

# St Saviour's C of E Academy

## Science Policy

Summer 2020

### Intent:

At St Saviour's Academy, we recognise the importance of Science in every aspect of daily life. As one of the core subjects taught in primary schools, we aim to give our children the specific skills and knowledge to help them to think scientifically and to gain an understanding of the world around them that is well informed with current research.

Our curriculum is structured to allow pupils to explore science through practical work-while understanding the five key areas of scientific enquiry; research, fair testing, pattern seeking, observation over time and identifying and classifying. Through weekly lessons, all children are encouraged to develop a sense of excitement around investigation and nurtures their scientific questioning skills, exploring possible answers and testing theories. Children are given the opportunity to explore key scientific areas of knowledge from the National Curriculum, through links to real-life scenarios, reinforcing and embedding prior knowledge in the long term memory. Using dual objectives children have a focus for both knowledge and a specific skill – such as planning, conducting, recording, concluding and evaluating their investigations – in each session. They are immersed in scientific vocabulary, which aid's children's knowledge and understanding not only of the topic they are studying, but of the world around them.

Additional opportunities for children to develop their Science Capital – of scientific knowledge and skills are achieved through links with a local high school, Science Week, The Royal Society Young People's Book Prize and educational visits. Links are made across other areas of the curriculum; Maths, English, Geography and History to name but a few, to ensure the enrichment of Science whilst encouraging the transference of skills.

### Aims:

- ❖ To develop a love of science; to enthuse children and make learning fun.
- ❖ To build on children's curiosity and sense of awe in the natural world.
- ❖ To ensure children experience all five scientific enquiries: observation, testing, research, classifying and identifying and pattern seeking by becoming scientists in the classroom.
- ❖ To make learning purposeful, to make cross curricular links and for children to experience 'real life' concepts. (Maths, English, Computing in particular)
- ❖ To increase children's scientific vocabulary and the language of science.
- ❖ To ensure children use a range of equipment accurately and safely through hands on investigations and observations.
- ❖ To develop learning in the outdoors; to increase children's confidence and natural curiosity of the world around them.

- ❖ To give children varied opportunities, through active participation. All children are exploring and following their own lines of enquiry. At times investigations are child led.
- ❖ To develop the children's Science Capital by supporting them to make sense of the world they live in and understand the processes and reasons why things happen. To understand and make a difference to the world e.g. how to look after the environment, how to stay fit and healthy.
- ❖ To develop a range of skills through the working scientifically stand of the curriculum: measuring, analysing, presenting and reasoning.
- ❖ To develop children's aspirations of potential careers in science through talking about the work of scientists and how they can make a difference to others.
- ❖ To introduce STEM (Science, Technology, Engineering and Maths) into the curriculum so that children can work on project-based investigations which involve a range of skills across the curriculum.

### Teaching and Learning:

Science is taught in each year group based on the 2014 National Curriculum objectives. Science lessons should be rich in questioning to develop a deeper understanding of concepts, engaging and exciting. Learning should be inclusive for all learners, where differentiated activities or teacher/TA support is planned to ensure all children make progress. Children who grasp concepts quickly will be challenged through application activities/questions, using Blooms taxonomy open ended tasks. This will give children opportunities to reason, explain and demonstrate their learning. Children should have a range of group and individual tasks, where children are solving problems, communicating with their peers and involved in hands on practical science. All lessons should be purposeful and inject a sense of excitement and anticipation as to what the children may be learning next. All lessons should be focused around the knowledge objectives of the National curriculum and also the working scientifically skills- how children are going to grasp the concepts in the lesson. Where possible- links to real life should be made and children should be working as scientists to promote independence in problem solving and thought processes. Opportunities for cross curricular learning and STEM activities are encouraged and for children to learn through discovery and play. Children should have opportunities to pose questions and have time to find the answers to these questions for themselves- deciding what line of enquiry they need to take. Some lessons may involve inviting in scientists, specialists and visitors to inspire the children and learn about potential careers in the science field to raise aspirations.

### The Learning Environment:

The learning environment should be stimulating with a range of recorded work and evidence of the different enquiry types on working walls with focused vocabulary and scientific language. Children should be subject to a safe learning environment, where equipment is stored safely and easily accessible. Equipment should be selected by the children at times so they can make decisions about the best materials to use for each task. Children should be posing questions and have access to higher order thinking activities to stimulate their curiosity and awe of the subject.

### Role of the Class Teacher:

The role of the subject leader is to ensure that science in the school is being taught according to the school's policy and also ties in with the teaching and learning

policy. They are to ensure that the subject remains current and falls within the aims of the schools vision and aims and SIP.

Monitoring of the subject would involve lesson observations, book scrutinies, learning walks, pupil conferencing, monitoring of science displays in class and around the school. It would also involve monitoring the class and school data to identify strengths and weaknesses and to ensure staff are aware of the children who are falling behind. Interventions should also be monitored to see what impact these are having on the children's attainment and progress.

INSET sessions with all staff should be based on colleagues CPD needs and done through an audit of staff skills and practice.

Other duties and role of the science coordinator is to ensure resources are ordered and relevant to the curriculum and year group expectations. To order new resources and consumables where needed to ensure that staff can teach the subject to their best ability. Due to budget restraints in the schools, this may also result in sourcing outside funding to replace broken/faulty or out of date resources. Inviting in visitors, organising special science events and encouraging classes to join into science themed weeks are essential for keeping the presence of science high in the school.

Updating the science policy according to new research, current practice and the schools vision and aims is essential for ensuring staff consistency in teaching the subject.

### Assessment and Marking:

The children's knowledge and understanding are assessed before each unit of work, this can take many forms such as: discussion, mind maps, KWL charts and concept maps. This summarises knowledge and understanding of the key topic. These key points are used to refine and identify the starting points and level of challenge for the children's lessons. These initial assessments are revisited at the end of the unit and new knowledge and understanding is added. Children also complete summative tests to assess their key understanding of the topic at the end of the unit. Alongside lesson by lesson assessment for learning, teachers will decide whether children are working below, at or above the National Curriculum expectations for their year group. This information is entered onto School Pupil Tracker and progress and attainment is reported to parents in the annual report. Teachers plan and assess from the National Curriculum which includes a dual objective/. This includes a knowledge objective and a working scientifically objective. Children's work is evidenced in a variety of ways in their science books and class displays which demonstrate their key understanding and skills they have acquired. The learning objectives in the book are stamped green if the children has fully understood the concept and black if they have not quite understood fully. All written work must be marked regularly and give children clear learning points and next steps to move them forward. Marking must be in line with the school's marking policy.

### Role of the Subject Leader:

- To be enthusiastic about science and demonstrate good practises.
- Track progress and attainment through the school and hold staff accountable for progress of all children.
- Monitor displays and science learning opportunities throughout the school.
- Conduct book scrutinies and ensure books show progression, support and opportunities for children to master and apply their learning.

- Co-ordinate assessment procedures and record keeping so as to facilitate progression and development through the school.
- Ensure the quality of teaching and learning in the school is of a good or better standard.
- Maintain resources and order new to support teachers teaching the curriculum (this includes sourcing external funding)
- To Coordinate external science visitors and plan science weeks.
- Support staff with providing science CPD and updates, encourage staff by sharing good ideas and organising in service and external training where required.
- Be aware of national and local developments through reading relevant materials and attending courses and hub meetings.
- Liaise with science coordinators from other schools to compare and share good practice.
- Facilitate parental involvement by organising 'Watch me I Learn'.
- Work to achieve equality of opportunity throughout the school.
- Look for opportunities for children to be involved in science weeks and joint school events.
- Promote STEM and cross curricular learning through the school.
- Ensure science policy is reviewed and updated regularly.
- To inspire children and raise their aspirations in science based careers- through a Science Capital focus.
- Ensure teachers are providing safe practice through their lessons and seek advice where needed.

### Health and Safety:

Children will be taught to use scientific equipment safely during practical activities. Class teachers and teaching assistants will check equipment before use to ensure it is safe to use, all damages will be reported to the science lead and the defective equipment will be taken away from children. A simple risk assessment will be carried out for all practical activities and any perceived hazards will be actioned appropriately. Safe practice must be promoted at all times. The ASE publication, "Be Safe!" has been adopted as the school's safety policy in science. CLEAPPS can also be referred to ensure safety in all sessions.

### Conclusion

This policy will need to be read in conjunction with the following school policies

- Teaching and learning policy
- Marking Policy
- SEN policy
- Computing policy
- Equal opportunities policy
- Health and Safety policy.

**Written** Summer 2020

**Review** Summer 2023

**Principal** L Davis

Signed



**Chair of Governors** M Weller



Signed

