Buckshaw Primary School and Nursery
Chancery Road • Astley Village • Chorley • PR7 1XP
T: 01257 418862 E: sbm@buckshaw.lancs.sch.uk www.buckshaw.lancs.sch.uk
Headteacher: Mrs S Price

Science Policy

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AUTHOR	Lauren Ellwood
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'Learning, believing and growing together.'

We believe that science is an integral part of providing the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science is continually changing our lives and is vital to the world's future success, and all pupils should be taught essential aspects of the knowledge, skills and uses of science. These skills have a practical application to everyday experiences which in turn is important for pupil's social development. By working scientifically, through tailored investigations involving planning, predicting testing, recording and analysing results, students come to appreciate the nature of the learning process.

Aims and Objectives

The aims and objectives of learning science in primary school are:

- Ask and answer scientific questions
- Plan and carry out fair scientific investigations, using equipment including computers
- Know and understand the life processes of living things
- Know and understand the physical processes of materials, electricity, light, sound and natural forces
- Know about materials and their properties
- Evaluate evidence and present their conclusions clearly and accurately

Science at Buckshaw Primary aims to teach our children the skills, knowledge and understanding they need to question and understand concepts and phenomena that occur in the world around them and equips them with the motivation to seek explanations for these.

Organisation

All KS1 and KS2 children have a lesson of science a week, in order to ensure progression and skills development. The lesson should be at least one hour in duration. EYFS children access science through ongoing continuous provision, they also receive a one hour lesson per week about the world around us.

The Curriculum

Science is taught through the Learning Challenge Curriculum and we follow the National Curriculum Programmes of Study for KS1 and KS2.

These include the following units:

- Working Scientifically
- Plants
- Animals Including Humans
- Characteristics of Materials

- Living Things and Habitats
- Rocks (KS2
- Light (KS2)
- Forces (KS2)
- States of Matter (KS2)
- Electricity (KS2)
- Earth and Space (KS2)
- Evolution and Inheritance (Y6)

Key Stage 1

In line with the National Curriculum, during Year 1 and Year 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the Learning Challenge Curriculum content:

- Asking simple questions and recognising that they can be answered in different ways.
- Observing closely, using simple equipment.
- Performing simple tests. o Identifying and classifying.
- Using their observations and ideas to suggest answers to questions.
- Gathering and recording data to help in answering questions.

Lower Key Stage 2

In line with the National Curriculum, pupils in Year 3 and Year 4 should be taught to:

- Ask relevant questions and using different types of scientific enquiries to answer them
- Set up simple practical enquiries, comparative and fair tests
- Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- Gather, recording, classifying and presenting data in a variety of ways to help in answering questions
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- Identify differences, similarities or changes related to simple scientific ideas and processes

- Use straightforward scientific evidence to answer questions or to support their findings.

Upper Key Stage 2

In line with the National Curriculum, pupils in Year 5 and Year 6 should be taught to:

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- Use test results to make predictions to set up further comparative and fair tests
- Report and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- Identify scientific evidence that has been used to support or refute ideas or arguments.

During science lessons, children are given the opportunity to work as a class, as individuals and as part of a group. The choice of class organisation is determined by the learning task. By its nature, science should involve lots of practical and enquiry work. Children devising and conducting their own investigations within the context of the relevant curriculum content, as well as being given opportunities to develop their working scientifically skills.

Resources

Additional resources are stored in the designated science cupboard. These include books, scientific equipment and planning boards.

Inclusion

All pupils shall have the opportunity to access to the Science programme of study that satisfies the National Curriculum 2014 requirements. It is important for all children to experience a range of scientific activities in ways that are appropriate to their needs and abilities. Special provision is made in exceptional cases. The school promotes equal opportunities and fairness of distribution of language resources. In school we aim to meet the needs of all our children by differentiation in our science planning and in providing a variety of approaches and tasks appropriate to ability levels. This involves providing opportunities for SEND children to complete their own projects, with support, to develop speech and language skills, as well as scientific skills and knowledge. This

will enable children with learning and/or physical difficulties to take an active part in scientific learning and practical activities and investigations and to achieve the goals they have been set. Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated activities. By being given enhancing and enriching activities, more able children will be able to progress to a higher level of knowledge and understanding appropriate to their abilities.

Assessment, Recording and Reporting

Most assessment is formative and is used to support teaching and learning and inform future planning. There are also end of unit summative assessments to show how well the children have grasped the subject and identify any areas that may need revisiting.

When written work is produced, it is marked in line with the school policy. Knowledge organisers have been introduced and these can be found in science books at the beginning of units of work. Children also have access to knowledge organisers for every topic which not only support their learning, but can also be used to assess against as they include key vocabulary and questions for the topic.

Monitoring

Monitoring is carried out by the subject leader in the following ways:

- Informal discussion with staff and pupils
- Work sampling
- Classroom observation

It is the responsibility of the Science Subject Leader, the Headteacher and Governors to monitor the standards of children's work and the quality of teaching in science. The Science Subject Lead is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. Regular reviews of the curriculum and resources will be conducted to ensure they meet the needs of all pupils.

Legislation and guidance

This policy reflects the requirements of the National Curriculum programmes of study for Science, which all maintained schools in England must teach.

It also reflects requirements for inclusion and equality as set out in the Special Educational Needs and Disability Code of Practice 2014 and Equality Act 2010 and refers to curriculum related expectations of governing boards set out in the Department for Education's Governance Handbook.

In addition, this policy acknowledges the requirements for promoting the learning and development of children set out in the Early Years Foundation Stage (EYFS) statutory framework.

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