



# MARISH



## Academy Trust

# SCIENCE POLICY

February 2018

## **SCIENCE POLICY**

### **Introduction**

Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches methods of inquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national and global level.

### **Aims**

The aims of science are to enable children to:

- ask and answer scientific questions;
- plan and carry out scientific questions, using equipment and scientific skills correctly;
- know and understand the life processes of living things;
- know and understand the physical processes of material, electricity, light, sound and natural forces;
- know about the nature of the solar system, including the earth;
- evaluate evidence and present conclusions clearly and accurately.

### **Delivering the curriculum**

At Marish Academy Trust we use the revised National Curriculum as the basis for our planning, enhanced with resources to support it. Science teaching is broken up into six units of work throughout the year – one each half term in Key Stages 1 and 2. In the Foundation Stage the scientific aspects of the children's work are related to the objectives set out in the Early Years Foundation Stage 'Knowledge of the World.'

The science topics are planned so they build upon prior learning. There are opportunities for children of all abilities to develop their skills and knowledge in each unit. Progression is built into the planning so that children are increasingly challenged as they move through the school.

In Key Stage 1 science should be taught for one session per week and in Key Stage 2 a minimum of one session. At least half of the lessons should cover investigational skills. Although science is taught as a discrete subject year groups often make links to Creative Curriculum topics, if necessary, to increase relevancy of the units and help put science into context for the children in everyday life.

### **Teaching and Learning Strategies**

We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills and understanding. Children are encouraged to ask, as well as answer and investigate scientific questions. They have the opportunity to use a

variety of data, such as statistics, graphs, pictures and photographs as well as a magnitude of scientific equipment to further enhance learning through awe and wonder. ICT is used to enhance learning.

We recognise that there are children of widely different abilities in all classes and we ensure that suitable learning opportunities are provided for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty;
- grouping children by ability in the room and setting different tasks for each ability group;
- providing resources of different complexity, matched to the ability of the child;
- using classroom assistants to support the work of individual children or groups of children;
- learning science outside the classroom on educational visits and workshops.

### **Organisation**

In Key Stages 1 and 2 children are not set for science and may be taught in ability groups or mixed ability groups depending on task. Lessons will be differentiated to meet the needs of all ability groups. Differentiation will be aimed to include all children in the same experiment providing scaffolding to meet all learning needs whilst still meeting the statements set in the National Curriculum.

Foundation Stage science is taught as an integral part of a topic and children will be offered opportunities to use a range of tools safely; encounter creatures; people; plants; and objects in their natural environments and in real-life situations; undertake practical "experiments"; and work with a range of materials.

### **Equal opportunities**

We aim to provide equality of opportunity for all children whatever their age, ability, gender, race or background. We want all pupils to achieve their full potential during their time at Marish and Willow Primary Schools. As such, we work to ensure that our expectations, attitudes, and practices enable all children to reach their potential.

### **Children with English as an Additional Language (EAL)**

All pupils with EAL are provided with opportunities to achieve in this subject area and often use colourful semantics to support their writing. When appropriate, activities are differentiated so that all learners can access the curriculum. At specific times, the EAL support team work alongside children to support them with their learning.

### **Equality of Opportunities**

Marish Academy Trust is committed to ensuring equal treatment of all pupils with any form of disability and will ensure that disabled children are treated favourably in any procedures

and practices. When a child's disability has been disclosed, the school will ensure reasonable adjustments are put in place so that they can have full access to the curriculum.

### **Gender Equality**

All staff ensure that current and future policies and practices in science do not discriminate against either gender, or maintain or lead to gender inequality. Any curriculum developments are monitored to identify if they have had an adverse impact relating to gender issues.

### **Special Educational Needs**

At Marish Academy Trust, we are continually striving for an inclusive multi-sensory approach which values and embraces the individual learning differences of the children within our schools. Therefore, in addition to targeting individual needs through differentiation, intervention programmes and EHP's, we are also focusing upon specific areas within our classrooms, with the aim of continually improving and developing our inclusive practice.

### **Gifted and Talented Children**

Within Marish Academy Trust, up to 10% of the school population may be considered gifted and talented. All teachers should ensure that more able children are identified and receive the appropriate support and challenge in all lessons to further extend and enhance knowledge.

### **Assessment and Record Keeping**

Assessments are undertaken at the end of each unit of work and can be in the form of:

- Practical investigations;
- Children selecting appropriate equipment or information sources to address specific questions or ideas under investigation;
- While a task is being carried out through discussion;
- Written work;
- Concept maps;
- Through observations of children working in groups or individually;
- Knowledge and skill criteria;

Teachers make an assessment of the children's work in science at the end of the year for their reports. Staff members are advised to look at Target Tracker for specific plans linked to their year group as well as the bands for assessing science. The results of these assessments are reported to parents. Planning is monitored throughout each half term to ensure that target Tracker statements are addressed appropriately in accordance with the National Curriculum.

### **Monitoring**

Monitoring of the standards of children's work and of the quality of teaching in science is the responsibility of the science subject leader. Pupils' books and planning are monitored each

term. An annual summary of science is made, in which strengths and weaknesses are evaluated.

## **Marking**

Worked is marked in accordance with the Academy Trust's marking policy.

## **Home learning**

Homework is set for science in accordance with the Academy Trust's Home Learning Policy.

The whole ability range is catered for within this extra-curricular provision from children with Special Educational Needs to those who are more able. Since September 2010 when the Children's University was launched in Slough over 2000 children have attended in excess of 20,000 club hours with over 1000 graduating from the Children's University in graduation ceremonies held in July.

## **Resources**

Science resources are centrally stored in both schools. Equipment is stored in labelled trays in large open cupboard units. The responsibility for organising, setting up and maintaining this area is that of the Subject Leaders. All staff are responsible for returning equipment to the storage cupboard in the exact same manner in which it was collected.

## **ICT**

Information and Communication Technology enhances our children and learning in science, wherever appropriate, in each key stage. Children use the laptops and computer suite to enhance their skills in a variety of ways such as data handling, word-processing, researching information on the Internet, presenting information and using digital cameras. Staff and children are also encouraged to use IWB in lessons, with high quality resources available, again where appropriate. Opportunities for embedded ICT as a tool to support learning and teaching are identified in curriculum planning.

## **The role of the Science Subject Leader**

The main responsibility of the subject leader in each school is to support teachers, so that the quality of teaching and levels of attainment by pupils are continuously improving.

The Science Subject leaders are responsible for:

- Identifying ways forward for the teaching of Science;
- Writing and implementing the Science Action Plan;
- Observing, supporting and working with colleagues;
- Monitoring the teaching of science within the school;
- Take responsibility for the purchase and organisation of central resources;
- Managing the budget;
- Identifying training needs.

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Trustwide Science Coordinators.

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