**St Mary’s Church of England Primary School & Nursery**

***Be the best you can be.***

**Science**

**Rationale**

All school policies form a corporate, public and accountable statement of intent - it is very important to create an agreed whole school approach of which staff, children, parents, governors and other agencies have a clear understanding. This policy is the formal statement of intent, implementation and impact for Science within St Mary’s C of E Primary School. It reflects the essential part that Science plays in the education of our pupils.

**Introduction**

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 and concepts, pupils should be encouraged to recognize the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encourage to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes.

(*The Science National Curriculum, 2014*)

At St Mary’s C of E primary School, science stimulates and excites pupil’s curiosity about natural phenomena and events in the world around them. Pupils understand how major scientific ideas contribute toward technological change – impacting on industry, medicine, business and improving quality of life. They learn to question and discuss science based issues that may affect their own lives, the directions of society and the future of the world, encouraging and supporting the development of Science capital. This knowledge base of science has a practical application to everyday experiences and is therefore important for pupil’s social development. By working scientifically, through tailored investigations involving planning, testing, recording and analysing results, students come to appreciate the nature of the learning process. All teachers, design and plan activities proving opportunities for students to display and to develop and apply their creative and imaginative capacities in science. These activities also enable them to experience an ongoing sense of success in their teaching and learning which are transferable to other subjects.

**Aims**

The National Curriculum for Science aims to ensure that all pupils:

* Develop scientific knowledge and conceptual understanding through the specific disciplines.
* 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.
* Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

At St Mary’s school our intention is to provide the children with a Science curriculum that reflects the purposes and aims taken from the national curriculum, as well as stimulate a child’s curiosity in finding out why things happen in the way that they do. It teaches methods of enquiry and investigation to stimulate creative thought.

Through engaging and stimulating lessons, our children should develop:

* An ability to solve problems, to reason, to think logically and to work systematically and accurately;
* A broad range of Science vocabulary in order to explain their hypotheses, and reason their science enquiry choices clearly using the correct terminology;
* To ask and answer scientific questions;
* To plan and carry out scientific investigations, with the correct use of equipment;
* To know about materials, electricity, light, sound and natural forces;
* To know about the nature of the solar system, including the Earth;
* To know how to evaluate evidence, and to present conclusions both clearly and accurately.

**Teaching and Learning**

We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes, we do this through whole-class teaching, while at other times, we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. Children often feedback their results and findings to the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in real scientific activities, e.g. investigating a local environmental problem, or carrying out a practical experiment and analysing the results.

We recognise that in all classes, children have a wide range of scientific abilities, and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways:

* setting tasks which are open-ended and can have a variety of responses;
* grouping children in mixed ability groups so that all children can hear a range of vocabulary and have the opportunity to reach a high order of thinking;
* providing resources of different complexity, matched to the ability of the child;
* Using LSAs to support the work of individual children or groups of children.
* Incorporating high order questions that apply to scientific thinking to extend the most able children in science.

**Science in EYFS**

Play underpins the delivery of all the EYFS. In Playing, children behave in different ways: sometimes within their play, they may describe and discuss what they are doing and sometimes they may be more reflective and quiet as they play. Within a secure and challenging environment with effective support, children can explore, develop and experiment as they play to help them make sense of the world. The EYFS strand ‘Understanding the World’ leads directly to scientific elements of the curriculum and leads to more formalised science learning in KS1 and then KS2.

**Inclusion**

All children at St Mary’s C of E Primary School are entitled to a quality of provision that will enable them to achieve their potential. We believe in positive intervention, removing barriers to learning, raising expectations and levels of achievement, in order to close the gap. High quality teaching that is differentiated and personalised will meet the individual needs of the majority of our children. We establish and maintain a culture of high expectations that expects children with SEND and those who are disadvantaged to be included in all the opportunities available to other children so they can achieve well. We ensure that children with any additional needs are supported through regular assessment and feedback, differentiated planning, scaffolding, target setting, the support of Teaching assistance and regular reviews of progress.

**Marking & Feedback**

Effective marking and feedback of children’s work is essential to enable them to develop and consolidate their understanding, while allowing teachers to assess each child’s progress and plan for their next steps. Work is marked against the success criteria for each lesson and in line with the school marking policy. Feedback is often provided to children verbally in Science enquiries but written marking, and the inclusion of next steps is used where appropriate and at the teachers discretion as to which fits best during each lesson.

**Resources & Displays**

All Science resources are located in the resources area. All staff should ensure that all resources needed for a topic are ordered in sufficient time, prior to the commencement of the topic. There must be an awareness of using resources economically and children should be taught how to get the most out of the resources they are using. It is the responsibility of all staff to ensure that resources are returned to the designated resources area when no longer needed.

**Assessment**

At St Mary’s C of E Primary School, we use assessment effectively to inform next steps and adapt planning to ensure all children are making progress. All class teachers are committed to raising standards of attainment through assessment and are responsible for the assessment of all children in their class.

Assessment takes place in a variety of ways:

* Talking to the children
* Effective questioning
* Observing and marking work
* Self and peer assessment
* Teacher assessment against targets and National Curriculum expectations

Information about the children’s progress is tracked and monitored using the Insight Pupil Tracking System. Teachers are required to regularly engage with Insight to track formative assessment data and at the end of every long term for summative assessment. These ongoing assessments inform future planning and teaching.

**Monitoring Teaching and Learning**

Monitoring within the school is undertaken by the Subject Leader, the Senior Leadership Team and Governors. This is recorded on the whole school monitoring schedule. Areas to be monitored will be decided upon in accordance with priorities indicated within the foundation subjects’ action plan and the whole school development plan.

Evidence in monitoring will be gathered, evaluated and reviewed through:

* learning walks
* formal lesson observations
* planning scrutiny
* children’s work scrutiny
* pupil conferencing

Results of any monitoring will be fed back to staff quickly and to SLT at their meetings so that any action required can be carried out effectively. Areas for staff training and CPD will be identified and delivered, as appropriate to the needs of the staff and school.

External monitoring, conducted by the School Improvement Partner and OfSTED, ensures that the school is supported in raising standards in the teaching of Design and Technology.

**Parental Involvement**

We encourage parents to be involved by:

* Inviting them into the school twice yearly to discuss the progress of their child
* Providing a full annual report in the summer term
* Inviting parents to take part in activities during British science week.