

BROOMFIELDS JUNIOR SCHOOL



Science Policy

2022-2023

DOCUMENT STATUS

Version	Date	Action
1	January 2020	Updated Policy
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Broomfields Junior School Science Policy

The Public Duty of the Equality Act 2010 Protected characteristics in the act include sex, sexual orientation and gender reassignment. Schools have due regard to:

(a) "eliminate discrimination, harassment, victimisation"

(b) "advance equality of opportunity"

(c) "foster good relations between persons who share a relevant protected characteristic and persons who do not share it"

This includes tackling prejudice and promoting understanding.

Broomfields Junior School

Intent

At Broomfields Junior School, it is our intention to provide a high-quality science education that provides children with the foundations they need to recognise the importance of science in every aspect of daily life. We give the teaching and learning of science high prominence.

Our science curriculum will enable children to become enquiry-based learners collaborating through researching, investigating and evaluating experiences. It will encourage respect for living organisms and for the physical environment.

In our school, science is about developing children's ideas and curiosity, and working with them to make sense of the world in which they live, both through investigation and using and applying their scientific skills.

Our aims in teaching science include the following:

- Preparing our children for life in an increasingly scientific and technological world today and in the future.
- Recognising the importance of providing opportunities for pupils to understand how science can lead to a number of varied employment professions in their 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, resilience 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 allowing our children to 'talk like scientists'.
- Developing the use of computing, including data loggers, in investigating and recording.
- Making links between science and other subjects.

Implementation

At Broomfields Junior School, our science curriculum is underpinned by the Essentials Curriculum by Chris Quigley. The Essentials Curriculum sets out the essential coverage, learning objectives and standards which are required for science.

The curriculum is aligned to the National Curriculum, following the programmes of study for each year group carefully. It provides the right balance between working scientifically and learning scientific facts.

Teachers plan lessons using our personalised Milestone documents. The Milestones ensure that the curriculum is covered and the skills, knowledge and vocabulary taught is progressive throughout each phase. In addition, they allow teachers to plan lessons that build upon previous knowledge and regular retrieval activities are planned in to assess how well the children are retaining previously taught knowledge.

The use of 'Science Learning Journey' displays in every classroom, knowledge organisers and fun games are used to secure scientific vocabulary.

A variety of learning opportunities are used to deliver our curriculum, and teachers are encouraged to make learning in science as hands on and creative as possible whilst still making learning explicit.

Working scientifically skills are embedded within the content of each block of learning so that pupils learn to use a variety of approaches and skills to answer scientific questions. Furthermore, we look for opportunities to link any science learning to STEM activities which incorporate cross-curricular challenges for the children to utilise a wide variety of skills. Each year group also takes part in a half term STEM program. In addition, this will allow our lower key stage 2 children in Years 3 and 4 to achieve their CREST award. Furthermore, we have established links within TCAT Academy and with Bridgewater High School to develop even more STEM learning opportunities including Oxplore, from Oxford University, working alongside Year 5 children.

At Broomfields Junior School, we ensure that our science curriculum equips all our children in gaining 'real-life' experiences that are transferable in the wider curriculum. Educational visits are another opportunity for the teachers to plan for additional science learning outside the classroom. For example, Year 3 visit Fox Howl, in Delamere Forest, to consolidate their learning on Animals and their habitats and even take part in soil sampling. Year 6 children visit the Catalyst museum and Year 5 children attend Safety Central.

Inclusion, SEN and MAAT

We teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. Through our science teaching, we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs.

We recognise the fact that we have children of differing scientific ability in all our classes and so we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of way by:

- Setting common tasks that are open-ended and can have a variety of responses.
- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks).
- Grouping children by ability and setting different tasks for each group.
- Providing a range of challenges with scaffolding resources.
- Using additional adults to support the work of individual children or small groups.
- Incorporating high order questions that apply to scientific thinking to extend the most able children in science.

Science across the curriculum

Science is concerned with making sense of the world. There are many links with other areas of the curriculum. These links are taken into account wherever appropriate and planned within each year group. The teaching of English, Maths and ICT is promoted strongly in Science. Science is used to extend and enable the pupils to practice the skills of language and literacy through speaking and listening alongside written skills and maths through the understanding of measurement and data handling. ICT is used to enhance learning and the use of graph software and data logging allow the children to access the curriculum in different ways.

ECM

Every Child Matters at Broomfields Junior School therefore, through the teaching of Science, we encourage children to:-

Be healthy - by learning about looking after the body by eating healthily, being hygienic and through exercise.

Stay safe - by learning how to use equipment safely.

Enjoy and achieve - through participating in practical and exciting lessons.

Make a positive contribution - through lesson participation and working with others.

Achieve economic well-being – by developing skills for life.

Assessment

Assessment at Broomfields Junior School is teacher based and formed using a range of informal strategies which include;

- Children's contributions to class discussions
- Quiz style questions
- Verbal and written outcomes from learning
- Initial and final concept maps
- Observations and careful questioning of pupils working scientifically
- 'Brain dump' pages

We measure the impact of our teaching within science through the following methods:

- Regular monitoring of the teaching and learning within science across the school via learning walks and book scrutiny.
- Through Pupil voice, children will be able to articulate their knowledge and understanding as a scientist selecting appropriate vocabulary confidently and accurately, explain how science shapes our world and say if they know more, remember more and understand more.
- Through moderation of learning within books within local science networks and within school with science leaders and class teachers to ensure and qualify judgements.

Impact

Children at Broomfields Junior School will:

- Demonstrate a love of science work and an interest in further study and work in this field
- Retain knowledge that is pertinent to science with a real-life context.
- Be able to question ideas and reflect on knowledge.

- Be able to articulate their understanding of scientific concepts and be able to reason scientifically using rich language linked to science.
- Demonstrate a love of mathematical skills through their work, organising, recording and interpreting results.
- Work collaboratively and practically to investigate and experiment.
- Achieve age related expectations in science at the end of their cohort year.

Health & Safety

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers, Teaching Assistants and the Subject Leader will check equipment regularly and report any damage, taking defective equipment out of action. Where needed and when necessary, risk assessments will be completed prior to practical and investigative work. Teachers will follow the CLEAPS documentation for carrying out science investigations safely.