WELBECK PRIMARY SCHOOL

Science Policy

Approved	July 2025
Next Review	July 2026

Aims and objectives

Our Science Policy follows The National Curriculum 2014 for Science Guidelines 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.

Planning

Medium term planning for Science is based on clear and precise learning objectives submitted to the head teacher and subject leader termly or half-termly. Science objectives are included on the topic web and outline plan for each half term. These are also uploaded to staff share to ensure that planning can be monitored by the subject leader.

Short term planning is done on a weekly/daily basis. It breaks down the medium-term planning and is objective based taking account of differentiated activities and use of support.

Teaching and Learning

Children 'Work scientifically through enquiry'. Teachers will provide opportunities for children to ask and answer scientific questions about the world around them, with a strong focus on oracy and talk partners to support clarity of explanation. They will then select a type of enquiry to follow to answer their question:

- identifying and classifying
- observation over time
- research
- comparative and fair testing
- pattern seeking

Teachers provide a creative curriculum within Science and they ensure all children have the opportunity to learn, observe and make links in consistent outdoor learning opportunities, in the school forest garden and in the school allotments, allowing pupils to make rich, cross-curricular links in their learning. The use of 'Curiosity Cubes' displays for specific topics in science also develop pupils' creative questioning and enquiry skills. Practical learning opportunities are consistently planned and facilitated to develop pupils' learning and skills. Websites and resources used to deliver outstanding teaching come from a wide variety of sources including STEM and Develop Experts.

Foundation Stage

In the Foundation Stage, the children follow the EYFS curriculum through which science objectives are taught through 'Understanding the World'. Pupils engage in topic related learning and discovery where opportunities are planned for them to find out about the world in which they live through practical exploration and experimentation. Activities are planned to encourage the natural interest and curiosity of the children allowing them to use all of their senses to notice similarities, differences and change.

Key Stage 1

In Key Stage 1, the main focus of science teaching is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. Pupils learn about life cycles of some animals, understand the idea of growing from young to old and learn that all living things reproduce.

Lower Key Stage 2

In Lower Key Stage 2, the main focus of Science teaching is to enable pupils to broaden their scientific view of the world around them. They do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. Children will build on their knowledge of life cycles and learn about the importance of personal hygiene to maintain good health.

Upper Key Stage 2

In Upper Key Stage the main focus of Science teaching is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. Children further build on their knowledge of life cycles and learn about the basic biology of human reproduction, including the birth of a baby.

Profile of Science

The profile of science is raised across the whole school through various ways. Thematic and daily practical lessons are implemented across the whole school activities for British Science week (spring term) as well as Women in Science Week (spring), which is co-ordinated and supported by students and staff from Nottingham University Aerospace Engineering department.
Every 2 years, pupils in UPKS2 participate in Children's University, where pupils can choose to undertake a science-based course such as aeronautics or civil engineering. These courses are delivered by external partners who come from various science departments at Nottingham University, a local business partner Sartorius which specialises in biopharmaceuticals and a local engineering company ARUP.
A LKS2 weekly Science Club is hosted every week throughout the year, allowing pupils to explore a variety of practical learning opportunities in science. Welbeck has engaged in workshops with the Environment agency and local 'Green Meadows' community group to develop awareness of pollution, recycling and water cycles and habitats in water ways. Welbeck also has an established school-link with a primary school in Oulu, Finland. Pupils in Y4 and Y5 carry out research into natural habitats in urban and rural settings and the impact nature has on mental wellbeing, sharing their results through video calls and conferences.

Monitoring and Evaluation

The purpose of monitoring and evaluating activities is to monitor the quality of teaching and learning, standards and curriculum coverage for progression and continuity across the school.
The Science Leader will monitor the quality of teaching and learning through:

- Scrutiny of planning
- Moderation of standards in pupil's work by looking at topic folders
- Quality of teaching and learning through lesson observations and feedback
- Evaluation of children's attainment against targets ('Never Heard the Word' grids)
- Pupil voice to monitor impact
- Feedback to governors
- Bluesky and Twitter evidence under #ScienceatWelbeck

The subject leader plays an important role in developing their subject across the school as determined by their job description.

Assessment opportunities

Foundation Stage

Science objectives are met in the EYFS area of 'Knowledge and Understanding of the World'. Children are assessed against the Foundation Stage Profile whereby teacher assessments are based upon informal and formal observations as well as focussed activity work.

Key Stage 1 & 2

All pupils' work is marked and assessed to inform planning and set targets for development. Teacher assessment forms a large part of this alongside observations of pupils and feedback from pupils. All Science topics start with a 'Never Heard the Word Grid' (see appendix) to assess what pupils already know/do not know at the beginning of a topic. This grid is then revisited at the end of the topic and is completed, clearly showing the progress pupils have made with their learning. Grids are clearly differentiated to ensure challenge for greater depth pupils while also ensuring EAL pupils can access their learning (see appendix)

Resources

An annual Science budget is set and made available for the subject leader to order new resources. Science resources are centrally stored in a cupboard in the POD. All resources are monitored and maintained termly by the Science co-ordinator in consultation with staff. Some classes have a selection of topic specific Science resources stored within their own classrooms in addition to this. All classrooms will set up a 'Science Investigation' area when teaching a specific Scientific focus for a topic. This will include the use of 'Curiosity Cubes' to promote independent questioning and enquiry.

Health and Safety

Science is taught in line with our general Health and Safety Policy. Vigilance is needed where children are engaged in a range of practical activities, including open-ended investigations which involve unknown possibilities. Individual teachers undertake their own specific risk assessments for lessons. The governing bodies code of practise for Health and Safety in Primary Science is encompassed in the booklet 'Be Safe!' and in the CLEAPSS document 'Health and safety in the school laboratory and the new science teacher'. This provides an overview of common health and safety issues in a school and what might be expected of a new science teacher. A copy of this booklet is kept in the Science resources cupboard. All staff are directed to ensure they are familiar with its contents and follow its guidance.

Appendix: 'Never Heard the Word Grid' example

Forces and Magnets

Beginning of topic / End of topic

	Never heard the word before	Heard but not sure of the meaning	Know what it means: give a simple definition and an example where necessary
Force			____________________ ____________________
Magnet			____________________ ____________________
Magnetic material			____________________ ____________________
Attract			____________________ ____________________
Repel			____________________ ____________________
Poles			____________________ ____________________
Surface			____________________ ____________________
Gravity			____________________ ____________________
Friction			____________________ ____________________

Top interesting things you've learned about Forces and Magnets:

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Forces and Magnets

Beginning of topic / End of topic

	Never heard before	Heard but not sure of the meaning
Force		
Magnet		
Magnetic material		
Attract		
Repel		
Poles		
Surface		
Gravity		
Friction		

An object with a magnetic field, which attracts and repels other items.

The 2 ends of a magnet.

A force that pulls all objects together.

Pushes and pulls which can make things move, stop or change shape.

When 2 magnets are put together and they push away from each other.

Metals that are attracted to magnets.

When 2 magnets are put together and they pull toward each other.

The top layer of a material.

A force between two surfaces that re sliding or trying to slide across each other.

What do you already know about forces and magnets?

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What questions do you have about forces and magnets?

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<u>Forces and Magnets</u>

Beginning of topic / End of topic

	Never heard before	Heard but not sure of the meaning
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Magnet		
Magnetic material		
Attract		
Repel		
Poles		
Surface		
Gravity