

# Science Policy

Designated Member of Staff: Liz Holding

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. The main aspects of science to be studied have been determined by the programmes of study of the National Curriculum 2014.

Through science pupils at Woodmancote School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

 **Aims** in teaching science include the following.  
Preparing our children for life in an increasingly scientific and technological world.

 Fostering concern about, and active care for, our local and global environment.

 Enabling learners to appreciate everyday and technological applications of science, both positive and negative.

 Helping develop and extend our children's scientific concept of their world.

## **Attitudes**

 Encouraging the development of positive attitudes to science.

 Building on our children's natural curiosity and developing a scientific approach to problems.

 Encouraging open-mindedness, self-assessment, perseverance and responsibility.

 Building our children's self-confidence to enable them to work independently.



Developing our children's social skills to work cooperatively with others.



Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

### **How Science is taught at Woodmancote:**

Science is a core subject and is allocated a substantial place in the curriculum. Focus Education has been used to provide each year group with starter questions and key assessment criteria according to the National Curriculum 2014 this allows for full coverage of the statutory curriculum. Teachers amend plans to suit their class and topical world events.

Scientific Enquiry is integrated into each unit. Most units provide opportunities for children to carry out the whole process of investigating an idea. This process involves planning, obtaining and recording evidence and analysing and interpreting data. Independent research is encouraged in all areas to expand on the children's own experiences.

### **Within our approach to science we:**



Stress the use of correct scientific language.



Refine and develop ideas through questioning and teacher intervention.



Make use of the school grounds as a source of scientific enquiry.



Encourage a 'hands on' approach where possible.



Give pupils opportunities to use ICT (video, digital camera, data logger) to record their work and to store results for future retrieval throughout their science studies



Give pupils the chance to obtain information using the internet.

Science at Woodmancote supports both the English and Maths curriculum allowing cross curricula work when applicable, standards used in English and Maths will be replicated in Science.

### **The contribution science makes to Spiritual, Moral, Social and Cultural Development:**

Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. We will also ensure that pupils realise the positive contribution of both men and women to science and the contribution from those of other cultures. We will not only emphasise the positive effects of science on the world but also include problems, which some human activities can produce. Science can provide opportunities for children to gain the knowledge, skills and understanding they need to lead confident, healthy and independent lives and to become informed, active and responsible citizens.

Through science at Woodmancote School, children learn:



that people and other living things have needs and that they have a responsibility to meet them.



what might improve or harm their local, natural and built up environments and some of the ways people look after these resources.



how to make simple choices that improve their health, including healthy diet and exercise and sexual development.



that medicines are helpful but can also be harmful if not used properly.



to identify and respect differences and similarities between people.

Drug awareness and sex education are taught in accordance with the school's separate policies and guidelines.

### Teaching science to children with Special Educational Needs (Inclusion):



We promote science as a subject and career which is equally accessible to all.



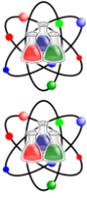
We are alert for and counter situations where pupils may dominate one another.



Written tasks allow some flexibility in the way pupils may respond.



We are aware that some subject matter may be more accessible for boys or girls and endeavour to ensure all children receive the same opportunities.



Children are given choice where possible.

We modify tasks to match the needs of individual children at both ends of the special needs spectrum.

### **Teaching science to children who are deemed to be Gifted and Talented:**

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 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. Additionally the subject leader will analyse data to ensure individuals and/or groups are achieving their potential, including providing a provision for G&T children.

### **Health and Safety**

Due regard is taken for health and safety and the school subscribes to CLEAPSS. Teachers and teaching assistants need to be aware of health and safety procedures when using equipment/food in science lessons. Pupils should also be made aware of the need for personal safety and the safety of others during science lessons.

The main points are listed in Appendix 1.

### **Resources**

Science resources are stored in a central science store that is organised into categories. Any equipment needed should be reported to the subject leader who will acquire it where possible. Plans are kept centrally on the server.

Missing/broken equipment is reported.

### **Record Keeping and Assessment:**

#### **Attainment targets**

Foundation Stage pupils investigate science as part of Understanding of the World. Children are encouraged to investigate through practical experience; teachers guide the children and plan opportunities that allow the children to experience and learn whilst experimenting for themselves. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

## **Key Stage 1**

The main focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about Science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

Pupils should read and spell scientific vocabulary at a level consistent with their reading and spelling knowledge at Key Stage 1.

## **Lower Key Stage 2 - Years 3 and 4**

The main focus of Science teaching in Lower Key Stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

'Working scientifically' must **always** be taught through and clearly related to substantive Science content in the programme of study.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing reading and spelling knowledge.

## **Upper Key Stage 2 - Years 5-6**

The main focus of Science teaching in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically.

At Upper Key Stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer

Science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. Pupils should read, spell and pronounce scientific vocabulary correctly.

'Working and thinking scientifically' must **always** be taught through and clearly related to substantive Science content in the programme of study.

### **Assessment for Learning, recording and reporting.**

Throughout the school teachers will assess whether children are working at/above or below the expected level for their age based on their understanding and application of the content of the National Curriculum 2014. Progress and attainment is reported to parents through parents' evenings and end of year reports. Knowledge and Scientific Enquiry are to be recorded on Target Tracker and progression can then be measured using age appropriate scientific enquiry.

### **Marking for Improvement (following the school's pink and green policy).**

Much of the work done in science lessons is of a practical or oral nature and, as such, recording will take many varied forms thus making marking different. It is, however, important that written work is marked regularly and clearly, as an aid to progression and to celebrate achievement. When appropriate, pupils may be asked to self-assess or peer assess their own or other's work.

Marking for improvement comments in a child's book must be relevant to the learning objective to help children to better focus on future targets.

### **Monitoring and Evaluating this Subject Area:**

*Monitoring and evaluating this subject will be in line with our Monitoring and Evaluating Policy*

The Subject Leader will carry out regular;



monitoring and evaluation of pupils' work;



lesson observations;



monitoring of planning

### **Safeguarding:**

*'We recognise that children who are abused or witness violence may find it difficult to develop a sense of self-worth. They may feel helplessness, humiliation and some sense of blame. The school may be the only stable, secure and predictable element in the lives of children at risk. When at school their*

*behaviour may be challenging and defiant or they may be withdrawn. The school will endeavour to support the pupil through:*

- *The content of the curriculum.*
- *The school ethos which promotes a positive, supportive and secure environment and gives pupils a sense of being valued.*
- *The school behaviour policy which is aimed at supporting vulnerable pupils in the school. The school will ensure that the pupil knows that some behaviour is unacceptable but they are valued and not to be blamed for any abuse which has occurred.*
- *Liaison with other agencies that support the pupil such as social care, Child and Adult Mental Health Service, education welfare service and educational psychology service.*
- *Ensuring that, where a pupil who has a child protection plan leaves, their information is transferred to the new school immediately and that the child's social worker is informed.'*

### **Equal Opportunities:**

*'At Woodmancote we are committed to ensuring equality of education and opportunity for all pupils, staff, parents and carers receiving services from the school, irrespective of race, gender, disability, faith or religion or socio-economic background. We aim to develop a culture of inclusion and diversity in which all those connected to the school feel proud of their identity and able to participate fully in school life. Our belief is that by having a sense of Belonging, children will Aspire to Achieve all that they are capable of.*

*The achievement of pupils will be monitored by race, gender and disability and we will use this data to support pupils, raise standards and ensure inclusive teaching. We will tackle discrimination by the positive promotion of equality, challenging bullying and stereotypes and creating an environment which champions respect for all. At Woodmancote we believe that diversity is a strength, which should be respected and celebrated by all those who learn, teach and visit here.'*

The person or sub-committee responsible for writing/reviewing the policy is responsible for ensuring that it meets all necessary statutory requirements, official guidelines and is not in conflict with other policies. They must also ensure that it reflects the vision, values and aims of Woodmancote School. After review, proposed changes to the policy the relevant Governing body Committee or leadership group must be consulted for approval of the changes. Changes to governors' policies must be approved at a full governors meeting. All other school policy changes must be approved at senior leadership level and then passed to the Teaching and Learning Committee for Governor approval.

### **Review:**

This policy will be reviewed at 3 yearly intervals

The chair of governors and headteacher are responsible for the review.

**Related Documents:**

5.1 *A Guide to the Law for School Governors: Community Schools February 2004*

Date: January 2016

Signed..... Chair of Teaching and Learning

Reviewed:

Reviewed: