Slindon CofE Primary School

Science Policy

Approved by:	**Laura Webb (Headteacher)**
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Article 29 (goals of education) Education must develop every child's personality, talents and abilities to the full. It must encourage the child's respect for human rights, as well as respect for their parents, their own and other cultures, and the environment.

Our Vision

At Slindon CofE Primary school we serve our local community and enable our school family to flourish. We recognise that everyone is *Unique* and want to ensure they are able to *Learn and Develop* in a high quality learning environment. We enrich the spirit in an *Enabling Environment,* in which *Positive relationships* foster creativity and curiosity. In hope we encourage our community to shine brightly and be courageous advocates of our world, shaping their futures for the better.

The Fruit of the Spirit is love, joy, peace, patience, kindness, goodness, faithfulness, gentleness and self-control; against such things there is no law.

Galatians 50; 22-23

Let Your Light Shine ~ Matthew 5:16

Slindon C of E Primary School understands the need for all pupils to develop their Scientific ability as an essential component of all subjects and as a subject in its own right. A good understanding of scientific knowledge and conceptual understanding helps to support pupils work across the curriculum.

Intent

At Slindon C of E Primary School, our curriculum is planned to develop increasingly sophisticated substantive and disciplinary knowledge. We believe that scientific knowledge is built up through experimental testing of ideas. When our pupils develop their disciplinary knowledge, they learn about diverse ways that science generates and grows knowledge through scientific inquiry. The knowledge gained through our science curriculum is knowledge for life and will play an important role in them becoming informed citizens.

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 science curriculums aims to uphold the values and ethos of our school through:

Enabling Environments:

From Reception to Year 6, Children are able to explore the school grounds and the local area to support their understanding of biodiversity and science learning. Children are given the tools and skills to be able to become independent and confident learners.

Positive relationships:

Our Science curriculum allows children the opportunity for group and paired working. This encourages positive relationships and the children acquire knowledge from their peers as well as supporting each through challenges.

Unique Child:

Science at Slindon C of E primary school flourishes because children are able to exert their own ideas and styles into their learning. Throughout the school we celebrate differences and uniqueness and in Science, these difference enable us to developing a robust and encompassing curriculum. We also appreciate that science helps us to understand God's world and the beauty of nature.

Learning and Development:

We understand that children learn at different rates and therefore our Science curriculum is adaptive and planned to support all learners. All teachers have an understanding of progression across science from EYFS to UKS2 which supports the children in making connections across the curriculum and aids development of their knowledge and scientific skills.

Our intent in teaching science include the following:

- Preparing our children for life in an increasingly scientific and technological world today and in the future.
- Helping our children acquire a growing understanding of the nature, processes and methods of scientific ideas.
- Helping develop and extend our children's scientific concept of their world.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and 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 computing in investigating and recording.
- Making links between science and other subjects.
- Developing robust knowledge and understanding of scientific vocabulary.

Statutory Requirements

Statutory requirements for the teaching and learning of Science are laid out in the National Curriculum in England Framework Document for Teaching, September 2014 and the statutory framework for the Early Years Foundation Stage, September 2014.

How Science is structured through the school/Implematation

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of the National Curriculum programmes of study for Science 2014 and 'Understanding of the World' in the Early Years Foundation Stage.

Science teaching at Slindon C of E Primary School, involves adapting and extending the curriculum to match all pupils' needs. Where possible, Science will be linked to class topics as detailed in the

school's Long-term Plans. Science will also be taught as discrete units and lessons where needed to ensure coverage. In KS1, Science is taught on a weekly basis. In KS2, Science units are blocked over 2 weeks.

Due to the mixed year groups in our classes, Science units are taught on a two-year rolling programme. This ensures progression between year groups and guarantees topics are covered.

Foundation Stage

Pupils explore science topics through making predictions, using their senses and investigating materials and their properties. Science is taught through the strand of 'Understanding the World'. Science teaching and learning is also linked to the other strands of The EYFS framework for learning.

The teacher and teaching assistants support pupils to develop a solid understanding of things occurring around them in their day-to-day lives. Children are encouraged to be creative and inquisitive as they participate in activities. Pupils are encouraged to use their natural inquisitiveness, while taking part in exploratory play in specific scientific areas as well as areas that link across the EYFS framework.

Key Stage One

During Key Stage one, pupils observe, explore and ask questions about living things, materials and the world around them. They begin to work together to collect evidence to help them answer questions, find patterns, classify and group objects, research using a variety of sources and carry out fair testing.
Pupils use reference materials to find out more about scientific ideas. They share their ideas and communicate them using scientific language, drawings, charts and tables. Science lessons in Key Stage one are either taught discretely or where possible connected to other curriculum areas. Pupils often use the outdoor areas in their science learning.

Key Stage Two

Children are encouraged to extend the scientific questions that they ask and answer about the world around them. Pupils carry out a range of scientific enquiries including: observations over time, pattern seeking, classifying, grouping and researching using other sources (including computing resources). Children in Key Stage Two learn to plan science investigations by only changing one variable to make it a fair test and are encouraged to plan and carry out investigations independently. Pupils are given the opportunity to learn outdoors as much as possible.

Science planning

Teachers plan to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available.
Teachers should use knowledge organisers to support their planning for each topic. Twinkl use is discouraged and lessons should be adapted by the teacher to ensure subject knowledge is robust.

The planning of science lesion is monitored across the school by the science subject leader and feedback is provided to the teachers.

Scientific vocabulary

Scientific vocabulary should be taught and then they should encouraged to use it throughout science lessons, in talk and in writing. Each unit has a particular set of vocabulary which is should be displayed in the classroom and on knowledge organisers.

Cross-curricular Science Opportunities

Teachers will seek to take advantage of opportunities to make cross-curricular links. They will plan for pupils to practise and apply the skills, knowledge and understanding acquired through Science lessons to other areas of the curriculum:

- Sharing strong links with mathematics – taking measurements (length, time, mass, etc), data handling and presenting data in tables and through the use of graphs and pie charts.
- Computing. We recognise the important role computing skills have to play in the development of scientific skills. We also recognise the importance of being computer literate. Computing skills are used on a daily basis to enhance teaching and learning of science and to give all children the opportunity to use computing to research, collect, analyse and present scientific findings.
- Geography shares a 'natural' link with Science and pupils should have every possible opportunity to explore the science present in and around their school environment.
- To bring in History children should have the opportunity to research and learn about famous scientists from history and how their achievements have changed or impacted upon our lives. E.g in UKS2, the children study English palaeontologist Mary Anning for evolution and inheritance.

Retrieval practice:

Retrieval practice should be done regularly to ensure children's learning is being embedded. Teachers' in school have had training and resources are provided to be able to carry out regular retrieval practice.

Assessment:

All pupils should be assessed following each lesson away from the point of teaching to ensure knowledge is embedded. This is tracked using the foundation assessments. Assessment should be made against the learning objective of the lesson – either a 1, 2 or 3. In the Foundation Stage, pupils are assessed using checkpoints and linked to the EYFS guidance.

After each unit of work, class teachers assess pupils based on their scientific knowledge and understanding linked to the objectives in the National Curriculum. In addition to this, pupils are assessed in working scientifically across the year and phase: Key Stage 1, Lower Key Stage 2 and Upper Key Stage 2. Each half term, pupil progress is captured and tracked against a year group's targets, which are related to their prior attainment in the Early Years and Key Stage 1 teacher assessments.

Recording of learning:

In the Foundation Stage, pupils work is recorded through the checkpoint assessment and photographs are taken regularly.
In KS1 pupils work will be recorded in science books. In KS2 work is recorded in their foundation books. Pupils should be provided with opportunities to record their learning: written, pictorial, tables or graphs. All work should be marked in line with the school's marking and feedback policy. Photos can be taken to support assessment and evidence and saved to the science photo folder on the server.

Resources

Trays are maintained by the subject leader in the resource's cupboard. The trays are labelled and organised in Key Stage units. Missing or broken resources should be reported to the subject leader as soon as possible and not put back broken, as this could cause injury.

Inclusion and Differentiation

At Slindon C of E Primary School, all lessons should be appropriately adapted to meet the varying needs of all pupils; ensuring that pupils of all abilities and backgrounds have an equal opportunity to make good progress and enjoy science. Pupils who achieved an assessment of 'greater depth' in their prior attainment are tracked as a more able pupil and should be identified on all planning. Knowledge organisers can be provided for the children to maintain cognitive balance and for use in retrieval practice

Equal Opportunities

Slindon C of E Primary School, has universal ambitions for every child, whatever their background or circumstances. Children learn and thrive when they are healthy, safe and engaged. In order to engage all children cultural diversity, home languages, gender and religious beliefs are all celebrated. Our curriculum includes a wide range of texts and other resources which represent the diversity and backgrounds of all our children.

Monitoring and review

The Science Co-ordinator and class teacher is responsible for monitoring the standard of the children's work and the quality of teaching in Science. The Science Co-ordinator is 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. Termly book looks and observations of teaching should be carried out and feedback given to class teacher and the earliest opportunity.