



Science Policy

Subject Leader: Leonie Pritchard

At Brookfield Community Primary School, our science curriculum is designed to equip children with the knowledge, skills, and abilities they need to thrive in an ever-changing world beyond primary education.

We aim to nurture a natural curiosity in our pupils, encouraging them to explore and question the world around them. Our science teaching fosters a deep sense of wonder about the universe while promoting respect for all living things and the environment.

The national curriculum for Science ensures that all pupils develop:

- A strong foundation of scientific knowledge and conceptual understanding across biology, chemistry, and physics.
- An understanding of the nature, processes, and methods of science through a variety of scientific enquiries that enable them to investigate and explain the world around them.
- The scientific skills necessary to appreciate the uses and implications of science today and in the future.

At Brookfield, we strive to motivate and inspire every child through a curriculum that is stimulating, engaging, and appropriately challenging.

Our science curriculum is carefully structured to develop key knowledge and scientific skills across all year groups. We ensure that 'Working Scientifically' skills are progressively built upon so that pupils can confidently apply their understanding—using equipment accurately, conducting experiments, forming logical arguments, and explaining scientific concepts clearly. Subject-specific vocabulary is explicitly taught, reinforced, and embedded through effective questioning and discussion to help pupils communicate their ideas with precision and confidence.

Our School Mission Statement of 'Many hearts make a school' and our School Values, are at the heart of our curriculum and all that we do at Brookfield Community Primary School.

Implementation

At Brookfield Community Primary School, we implement an inclusive science curriculum that meets the needs of all pupils, including those with special educational needs and disabilities (SEND) and those who are more able.

Our curriculum is progressive and carefully designed to reflect the needs and interests of our children. Working Scientifically skills are embedded throughout lessons to deepen understanding and enable pupils to apply their scientific knowledge with increasing independence and confidence.

At the start of each unit, pupils share their prior knowledge, allowing teachers to identify misconceptions and tailor planning to meet learning needs effectively. Each unit is delivered through a sequence of engaging and well-structured lessons, built around clear knowledge- and skills-based objectives. Key scientific vocabulary is explicitly taught and reinforced, and is detailed within our termly knowledge organisers to support pupils' learning and recall.

End-of-unit assessment tasks are used to demonstrate progress in both scientific knowledge and skills. Teachers continually assess pupils' understanding against these objectives to ensure that learning is secure and that all pupils are appropriately challenged and supported.

Our science curriculum is delivered through high-quality, 'quality first teaching' as outlined in our Teaching and Learning Policy. Enrichment opportunities including visits from inspirational speakers, hands-on workshops, and educational trips further enhance children's learning experiences, deepen their understanding, and nurture a lifelong enthusiasm for science.

Impact

Our well-planned science curriculum ensures that all children acquire the essential knowledge, skills, and understanding they need to think and work scientifically. Learning in science is progressive, developmental, and stimulating, enabling pupils to build on prior knowledge and make meaningful connections across topics and year groups.

Through high-quality teaching, children develop curiosity, resilience, and a sense of responsibility for the world around them. They gain the confidence to question, investigate, and explain scientific concepts using appropriate vocabulary and methods.

We measure the impact of our science curriculum through a range of strategies, including formative and summative assessments, pupil voice, and the monitoring of children's work. These approaches help us ensure that pupils not only know more and remember more but can also apply their scientific understanding to real-life contexts.

Ultimately, our science teaching equips children with the skills, knowledge, and learning attitudes needed to be inquisitive, independent thinkers — empowering them to be the best they can be and to approach the wider world with curiosity and confidence.

Curriculum Structure and Progression

Science units at Brookfield Community Primary School are carefully sequenced throughout the school to ensure that both knowledge and skills are progressive and build logically over time. Each year group's long-term plan outlines the units to be taught, ensuring full coverage of the National Curriculum. Teachers follow the Plan Bee Scheme of Work, supported by our progression documents and unit overviews, to ensure that children consistently revisit and build upon key concepts, "sticky knowledge," and Working Scientifically skills.

Early Years Foundation Stage (EYFS)

In the Early Years, science is explored through the Understanding the World area of learning within the EYFS Curriculum. Scientific understanding is developed indirectly through play-based and practical activities that encourage children to explore, observe, predict, problem-solve, make decisions, and talk about the world around them. This approach nurtures curiosity and lays a strong foundation for future scientific learning.

Key Stage One

The main focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, developing an awareness of both the natural and humanly-constructed world. Children are encouraged to be curious, ask questions, and use simple forms of scientific enquiry to investigate their ideas. They begin to use basic scientific language to describe what they observe and communicate their findings in a variety of ways, fostering confidence and independence as young scientists.

Lower Key Stage Two

In Lower Key Stage 2, pupils broaden their scientific understanding of the world through exploration, discussion, testing, and developing their ideas about everyday phenomena and the relationships between living things and their environments. They begin to make connections between functions, relationships, and interactions. Children are encouraged to ask increasingly sophisticated questions, select appropriate methods of enquiry, and draw simple conclusions using scientific vocabulary to explain their ideas clearly.

Upper Key Stage Two

In Upper Key Stage 2, the focus shifts toward developing a deeper and more analytical understanding of a wide range of scientific concepts. Pupils explore abstract ideas and recognise how these ideas help them explain and predict how the world works. They also begin to appreciate that scientific understanding evolves over time. Children are encouraged to plan and conduct

different types of scientific enquiry — including observing over time, identifying patterns, classifying and grouping, conducting fair tests, and researching using secondary sources. They learn to draw well-reasoned conclusions, use evidence to justify their ideas, and apply their scientific knowledge to explain findings with increasing sophistication.

Teaching and learning style

Our principal aim is to develop children's scientific knowledge, skills, and understanding through engaging, inclusive, and purposeful learning experiences. At Brookfield, science is taught using a diverse range of strategies to ensure that all pupils are challenged, motivated, and inspired. Learning sometimes takes place through whole-class teaching, while at other times pupils work collaboratively or independently on enquiry-based research activities. Children are taught to ask their own scientific questions as well as answer those posed to them. They are given opportunities to collect, analyse, and present a variety of data — including statistics, graphs, photographs, and written observations — to support their conclusions and communicate their findings effectively.

A variety of teaching and learning strategies are employed to meet the needs of all learners, including:

- Practical investigations and experiments to develop hands-on understanding of scientific concepts.
- Demonstrations and modelling to illustrate complex ideas or procedures.
- Group discussions, debate, and targeted questioning to encourage reasoning, explanation, and deeper thinking.
- Problem-solving challenges that require application of knowledge to real-world scenarios.
- Role-play, drama, and creative tasks to explore scientific concepts in imaginative ways.
- Use of ICT, including digital simulations, research, and data analysis, to enhance learning.
- Fieldwork and outdoor learning to connect theory to the environment and everyday experiences.
- Cross-curricular links to make connections between science and other subjects, enhancing relevance and understanding.
- Formative assessment strategies, such as low-stakes quizzes, retrieval practice, and questioning, to reinforce learning, identify misconceptions, and help pupils retain key knowledge over time.

Learning is reinforced through presentations and reports, which help children clarify their thinking, use scientific vocabulary accurately, and communicate scientific ideas with confidence. Problem-solving and hands-on investigations remain central to our approach, and pupils are regularly involved in real scientific enquiries — such as investigating local environmental issues or designing and conducting experiments to test their own hypotheses.

Assessment

Children's progress in science is continually monitored throughout their time at Brookfield Community Primary School, and this information is used to inform future teaching and learning. By the end of each key stage, pupils are expected to know, apply, and understand the knowledge, skills, and processes specified in the relevant programmes of study as set out in the National Curriculum, which form statutory requirements.

Assessment for learning is ongoing and embedded throughout the planning, teaching, and learning cycle. In addition, children in Key Stages 1 and 2 are formally assessed on a half-termly basis using a range of methods, including:

- Observing children at work individually, in pairs, in groups, and as a class.
- Questioning, discussion, and listening to pupils to probe understanding.
- Reviewing work, materials, and investigations produced by children, supported by reflective discussion.

- End-of-unit *Sticky Knowledge* assessments to check retention of key concepts.
- Focused assessments of *Working Scientifically* skills to evaluate practical application.
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In the Foundation Stage, assessment is carried out against the *Understanding the World* area of learning, as well as relevant aspects of *Expressive Arts and Design*, using the Development Matters statements and Early Learning Goals. Practitioners indicate whether children are meeting expected levels of development or are not yet reaching expected levels ('emerging').

Through this combination of ongoing formative assessment and structured summative evaluation, teachers can accurately track progress, identify misconceptions, and ensure that all pupils are supported and challenged to achieve their full potential.

Inclusion and Differentiation

At Brookfield Primary School, we strive to meet the needs of all pupils by carefully differentiating science planning and providing a variety of approaches and tasks tailored to different ability levels.

For pupils with special educational needs and disabilities (SEND), this may include opportunities to complete individual projects with appropriate support, helping them to develop speech and language skills alongside scientific knowledge and practical skills. These approaches enable children with learning or physical difficulties to actively participate in scientific learning, investigations, and practical activities, achieving the goals set for them.

Some pupils may require closer supervision and additional adult support to make progress, while more able pupils are challenged through differentiated tasks and extension activities designed to deepen understanding and foster independent thinking.

Through this inclusive and flexible approach, all children are supported to engage meaningfully in science, develop confidence, and achieve their full potential.

Role of the Subject Leader

The subject leader for Science at Brookfield Primary School has a key role in ensuring high standards of teaching and learning across the school. They are responsible for monitoring the quality of children's work and progress, supporting colleagues in the planning and delivery of science lessons, and providing strategic leadership and direction for the subject.

The subject leader stays informed about current developments in science education and ensures that teaching practices reflect best practice and statutory requirements. They manage the science budget, oversee resources, and organise trips, workshops, and other enrichment activities to enhance learning.

Allocated time is provided to allow the subject leader to review samples of children's work, undertake professional development, liaise with subject leaders in other schools, and coordinate events such as Science Week. Through these responsibilities, the subject leader plays a vital role in promoting engagement, progress, and enthusiasm for science throughout the school.