



SUBJECT ON
A PAGE

Science

AT BROUGHTON PRIMARY SCHOOL, WE BELIEVE THAT SCIENCE ENABLES OUR CHILDREN TO DEVELOP A STRONG SENSE OF ENQUIRY AND CURIOSITY WHICH SUPPORTS THEM IN EXTENDING THEIR KNOWLEDGE AND UNDERSTANDING OF THE WORLD AROUND THEM AND PROMOTES RESPECT FOR THE LIVING/NON-LIVING.



Intent

WE AIM TO:



To develop scientific knowledge and conceptual understanding through the specific disciplines of Biology, Chemistry and Physics

To 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

To be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future

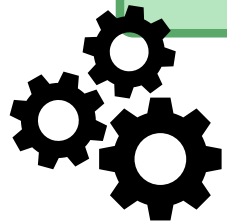
To develop the essential scientific enquiry skills to deepen their scientific knowledge

To use a range of methods to communicate their scientific information and present it in a systematic, scientific manner, including I.C.T., diagrams, graphs and charts

To develop a respect for the materials and equipment they handle with regard to their own, and other children's safety

To develop an enthusiasm and enjoyment of scientific learning and discovery

To develop the natural curiosity of every child



Implementation

HOW DO WE ACHIEVE THIS?

Our Approach:

Science will be taught in planned and arranged weekly topic blocks by the class teacher. This is a strategy to enable the achievement of a greater depth of knowledge. Through our planning, we involve problem solving opportunities that allow children to find out for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning, so that all children keep up.

Our Lessons:

At Broughton Primary School, Science is taught through dedicated Science Weeks, which take place on a half termly basis. In Key Stage 1 children follow their National Curriculum year group topics. Teachers follow a two year rolling-curriculum in both lower and upper Key-Stage 2 which allows all pupils to cover all topics set out in the National Curriculum, particularly important on occasions when classes are organised as mixed year groups classes. Class teachers use a range of planning schemes, such as Hamilton Trust, Developing Experts, Explorify, Ogden Trust and Thinking, talking, doing Science. Our planning structure ensures the children develop scientific knowledge and understanding through enquiry focused games, research and practical investigations. Individual lessons may vary in structure depending on the needs of the class and the topic they are studying at the time. Where individual children have barriers to learning, they are provided with tailored support to enable them to succeed.

Professional Development:

Our school is part of a local consortium which works with the Ogden Trust to raise the profile of Physics in primary schools and our Science Subject Leader has attended quality CPD sessions on: Electricity, Light & Sound, forces, Earth & Space. Our Science lead also completed an Education Endowment Foundation funded project run jointly by Oxford Science and Oxford Brookes on: Thinking, Talking, Doing Science. Our school is part of the STEM association which ensures our children learn the possibilities for careers in science as a result of our community links and connection with national agencies. During the academic year of 2022-2023, our school is working towards achieving Primary Science Quality Mark Award.

Resources:

Children will have opportunities to develop their scientific curiosity by having access to a range of high quality, modern and appropriate resources and equipment, which are formally audited on an annual basis. The Ogden Trust have recently provided individual kits for the teaching of all primary Physics units, along with a bonus kit of fun, practical and engaging science resources which can be used across the curriculum. Technology, such as laptops, iPads, data loggers visualisers, are also regularly used to support scientific enquiry and for the recording of investigations.

Science enrichment:

During their time at Broughton Primary School, all children will be given the opportunity to undertake enrichment activities linked to their science topics. Some of these activities may include: visits to our local nature reserve which is rich in biodiversity, taking part in 'Star gazing' sessions led by a local secondary school teacher, visiting a mobile planetarium, observing a REACT science show, taking part in a Science taster session held at our local secondary school, accessing workshops led by Cumbria Business Partnerships, who provide links with our local industries whilst also having the opportunity to work in school with professional scientists (rock/fossil experts/Pet Encounter etc)

Science leader monitoring tasks:

The following monitoring tasks will be completed by the Science Subject leader at at least once during each academic year:

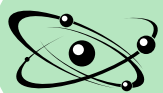
- Learning reviews based on work in the children's books and our online learning platform (Seesaw)
- Interviewing pupils from a range of year groups
- Questionnaires for pupils and staff
- Lesson observations/learning walks
- Subject leader and class teacher TEAM teach opportunities

Impact

HOW DO WE KNOW WE HAVE ACHIEVED THIS?



Children can demonstrate their knowledge and understanding of the topic through the use of vocabulary concept maps



Children can speak confidently about their experiences of practical investigations and are able to make sensible predictions and draw conclusions using their scientific knowledge.



Children are keen to ask 'how?' and 'why?' questions about the world around them, and are able to make scientific links



Children possess the skills to plan and carry out investigations in science, and can use the results to draw conclusions



Children can confidently use a range of methods to communicate and present their scientific findings



Children show awareness of how to keep themselves and others safe when using scientific equipment and materials.



Children enjoy science, look forward to lessons and talk enthusiastically about the subject.



Children are resilient and inquisitive, and are not afraid to ask questions or to make mistakes