Science Policy
Date reviewed Autumn 2021
Next Policy Review Date: Autumn 2024

Luttons Community Primary School

and

Sherburn Church of England Primary School

Joint Policy on Science

Luttons Community Primary School
And
Sherburn Church of England Primary School

This document reflects both schools Mission Statements and aims:

Sherburn Church of England Primary School's Mission Statement is - 'Working together, putting children first within our Christian family.' Our aim is to 'Serve our community by providing an education of the highest quality for children of all faiths and none, within the context of Christian beliefs and practice.' We believe in working together to make sure the school is a safe, secure, friendly and purposeful place where children are safe, encouraged, challenged and supported to do their best and learn'.

The Religious Ethos at Sherburn Church of England Primary School is 'Christian values underpin the work of Sherburn CE VC Primary School and these influence our care of the individual. The three Christian Values are friendship, truthfulness and forgiveness.
These support this policy wholeheartedly:

- Forgiveness because we learn from everything;
- Truthfulness to help us to be open; and
- Friendship because we call God our friend.'

Luttons Community Primary School's Mission Statement is - 'Together we care, learn and grow'. Our aim is to 'Nurture, support and mentor everyone as they strive for excellence.'

Science Policy

Rationale

To develop in pupils, curiosity, enjoyment, skills and a growing understanding of science knowledge, through an approach in which pupils raise questions and investigate the world in which they live.

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

The national curriculum for science 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.

Long term planning for science is organised by the science coordinator using The Wolds and Vale Key Skills documents for areas of Knowledge and Understanding and Working Scientifically, ensuring breadth and depth of the programmes of study for science which are set out year by year for Key Stages 1 and 2 in the 2014 national curriculum. Learning opportunities for pupils within the Early Years are incorporated into half-termly units, focussing on relevant statements from the new 2021 Development Matters document. Our classes across the federation work towards bespoke long-term plans on a 4-year rolling programme, in order to accommodate mixed Key Stage and year group classes.

Medium term planning ensures that teachers at The Wolds and Vale Federation work towards a skills-based curriculum, which ensures pupils learn not only factual information, but also develop the skills they need to function well in the future. Half-termly plans have been developed by the science coordinator for each unique class and pupils in our mixed-age classes learn and experience new scientific knowledge and topic specific vocabulary whilst gaining understanding through taught half-termly units. Where appropriate these units support/enhance our English curriculum drivers (high quality CLPE texts) in supporting pupils' language and vocabulary development.
The progression of key skills in 'Working Scientifically' underpins each and every lesson and sequence of lessons/units from the Early Years to Year 6.

The **5 Types of Scientific Enquiry** form the focus of every science lesson. One of these 5 types of enquiry ensure that Working Scientifically is firmly embedded into every aspect of scientific teaching and learning. Lessons focus on one of the following areas and enquiry posters are displayed on the science working wall in each classroom:

- Identifying and classifying things
- Pattern seeking
- Observing changes over time
- Researching and using secondary sources
- Comparative and fair testing

Pupils in Key Stage 1 will be aware of the different types of enquiry and know which one is to be focussed on in each lesson. In Lower Key Stage 2, pupils will identify the type of enquiry and in Upper Key Stage 2, pupils will choose the most suitable type of enquiry and be able to explain why.
'Working scientifically' is described separately in the programme of study but must and is **always** taught alongside the teaching of substantive science content in the programme of study/key skills.

Science and Inclusion

Differentiation of activities will be made in the weekly/daily planning as appropriate to the pupils being taught based upon their prior knowledge, understanding and skills.
Equal opportunities in science will be given to all pupils. (See equal opportunities policy).
The strong practical mathematical links with investigations will be seen as an opportunity for teaching and should be explored at the planning stage, to make purposeful links with and practical application of the wider curriculum.

A wide and varied range of teaching and learning styles will be adopted to allow all pupils the opportunity to demonstrate their scientific knowledge, understanding and reasoning skills in different ways, including talk/discussion; write/describe; draw pictures; take photographs; video; make/construct a variety of tables, charts (including simple, bar charts produced as a group and displays) utilising computing resources and skills as appropriate.

Pupils will normally be organised into small groups and encouraged to work co-operatively for science work. The group size will be determined by the age, task and ability of the pupils.

Classroom Working Walls and Vocabulary

Displays of science work will be used to emphasise and raise the importance of science in the school and reflect the current learning taking place in class. It is vital that key vocabulary is taught explicitly during each science topic and key vocabulary will be prominently displayed alongside the 5 types of scientific enquiry that teachers will refer to during each lesson. Teachers will discuss and define the meaning of new vocabulary at the start of a topic and encourage the children to include this vocabulary in their work. Pupil's prior knowledge and questions will be displayed to inform and direct the sequence of teaching and learning as each unit progresses as well as 'next steps' to ensure a rapid response in supporting children to close any gaps that are quickly identified.

Assessment
The assessment of knowledge and skills will be planned for as part of the teaching process. (See assessment policy).

Assessment for learning is carried out before the start of a science topic. KWL grids will be completed prior to any new teaching and learning and used to identify what pupils already know and have retained and what they want to know/learn. At the end of a topic pupils new knowledge and skills can be recorded. This will inform teachers of any gaps or misconceptions requiring 'revisit and review' within the next unit.

'Revisit and review' sessions/activities form the start of every science lesson, to recall prior learning, address any gaps or misconceptions and revisit knowledge and skills acquired from earlier in the planning cycle.
Pre and post-unit assessments of each topic inform teachers of any misconceptions and gaps in knowledge. This will be addressed in the next 'revisit and review' sessions and inform of any changes or adjustments needed in the next phase of planning.
All pupils carry out regular **'Focussed Assessed Lessons'** from the Primary Science Teaching Trust as part of their planned and taught lessons. These allow for moderation against the National expected standard in science in both KS1 and KS2 and provides further evidence to support teacher assessment/judgements.
Summative assessment will take place at the end of each term, based on teacher assessment and assessed tasks within completed units of study. Teachers will use an electronic tracking system set up by the science coordinator to monitor attainment and progress in knowledge and understanding and working scientifically. All of the above assessment tools will be used to inform teachers and provide a variety of evidence to support overall end of year judgements and assessment.

Resources
Resources linked to the themes of the Science Topics will be stored appropriately and securely.
We will adopt the North Yorkshire guidelines for safety, ASE 'Be Safe' 4th Edition, which are a minimum requirement of health and safety standards. Teachers should notify the science co-ordinator of any suggested amendments. Free advice is available from CLEAPSS hotline 01895 251496.
Regular monitoring and auditing of science resources across the federation ensure equipment and resources can be shared, updated and purchased where necessary to further support and enhance all pupils' learning experiences and development of key skills as well as their purpose and application within the local community, wider world and for the future.

The role of the Science Subject Leader is to:

- be responsible for the development of science in school.
- monitor the effectiveness of science in school.
- support colleagues in their planning and teaching strategies for classroom management.
- disseminate new information.
- provide or organise staff training.
- be responsible for providing appropriate science resources.
- liaise with the secondary school regarding continuity.
- reviews evidence of the children's work, observes science lessons across the school and talks to children about their science learning.