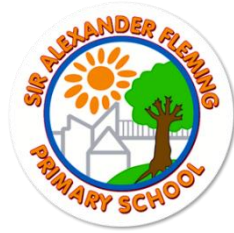


'Belonging, Being, Becoming'



Science Policy

Updated: January 2023

Review Date: January 2024

Our school values



SAFE – keep ourselves and others safe by making sensible choices within school, online and in the community.



RESPECT – have the social, emotional and nurturing skills to respect ourselves, our families and our communities.



PRIDE – be proud of what we all achieve by aspiring to work hard and become your 'best self'



BRAVERY – to overcome barriers by attempting difficult challenges by being resilient, independent and inquisitive.



SUCCESS – achieving high standards with a belief that with effort anything is achievable.

What is Science?

Science makes people reach unselfishly for truth and objectivity; it teaches people to accept reality, with wonder and admiration, not to mention the deep awe and delight that the natural order of things brings to the true scientist."

LISE MEITNER: PHYSICIST 1953

At Sir Alexander Fleming Primary School and Nursery, we want our children to be naturally curious about the world around them. Our curriculum has been developed to ensure full coverage of the National Curriculum and to foster a sense of wonder about natural phenomena. We are committed to providing a stimulating, engaging and challenging learning environment. Throughout our school children are encouraged to develop and use a range of working scientifically knowledge including questioning, researching and observing. We promote and celebrate these skills. We want our children to have a broad vocabulary. Scientific language is to be taught and built upon as topics are revisited in different year groups and across key stages. We intend to provide all children regardless of ethnic origin, gender, class, aptitude or disability with a broad and balanced science curriculum.

What is the intent of the Science curriculum at Sir Alexander Fleming Primary School?

We aim to provide a broad, scientific curriculum that develops vocabulary and empowers children to ask scientific questions – this will enable children to make careful observations and decisions based on justifiable reasons. We ensure various, memorable experiences (including experiments, science weeks and STEM days) take place to broaden children's knowledge. All learning is accessible for all children regardless of their ability or background. Children are encouraged to read in science lessons through research and books for children to make links across the curriculum. Maths links are made through science by improving data handling skills as well as being able to develop the recording of scientific experiments. Ultimately, we want children to enjoy learning all areas of science and many topics will be covered on more than one occasion throughout children's schooling to embed knowledge. There are several key skills and attributes we will develop; children are taught to work scientifically, which involves:

- Developing an understanding of science through enquiry and investigation
- Observing, measuring and undertaking a variety of tests
- Developing curiosity and asking scientific questions
- Reading and using scientific vocabulary
- Testing and developing ideas
- Making decisions
- An enjoyment and fascination of science



Teaching and Learning

Delivery of science places an emphasis on scientific investigations and practical activities. Science is taught in weekly lessons and is also delivered during Forest School in KS1 and Outdoor Learning in KS2; children in nursery and reception develop their understanding of the world during Forest School and outdoor learning sessions where learning is guided by children's inquisitiveness.

Science lessons are adapted to ensure all groups of learners can access the curriculum and make progress in each session. Topics are revisited over the years from EYFS to year 6 so that knowledge and scientific skills can be added progressively. Teachers follow the National Curriculum to ensure statutory content and knowledge are taught effectively. We have STEM days every term to encourage children's joy in STEM subjects and to ensure scientific knowledge is taught in a cross curricular way.

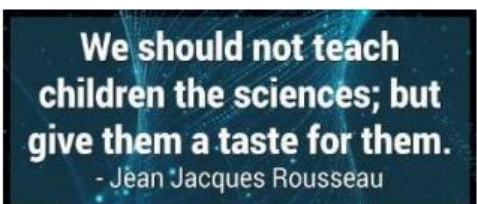
Working Scientifically

Working scientifically at Sir Alexander Fleming is an integral part of all science teaching and is not taught as a separate strand. 'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. For one half term per year, we have an 'investigations focus' in science to encourage children to be able to display their scientific knowledge in planning experiments in areas that interest them.

Children are taught to carry out five key areas of scientific enquiry:

- observing over time
- pattern seeking
- identifying, classifying and grouping
- comparative and fair testing (controlled investigations)
- researching using secondary sources

Pupils should also seek answers to questions through collecting, analysing and presenting data.



Curriculum Links

Science has many strong links with other subjects as well as constantly reinforcing children's basic skills; it develops many of the skills used in English such as reading, writing, speaking and listening. Children enhance their maths skills by developing their ability to problem solve, measure and represent and analyse information. Children use their computing skills whenever possible – including use of computers, tablets, cameras and movie creators.

Planning

Planning is the responsibility of the class teachers who deliver the lessons across the school. Guidance and support will be provided by the Science co-ordinator. Planning is used to:

- Set clear achievable goals
- Ensure work is matched to pupils' abilities, experiences and interests
- Ensure progression, continuity and subject coverage throughout the school
- Provide criteria for assessment and evaluation of teaching and learning

Assessment and Record Keeping

Pupils are assessed throughout each term and progress is recorded in accordance with our progression of knowledge document for science. Progress is assessed and recorded through O Track.

Formative forms of assessment are used throughout the year using marking, questioning, peer and self-assessment.

Monitoring and Reviewing

The Science co-ordinator is responsible for monitoring the standards of children's work and the quality and breadth of teaching. The coordinator supports colleagues in the teaching of science by informing them of current developments in the subject and by providing a strategic lead and direction for the subject in school.

The co-ordinator is also responsible for evaluating strengths and weaknesses in the subject and identifying areas for improvement and development. This is established during learning walks, professional conversations and pupil voice.

Resources

A wide range of science resources are stored in a central location in school. The subject coordinator is responsible for purchasing, organising and replenishing resources and teachers are encouraged to request necessary resources before a new topic begins.

Equal opportunities and inclusion

At Sir Alexander Fleming Primary School, we plan to provide for all pupils regardless of gender, ethnicity, socio-economic status, cultural background, academic ability, Special Educational Need/Disability or vulnerability to achieve their full potential. We are committed to ensuring that children and staff are happy and that they enjoy coming to school. This policy will underpin excellent teaching, learning and progress. It will promote the high standards and high expectations set out in the school's aims and code of conduct. We are committed to meeting the needs of everyone especially those identified in the 2010 Equality Act. In line with our 'Equal Opportunities Policy' we are committed to providing a teaching environment that promotes learning. Children are given opportunities to work with others, listen to each other and treat everyone with **respect**. We will:

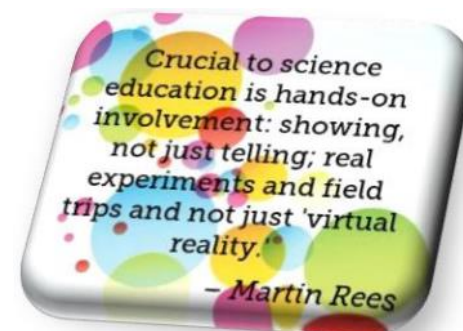
- Plan our classroom activities to challenge.
- Be aware of different learning styles and the need to allow pupils to be able to work in their preferred learning styles for some of the time.
- Use materials for teaching which avoid stereotyping, bias towards race, gender, role or disability.
- Deal with such issues clearly and sensitively when they arise.

Children identified as needing extra support in English will be given the appropriate help in the classroom. Providing for SEND pupils should take account of each pupil's particular learning and assessment requirements and incorporate specific approaches which will allow all individuals to succeed

Health and safety

The document 'National Curriculum in England' recognises that Health and Safety issues are an important feature of the science curriculum.

Teachers should be alert to safety issues and potential hazards and should teach children how to approach hazards in a safe way. Children should be encouraged to make risk assessments and take reasonable precautions for themselves.



The publication 'Be Safe!' (Published by the Association for Science Education - ASE) contains information and advice about aspects of safety in science and is available through the ASE website. CLEAPSS website also contains information and advice about aspects of science safety.

General Guidelines

In science, pupils will need to acquire a range of skills, and work with a variety of materials, substances, tools and apparatus. Whilst planning for science activities, teachers will consider and comply with the following:

- Train children, through demonstrations and positive guidance in safe ways to use tools and equipment, and in aspects of personal hygiene (washing hands after practical work and before working with food).
- Familiarise themselves and with safe practice, trying out tools, apparatus, techniques or procedures to ensure safety.
- Ensure that adults other than teachers involved in activities are familiar with safe practices.
- Ensure that, during activities that require close supervision, only a manageable number of children are involved at one time; this is suggested to be a maximum of 4 children.
- Ensure that, if an emergency occurs which requires a teacher to leave the class unattended, all children stop work until the teacher returns. Electrical equipment will be switched off and hazardous apparatus removed.
- Involve the children in good working practices including looking after and replacing equipment and materials after use.
- Know the location of the First Aid Box and be aware of the school's Accident and Emergency procedures.