

Broughton Primary School



Key Stage 2 Science Policy

Science at Key Stage 2 Policy (Wales)

We believe this policy relates to the following legislation:

- School Standards and Organisation (Wales) Act 2013 (Welsh Government)

The following documentation is also related to this policy:

- The School Curriculum for 3 to 19 year olds in Wales 2008 (Welsh Government)

Aims

- To promote a positive attitude and enjoyment of Science.
- To develop pupils' interest in science and an appreciation of its contribution to all aspects of everyday life.
- To enable pupils to effectively communicate scientific ideas by using scientific vocabulary.
- To provide pupils with sound skills, knowledge, understanding and experience on which to base further studies in Science.
- To promote exploration and systematic enquiry and to develop skills necessary to follow a line of investigation.
- To treat all living things and the environment with interest, care and respect.
- To recognise hazards and risks when working.
- To develop an awareness of the influence Science has on our everyday lives.

Objectives

- To ensure teaching and learning in school supports the development of science skills, ensuring all pupils achieve their full potential according to their ages and abilities.
- To ensure the school's teaching staff is highly trained and consists of committed teachers who have the expertise to develop the potential of all pupils.
- To provide a rich and varied curriculum that will stimulate and interest all pupils.
- To ensure teaching styles and methods vary to suit pupils' differing learning styles and abilities, thus enabling pupils to become effective learners.
- To provide resources for all pupils that will support effective learning and teaching.
- To ensure leadership and management structures within the school support the implementation of these objectives.
- To ensure teaching and learning is built upon prior knowledge

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Learning and Teaching Guidelines

Science encourages children to develop enquiring minds, to enjoy practical activities and it gives purpose to many of the skills introduced in Mathematics.

The subject is taught for a minimum of 2 hours a week, to each year group.

Science is taught as a discrete subject, although cross curricular links are made wherever appropriate (particularly to Mathematics and Technology) and learning may take place within a topic framework where circumstances allow.

At Key Stage 2, learners are given opportunities to build on the skills, knowledge and understanding acquired during the Foundation Phase. The skills learners are given opportunities to build on are:

- Following the processes of planning, developing and reflecting in all areas of enquiry.
- Communicating ideas, information and data in a variety of ways depending on the nature of the task.
- Searching for, accessing, collecting and processing relevant scientific evidence, information, ideas and data.
- Estimating and measuring using non-standard and standard measures, recording and presenting information.

Learners develop their skills (outlined above) through the range of 3 areas:

- Interdependence of organisms
- The sustainable earth
- How things work

Planning and organisation

Activities are planned to foster curiosity, creativity and to ensure they are interesting, enjoyable, relevant and challenging for the learners at Broughton Primary. Teachers enable learners to initiate, explore and share ideas, and extend, refine and apply their skills, knowledge and understanding in new situations. Teachers also allow time for thinking, peer discussion and reflection.

The School follows the *Collective Learning Science* scheme, which provides the basic structure for our Scheme of Work. Additional material is also selected by teachers to expand, develop and assist in providing pupils with quality of learning.

Work is taught on a 2 year cycle, so all learners will have experienced each unit of work from the *Collective Learning* scheme by the end of year 6. The units of work in upper key stage 2 that correspond to that in lower key stage 2 develop the progression of knowledge and skills as the learners move up through the school.

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The units of work for each year group are as shown below:

Years 3 and 4

	Autumn	Spring	Summer
Cycle A	Down in the Woods	Third Rock From the Sun	World of Water
Cycle B	Let's Play With Physics	How Does My Body Work?	Our Sustainable Earth

Years 5 and 6

	Autumn	Spring	Summer
Cycle A	Material changes	Energy, light and sound	Water life
Cycle B	Forces in motion	Plants for life	Healthy living

Teaching and learning

Each of the units of work taught at Broughton Primary are a progression of skills through each year group. The majority of any of the units focus on the main concepts to be learned but there are also extension activities for more able pupils.

Years 3 and 4 unit overviews:

Down in the woods

- Investigate the plants and animals found in 2 contrasting local environments, specifically looking at identification, life cycles and place in the environment.
- The environmental factors that affect what grows and lives in those two environments.
- How humans affect the local environment, e.g. litter, water pollution, noise pollution.

Third rock from the sun

- Compare the features and properties of some natural and made materials.
- Investigate the properties of materials relating to their uses.
- How some materials are formed or produced.

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World of water

- Investigate the plants and animals found in 2 contrasting local water environments, specifically looking at identification and place in the environment.
- Life cycles of plants and animals that live in water environments.
- Food chains and classification of animals.
- Effects of the seasons on water environments.

Let's play with physics

- Forces of different kinds.
- The ways in which forces can affect movement and how forces can be compared.
- How different sounds are produced.
- How light travels and how this can be used.

How does my body work?

- The names, position and relative sizes of a human's main organs.
- The need for a variety of foods for human good health.

Our sustainable Earth

- How humans affect the local environment.
- A comparison of the features and properties of some natural and man-made materials.
- How some materials are formed or produced.
- A consideration of what waste is and what happens to local waste that can be recycled and that which cannot be recycled.

Years 5 and 6 unit overviews:

Each unit in upper juniors begins with revision of work covered in lower juniors to consolidate knowledge before moving on.

Material changes

- A comparison of the features and properties of some natural and made materials.
- The properties of materials relating to their uses.
- How some materials are formed or produced.

Energy, light and sound

- The uses of electricity and its control in simple circuits.
- The way that sound travels.
- How light travels.
- The properties of materials relating to their uses.

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Water life

- Investigate the plants and animals found in 2 contrasting local water environments, specifically looking at identification and place in the environment.
- The interdependence of living organisms in those two environments and their representation as food chains.
- How humans affect the local environment.

Forces in motion

- Forces of different kinds e.g. gravity, air resistance.
- The ways in which forces can affect movement and how forces be compared.
- The daily and annual movements of the Earth and their effect on day and year length.
- The relative positions and key features of the Sun and planets in the solar system.

Plants for life

- Investigate the plants and animals found in 2 contrasting local environments, specifically looking at identification, life cycles and place in the environment.
- The interdependence of living organisms in those two environments and their representation as food chains.
- The environmental factors that affect what grows and lives in those two environments e.g. sunlight, water availability, temperature.
- How humans affect the local environment, e.g. litter, water pollution, noise pollution.

Healthy living

- The names, positions, functions and relative sizes of a human's main organs.
- The need for exercise for human good health.
- The effect on the body of some drugs, e.g. alcohol, solvents, tobacco.

Resources

The school has a full range of resources to support the teaching of this subject throughout all year groups. Resources are upgraded and replenished when the need arises.

Class teachers are responsible for informing their curriculum lead for the specific year group or Senior Management Team of resources which are required in order to deliver their planned curriculum.

Information books on science topics are available in the library and a range of non-fiction texts relating to science topics are available in classrooms.

Health and safety

The safe use of equipment and materials is promoted at all times. All accidents and incidents are reported to the Head teacher who makes a decision as to appropriate action.

Differentiation

The study of science is planned and differentiated effectively to provide learners with a suitable range of activities and support appropriate to their abilities and needs. Curriculum planning ensures that all learners have an equal opportunity to take part in every aspect of the science curriculum this is ensured by giving learners differentiated tasks that are matched to their level of attainment so that they can demonstrate successfully what they know, understand and can do.

Within classes co-operative learning takes places in the majority of lessons, so learners of varying ability will be working alongside each other, this lends itself well to this subject because:

1. The development and understanding of Science does not necessarily rely on an existing bank of knowledge. Pupils may grasp some areas in isolation from others.
2. The practical nature of Science often reinforces concepts in a tangible way and can be more conducive to assisting pupils who struggle with abstract ideas, formulae etc.
3. There is less demand for written language as Science can be recorded in terms of pictures and diagrams.

Assessment for learning

Teacher assessment essential as it provides information about learners' attainment and progress. Learners' work is evaluated using clear criteria, which are consistently applied across the curriculum. Marking is in line with the marking policy and work is marked based on to what degree the learner has met the skills of the lesson, a next step will also be given if appropriate.

Not all activities or lessons are suitable for assessment since there may be a series of activities or lessons which combine and lead up to one specific teaching point and it may be after this that pupils are ready to apply their understanding.

Having assessed a learners understanding through the marking of their written work or through conversation with them, teachers will then feed back to the child on their strengths and weaknesses. This may take written form in a pupil's book it may take place orally.

Areas of weakness are given additional support from the teacher either on an individual basis or in a small group. Common difficulties or recurring misconceptions are addressed to the whole class.

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We believe it is essential that this policy clearly identifies and outlines the roles and responsibilities of all those involved in the procedures and arrangements that are connected with this policy.

Role of the Governing Body

The Governing Body has:

- delegated powers and responsibilities to the Headteacher to ensure all school personnel and stakeholders are aware of and comply with this policy;
- responsibility for ensuring compliance with the legal requirements of the National Curriculum;
- responsibility for ensuring that the school complies with all equalities legislation;
- nominated a designated Equalities governor to ensure that appropriate action will be taken to deal with all prejudice related incidents or incidents which are a breach of this policy;
- responsibility for ensuring funding is in place to support this policy;
- responsibility for ensuring this policy and all linked policies are maintained and updated regularly;
- responsibility for ensuring all policies are made available to parents;
- the responsibility of involving the School Council in the development, approval, implementation and review of this policy;
- nominated a link governor to visit the school regularly, to liaise with the Headteacher and the coordinator and to report back to the Governing Body;
- responsibility for the effective implementation, monitoring and evaluation of this policy

Role of the Headteacher and Senior Leadership Team

The Headteacher and the Senior Management Team will:

- ensure all school personnel are aware of and comply with this policy;
- ensure compliance with the legal requirements of the National Curriculum;
- consider disapplying a pupil from all or part of the National Curriculum for a period of time if this will benefit the child;
- encourage parents to take an active role in curriculum development;
- provide leadership and vision in respect of equality;
- provide guidance, support and training to all staff;
- monitor the effectiveness of this policy by:
 - observing teaching and learning
 - planning scrutiny and work trawls

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- monitor standards by:
 - auditing the subject area
 - review of the scheme of work
 - monitoring teachers planning
 - lesson observations
 - scrutinising children's work
 - discussions with pupils

- ensure continuity and progression throughout the school;
- provide guidance and support to all staff;
- provide training for all staff on induction and when the need arises regarding;
- keep up to date with new developments;
- undertake risk assessments when required;
- review and monitor;
- annually report to the Governing Body on the success and development of this policy

Role of Teachers

Teachers will:

- comply with all aspects of this policy;
- work closely with the subject leader to develop this policy;
- devise medium and short term planning;
- develop pupils' spoken language, reading, writing and vocabulary in all subjects;
- plan and deliver good to outstanding lessons;
- plan differentiated lessons which are interactive, engaging and of a good pace;
- have high expectations for all children and will provide work that will extend them;
- assess, record and report on the development, progress and attainment of pupils;
- achieve high standards;
- celebrate the success of pupils in lessons

Role of Pupils

Pupils will:

- be encouraged to work in partnership with the school by making decisions and exercising choice in relation to their learning;
- listen carefully to all instructions given by the teacher;
- ask for further help if they do not understand;
- participate fully in all lessons;
- participate in discussions concerning progress and attainment;
- treat others, their work and equipment with respect;

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Role of Parents/Carers

Parents/carers will:

- be aware of and have access to this policy which is available on the school website;
- be encouraged to take an active role in the life of the school by attending:
 - parents and open evenings
 - parent-teacher consultations
 - curriculum development workshops
 - sharing services
- be informed via the website and Twitter of their child's topics;
- encourage effort and achievement;
- encourage completion of homework and return it to school;
- provide the right conditions for homework to take place;
- expect their child to hand in homework on time;
- join the school in celebrating success of their child's learning;

Inclusion

We believe that we are an educationally inclusive school as we are concerned about the teaching and learning, achievements, attitudes and well-being of all our pupils. We aim to provide places for all pupils who express a preference to join this school.

We work hard to offer equality of opportunity and diversity to all groups of pupils within school such as children:

- from both sexes;
- who have Special Educational Needs;
- who are looked after;
- from minority faiths, ethnicities, travelers, asylum seekers, refugees;
- who are gifted and talented;
- who are at risk of disaffection;
- who are young carers;
- who are sick;
- who have behavioural, emotional and social needs;
- from families who are under stress

Special Educational Needs

Those pupils with special educational needs at School Action and School Action Plus will receive an Individual Education Plans (IEP) with appropriate targets relating to the subject.

Monitoring & Review of the Subject

Monitoring of standards of children's work and the quality of teaching is the responsibility of the Head teacher and the SMT.

Standards will be monitored by:

- monitoring pupils work
- subject observations
- pupil discussions
- audit of subjects
- scrutiny of planning
- general curriculum discussions

Cwricwlwm Cymreig

We live in Wales and our pupils are educated in Wales, and in order to consolidate our sense of national identity we ensure that the learning that happens in Science lessons includes issues of local and wider Welsh interest. Welsh topics and pupils are encouraged to discuss issues of Welsh interest in oracy lessons.

Raising Awareness of this Policy

We will raise awareness of this policy via:

- the School Handbook/Prospectus
- the school website
- the Staff Handbook
- meetings with parents such as introductory, transition, parent-teacher consultations and periodic curriculum workshops
- school events
- reports such annual report to parents and Headteacher reports to the Governing Body

Training

All school personnel:

- have equal chances of training, career development and promotion
- receive training on this policy on induction which specifically covers:
 - teaching and learning
 - planning
 - assessment

➤ **key skills**

- receive periodic training so that they are kept up to date with new initiatives

Equality Impact Assessment

Under the Equality Act 2010 we have a duty not to discriminate against people on the basis of their age, disability, gender, gender identity, pregnancy or maternity, race, religion or belief and sexual orientation.

This policy has been equality impact assessed and we believe that it is in line with the Equality Act 2010 as it is fair, it does not prioritise or disadvantage any pupil and it helps to promote equality at this school.

Monitoring the Effectiveness of the Policy

The practical application of this policy will be reviewed annually or when the need arises by the Headteacher and the nominated governor.

A statement of the policy's effectiveness and the necessary recommendations for improvement will be presented to the Governing Body for further discussion and endorsement. (See Policy Evaluation)

Science Policy

The KS 2 Science policy and procedure was passed for use in Broughton Primary School.

On:.....

By:.....Headteacher

By:.....Chair of Governors

Date of planned review:.....