



Family, Faith and Fascination

Science Policy

Boutcher C.E. Primary School

Reviewed by:	Ashlie Dixon
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Last reviewed during:	Autumn 2021 (including responses to COVID)
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Boutcher C.E. Primary School Science Policy

Introduction:

At Boutcher, we believe that a high-quality Science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum 2014.

Through Science, pupils at Boutcher will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

Equal opportunities:

We aim to promote equal opportunities for and to have high expectations of all pupils irrespective of age, race, gender, background, physical/sensory ability, intellect and special educational needs.

We aim to personalise our curriculum, where appropriate, in order to fully engage and motivate all of our pupils. Tasks will be set which challenge all pupils, including the more able. For pupils with SEN the task will be adjusted or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence

Aims:

National curriculum aims:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

At Boutcher we use the above aims to form the basis of our science teaching and they form the basis of our decisions when planning, delivering and assessing in Science.

Our aims:

- to develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.
- to develop a knowledge and appreciation of the contribution made by famous scientists to our knowledge of the world, including scientists from different cultures
- to encourage pupils to relate their scientific studies to applications and effects within the real world
- to develop a knowledge of the science contained within the programmes of study of the National Curriculum.
- To build on pupils' curiosity and sense of awe of the natural world
- to develop in pupils a general sense of enquiry which encourages them to question and make suggestions

- to provide pupils with a range of specific investigations and practical work which gives them a worth-while experience to develop their understanding of science
- to develop progressively pupils' ability to plan, carry out and evaluate simple scientific investigations and to appreciate the meaning of a 'fair test'.
- to introduce pupils to the language and vocabulary of science
- to give pupils regular opportunities to use the scientific terms necessary to communicate ideas about science
- to give pupils opportunities to use ICT (video, digital camera, data logger) to record their work and to store results for future retrieval throughout their science studies
- to give pupils the chance to obtain information using the internet.

Organisation and delivery

Science is taught weekly (some units twice a week) in all classes across the school as a core subject. Units are allocated to specific year groups and these must be taught by the end of the year. The order of units taught can vary according to teacher's mapping of other subjects in the curriculum. (E.g. Tadpole's Promise in Year 2 may be studied in summer term so 'Animals including humans' Science topic links well and will be taught in the same term)

Children start each unit with a unit cover sheet where they discuss the aims of the topic and share the vocabulary that will be taught in that unit. This vocabulary is encouraged to use throughout the course of the unit and children refer to it (as well as teachers with marking and feedback)

Teachers plan and deliver lessons according to the specific objectives set out on the unit cover sheet. Teachers have access to the Kent Primary Scheme of work where they may modify and adapt the lesson plans to meet the needs of their pupils.

Cross-curricular skills and links

Science is associated with every aspect of our lives and we will relate it to all areas of the curriculum. Cross-curricular links are encouraged and where possible, children will have the opportunity to explore their local environment and use art, DT and geography learning to help aid the way in which their work is recorded.

We will ensure that pupils realise the positive contribution of both men and women to science and the contribution from those of other cultures, through links to other subjects being taught. We will ensure pupils are taught and exposed to the positive effects of science on the world and how problems and challenges are faced.

Progress and achievement

Much of the work done in science lessons is of a practical or oral nature and, as such, recording will take many varied forms. When children complete written tasks in their science books, marking will be carried out as part of a 'Whole class feedback' sheet. At the end of each lesson, teachers will complete a sheet where they identify the LO and any key vocabulary and misconceptions that need to be highlighted or revisited in the next lesson. Teachers will comment on work that should be praised and work they may need revisiting, support or some scaffolding in order for the child to meet the learning objective. Teachers' feedback should enable children to fulfill the learning objective set out in the lesson and help children further their scientific learning (knowledge, vocabulary, understanding) During the unit being covered, teachers will carry out mini assessments and provide investigative opportunities to explore and address any misconceptions that children may have.

Assessment

As a school we use the Science Southwark Star Assessment where we monitor whether children are emerging, developing or secure for their year group. This is recorded on a central record, which all teachers have access to.

Resources

There are a wide of resources available to all pupils in each topic covered and practical equipment is provided for each topic. The risks of using these are always carefully considered in advance by teachers and are used under adult supervision.

The School has an annual Science week (held in March) where all classes participate in trips, workshops and fun activities which are suitable and fit the theme being covered that year.

Health and safety

Pupils will be taught to use scientific equipment safely when using it during practical activities. Teachers will take into consideration risk, as well as potential issues that may arise during practical activities. A risk assessment will be carried out for all trips and any perceived hazards will be assessed and a decision will be made whether the trip should go ahead as planned.

Outside agencies we use regularly as a School

Surrey Docks Farm, Science Museum, Science Boffins, Insect Lore

Covid-19

Immediate Response to School Closure

When school closed as part of the national lockdown in March 2020, we moved teaching and learning to the online platform, Google Classroom. We made the decision as a staff team for all teachers to ensure that they taught science weekly and covered all science topics for the academic year 2019-20. Teachers adapted their planning to suit the remote learning taking place and children were set tasks and work was monitored via uploads and photographs of work on Google Classroom. Although new teaching in other areas wasn't always desirable, we wanted all children to have the full year group coverage in Science. This was vital as we build upon the knowledge and skills developed in previous year groups.

Scientific enquiry and children developing the skills to select appropriate equipment and resources was difficult to facilitate through Google Classroom activities. In some year groups, open ended enquiry-based learning was given and children were encouraged to take part in simple experiments from home. Due the first-time nature of this situation, we made the decision to make Science teaching as clear and well-pitched so that all children were able to access the learning, regardless of home equipment or resources. All educational trips, workshops and in school learning that was due to occur in the summer term was cancelled.

Return to School Response with Social Distancing Restrictions

Upon return to school, we decided as a staff team to start teaching science with the first topic due to be taught in the current academic year each class is in.

'Working scientifically' was the hardest aspect of science to monitor and access during the remote learning period. In the current academic year, teachers will ensure that children are given plenty of opportunity to witness scientific equipment and resources being handled effectively. This will ensure they understand and develop the necessary skills in their year group for the 'working scientifically' element of the Science curriculum. If another home learning period occurs, children will have had opportunities given at school already and can build on these in appropriate ways.

Without science trips and workshops in the near future, we will be using video clips and maximising scientific resources online (e.g Oak Academy and resources available through the Science Museum and other online learning platforms)

First hand experiences and children having the opportunity to observe the world around them is key in developing an enquiring mind. We are using Reception's garden, the peace garden, both playgrounds and the area around the school as much as possible to maximise the opportunities for children to learn outside.

Examples:

Year: 1

Topic: Seasonal Change

Children have looked in the garden for signs of autumn and we created our own autumn tree using the things we spotted on our journey. Normally we would collect conkers, acorns and leaves but we decided to draw our trees and cut and stick a range of pictures instead.

Year: 4

Topic: Living things in their habitats

Children went on a minibeast hunt, looking for minibeasts within the school grounds and the outside area of the school.

Whilst at school, we are minimising opportunities where children work in partners and groups so teachers are taking the role of demonstrating scientific experiments in situations where children would have taken a leading role before. We are determined to minimise risk and spread of Covid, so we are ensuring our working environment is as safe as possible.

Marking will be live, on the spot and lessons amended at the time according to misconceptions or errors that arise within the lesson. Teachers will use the whole class feedback sheet where appropriate to address the learning and build on knowledge, concepts and misconceptions from the lesson taught. If teachers look through each book, they must ensure they are quarantined for 48 hours. Feedback will be given at the start of the next lesson and children can respond to any errors or marking that needs following up.

Future Plan for School Closure

If another lockdown period occurs, we will continue to teach science weekly through Google Classroom. We will ensure we address and create positive experiences from any areas we felt needed improving during the previous lockdown experience. Children will be encouraged to submit their work so that teachers can view it and give appropriate feedback to the whole class.

In the event of children being required to self-isolate from school, teachers will continue to provide the science learning through Google Classroom weekly. Children will continue to access the same lessons as the rest of the class, although the delivery of the content might vary or be adapted to be suitable for a home learning environment.

Should the whole class not be able to attend school, children will continue to be provided with weekly lessons, continuing with the objectives from the current science topic that was being covered in school. Lessons will be accessible to all children and adaptations made if necessary.

In the event of a teacher being unable to plan and teach their own class, the subject coordinator will ensure the content is being taught and tasks set accordingly.

It is the responsibility of the subject leader to monitor the standards of children's work and support teachers in their teaching of this subject. We will ensure we teach science via video calls, PowerPoints and presentations and set activities and tasks for children to complete and upload via Google Classroom.

Response to Black Lives Matter (BLM)

At Boutcher, we have always been committed to providing all children with an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class. We are developing our understanding and responding to the BLM movement by ensuring we have positive role models for all our children and having the opportunity to learn and find out about BAME scientists and people that have impacted the world we live in. We recognise that this is going to be an ongoing and crucial part of our school future and we are working together as a school community to ensure we are being as effective, respectful and sensitive as possible.

In Year 5, children are studying the text 'Hidden Figures', which cross links with science teaching and promotes and celebrates the sexism and racism experienced during the space race.

We want all children to feel they are positively represented and have opportunities to find out and explore the lives of significant individuals that have made an impact in the world we live in. For BAME children, this may be learning about scientists or inventions and discoveries from people from a range of countries and places. We want children to see themselves as the future and be equipped with the necessary skills and knowledge from the wider world. If children have the self-belief and determination, they will achieve greatness. In terms of science, we want all children to feel valued and positively represented. We are striving for a range of books in science where all children feel they are represented, respected and valued

