




WHERE STARS SHINE

# SCIENCE POLICY

Policy Lead Committee:	Local Academy Committee	In consultation with: SLT
Approved by:		Date: 20 <sup>th</sup> July 2023
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## 1. Policy Aims and objectives

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 enquiry 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,

### UNITED NATIONS COVENTION ON THE RIGHTS of the CHILD

- ARTICLE 1 Everyone under the age of 18 has all the rights in the Convention
- ARTICLE 2 The Convention applies to every child whatever their ethnicity, gender, religion, abilities, whatever they think or say, no matter what type of family they come from.
- ARTICLE 4 Governments must do all they can to fulfil the rights of the child.
- ARTICLE 28 Education. The child has a right to education, and the State's duty is to ensure that primary education is free and compulsory, to encourage different forms of secondary education accessible to every child, to make higher education available to all on the basis of capacity and to ensure that school discipline is consistent with children's rights and dignity. The State shall engage in international cooperation to implement the right to education.
- ARTICLE 29 Education shall aim to develop the child's personality, talents and mental and physical abilities to the fullest extent. Education shall prepare the child for an active adult life in a free society and shall foster in the child respect for his or her parents, for his or her own cultural identity, language and values, and for the cultural background and values of others.

### P4C

P4C is embedded in (curriculum subject) through the 4Cs (Creative thinking, Collaborative thinking, Caring thinking and Critical thinking). Pupils are given opportunities to use thinking skills that they have developed in P4C sessions to challenge what they already know and explore more complex ideas further

## 2. Children with Special Educational Needs

At Severnbanks, we recognise that children with identified SEND needs may have strengths in different areas, therefore we strive for them to be included in all areas of the curriculum. We also acknowledge that children with SEND may need differentiated work or further support appropriate to their specific needs and ability in order for them to take as full a part as possible in all school activities.

## 3. Aims

- To develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.
- To build on pupils' curiosity and sense of awe of the natural world.





- To use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science.
- To introduce pupils to the language and vocabulary of science.
- To develop pupils' basic practical skills and their ability to make accurate and appropriate measurements.
- To develop pupils' use of information and communication technology (ICT) in their science studies.
- To extend the learning environment for our pupils via our environmental areas and the locality.
- To promote a 'healthy lifestyle' in our pupils.

#### **4. Objectives**

The following objectives derived from the above aims will form the basis of our decisions when planning a scheme of work. Assessment will also be related to these objectives:

***To develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.***

- To develop a knowledge and appreciation of the contribution made by famous scientists to our knowledge of the world including scientists from different cultures.
- To encourage pupils to relate their scientific studies to applications and effects within the real world.
- To develop a knowledge of the science contained within the programmes of study of the National Curriculum. Here at Severnbanks all year groups will be following the 'Science Bug' scheme of work.

***To build on pupils' curiosity and sense of awe of the natural world***

- To develop in pupils a general sense of enquiry which encourages them to question and make suggestions.
- To encourage pupils to predict the likely outcome of their investigations and practical activities

***To use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science***

- To provide pupils with a range of specific investigations and practical work which gives them a worth - while experience to develop their understanding of science.
- To develop progressively pupils' ability to plan, carry out and evaluate simple scientific investigations and to appreciate the meaning of a 'fair test'.



***To develop the ability to record results in an appropriate manner including the use of a variety of Thinking Skills maps***

- To introduce pupils to the language and vocabulary of science.
- To give pupils regular opportunities to use the scientific terms necessary to communicate ideas about science.
- To develop pupils' basic practical skills and their ability to make accurate and appropriate measurements.
- Within practical activities give pupils opportunities to use a range of simple scientific measuring instruments such as thermometers and force meters and develop their skill in being able to read them.

***To develop pupils' use of information and communication technology (ICT) in their science studies***

- To give pupils opportunities to use ICT (including digital microscope, video, digital camera, data logger) to record their work and to store results for future retrieval throughout their science studies.
- To give pupils the chance to obtain information using CD-ROMs and other data bases

## **5. Teaching and Learning Style**

### **Differentiation and Additional Educational Needs**

At Severnbanks all year groups use PLAN Primary Science resources to support teachers to plan and assess effectively the science National Curriculum for England. For pupils with SEND the task will be adjusted slightly or pupils may be given extra support. 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.

Extra-curricular activities for More Able pupils are identified and pupils given the opportunity to attend these.

Pupils will be involved in a variety of structured activities and in more open -ended investigative work:

- Activities to develop good observational skills
- Practical activities using measuring instruments which develop pupils' ability to read scales accurately
- Structured activities to develop understanding of a scientific concept
- Open ended investigations.

On some occasions pupils will carry out the whole investigative process themselves or in small groups.





## 6. Curriculum Planning

Planning in science is derived from Plan Primary Science, which establishes a full coverage of the current National Curriculum with a hands on approach. The scheme provides a basis for termly and weekly planning whilst also ensuring progression between year groups and guarantees that some topics are revisited with greater in-depth knowledge if required. Teachers are expected to adapt and modify the resources to suit their own teaching, the use of any support staff and the resources available.

- KS2, KS1 and Foundation stage teachers should be teaching science for a minimum of 1 1/2 hours each week, or equivalent pro rata.
- Teachers should try to make cross-curricular links wherever possible.
- In KS2 a minimum of 50% of lessons should include practical Scientific Investigation.
- In KS 1/ Foundation stage a minimum of one third of lessons in each half term should include practical Scientific Investigation.

***The science curriculum is delivered through co-operative group work, individual work, and whole class teaching.***

Within this structure there will be: -

- Whole class and group discussions and presentations.
- Demonstrations, explanations and instruction by teachers to groups, individuals and the whole class as well as child-led when possible.
- Practical activities to advance and consolidate knowledge and skills.
- Problem solving and investigation tasks.

We carry out our curriculum planning in science in three phases (long-term, medium-term and short-term). The long-term plan maps the scientific topics studied in each term during the key stage. The science subject leader works this out in conjunction with teaching colleagues in each year group, in some cases we combine the scientific study with work in other subject areas, especially at Key Stage 1; at other times the children study science as a discrete subject.

Our medium-term plans, which we are collated form the 'Science Bug' scheme of work, give details of each unit of work for each term. The science subject leader keeps and reviews these plans.

We have planned the topics in science so that they build upon prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit and we also build progression into the science scheme of work, so that the children are increasingly challenged as they move up through the school.



## **7. Foundation Stage**

The EYFS provide opportunities for children to develop their knowledge and understanding of their familiar world and the natural environment. Children are encouraged to differentiate between similarities and differences in relation to places, objects, materials and living things.

Learning and development within The World strand of this area of learning is implemented through planned purposeful play activities that reflect the children's current interests and a mix of adult led and child initiated activity in addition to a weekly session of Forest School. Planned learning opportunities are informed by the Development Matters Statements (the developmental continuum from birth to 60+months) and the Early Learning Goals (the end of year statements which are used to define attainment at the end of the Early Years Foundation Stage).

## **8. The contribution of science to teaching in other curriculum areas.**

### ***English***

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study within literacy are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information. Writing across the curriculum is actively promoted in Severnbanks.

### ***Mathematics***

Science contributes to the teaching of mathematics in a number of ways. The children use weights and measures and learn to use and apply number. Through working on investigations they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.

### ***Information and communication technology (ICT)***

Children use ICT in science lessons where appropriate. They use it to support their work in science by learning how to find, select, and analyse information on the Internet and on CD-ROMs. Children use ICT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

### ***Personal, social and health education (PSHCE) and citizenship***

Science makes a significant contribution to the teaching of personal, social and health education. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. They organize campaigns on





matters of concern to them, such as helping the poor or homeless. Science promotes the concept of positive citizenship.

### ***Spiritual, moral, social and cultural development***

Science teaching offers children many opportunities to examine some of the fundamental questions in life, for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet and how science can contribute to the way we manage the earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

### ***Teaching science to children with special needs***

We teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Our work in science takes into account the targets set in the children's My Plans or My Plan +.

## **9. Assessment and recording**

We assess children's work in science by making informal judgements as we observe them during lessons. On completion of a piece of work, the teacher marks the work and comments as necessary.

Teachers assign an achievement level against objectives and this is recorded on the INSIGHT tracker in school. The subject coordinator then analyses the data and produces a report about the standards in their subject. We use these grades as the basis for assessing the progress of each child and we pass this information on to the next teacher at the end of the year.

## **10. Resources**

We have sufficient resources for all science teaching units in the school and these are updated as required. We keep these in a central store where there is a box of equipment for each unit of work. There is also a collection of science equipment which the children use to gather weather data. The library contains a good supply of science topic books and computer software to support children's individual research.



## **11. Monitoring and review**

It is the responsibility of the science subject leader to monitor the standards of children's work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The science subject leader gives the head teacher an annual summary report in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The science subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe teaching in the subject.

**This policy is available on the school website:**

**[www.severnbanksprimaryschool.co.uk/website/policies/257152](http://www.severnbanksprimaryschool.co.uk/website/policies/257152). Paper copies are available on request from the School Office.**