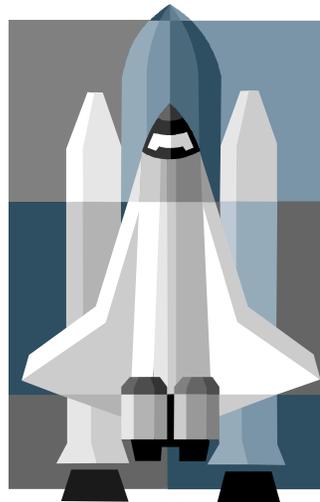


WOOLGROVE SCHOOL

The Science Policy



'Equal opportunities lie at the heart of all that we do at Woolgrove. We are committed to ensuring that every member of the school community, whatever their position, race, gender, disability or religion is given the same chance as any other to access the services and support of the school'

Glynne Rowlands
Vicky Litchfield
2015

At Woolgrove School we believe that Science should be recognised as being a distinct form of knowledge to be experienced and enjoyed by all. Science is best learnt and enjoyed by active participation and so the teaching follows an empirical model of epistemology. Science has its own:

- a) Central concepts.
- b) Logical structure.
- c) Truth criteria
- d) Methodology.

In Woolgrove we see that at times, science will be taught as a discrete discipline and at other times as part of a topic, whatever is deemed appropriate by the professionalism of the teacher. This is particularly so in the Early Years Foundation Stage where science has its place in knowledge of the world. It will have obvious areas of overlap with Maths and English; also with Technology, which must always be seen as cross-curricular and not as a “form of knowledge”. It will also be seen as an item contributing to technological development in history and aesthetics. In some specific topics, there are religious and ethical considerations which a responsible society must consider.

To this end, in science teaching will:-

- 1) Help pupils to raise questions and think how to answer them experimentally, using “fair testing”.
- 2) Encourage children to predict outcomes, based on prior knowledge and experience.
- 3) Prompt careful observations, measurement and appropriate recording.
- 4) Help children to evaluate their work.
- 5) Encourage children to communicate their experiences and results using appropriate scientific language.
- 6) Help children to see the relationship of their work to practical relevance and technology.
- 7) Help children to have due regard for health and safety.
- 8) Have due regard for the ‘Every Child Matter’ criteria
 - i Being healthy
 - ii Staying safe
 - iii Enjoying and achieving
 - iv Making a positive contribution
 - v Achieving economic well-being

- 9) Pay proper regard to the school policy on inclusion by providing lesson material which is differentiated and which makes use of all means to provide sensory stimulation to help pupils to learn.

AIMS AND IMPLEMENTATION OF THE SCIENCE CURRICULUM

We believe in the entitlement of all children to experience science in their education and so the main aim of the Science Curriculum is to enable all children to develop a sound understanding of scientific concepts and to foster natural curiosity and interest, to the best of their ability. This will be done with due regard to the Aims of Woolgrove School.

Every effort will be made to provide material which caters for the needs of our children by providing suitably differentiated work and catering for those needing particular sensory stimulation to enhance learning.

PROGRAMME OF STUDY

The requirements of the programme of study apply across the areas of Experimental and Investigative Science, Life Processes and Living Things, Materials and their Properties and Physical Processes which are visited by each year group in KS1 and KS2 and in a more integrated fashion in the Early Years Foundation Stage. These are:-

- 1) Systematic enquiry.
- 2) Science in every day life.
- 3) The nature of scientific ideas.
- 4) Communication.
- 5) Health and Safety.

The programme of study for each Key Stage should be taught to all pupils with recognition of their abilities and with due consideration to differentiation and the needs of children needing extra sensory stimulation. For pupils who need the provision, materials may be selected from earlier or later Key Stages where this is necessary to enable individuals to progress and demonstrate achievement. The programme of study and knowledge development for each year's study are to be found in the teachers' booklet "Steps in Science" (Third Edition) published by H.E.S., but somewhat rearranged by Woolgrove Staff to reflect the important principle of teacher ownership of the curriculum, without which, research has shown, curriculum innovation will fail.

By using "Steps in Science", which is widely used in mainstream schools, Woolgrove will be able to receive children into the school to do a continuation of work being done in the feeder schools and also to place children back into mainstream, at a suitable point in their school careers, such children having covered the same areas of the curriculum as done by their peers.

TEACHING AND LEARNING

The deliverance of the National Curriculum in science must be planned to ensure the development of a sound understanding of concepts and skills whilst fostering the ability to transfer these skills to everyday situations. "Steps in Science" corners the requirements of the National Curriculum guiding the teaching of the Science Curriculum in the spiral approach to the content demanded. Teachers are encouraged to be professional, take ownership of the curriculum and include other suitable material and especially to be innovative in the practical work in every area.

Further ideas for Nursery/ Early Years Foundation Stage, KS1 and KS2 are given in "Science for Early Years and KS1" and "Science for KS2", copies of which are held by the Head of Lower School and by the Science Co-ordinator.

There is an extensive library of books for teacher reference in the Resources Room.

Help may be obtained from the Science Co-ordinator.

Suggested approaches to the teaching of Science are as follows:-

1. Setting small progressive steps or objectives which are realistic and appropriate to the needs of the individual.
2. Varied practical and oral work, problem solving and investigations.
3. Encouraging the use of different methods of recording results.
4. Exposition by the teacher and pupil-teacher discussions.
5. Use of relevant videos and visits to places of interest.
6. Use of the computer and inter-active white board, where appropriate, to extend skills.
7. Depending on the task, children should have the opportunity to work both individually and in groups.
8. In discrete science topics or in cross-curricular topics.
9. Frequent revision of earlier work done in the topic being taught and earlier topics so that children remember content and are able to fit new work into that already taught.

ASSESSMENT AND RECORDING

Teachers will normally maintain a personal record of comments and assessments of individual children, as part of the teaching process. This is an ongoing process throughout the year. It could include individual examples of work, graded if appropriate into levels of achievement, photographs of

individual and group work, audio tape and video recordings. Reviews are undertaken annually and reports sent to parents.

ROLE OF THE SCIENCE CO-ORDINATOR

1. To monitor the whole school deliverance of the Science Curriculum.
2. To manage the science resources.
3. To manage the science budget, in collaboration with, and with due regard to the needs of all staff.
4. To provide advice on the delivery of the curriculum.
5. To circulate examples of good practice.
6. To help other staff to develop their science skills by means of their attendance on courses and school based INSET.

July 2010

EARLY YEARS AND SCIENCE

Since the introduction of the Foundation Stage into the English education system (September 2000), it behoves all involved in education to pay more than a passing attention to the early years in all areas of the curriculum and those involved in science education must recognise their responsibility, although it is understood that science education will not be delivered as a discrete subject at this stage but as a part of the “seamless robe” of interrelated learning appropriate for young children.

SCAA (now the QCA), identified six areas of learning in the “desirable outcomes for children’s learning on entering compulsory education”
(**Desirable Outcomes in Education; 1996; SCAA**)

Personal and Social Development

Language and Literacy Development

Mathematics

Knowledge and Understanding of the World

Physical Development

Creative Development

“This framework now acts as the basis for curriculum planning within and across which knowledge and understanding, skills and attitudes can be developed concurrently” (**Right From the Start; 1999; ATL; P. 13**). Scientific education is best seen as part of “Knowledge and Understanding of the World”.

A well-resourced learning environment will stimulate early years children to think and talk about their surroundings scientifically and opportunities can be provided to observe, think and investigate, to look for patterns, seek inferences and start to question. Their five senses can be used in enjoyable games rich in scientific potential.

During food technology, staff may encourage observations and discussions on changes; likewise, when mixing paints experiments may be stimulated involving predicting, observing and recording of outcomes all broadening scientific knowledge.

Various modelling materials can be provided for a particular activity and children encouraged to decide which is the most appropriate for the task, so highlighting differences and similarities in materials. Children will need time to experiment and to discuss their findings and choices with adults and with each other.

Early work with magnets will help towards an understanding of matter, creating sounds stimulates ideas about energy; using wind and water power spark activities used to investigate forces.

Many scientific activities require no financial outlay, for example, recording the weather and observing seasonal changes in nature. The early years setting is ideal for feeding natural curiosity about living things --- plants and animals, growing vegetables, measuring and observing. Classroom pets and their feeding habits all provide opportunities for observation, discussion and recordings of results of suitable investigations.

Assessment of children’s learning at this stage will best be carried out informally by all involved staff who may question, listen to children talking amongst themselves, observe children at play and work and record comments in a notebook in order to inform planning.