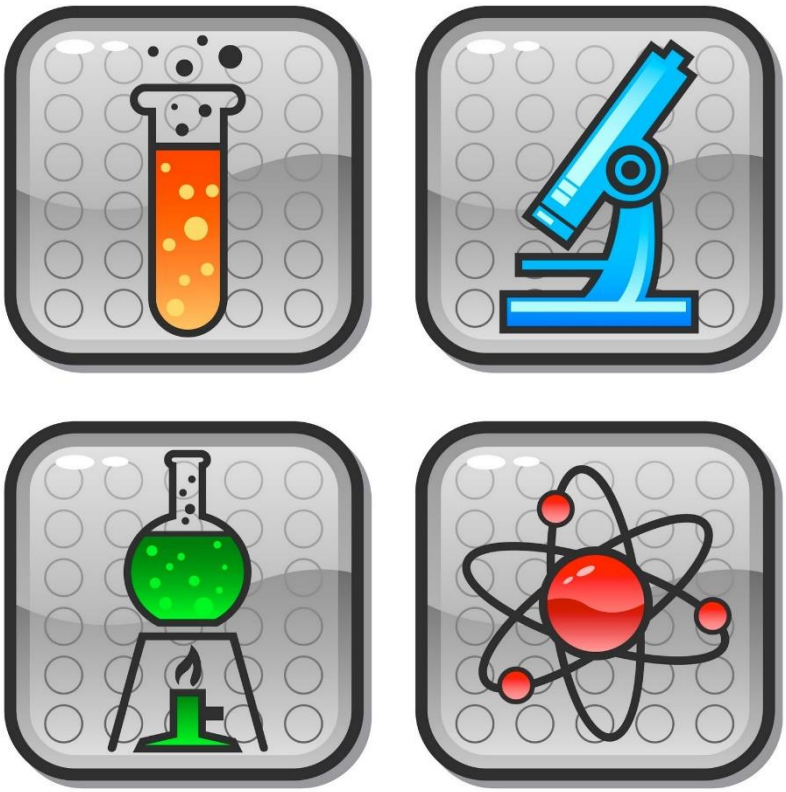
Burradon Community Primary School

Science Policy



September 2024

Miss M Hopper

Rationale:

Science at Burradon Community Primary School takes its aim from our core values:

Be curious about the world around you, ask questions and investigate.

Care and respect yourself, other people, our school and the wider world.

Intent:

Our aims in teaching science are to:

- Prepare our children for life in an increasingly scientific and technological world
- Increase children's independence in their science learning and working scientifically skills
- Help our children develop their understanding of working scientifically
- Raise aspirations and awareness of science related careers
- Lay the foundations for future learning
- Foster concern about, and active care for, our environment

Implementation: Teaching and Learning

We encourage our children to be confident and curious learners who can question and understand the world around them. We do this by:

- Exploring science with all children using topics drawn from the National Curriculum guidance or Early Years' Framework
- Nurturing pupils' natural curiosity by discussing what they want to learn at the start of each new topic and building learning opportunities from there
- Embedding opportunities for all working scientifically skills, including; observing over time, pattern seeking, identifying, classifying grouping and secondary research
- Working closely with external agencies, such as NUSTEM, to raise awareness of Science careers
- Making science lessons enjoyable and engaging
- Allowing opportunities for problem solving, peer discussion and learning

Implementation: Organisation

Science at Burradon is taught across KS1 and KS2, covering Biology, Chemistry and Physics. In EYFS, Science forms part of the Understanding the World strand of the EYFS curriculum, in which children have the opportunity to explore and interact with the world around them.

All science topics allow opportunities for pupils to work scientifically by making predictions, concluding their findings, observing, pattern seeking, researching and identifying, classifying and grouping. Where possible, opportunities are sought to link Science with other areas of the curriculum, such as DT, Computing, Geography and PSHCE.
We use a range of teaching and learning methods in science lessons. Our teaching methods include whole class demonstration, group work, paired work and individual work. We recognise that in most areas of science, children learn best from hands on experience through exploration and investigation, so opportunities are given for children to learn in this way.

When practical science lessons are carried out there may be little or no formal recording, instead the children or staff may take photographs and upload these to SeeSaw.

ICT is used in some science lessons to support teaching and learning. For example, children may use computers to find, select and analyse information using the internet. In some lessons, children may use ICT to record, present and interpret data as well as using the computer to present their findings to the rest of the class. Children are also introduced to data loggers, through iPads, as part of the KS2 working scientifically curriculum.

Implementation: The Curriculum

Science learning in Early Years:

The 'Understanding the World: The World' strand of the EYFS curriculum underpins future science learning in KS1 and 2. The EYFS statutory framework 2021 document states that understanding the world involves guiding children to make sense of their physical world and community by helping them:

•Use their senses in hands-on exploration of natural materials and talking about what they see, using a wide vocabulary
•Explore how things work, using toys and mechanical equipment to investigate
•Plant seeds and care for growing plants, observing growth and decay, understanding the key features of the life cycle of a plant and animal
•Begin to show care and concern for living things and the environment
•Explore and talk about the different forces they can feel
Understand the effect of changing seasons on the natural world around us

Early Learning Goal:
ELG: The Natural World Children at the expected level of development will: -
Explore the natural world around them, making observations and drawing pictures of animals and plants;
Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;
Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Science learning in KS1 and 2:

In KS1 and 2, we follow the National Curriculum Science Programme of Study, as follows:
During Years 1 and 2, pupils are taught to:

- ask simple questions and recognise that they can be answered in different ways
- observe closely, using simple equipment
- perform simple tests
- identify and classify
- use their observations and ideas to suggest answers to questions
- gather and record data to help answer questions

During Years 3 and 4, pupils are taught to:

- ask relevant questions and use different types of scientific enquiries to answer them
- set up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gather, record, classify and present 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 to 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

During Years 5 and 6, pupils are 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 present 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

Impact: Monitoring and Assessment

We monitor the teaching and learning of Science in the same way as we do all other subjects in our curriculum.

- Children are assessed on their progress at the end of each academic year and the subject leader provides an annual subject report to Governors commenting on the progress the children have made in the subject.
- Teachers monitor children's progress and adjust their teaching accordingly. Assessment of the children's work is on-going to ensure that understanding is being achieved and that progress is being made. Assessment is largely based on questioning and verbal discussion, as well as recorded work.
- Practical lessons provide hands on, kinaesthetic learning ensuring concrete understanding, particularly when dealing with difficult and abstract concepts.
- Feedback and marking of work is guided by the school's Marking and Assessment Policy and children are given time to respond to this feedback.
- Regular book scrutinies and discussions with children allows the Science subject leader to monitor pupils progress and curriculum coverage

NUSTEM:

For the past few years our school has worked in partnership with NUSTEM (formerly Think Physics) at Northumbria University. NUSTEM work with selected schools to deliver science workshops to children and their families and training to school staff with the aim of raising awareness of and interest in science careers. The NUSTEM workshops are all based around specific science careers, e.g. The Geologist, The Systems Engineer, but are delivered in an interactive and engaging way. Children respond very positively to these learning experiences both in the classroom and in the lab at Northumbria University, with many saying that they would now think about Science careers. NUSTEM also offer half-termly forum meetings for Science Coordinators which allow best practice and new ideas to be shared and then disseminated to school staff.

Inclusion:

It is our policy to offer opportunities to all pupils and to promote individuality irrespective of ethnicity, attainment, age, disability, gender or background. At Burradon Community Primary School all children matter and are given every opportunity to achieve their best. We use formative assessment during the lessons to identify the children who have achieved the objectives and those who need more support and reinforcement. Some activities are differentiated to accommodate different ranges of ability, whilst others (e.g. those involving group work) may be differentiated by outcome.

Subject Leader:

The science subject leader will attend training and support meetings to keep abreast of current developments and will report back to staff as required. They will also collect evidence (data, photographs, work) from each class to compile a portfolio that allows them to assess how well their subject is being delivered. The Science subject leader will provide training and support to staff as needed, either directly or via CPD courses.

Resources:

Our school has a wide range of resources to support the teaching of science across the school. The science leader carries out a regular audit of science resources across the school to ensure these are up to date. The science leader is responsible for the ordering and maintaining of resources in liaison with class teachers.

Health and Safety:

- All school staff are aware of the general Health and Safety requirements in science activities.
- The school has risk assessments for activities delivered off-site and any special activities (for example with visitors or during science week) which take place on-site.
- Staff not confident in delivering areas of the curriculum will seek support and CPD from school.
- Staff should encourage pupils to be aware of basic hazards and take steps to control these risks for themselves and others.
- The school expects that children will have opportunities to use a variety of science equipment, whether with support or independently. These opportunities can represent an important element of pupil safety education.

Renew date:

This policy will be reviewed biannually.
Renewal date 2026.

Miss M Hopper
September 2024