



All Saints Benhilton C.of E. Primary School Science Policy

Mission Statement: Together, within God's love, we celebrate and inspire today's minds for tomorrow's challenges.

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 is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of knowledge and key concepts, pupils will recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to ask questions in order to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes.

Aims: we believe the key principles of good teaching and learning in Science are :

1. learning activities are well planned, ensuring progress in the short, medium and long term
2. teaching and learning activities enthuse, engage and motivate children to learn, and foster their curiosity and enthusiasm for learning
3. assessment informs teaching so that there is provision for support, repetition and extension of learning for each child, at each level of attainment
4. the learning environment is ordered, the atmosphere is purposeful and children feel safe
5. there are strong links between home and school, and the importance of parental involvement in their children's learning is recognised, valued and developed

Key Principle 1:

Children learn best when learning activities are well planned, ensuring progress in the short, medium and long term.

THERE WILL BE EVIDENCE IN THE LEARNING ENVIRONMENT OF:

- progress in the children's learning, specifically related to Science skills *and* knowledge (in their books, on the walls, in conversation, in their learning behaviour)

TEACHERS WILL ENSURE THAT:

- Science learning is a combination of *skills* and *knowledge*. Each unit of Science being planned will include opportunities for children to review and extend upon their knowledge in that area as well as apply and develop their scientific enquiry.

IMPLICATIONS FOR THE WHOLE SCHOOL WILL BE:

- Programmes of Study in Years 1-6 are informed by the National Curriculum 2014, to ensure continuity and progression of Scientific knowledge and skills. Programmes of Study for EYFS pupils are informed by the Early Years Outcomes.
- there is a broad and balanced Curriculum Map in place that ensures subject coverage of, as well as continuity and progression throughout, the science curriculum
- a monitoring cycle is in place to support the progress of individuals and groups of learners: Learning Walls, Pupil Progress Meetings, lesson observations, planning scrutiny, book-looks.

Key Principle 2

Children learn best when teaching and learning activities enthuse, engage and motivate them to learn, and when they foster their curiosity and enthusiasm for learning.

THERE WILL BE EVIDENCE IN THE LEARNING ENVIRONMENT OF:

- Science resources used to support children's understanding of new concepts (scientific vocabulary, books, posters etc.)
- concrete materials to assist particularly with more abstract themes
- specialist resources used to build on children's skills
- related out-of-school and enrichment activities and visits.

- External agencies visiting.

TEACHERS WILL MAKE SURE THAT:

- well-judged and effective teaching strategies successfully engage pupils in their scientific learning – a *hook*, a *quality learning journey* and *high quality outcome* will be in evidence in each unit of learning
- lessons will include investigative and experimental learning.
- they use their expertise, including their science subject knowledge, to develop pupils' knowledge, skills and understanding in a structured way, across the range of subjects and areas of learning
- well framed questions at different levels (see Bloom's Taxonomy), knowledgeable answers and the use of discussion, promotes learning at greater depth.
- they ensure an appropriate ratio of exposition to learning-activity in their teaching
- appropriate home-learning is set to nurture children's enthusiasm and curiosity, and develop their understanding in areas under study

IMPLICATIONS FOR THE WHOLE SCHOOL WILL BE:

- The Science Subject leader will ensure appropriate resources are sourced, related out-of school learning opportunities are shared and links are made with other institutions.

Key Principle 3

Children learn best when assessment informs teaching so that there is provision for support, repetition and extension of learning for each child, at each level of attainment.

THERE WILL BE EVIDENCE IN THE LEARNING ENVIRONMENT OF:

- children who are motivated to learn through differentiated learning-activities that build on their prior attainment and issue challenge that is pitched at a level that is achievable when they show good learning behaviours and work to the best of their abilities.

TEACHERS WILL MAKE SURE THAT:

- the pace and depth of learning is maximised as a result of their monitoring of learning during lessons and any consequent actions in response to pupils' feedback
- they have high expectations for all children, and plan, resource and direct differentiated learning activities that give support and issue challenge for all
- they keep agreed science assessment records

IMPLICATIONS FOR THE WHOLE SCHOOL WILL BE:

- Subject Leader and Senior Leaders will analyse data to ensure individuals and/or groups are achieving their potential, including provision for children to work at Greater Depth.

Key Principle 4

Children learn best when the learning environment is ordered, the atmosphere is purposeful and they feel safe.

THERE WILL BE EVIDENCE IN THE LEARNING ENVIRONMENT OF:

- the safe use of resources

TEACHERS WILL MAKE SURE THAT:

- risks have been assessed carefully before carrying out any practical activities

IMPLICATIONS FOR THE WHOLE SCHOOL:

- health and safety procedures are in place and are adhered to

Key Principle 5

Children learn best when there are strong links between home and school, and the importance of parental involvement in their children's learning is recognised, valued and developed.

THERE WILL BE EVIDENCE IN THE LEARNING ENVIRONMENT OF:

- photos, resources in the classroom and scientific topic homework, to emphasise the value of home/ school liaison.

TEACHER'S WILL MAKE SURE THAT:

- parents are welcomed in to share in their children's Science learning through end of Learning Journey Celebrations and project based homework.

IMPLICATIONS FOR THE WHOLE SCHOOL:

- ensure parents are informed about school events and relevant topics through half termly Curriculum Notes, newsletters, termly calendars, letters, and the school website

TEACHING AND LEARNING

Science teaching at All Saints Benhilton is about excellence and enjoyment.

In Key Stage 1 and 2 we use the Kent Primary Science (edukent) scheme as a useful starting point for planning, however it is expected that teachers plan beyond and around this guidance and are encouraged to draw from a range of resources and maximise opportunities for practical and investigative work. We also make use of the Cornerstones scheme and expect that, where a topic makes suitable links to science, cross-curricular teaching will occur.

In the Early Years Foundation Stage, Science is an integral part of topic work and class teachers plan activities referring to the area of learning; 'knowledge and understanding of the world'.

In EYFS, pupils have access to Child Initiated as well as Teacher Initiated Scientific activities each week.

In KS1 - a minimum of 90 minutes Science will be taught each week.

In KS2 - a minimum of two hours Science will be taught each week.

In all Key Stages, a minimum of 50% of science lessons, across the year, will include practical scientific enquiry.

Pupils should build up an extended specialist Scientific vocabulary, and use technical terminology accurately and precisely. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data.

The Curriculum

In line with the Early Years Outcomes, Science (Understanding the World) teaching in the Early Years Foundation Stage covers Plants, Animals, Materials, the Natural Environments and Seasons. Children are encouraged to investigate and explain their findings, building up a Scientific vocabulary.

In line with the National Curriculum, Science teaching in Key Stage 1 will cover Seasonal Change, Everyday Materials, Animals including humans, Plants and All living things in their habitats.

Most of the learning about science should be done through the use of first-hand practical experiences and investigations, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

In lower key stage 2, the Science Curriculum will cover Forces and Magnets, Animals including Humans, Rocks, Light, Plants, States of Matter, Sound, Electricity and All living things in their Habitats. The principal focus is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas, and by beginning to develop their ideas about functions, relationships and interactions. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Science teaching in upper key stage 2 will cover Properties and Changes of Materials, Life cycles, Earth and Space, Forces, Animals including Humans, Light, Evolution and Inheritance, Living things and their Habitats and Electricity.

The principal focus is to enable pupils to develop a deeper understanding of a wide range of scientific ideas through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, children should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time.

Equality and Inclusion

Wherever possible lessons and resources reflect and value the contribution of different races, sexes and cultures to scientific thinking and understanding. Resources avoid negative stereotyping and present positive images of men and women of all races (refer to Equal Opportunities Policy).

Most Science lessons are appropriate for all children since the teacher will differentiate as necessary for those children with additional needs. We provide a variety of approaches and tasks appropriate to ability levels, including ways of recording and explaining results and observations.

Science is taught within the guidelines of the school's equal-opportunities policy.

We ensure that all our children have the opportunity to gain science knowledge and understanding regardless of gender, race, class, physical or intellectual ability.

Safety

Primary science is relatively safe but advice may be sought from the detailed medium term plans, the science coordinator or the "ASE Be Safe" booklet. At Foundation Stage and Key Stage 1 pupils are taught to recognise hazards and risks and to follow simple instructions to control risks to themselves. At Key Stage 2 pupils are expected to be involved in identifying and assessing hazards to themselves and others and taking action to control them.

Display

Classroom science displays support pupils' learning and create a visually stimulating learning environment. All classrooms must have a science display.

Displays aim to :

1. communicate ideas and information clearly.
2. Stimulate pupil interest, curiosity and questioning.
3. Show appreciation of pupils' work and interest.
4. Make the environment attractive.

The classroom science display should include:

- A unit target poster that included information about the children's current learning (knowledge) and the skills they are learning to use (working scientifically skills).
- Sources of information to support learning (books, posters, interesting facts).
- Appropriate stimulating pictures/photographs and associated questions to stimulate interest and discussion.
- Physical resources to support the unit of work (e.g. examples of materials, magnets, mirrors, lenses, measuring cylinders).
- Key vocabulary for the unit, for both skills and knowledge. A distinction needs to be made between vocabulary that children need to spell accurately and vocabulary they just need to understand.

DISSEMINATION OF THE POLICY

The policy will be available for all members of staff, on the school server, and on the school website for parents.

PROCEDURES FOR MONITORING AND EVALUATION

The head teacher, members of the senior leadership team and the Science Subject leader will monitor the planning and the curriculum. The head teacher and Assistant Headteacher will monitor the quality of teaching and learning.

Date reviewed: May 2016

Next review: May 2019