Sutton C of E VC Primary School

Science Policy

Reviewed November 2020

Intent

Our intention that every pupil, irrelevant of needs, develops such a passion for Science that they harness their natural excitement and curiosity and in turn this inspires them to pursue scientific enquiry. We wish that every child is excited by scientific ideas and wants to learn to explain and analyse phenomena, make predictions and solve problems.

Rationale:

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and it is vital for the world's future and prosperity. All children should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, children should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. Children should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. Children will be working as scientists to explore through hands-on activities to create a sense of awe and wonder about the world they live in. Science should encourage rich questioning which stimulates thinking and makes children want to find out the answers to these 'real life' problems. In order for children to achieve well, they must not only acquire the necessary knowledge but also understand its value, enjoy the experience of working scientifically and sustain their interest in learning it. Children need to be exposed to all five types of

scientific enquiry: observation over time, research, pattern seeking, classifying and identifying and comparative/fair testing. Children need to learn about scientists who have made a difference in society and think about the role they play in the real world. Then they are more likely to continue to study science and use that learning for work, for family and to contribute as informed citizens.

Implementation - Teaching and Learning:

Science is taught in each year group based on the 2014 National Curriculum objectives and incorporating the CUSP curriculum knowledge strips. 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 are children 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 including reading books linked to the topic 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.

Every year, the school participates in the National Science Week activities linked to the national theme. Children have the opportunity to explore, research and participate in hands-on experiences which broaden their scientific knowledge and encourage the development of an enquiring mind.

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.

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, recapping using CUSP cumulative quizzes at the end and start of each session 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. Children will complete assessment questions at the end of the lesson and these are revisited at the start of each lesson in a cumulative way to reinforce knowledge and understanding. Teachers will assess each child at the end of the unit and enter the data on Pupil

Asset. 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 Pupil Asset and progress and attainment is reported to parents in the annual report. Teachers plan and assess from the National Curriculum which includes a breadth (Knowledge) 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 outcomes will be differentiated using Paddling, Snorkelling and Diving as per the school teaching and learning policy. 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. Teachers may set children home learning to focus on these next steps to further embed their learning.

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.
- Coordinate 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.
- 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.
- 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.
- Ensure teachers are providing safe practice through their lessons and seek advice where needed.

Impact:

- ❖ 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. (Math, English, Reading 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 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.

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. Teachers use their professional judgement to determine if a formal risk assessment is required when carrying out activities. Any perceived hazards will be actioned appropriately. Teachers will refer to CLEAPPS for clarification when necessary. Safe practice must be promoted at all times.

Conclusion

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

-Teaching and learning policy
-Marking Policy
-SEN policy
-Health and Safety policy.