task will be adjusted or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence. Writing frames for investigations and other tasks have been developed. Where possible, teaching assistants will be used to support individual needs.

### **Gifted and Talented**

Most importantly we ensure that good differentiation provides challenging activities for all pupils. For the most able, we are building a bank of resources that challenge their understanding and require them to apply their knowledge. At times, more open-ended investigations are set. Gifted and talented pupils are routinely challenged with probing questions from the teacher either within the whole group or individually.

## **The role of the Coordinator and Curriculum Team:**

The co-ordinator will be responsible for developing their curriculum area and working together with their curriculum team.

The role of the co-ordinator is to:

- Ensure teachers are familiar with documents and schemes of work to help them to plan lessons. Provide support and advice to all staff
- Lead by example in the way that they teach lessons in their own classrooms.
- Track progress in the subject area, analyse assessment data
- Prepare, organise and lead INSET
- Monitor the subject through:
  - Observing colleagues from time to time, with a view to identifying the support they need.
  - Scrutiny of pupil's work and displays
  - Planning.
  - Pupil Interviews.
- Develop the action plan with the curriculum team
- Review resources and manage the budget for the subject area
- Update policy and documents with the curriculum team
- Attend all relevant inset and support staff in training needs
- Work cooperatively with the Inclusion manager coordinator in providing advice and support staff.
- Keep an organised and up to date file.
- Meet with the governors and discuss the subject area

## Assessment and record keeping:

### **Assessment of learning**

Assessment opportunities will be identified within schemes of work. At key stage 1, pupil progress is judged against the expectations of the National Curriculum Programme of studies. Teachers will monitor progress and understanding from practical activities during science lessons and evidence in books in relation to the learning objective. Teachers can assess children during practical lessons where they will have given lots of opportunities for speaking about scientific concepts. Children will be assessed from an end of topic test and teacher assessments throughout the year as to whether they are meeting the statements from the Science KS1 Programme of study.

At Key Stage 2 similar arrangements will be followed with teacher assessment throughout lessons and end of topic test. The assessment of scientific enquiry will rely on a mixture of evidence from pupils' everyday practical work throughout the key stage and other more independent investigations carried out by the pupils.

### **Assessment for learning**

We aim to ensure that pupils understand what is required of them and what they need to do to improve. Learning objectives are shared at the beginnings of lessons and reviewed at appropriate intervals. Clear guidelines are given on what is expected for each piece of work, with the marking criteria sometimes being shared. Children have an opportunity at the beginning of each lesson to review teacher feedback from previous lessons. They are expected to correct any scientific vocabulary and answer questions that have been set to either support or challenge them.

### **Moderation**

Moderation of work is a key to raising standards in science and the coordinator will help each key stage to level work against the Science Programme of studies.

### **Statutory requirements**

At Key stage 1 the only statutory requirement is that children are taught all of the concepts from each topic in the KS1 Science Programme of Study. Working Scientifically should not be taught separately but implemented into all lessons.

At the end of Key stage 2 children should have been taught the KS2 Science Programme of Study. 'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study.

## Equal Opportunities:

We are committed to treat every person with equality of esteem and the respect and dignity due to a child of God.

At St Mary's we believe that all human beings are equal in the eyes of God regardless of their race, gender, disability, religion, belief or age. Due to this we aim to ensure that all members of our school have equal opportunities to learn, develop and grow with dignity in a community of mutual respect. We are committed to valuing and celebrating the diversity within our community.