



Science Policy

This policy should be read in connection with the Whole School Curriculum Policy.

"Schools should bear in mind that the objective in the National Curriculum is to ensure that each pupil should obtain maximum benefit by offering pupils the opportunity to reach the highest possible achievements without making impossible demands".

Science is a body of knowledge built up through experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills.

In their early experiences of the world pupils develop ideas which help them to make sense of the things that happen around them. It is through active engagement in learning experiences that pupils develop knowledge and understanding about their environment, this learning being supported and extended through communication with others.

Science will help us deliver the aims of Beacon Hill School in the following ways:

Actively develops parental partnerships for the benefit of the children.

The home environment is the first environment a child will encounter and understand. Parents have a vital part to play in enabling their child to do this. They are also able to support the more formal work of school in this area thus enhancing its value to the pupils.

Has high expectations for continuous improvement in order to raise standards for pupils.

Every pupil has an entitlement to the Science curriculum at a level that they can make sense of it. It is important that high standards of teaching and resources are used to enable pupils to gain the most from this subject.

Establishes an atmosphere of security, trust and respect for all.

For some pupils their feeling of well-being and safety in the school environment should be reinforced if their knowledge and understanding of it is increased. Science has an important role to play; specifically the areas of the Science curriculum that refer to taking care of the environment and our local area are especially relevant and the areas of learning about ourselves and how to be healthy.

Positively promotes and encourages independence, confidence and self-advocacy.

A pupil's independence and sense of self-esteem should be increased if their knowledge and understanding of the world around them and their ability to take care of it is developed. A pupil's quality of life should also be positively enhanced by increased knowledge of science .

Values communication and provides the time and opportunity to make it effective.

Pupils will be encouraged to explore and develop the skills communication skills. The opportunity to communicate with should be supported and developed at all level from early sensory work to more extended discussion and development of scientific enquiry skills.

Celebrates achievement for all.

Science should provide many excellent opportunities for the display and sharing of pupil's work and ideas. These should include photographic records of fieldwork, practical investigations, excellent work and accreditation.

That extends inclusion within and beyond the school.

Where possible opportunities for inclusion in science in mainstream schools and colleges will be considered when appropriate for pupils.

That gives pupils the skills and opportunities to make informed choices.

Recent changes to the science curriculum encourage pupils to explore how science works. This in important area for pupils to learn about drugs, disease and health and to develop the skills necessary with the correct information to make informed choices about their life.

That works in a creative and enterprising way to fulfill these aims.

It is essential that planning is appropriate and as creative as possible for all pupils. This may involve sensory science activities, using ICT software and equipment for pupils to demonstrate their knowledge and understanding, and relevant visits to and from linked to curriculum topics. Planning in science especially at secondary and 6th form will make relevant links to work related learning.

The aims of Science:

At Beacon Hill we believe that a broad and balanced science education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability. Our aims in teaching science include the following.

- Preparing our pupils for life in an increasingly scientific and technological world.
- Fostering concern about, and active care for, our environment.
- Helping pupils acquire a growing understanding of scientific ideas.
- Helping develop and extend pupil's scientific concept of their world.
- Developing pupil's understanding of the international and collaborative nature of science.

Attitudes

- Encouraging the development of positive attitudes to science.
- Building on pupil's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building pupil's self-confidence to enable them to work independently.
- Developing our pupil's social skills to work cooperatively with others.
- Providing pupils with an enjoyable experience of science, so that they will develop a deep and lasting interest. To promote knowledge and understanding about themselves and the world around them. For pupils to observe, explore and ask questions about living things, materials and phenomena.
- To develop an awareness of health and safety issues
- To develop attitudes such as; listening to and respecting the work of others; respecting the environment and other living things.
- Exploration of the world about them using all the senses.

Skills

- Giving pupils an understanding of scientific processes.
- Helping pupils to acquire practical scientific skills.

- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Developing the use of scientific language, recording and techniques.
- Developing the use of ICT in investigating and recording.
- Enabling pupils to become effective communicators of scientific ideas, facts and data.
- To develop skills of predicting, asking questions, making inferences, concluding and evaluating and to encourage children to be curious about the things they experience and observe.
- To communicate ideas using language, drawings, symbols, signs or writing.
- To develop mathematical skills such as sorting, counting and ordering numbers, measuring and recording using graphs, pictograms, bar charts.
- To begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas.
- To evaluate evidence and consider whether tests or comparisons are fair.
- To use reference materials to find out more about scientific ideas.
- They share their ideas and communicate them using scientific language, drawings, charts and tables.
- For all children including those on the autistic spectrum to use these experiences to make sense of themselves and the world around them.

Science teaching should offer opportunities for pupils to:

- ✚ Develop knowledge and understanding of important scientific ideas, processes and skills and relate these to everyday experiences.
- ✚ Learn about ways of thinking and finding out and about communicating ideas.
- ✚ Explore values and attitudes through science.
- ✚ Science should help pupils develop an informed concern about the quality of the environment and the future of the human environment
- ✚ Science should foster a caring attitude in all matters relating to human beings, living creatures and plants

Guidelines

- ❖ All pupils at Beacon Hill will have access to the Science curriculum except 6th Form where scientific concepts will be taught through Work Related Learning and other Vocational topics. Science in the Early Years is taught through the Early Learning Goals.
- ❖ Pupils follow the National Curriculum Programme of Study for Science. Work is differentiated to meet the needs of all pupils in at Beacon Hill. Schemes of work are supported by QCA units which are used and adapted to meet the needs and abilities of all pupils. During planning reference is made to schemes of work, which have been written with close reference to

the QCA documents, ensuring that breadth, progression and all elements of Science are covered.

- ❖ A scheme of work at Key Stage 4 will follow the Key Stage 4 Programme of Study and accreditation specifications.
- ❖ Accreditation of science at Key Stage 4 and 6th form (when relevant) will be adapted to meet the needs and abilities of all pupils
- ❖ Pupils with ASD will take part in science lessons where work will not only address the science curriculum but will also address and take into consideration the triad of impairment.
- ❖ The Science curriculum will be taught through a cycle of topics relevant to the number of years within each key stage. Details are in the schemes of work.
- ❖ Science has cross-curricular links with other subjects, for example, Numeracy (measuring, locating, quantifying and comparing, reporting findings through the use of graphs, tables and numerate concepts), Geography (understanding of the weather and the environment), Literacy (reporting, media understanding and communicating with others), Religious Education (respect for other faiths and ways of life, and ethical matters), History (links to previous understanding and the development of new ideas and concepts), and Citizenship (concern for the environment, ethical questions and scientific enquiry skills). All of these will help increase a pupil's self-esteem and awareness.
- ❖ For all pupils the emphasis will be on concrete experiences to develop their understanding. Community facilities are used to reinforce these experiences.
- ❖ Pupils with profound and multiple learning difficulties will be taught through schemes of work which aim to maximise their experience and the use of their senses.
- ❖ The use of P-scales and National Curriculum levels are used in Science as a means of informing planning and monitoring progress made by pupils. Assessment of attainment in science takes place in the summer term of each year using the assessment tool PIVATS expect for 6th form.
- ❖ Access to the study of Science will be in accordance with the equal opportunities policy.

- ❖ The use of signs and symbols will be used to improve teaching in this area.
- ❖ The use of ICT will be used widely in science to give pupils to support both learning (for example the use of interactive programmes, the digital microscope, photographs and symbols) and presentation.
- ❖ Pupils will use the Internet to access carefully selected Scientific information to help support their study.
- ❖ Pupil's ability to speak and listen will specifically be enhanced through scientific discussion and exploration.
- ❖ Work will be included to increase pupil's awareness of others, their lifestyles and problems.
- ❖ Pupil's achievements in Science will be variable but will always be valued and where appropriate, celebrated.
- ❖ The emphasis at all times will be on improving the skills of all the pupils and on improving the work of the school in this area.
- ❖ Work in Science will be recorded regularly and this recording will inform pupils learning.
- ❖ Work will be assessed annually through teacher assessments and reported to parents as part of the annual review procedures.
- ❖ Science will be monitored half termly.
- ❖ For the continuous development of the Science curriculum an action plan is written and reviewed each year.
- ❖ Health and Safety issues are especially relevant in Science and teachers will complete appropriate risk assessments for Science lessons.