

ASHBROOK SCHOOL



**"Everyone matters; everyone is
important"**

SCIENCE POLICY

Updated Spring 2009

SCIENCE POLICY STATEMENT

SCHOOL AIM:

"Everyone matters; everyone is important."

CO-ORDINATOR: Mrs C Ryan LINK GOVERNOR: Mr J Dutton

AIM

In light of Every Child Matters our aim is to create an environment where we enable our children to achieve the best possible physical, personal and educational outcomes.

- to meet the requirements of the National Curriculum;
to provide a relevant and balanced science education for all pupils;
- to develop children's knowledge and understanding of scientific processes;
- to stimulate imagination and curiosity through first hand experience;
 - to foster a caring attitude towards the environment
 - to develop a questioning and reflective mind by providing a range of interesting and enjoyable activities.

SUMMARY

Science is the study of chemical, physical and biological concepts in relation to the local environment and the world around us. This will involve active practical exploration.

Science in the National Curriculum has been divided into four areas of study as follows: 'Experimental and Investigative Science', 'Life Processes and Living Things'; 'Materials and their Properties' and 'Physical Processes'.

LEARNING INTENTIONS

- To develop close and accurate observations using all senses
- To develop scientific practical skills needed to investigate
- Use both first-hand experience and secondary sources (including ICT) to obtain information
- To develop an interest in discovery, working co-operatively and independently as appropriate
- To develop an understanding of conceptual ideas
- To select and use materials and equipment safely

ORGANISATION

The Early Years Foundation Stage curriculum introduces basic scientific concepts within 'Knowledge and Understanding of the World'.

The Science curriculum is based on the QCA Units of Study. At both Foundation and Key Stage 1, the Science curriculum is planned to provide links with other subjects, as well as those activities which teach specific scientific skills. A whole school approach to Science ensures progression of knowledge and skills.

MANAGEMENT

The curriculum for each year group is divided into six half-termly units and where appropriate is delivered in a cross-curricular manner using activities centred around a topic, or, by teaching specific scientific skills. The Science Co-ordinator will be responsible for liaising with other subject co-ordinators in order to promote the use of science to support other curriculum areas.

TEACHING AND LEARNING

At Ashbrook School we use a variety of teaching and learning approaches which suit the age, abilities and interests of the children and which help them to meet the requirements of the National Curriculum. The children's learning is mainly through first hand experiences, initially using their immediate surroundings and at a later stage reference sources. We encourage the children to be involved directly with their environment, gaining information by observations using all their senses. We encourage them to raise questions and find solutions to problems. They are also encouraged to communicate their findings verbally, pictorially or in written form.

Through a range of learning opportunities we aim to extend children's learning and develop the following scientific skills:

- Observation
Gathering information
Sorting, comparing & classifying
Measuring
Recording and communicating
Drawing conclusions
Investigating
- Hypothesis
Inference
Prediction
Evaluating
Interpreting data
Questioning
Applying findings
- Thinking skills to complement the key skills within the National Curriculum.

CROSS CURRICULAR LINKS

Links are to be found between Science and a range of other curricular areas. However, the links should be genuine rather than contrived.

CONTINUITY AND PROGRESSION

To ensure continuity and progression it is vital that information is recorded and transferred in a comprehensive manner at regular, and appropriate, stages.

Children's science formative records are regularly monitored, reviewed and new targets for learning set.

Planning for Science occurs at three levels:

- Long Term - yearly planning
- Medium Term - half-termly planning
- Short Term - weekly planning and daily planning

DIFFERENTIATION (See also Special Needs Policy)

Our aim is to meet the needs of each individual child and involve them as far as possible in determining their next target and organisation of their pace of work.

Some children will be able to pursue more demanding work at higher levels and should be encouraged to do so. Some children will benefit from work at a lower level in order to help them consolidate particular skills. Pupils are challenged by matching learning activities to their level of ability through planning.

EQUAL OPPORTUNITIES/SPECIAL NEEDS

All pupils will have access to Science on an equal basis, irrespective of gender, race or religion and at an appropriate level. As far as possible, any child with a specific disability will be provided with the same opportunities as his/her peers.

A broad, balanced and differentiated curriculum will be provided in order for each child to achieve their potential as far as their capability allows.

ASSESSMENT, RECORDING AND REPORTING

Assessment and testing is fundamental to the implementation of the National Curriculum and regular teacher assessments help to determine the child's level of performance. These assessments can be recorded in the Formative Record File.

The teacher should provide learning experiences which ensure that each individual child makes progress across the curriculum.

Much assessment will take place informally in the classroom and discussion between the teacher and the child will take place in order that targets can be negotiated, as appropriate.

All assessment tasks should be constructed so that they provide valuable learning experiences and a basis for future action.

In Key Stage 1 at the end of each year children's progress is recorded in their Record of Achievement and will be referred to under the general heading of Knowledge and Understanding of the World in the EYFS. This is sent home to parents and a copy kept in the child's file. Within our planning folders there will be a record of learning objectives covered by children during the year. I

OPERACY

- Thinking is an important human life skill which, like literacy and numeracy, has to be learned and practised to be effective.
- We use "thinking tools" to help with this process. These tools help us to generate often completely new ideas in all areas of the curriculum which may not have been considered before.
- Once the thinker has acquired the skills and techniques they can control and direct their thinking at will.

STAFFING AND RESOURCES

Class teachers are responsible for delivering the Science Curriculum within their class. There is a nominated member of staff who has responsibility for co-ordinating the curriculum and is supported by a Link Governor. (Role of the Science Co-ordinator - Appendix 1).

A full list of resource details is identified in Appendix 2.

MONITORING AND EVALUATION

The Curriculum Manager, the Science Co-ordinator and the Link Governor are responsible for ensuring the appropriate policy statements, guidelines and

Schemes of Work are drawn up and revised in line with the School Improvement Plan.

The Curriculum Managers and the Science Co-ordinator are jointly responsible for the planning, teaching, learning, monitoring and evaluation throughout the school.

DATE WRITTEN

This policy was rewritten in Spring Term 2009 and will be regularly reviewed in line with the ever changing learning climate. This policy is fundamental to the success of Ashbrook School and will be actively shared with all stakeholders.

ROLE OF THE SCIENCE CURRICULUM CO-ORDINATOR

To be responsible to the Headteacher, in liaison with the Curriculum Manager, for the co-ordination of the work in the specified curriculum area by undertaking the following:

- 1 Act as consultant in the specified curriculum area with other members of staff.
 - 1.1 Foster the necessary integration of curriculum planning and delivery throughout the school in consultation with colleagues
 - 1.2 Advise and support colleagues in aspects of their work:
 - individual children's needs
 - teaching/learning strategies - in conjunction with the Special Needs Co-ordinator, if appropriate
 - classroom management
 - planning, assessment and record keeping
 - use of resources
 - through planning support and observation
 - 1.3 Identify and advise on current and future needs and contribute to whole school planning and lead staff training for National Numeracy Strategy.
 - 1.4 Organise and purchase relevant teaching resources from within annual budget.
 - 1.5 Convene and chair relevant staff meetings in liaison with the Headteacher/Curriculum Manager by:
 - drawing up an agenda/timetable
 - preparing background/discussion papers
 - organising necessary equipment and material
 - organising guest speakers/advisors' input
 - noting decisions made/actions to be taken
 - ensuring appropriate follow up
 - 1.6 Refer colleagues, where necessary to external agencies for advice/support eg: Resource Centres, Library, Museums
 - 1.7 Inform newly qualified teachers, new members of staff and supply teachers about arrangements for the curriculum area

- 1.8 Organise workshops for parents, as appropriate.
- 2 Take major responsibility for the development of the curriculum area.
 - 2.1 Keep abreast of current thinking by attending relevant courses/meetings, reading and research and share significant developments with other colleagues.
 - 2.2 Draw up and develop policy statements, guidelines and schemes of work as appropriate in consultation with the Headteacher and Curriculum Manager by:
 - preparing draft/discussion papers
 - chairing staff meetings
 - organising working groups, where appropriate
 - researching material and gathering information
 - attending INSET
 - feeding back progress to colleagues/governors
 - 2.3 Organise, manage and maintain resources in consultation with other colleagues.
 - 2.4 Monitor the effectiveness of work in order to improve the quality and continuity of work throughout the school.
 - 2.5 Liaise with colleagues with like responsibilities in the liaison group, and participate in National and local initiatives as and when appropriate.
- 3 Make a significant contribution to relevant school based in-service training, in liaison with the INSET co-ordinator and Curriculum Manager.
 - 3.1 Identify needs/intended outcomes
 - 3.2 Plan appropriate programme, involving advisory service and outside agencies as and when appropriate.
 - 3.3 Take responsibility for the overall organisation of the initiative.
 - 3.4 Devise means of effectively evaluating the outcomes.
 - 3.5 Formulate plan for further action, as appropriate.

This job description may be amended at any time after discussion with the relevant member of staff and the Headteacher.

Appendix 2

RESOURCES

Science resources are stored in the Music Room. The resources are packed into individual boxes and clearly labelled with their contents.

In addition there are teacher's resource packs on:

- Electricity and Magnetism - AT4
- Forces and Energy - AT4
- Colour and Light - AT4

A half-size skeleton is kept in the Medical Room.

Please ensure that when equipment is used that it is put back in the correct place and any faulty equipment is sent to the Science Co-ordinator.

MEASUREMENT OF TIME

Tocker Timers.....	4
Transam Sand Timers.....	1 minute x 7
Transam Sand Timers.....	3 minute x 4
Transam Sand Timers.....	5 minute x 4
Seconds hand stopclock	
Stopwatch	
Stopwatch LCD.....	x 1
Water Timers.....	x 2
- sets of 1/2 minute, 1 minute, 2 minute	
Egg Timers.....	x 5

MEASUREMENT OF CAPACITY

Funnels.....	large x 11
Funnels.....	small x 4
Round buckets with measurements -	varied sizes, 2000 ml-50ml x 10

MAGNETISM

Box of magnets.....	x 1
Large horseshoe magnet.....	x 2
Small horseshoe magnet.....	x 1
Magnetic adhesive tape.....	x 1
Metal cubes and Metal discs	

MEASUREMENT OF MASS/WEIGHT

Centicubes.....	x 1000+
Centicube base trays.....	x 8
Kitchen scales.....	x 1
Slotted masses 10g.....	x 9

Slotted masses 5g.....	x 6
Slotted masses 100g.....	x 5
Measuring spoons - set of 5.....	x 1

COLLECTING EQUIPMENT

Transparent buckets.....	x 5
Transparent buckets (with measurements).....	x 2
Petri dishes.....	x 12
Droppers.....	x 10
Pooters.....	x 5
Pond nets.....	x 3
Pond dippers.....	x 2

OBSERVATION

Miniscopes.....	x 3
Bausch & Lomb microscopes.....	x 9
Hand lenses.....	x 8
Small hand lenses.....	x 20
Zoom lenses.....	x 2
Magnispectors.....	x 4
Midispectors.....	x 5
Minispectors.....	x 47
LEM Tripod magnifiers.....	x 5
Two-way/Little Learner microscopes.....	x 4
Binocular microscopes.....	x 5
Tripod magnifiers.....	x 2
Binoculars.....	x 1
Wormery.....	x 1

CONSTRUCTION

Duplo..... Reception
 Wooden bricks
 Crate of large construction toys

Lego..... Year One

Large crate of Tactic
 Stickle Bricks
 Wooden bricks

Lasy..... Year Two

Clix
 Lego
 Wooden bricks
 Reo-click
 First Gear

Construx..... Year ?
 Straws
 Lego
 Clix
 Technic Lego

Cogs, wheels and springs..... a selection
 Magnetism..... a selection
 Bulbs..... a selection
 Candles..... a selection
 Assorted balls..... a few
 Assorted rocks..... a selection
 Fossils and bones..... a selection
 Electricity..... full selection
 Toys..... a selection
 Materials..... wooden blocks
 Fabrics..... a selection
 Minibeasts..... selection of hand puppets
 Marbles..... a selection

COLOUR AND LIGHT

Coloured acetate sheets..... x 2 packets
 Kaleidoscope..... x 1
 Torches..... x 2
 Filter papers..... x 1 box
 Filter papers..... x 1 packet
 Prisms..... x 4
 Plane mirrors.....largest size..... x 16
 Plane mirrors..... x 13
 Plane mirrors..... x 1 packet
 Plane mirrors.....smallest size..... x 16

Convex/concave mirrors..... x 16
 Light box..... x 1

MEASUREMENT OF TEMPERATURE

Thermostik.....	x 4
Digital thermometer.....	x 2
Stirring thermometers.....	
Maximum/minimum thermometers.....	x 2
Spirit thermometer.....	x 1
Pool/bath thermometer.....	x 1

During their time at Ashbrook School children may have the opportunity to use:

- Hand lenses
- Magnispectors
- Minispectors
- Tripod magnifiers
- Microscopes
- Thermometers
- Timers
- Magnets
- Bulbs
- Buzzers
- Torches
- Mirrors
- Skeleton
- Collecting equipment
- Construction kits
- Ramp with various surfaces
- Minibeast puppets

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