

Brant Road, Preston, PR1 5TU. Tel: 01772 792302 Website: www.brockholeswood.lancs.sch.uk

Head Teacher: Miss Natalie Barber BA Hons - email: head@brockholeswood.lancs.sch.uk

Breakfast & After School Clubs email: badgers@brockholeswood.lancs.sch.uk

Science Policy

Intent

Our intent for the teaching of science at Brockholes Wood School is to provide the foundations for understanding the world through the specific disciplines of biology, chemistry and physics, which will make for a high quality science education.

We aim to inspire our young scientists by delivering collaborative hands on activities which develop their sense of excitement and encourage rich questioning in order to foster their natural curiosity and scientific thinking.

In order for children to achieve well, they must not only acquire the necessary knowledge but also understand its value, enjoy the experience of working scientifically and sustain their interest in learning science. Children need to be exposed to all five types of scientific enquiry: observation over time, research, pattern seeking, classifying and identifying and comparative/ fair testing.

Therefore, in science, we must involve all children in our enquiries, inspire a culture of questioning and embed their scientific knowledge and vocabulary in order to create life-long learners and scientists for the future.

Aims:

- To prepare our children for life in an increasingly scientific and technological world.
- To foster concern about, and actively care for our environment.
- To help develop and extend the children’s scientific knowledge about the world through their everyday experiences.
- To increase children’s scientific vocabulary and the language of science.
- To develop learning in the outdoors; to increase children’s confidence and natural curiosity of the world around them.
- To give children varied opportunities, through active participation. All children should explore and follow their own lines of enquiry. At times investigations are child led.
- To develop a range of skills through the working scientifically strand of the national curriculum: measuring, analysing, presenting and reasoning.
- To make learning purposeful, making cross curricular links where possible, and for children to experience ‘real life’ concepts (Maths, English and Computing in particular.)
- To develop children’s aspirations of potential careers in science through talking about the work of scientists and how they can make a difference to others.
- To introduce STEM (Science, Technology, Engineering and Maths) into the curriculum so that children can work on project based investigations which involve a range of skills across the curriculum.

Brant Road, Preston, PR1 5TU. Tel: 01772 792302 Website: www.brockholeswood.lancs.sch.uk

Head Teacher: Miss Natalie Barber BA Hons - email: head@brockholeswood.lancs.sch.uk

Breakfast & After School Clubs email: badgers@brockholeswood.lancs.sch.uk

Concepts, skills and attitudes

- Encourage positive attitudes to science.
- Build on our children’s natural curiosity about the world around them.
- Encourage children to plan and carry out their own investigations.
- Encourage open mindedness, self-assessment and responsibility.
- Build self-confidence and enable children to work and think both independently and in a group through discussion, developing social skills.
- Provide children with an enjoyable experience of science.
- Include science as an integral part of a creative curriculum.
- Develop the skills of investigation by encouraging children to question things that they experience in their world, predicting and explaining.
- Encourage children to ‘think like a scientist’ when working scientifically

Our teaching:

Our Science Policy follows the ‘National Curriculum 2014’ for Science Guidelines and our own Intent and Implement documents and aims to ensure that all pupils:

- 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.
- PLAN Matrices are used as MTP for science
- TAPs are used to assess aspects of science with a unit
- The programmes of study for Science are set out year-by-year for Key Stage 1 and 2. We are however, only required to teach the relevant programme of study by the end of the key stage and may introduce content earlier or later throughout the key stage.

Key Stage 1

There are two elements to Science. A body of scientific knowledge and a group of skills based processes which together help children to discover more about the world they live in. In the National Curriculum the programmes of study describe a sequence of knowledge and concepts in the following areas:

- Working scientifically
- Seasonal changes

Brant Road, Preston, PR1 5TU. Tel: 01772 792302 Website: www.brockholeswood.lancs.sch.uk

Head Teacher: Miss Natalie Barber BA Hons - email: head@brockholeswood.lancs.sch.uk

Breakfast & After School Clubs email: badgers@brockholeswood.lancs.sch.uk

- Living things and their habitats
- Plants
- Animals including humans
- Everyday materials and their uses

Key Stage 2

- Working scientifically
- Plants
- Animals, including humans
- Rocks
- Light
- Forces and Magnets
- Living things in their habitat
- States of matter
- Sound
- Electricity
- Properties and changes of materials
- Evolution and Inheritance
- Light

EYFS

In the EYFS, we plan and assess the children’s work using Development Matters which supports the Early Years Foundation Curriculum. The children’s work is often linked to the ‘Understanding the World’ aspect but will also have links to other areas (which have been identified in the science intent and implementation document). The characteristics of effective learning also play a vital role in a child becoming an effective science learner. They run through and underpin all areas of learning and development; they are processes rather than outcomes. The children will learn about similarities and differences in relation to places, objects, materials and living things which involve guiding children to make sense of their physical world. They will talk about features of their own environment and how environments might vary from one another. They will make observations of animals and plants and explain why some things occur, and also talk about changes.

Planning and Lesson Content

Teachers will base their planning on the programmes of study for their relevant year groups, Intent and Implement Document and the PLAN matrices and use the science

Brant Road, Preston, PR1 5TU. Tel: 01772 792302 Website: www.brockholeswood.lancs.sch.uk

Head Teacher: Miss Natalie Barber BA Hons - email: head@brockholeswood.lancs.sch.uk

Breakfast & After School Clubs email: badgers@brockholeswood.lancs.sch.uk

topic overviews to ensure coverage and progression (long term plan.) Medium/short term planning is created to break down the half-termly/termly learning into manageable weekly lessons with clear learning objectives, resources, organisation, differentiation, independent tasks, plenaries and means of assessment. Science lessons are taught for approximately 1 hour in Key Stage 1 and 2 hours in Key Stage 2. Planning also ensures that links are made to computing opportunities.

We try to use our school grounds to support children in fostering a love and respect for the natural environment. The children at Brockholes Wood are encouraged to get involved in the planting of seeds, bulbs and flowers both in the garden area.

The contribution of science to teaching in other curriculum areas

English

Science contributes significantly to the teaching of English in our school because both areas of the curriculum are fully embedded into our themes and are no longer solely taught as discrete subjects. This means that we are actively promoting the skills of reading, writing, speaking and listening within a science- based theme.

Mathematics

Science contributes to the teaching of mathematics in a number of ways. When working scientifically the children learn to use and apply number, measurements and statistics. They also develop maths skills such as estimating, predicting, sorting and explaining patterns and develop accuracy in their observation and recording of events. Many of their answers and conclusions include numbers and measurements.

Personal, social and health education (PSHE) and citizenship

Science makes a significant contribution to the teaching of PSHE and citizenship. This is mainly in three areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, the subject gives children numerous opportunities to debate and discuss. They can organise campaigns on matters of concern to them, such as helping the poor or homeless. Science thus promotes the concept of positive citizenship. Thirdly, within the scientific study of animals, knowledge and understanding of human science biology, lifecycles and healthy living are taught which link directly to areas within the personal and health sections of the PSHE programme of study, including RSE.

Social, moral, spiritual and cultural development

At Brockholes Wood Primary School, we provide a wide range of opportunities for pupils to develop their spiritual, moral, social and cultural identity so that they can thrive as they grow and develop in these areas in school and the wider world. As part of our spiritual,

Brant Road, Preston, PR1 5TU. Tel: 01772 792302 Website: www.brockholeswood.lancs.sch.uk

Head Teacher: Miss Natalie Barber BA Hons - email: head@brockholeswood.lancs.sch.uk

Breakfast & After School Clubs email: badgers@brockholeswood.lancs.sch.uk

moral, social and cultural development we promote fundamental ‘British Values’ which are at the heart of the ethos of our curriculum at Brockholes Wood Primary School. Our pupils’ spiritual, moral, social and cultural development gives them the skills to be thoughtful, caring and active citizens in school and in wider society which we develop and nurture through a range of activities and opportunities both within and outside the school environment.

Computing

Computing enhances the teaching of science in our school significantly because there are some tasks for which computing is particularly useful. It also offers ways of impacting on learning which are not possible with conventional methods. Software is used to animate and model scientific concepts and to allow children to investigate processes which it would be impracticable to do directly in the classroom. Specific software is used to assist in the collection of data and in producing tables and graphs. Children use technology to record, present and interpret data; to review, modify and evaluate their work and to improve its presentation. Children learn how to find, select, and analyse information on the Internet and on other media.

Continuity and Progression

EYFS pupils investigate science as part of Understanding the World. Children are encouraged to investigate through practical experience; teachers guide the children and plan opportunities that allow the children to experience and learn whilst experimenting for themselves. By careful planning, pupils’ scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2.

Pupils in Key Stage 1 will be introduced to science through focused observations and explorations of the world around them. These will be developed further through supportive investigations which will lead into more independent work at Lower Key Stage 2 and independence in Upper Key Stage 2. The knowledge and content prescribed in the National Curriculum will be introduced throughout both key stages in a progressive and coherent way.

Assessment, Recording, Reporting and Marking

Children will recap at the beginning of each unit to see if ‘sticky ‘learning’ has taken place from other year groups. This summarises knowledge and understanding of the key topic. These key points are used to refine and identify the starting points and level of challenge for the children’s lessons. These initial assessments are revisited at the end of the unit and new knowledge and understanding is added. Alongside lesson by lesson assessment for learning, teachers will decide whether children are working below, at or above the National Curriculum expectations for their year group. This information is entered into the Curriculum Attainment Records (CAR) and attainment is reported to

Brant Road, Preston, PR1 5TU. Tel: 01772 792302 Website: www.brockholeswood.lancs.sch.uk

Head Teacher: Miss Natalie Barber BA Hons - email: head@brockholeswood.lancs.sch.uk

Breakfast & After School Clubs email: badgers@brockholeswood.lancs.sch.uk

parents in an annual report. Teachers plan and assess from the National Curriculum which includes a breadth (knowledge) and a working scientifically (skills) objective. Children’s work is evidenced in a variety of ways in their science books and class displays, which demonstrate the key understanding and skills they have acquired. The learning objectives in the book are highlighted in a pink highlighter if the children have fully understood the concept and left blank if they have not quite understood fully. All written work must be marked regularly and give children clear learning points and next steps to move them forward linked to the success criteria. Marking must be in line with the school’s marking policy. Teachers may set children home learning to focus on these next steps to further embed their learning.

Monitoring and Evaluation

The monitoring of the standards of children’s work and of the quality of teaching in Science is the responsibility of the Science Lead. Their work also involves supporting colleagues in the teaching of this subject, keeping abreast with current developments in the subject, and providing a strategic lead and direction for the subject in the school. Lesson observations, book scrutinies, learning walks and teacher and pupil questionnaires are also undertaken to review the teaching and learning taking place. Data analysis is carried out annually using the CAR data and targets for the coming year and based on these findings.

Equal Opportunities/Special Educational Needs/Gifted and Talented

The school’s equal opportunities policy clarifies the way in which we at Brockholes Wood strive to ensure the equal provision for all children regardless of their gender, race, religion, class or ability.

We achieve these goals in Science by:

- Involving all of the children in oral work
- Planning differentiated work to suit the ability of the children
- Allowing access to materials and equipment
- Ensuring that course content is relevant to all pupils
- Having high expectations of every child
- Presenting pupils with positive images and role models to challenge existing stereotype views that scientists are synonymous with white male western culture. It will indicate the contribution women have made to scientific/technological achievements and that scientists come from a variety of backgrounds
- To learn about scientific/technological achievements associated with different cultures historically

Brant Road, Preston, PR1 5TU. Tel: 01772 792302 Website: www.brockholeswood.lancs.sch.uk

Head Teacher: Miss Natalie Barber BA Hons - email: head@brockholeswood.lancs.sch.uk

Breakfast & After School Clubs email: badgers@brockholeswood.lancs.sch.uk

Health and Safety

Safe practice must be promoted at all times. Teachers must take into account the school's Health and Safety policy. Particular attention must be given to avoiding the use of anything that aggravates individual pupils' allergies. Safety issues will have been identified in planning, and all investigations are carried out under adult supervision, in small groups when necessary and appropriate.

Role of the Subject Leader

- To have a sound knowledge of the Science curriculum and the programmes of study
- To attend courses to support and extend CPD
- To provide feedback to other members of staff
- To support other staff in planning, offering advice and guidance
- To monitor planning and classroom teaching throughout school
- To order and maintain resources

PREVENT

This policy is to be read in conjunction with the school's PREVENT policy, in response to a legal duty from the DfE placed on schools to have due regard to the need to prevent people from being drawn into terrorism or be subject to radicalisation. *The Counter Terrorism and Security Act 2015*, section 26th February 2015. In line with legislation to prevent possible radicalization of individuals the school safeguards children through adherence to this policy and allowing Internet access under staff supervision.

Signed: Natalie Barber

Reviewed: September 2023

Next Review: September 2025