



Benington C of E Primary School

Science policy

Written	Reviewed	Next Review Date	Author	Adopted by Governors	Sub-Policies
October 2012	October 2019	October 2021	Julia Beaven		none

Aims and Objectives:

We live in an increasingly scientific and technological age where children need to acquire the knowledge, skills and attitudes to prepare them for life in the 21st century. We, at Benington Primary School believe that the teaching of science develops in children an interest and curiosity about the world in which they live, and fosters in them a respect for the environment. Through the framework of the National Curriculum, science aims to:

- Develop scientific knowledge & conceptual understanding through the specific disciplines of Biology, Chemistry and Physics.
- Equip children to use themselves as starting points for learning about science, and to build on their enthusiasm and natural sense of wonder about the world.
- Develop through practical work the skills of observation, prediction, investigation, interpretation, communication, questioning and hypothesizing, and increased use of precise measurement skills and ICT.
- Encourage and enable pupils to offer their own suggestions, and to be creative in their approach to science, and to gain enjoyment from their scientific work.
- Enable children to develop their skills of co-operation through working with others, and to encourage where possible, ways for children to explore science in forms which are relevant and meaningful to them.
- Teach scientific enquiry through contexts taken from the National Curriculum for science.
- Encourage children to collect relevant evidence and to question outcome and to persevere.
- Encourage children to treat the living and non-living environment with respect and sensitivity.
- Stress the need for personal and group safety by the correct usage and storage of resources.
- To enable children to appreciate that we do not always know the answers and results when carrying out scientific enquiry.
- Equip children with the scientific knowledge required to understand the uses & implications of science, today and for the future.

The Philosophy and Ethos:

We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Through the programme of study in the National Curriculum science document children will acquire and develop these skills throughout their Primary years.

We believe that science promotes communication in a specific and precise language involving mathematical and logical thinking. It allows children to develop ways of finding out for themselves and gives them practice in problem solving.

As their knowledge and understanding increases and they become more proficient in selecting and using scientific equipment and collating and interpreting results they will become increasingly confident in their growing ability to come to conclusions based on real evidence. Science fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. It allows children to develop original ideas and a questioning attitude.

In science, pupils are encouraged to be open-minded and to try and make sense of what they see and find out. The main focus of our approach will be through open-ended activities where we encourage children to recognize the need for fair testing.

Learning

Pupils will be provided with a range of learning experiences. These will include first-hand experience of:

- Exploratory play to gain experience of a situation or article and to develop their own ideas
- Experimentation to try out ideas and find what happens
- Investigation to test ideas or hypotheses in an increasingly systematic way
- Focused observation to develop the ability to notice detail and changes that take place over time
- Focused practical tasks to promote understanding of a concept or skill
- Sorting and classifying to group things by observable characteristics
- Discussion and debate of ideas and conclusions to consolidate understanding and develop the ability to explain clearly
- Presenting the results of their work in appropriate and varied ways
- Gaining respect for evidence and appreciating the views of others
- Working collaboratively and independently
- Learning about the work of famous scientists.
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Secondary sources will be used to widen experiences, enhance understanding and provide evidence for enquiry by:

- Providing opportunities for individual and group research
- Providing examples and illustrations from wider contexts that those possible in the classroom and the immediate environment
- Providing examples and illustrations requiring the use of specialised technology e.g. DVD's videos, CD ROMS and the Internet
- Children need to understand that not all questions can be answered and they need to be prepared to try things out, not knowing the outcome
- Regular science visits by professionals, links to local businesses and enrichment activities.
- Pupils in Yr.5/6 will also have the opportunity to undertake national investigations run by the BBC Terrific Scientific Programme.

Teaching

In KS1 and KS2 teachers follow the National Curriculum 2014 and use the Rising Stars scheme of work and resources as a starting point. During the Early Years science learning will take place as part of a cross-curricular topic and will have a strong emphasis on developing basic enquiry skills and high quality observations as set out in the early learning goals. In KS1 & 2 science will generally be delivered as a

discreet subject lesson, linked wherever possible to creative curriculum topics. Approximately 1 ½ hours a week at KS1 and 2 hours at KS2 will be spent on science. Science activities will be organized using a variety of grouping strategies that are most effective to deliver the learning objectives for all abilities. Careful assessment will be made to manage any risks involved in practical activities.

Knowledge and understanding of scientific concepts will be developed through:

- Identification of the range and level of initial starting points within the class- what do all pupils know, most pupils know, only some pupils know?
- Planning suitable activities building on these initial starting points, using outdoor learning where possible.
- Clear learning objectives for each lesson shared with the pupils
- The use of clear exposition and discussion of learning objectives for individuals, groups or the whole class
- Provision and definition of appropriate scientific vocabulary to be used in written and verbal presentations
- Providing a range of opportunities for children to work scientifically, including; observing over time, identifying & classifying, pattern seeking, fair testing, research and create, make & design.

Investigation skills will be developed through:

- Planned progression of skills appropriate to the age and ability of pupils.
- A focus on the development of specific skills
- Sufficient practice and consolidation in a variety of contexts
- The provision of frequent opportunities for pupils to make choices and take decisions both collaboratively and independently

Assessment Recording and Reporting

Science will be assessed in line with the school assessment policy. Information gained from pupil records, initial assessment tasks and discussions will be used to plan activities. Assessment of experimental and investigative work will be on-going throughout the year. Work will be marked regularly against lesson objectives shared with pupils. Comments will identify strengths and weaknesses and provide targets for future work. When possible, children will be encouraged to review their own progress. Summative records will be kept in line with Herts Assessment Guidance.

Special Educational Needs

Notice will be taken of targets for SEN Pupils. Children will be given the necessary support to access the curriculum and allow them to carry out tasks at their own level.

Gifted and Talented

Provision will be made when necessary for pupils to extend their experiences beyond that of the majority of the class by one of the following:

- reducing the level of support provided and thereby increasing the need for independent thinking
- increasing the level of knowledge to be gained and communicated
- applying knowledge to an unfamiliar context
- setting more challenging criteria for presenting information
- explanations showing a more in depth understanding of scientific concepts

Safety

Pupils will be made aware of safety issues that arise in topics or activities and will be trained to use the appropriate equipment and carry out tasks in a safe and responsible manner. Pupils will be increasingly required to identify safety considerations in their planning as they progress through the school.

Resources

Science resources are stored in drawers in the hall. Resources should be returned here when no longer required. Reference resources for staff can be found in the staffroom and in classrooms appropriate to age. The resource areas will regularly be checked. Resource shortages should be notified to the co-ordinator. Staff should check that the required resources are available prior to the start of a new topic. The school grounds, which include a wildlife area, are to be used throughout the year to aid the delivery of the Life Processes and Living Things section of the NC.