

Written by: Lucy Grunner  
Approved by Governors:



# Hallgate Primary School Science Policy

**Date of Policy: May 2022**  
**Review Date: July 2024**

## Aim

The aim of this policy is to provide a clear statement of the principles and practice underpinning the Science curriculum at Hallgate Primary School. It provides a framework that enables all adults working in school to be clear about our intention and consistent in the way we deliver our Science curriculum to our pupils. It reflects both the aspirations and practice of staff and governors for the pupils at Hallgate.

## Whole School Curriculum Intent

At Hallgate Primary School, our vision and values are at the core of everything we do; they underpin our teaching and learning and create an environment which supports our children to become successful learners, confident individuals and responsible citizens. We ensure that our pupils enjoy an existing and challenging curriculum, which equips them with the skills needed for a successful future.

### Successful Learners

At Hallgate Primary School we take responsibility for ensuring that our children are equipped with the essential skills that they need to be successful learners and we are committed to ensuring that all children make good progress from their starting points in core areas of the curriculum.

We place a strong emphasis on developing pupils as 'Super Learners'; encouraging a positive attitude to learning which equips children with the confidence and resilience they need to be good learners.

Our six core skills are : concentrate, don't give up, co-operate, have a go, keep improving, enjoy learning.

We aim to develop a love of learning which encourages curiosity, engagement and enjoyment. We place a strong emphasis on developing skills for life and encourage learning for a purpose, enabling children to make links between different areas of the curriculum and apply their learning in a meaningful way. We pride ourselves on offering pupils a broad, balanced and vibrant curriculum with exciting and stimulating learning opportunities in all areas of the curriculum.

### Confident Individuals

Our aim is to enable all pupils to become confident individuals who face new challenges with ease and see themselves as successful learners and valued individuals.

We want pupils to be able to have a go, make mistakes and keep improving within a learning environment, where they feel safe, secure, supported, valued and calm. This is facilitated at Hallgate Primary School through promoting a strong values ethos, clear behaviour expectations, a well organised learning environment and quality first teaching in the classrooms.

Quality First Teaching includes:

- Staff having high expectations of themselves and all children.
- Teachers are expected to impart knowledge accurately and with enthusiasm.
- They are expected to take into account prior knowledge and experiences and to build on this in a systematic way.
- Highly focussed lessons with clear learning objectives.
- High demands of child engagement with their own learning.
- High levels of interaction for all children.
- Appropriate use of teacher questioning, modelling and explaining.
- Emphasis on learning through dialogue and exploration.

- An expectation that children will develop resilience and accept responsibility for their own learning and independence.
- Regular use of praise and encouragement to motivate children.

We are committed to providing pupils with a wide range of opportunities which broaden their skills and develop their confidence. The chance to see, hear, participate in a range of experiences (including: performances, outdoor learning, clubs, visits, visitors, challenges, enterprise and community projects) enrich the quality of pupils' lives and develop skills such as cooperation, creativity, innovation, problem solving, self-expression, leadership and independence.

### **Responsible Citizens**

Integral to the Hallgate Curriculum is a commitment to developing well rounded, responsible citizens who care about each other, their school, their community and their world.

This is done through the promotion of Hallgate Values, British Values and an emphasis on spiritual, moral, social and cultural development throughout the curriculum. Children are taught what it means to be responsible citizens and are given opportunities to put this into practice.

## **Subject Curriculum Intent (Science)**

Science stimulates and excites curiosity about natural phenomena and the world around us. It helps to explain what is occurring, to predict and understand what makes things behave as they do. Science has changed our lives over time and is a vital part of our future; it impacts on our own lives and the world in which we live. At Hallgate, our aim is that pupils leave our school with a deeper understanding and knowledge of their world, the ability to ask questions and conduct investigations which will help them to answer their questions. We strive to provide learning opportunities which are based on real life situations; immersing pupils in practical and purposeful first-hand experience and supporting them to make links. Key scientific terminology and knowledge will be introduced each lesson and built on over time to lead to deeper knowledge, with links made where appropriate. Opportunities to work scientifically are planned regularly to develop the skills of: observing over time; identifying, classifying and grouping; pattern seeking; comparative and fair testing and research using secondary sources.

### **Key Aims**

#### **We aim to:**

- Develop scientific knowledge and the understanding of scientific concepts.
- Develop pupils' natural curiosity of the world around them.
- Develop pupils' questioning and enquiring minds through a range of engaging experiences.
- Help pupils develop the skills to make systemic enquiries.
- Provide opportunities for pupils to apply theoretical ideas to the solving of practical problems.
- Increase pupils' understanding of how science is used in the wider world today and the possibilities it offers for the future.
- Increase Science Capital throughout the school and encourage pupils to consider careers in Science.
- Develop pupils' understanding of the nature, processes and methods of science through different types of scientific studies.
- Develop pupil's understanding and use of scientific vocabulary in context.
- Support Science (and other learning) through use of the Outdoor Areas and a carefully developed Outdoor Learning curriculum.
- Provide opportunities for pupils to explore science alongside other subjects that link to it, such as STEM

## Implementation of our Curriculum

### Key Components of Curriculum Delivery

At Hallgate Primary School, we build our science curriculum around:

- Delivery of the National Curriculum and EYFS Statutory Framework through planned schemes of work.
- Explicit teaching of Working Scientifically skills.
- Opportunities for children to experience different enquiry types (observing over time; identifying, classifying and grouping; pattern seeking; comparative and fair testing and research using secondary sources).
- Links to prior learning (earlier topics and year groups) and the 'sticky knowledge' we want the children to be able to recall.

### Key Teaching Strategies

- We use a variety of teaching and learning styles in science lessons, underpinned by a commitment to practical, hands-on, enquiry led scientific investigation, often linked to our cross-curricular topics.
- Wherever possible, we involve our pupils in real scientific activities; for example, investigating a local environmental problem, or carrying out a practical experiment and analysing the results.
- All science lessons are planned to develop both Knowledge and Working Scientifically skills.
- We encourage the pupils to ask, as well as answer, scientific questions. Planned use of talk and discussion, alongside opportunities to work collaboratively in pairs or groups on a shared task, are an essential part of scientific learning. Pupils engage in a wide variety of problem-solving activities.
- Pupils have the opportunity to use a variety of data including statistics, graphs, pictures, and photographs and are encouraged to present their findings in a variety of ways, including presentations to the rest of the class or a wider audience. Pupils make use of ICT and scientific equipment, such as data loggers, in science lessons, where appropriate, to enhance their learning.

### Learning Environment

Pupils learn well in a calm, positive, well ordered, well managed and stimulating environment where expectations are clear. All environments have to be planned to give children the best learning potential, including:

- The use of display as a focal point for learning - each classroom is expected to have a science working wall which will support the children with re-call of sticky knowledge, key vocabulary and prior learning.
- Appropriate and flexible grouping of pupils -
- A variety of ways of working including individual, paired, group work and whole class.
- Well organised resources which enable maximum independence for pupils and the ability

### Behaviour Expectations

All staff at Hallgate Primary School follow our Behaviour Policy. Individual class teachers explain and discuss the school's expectations with their class. We expect all of our pupils to comply with these expectations in order to promote the best learning opportunities for everyone. To ensure this, we implement:

- Use of the 'Power of 3' to ensure consistent expectations within the classroom and around the school.
- Clear classroom display, and regular referral to, our behaviour expectations and Hallgate Values.
- Consistent use of positive reinforcement and rewards.
- Consistent and fair use of warnings and sanctions, in line with our Behaviour Policy.

## Planning

### Long Term Planning

### Medium/ Short term planning

### Requirements of Science Planning

## Wider Opportunities

We believe that pupils' scientific understanding, knowledge and skills are at their best when they have the opportunity to take part in purposeful, practical, enquiry led scientific investigation. We provide different experiences to enhance the learning, motivation and engagement of pupils which will improve retention of knowledge and encourage pupils to make links to other areas of the curriculum and to real life.

## Teaching and learning

## Knowledge and Skills

### **Planning**

*The National Curriculum* is delivered through planned programmes of study. The responsibility for planning in Science is in line with our Curriculum Policy.

- The Curriculum Leader is responsible for providing a curriculum overview in the form of a two year cycle plan stating what is to be taught in each phase.
- The Subject Leader (working alongside the Curriculum Leader) is responsible for providing a scheme of work to ensure national curriculum coverage and progression of skills.
- Phase leaders work with their team to provide medium term planning for each unit of work in the Hallgate planning format, ready for the start of each half term. In Science this comprises of weekly lesson plans for the full half term.

### **Key requirements of planning**

- Clear learning objectives linked to knowledge and skills
- Identified steps to success for different groups of learners (Working Towards/Meeting)
- Tasks and activities to support the learning objective.
- Information on how learning or task is differentiated for different groups of learners
- Identified opportunities for Active Learning strategies.
- Identified use of Teaching Assistant support
- Identified assessment opportunities linked to 'Working Scientifically skills'
- Adaptations needed as a result of assessment – for individuals or groups/actions to support individual pupils or focus groups
- Clear and purposeful links to cross-curricular topics
- Combining scientific study with work in other subject areas, where possible.
- Links to SMSC and Super Learners

### **Inclusion**

Our inclusive approach allows all pupils to learn, regardless of ethnicity, gender, faith or none, culture, ability or disability. We select and use resources that positively reflect all of the above. We recognise that pupils have a wide range of scientific abilities, and we ensure that we provide suitable learning opportunities for all by matching the challenge of the task to the ability of the pupil. We achieve this by:

- Setting tasks which are open-ended and can have a variety of responses
- Setting tasks of increasing difficulty through the use of high order thinking questions
- Providing resources of different complexity, matched to the ability of the pupil
- Using Teaching Assistants to support the work of individual pupils or groups of pupils

### ***Wider curriculum opportunities***

- School visits for science are organised where possible in line with the current unit of work, to enhance and extend learning.
- Local resources, such as scientists from industry, are used to support units of work where possible.
- Opportunities for cross curricular learning are encouraged, including all STEM subjects, English and a wide range of foundation subjects such as geography, history, music and PE.
- The school encourages participation in National Science week and STEM activities and competitions.
- Science displays in all classrooms and around the school celebrate pupils' work and evidence progress.

### ***Resources***

- All resources for specific topics are stored centrally in the KS2 cupboard.
- There is a stock of frequently used resources (e.g. beakers, droppers, measuring equipment etc)
- Resources are organised in labelled boxes or trays
- All staff are responsible for ensuring that resources are stored correctly
- All staff are responsible for informing the Subject Leader when extra resources are needed, when there are breakages and when consumables are running low
- The Subject Leader is responsible for carrying out an annual audit of resources and updating and replenishing resources when needed
- There are a range of scientific materials, such as reference books, stored in the school library.

### ***Health and Safety***

The safe use of equipment and safe practice is an integral part of scientific teaching.

- The safe use of equipment is to be promoted at all times.
- CLEAPSS is to be adhered to at all times in planning lessons - staff are responsible for using the CLEAPSS guidance to ensure that their lessons are risk assessed where necessary.
- Risk Assessments must be included on plans to cater for allergies and disabled pupils when appropriate.

## **Impact of our Curriculum**

### ***Assessment***

Science is primarily assessed against objectives for 'Working Scientifically'. Opportunities for assessment are identified as an integral part of planning, with specific assessment criteria included in all lesson plans. Knowledge will be assessed at the end of each unit of work with a short, knowledge based quiz. All data will be recorded against objectives on Otrack.

### ***Formative assessment***

Formative Assessment is used to inform planning, teaching and learning - including differentiation. The assessment of pupils' work is on-going to ensure that understanding is being achieved and that progress is being made. Written or verbal feedback is given to the pupil in line with school Marking and Feedback policy, to help guide their progress.

### ***Monitoring and Evaluation***

Monitoring for science is carried out in line with the school Curriculum Policy. The Subject Leader is responsible for keeping up to date with developments in Science and organising CPD as required. Best practice for science is identified and shared amongst practitioners as part of whole staff meetings and phase meetings.

The Subject Leader, supported by the Curriculum Leader, is responsible for monitoring and evaluating standards in Science across the school and providing an annual report to the Headteacher and Governors to inform the School SEF, using evidence gathered from: books, data, displays, learning walks, observations, planning and pupils voice.

### ***Equality Duty***

In our school we aim to ensure equal opportunity for all regardless of gender, age, ability, religion, race or cultural/ethnic background. Equality at Hallgate School is about enabling all pupils to achieve their maximum potential as individuals and as members of society, and of ensuring equality of opportunity and treatment for all pupils, members of our staff and school community. Our school ethos is to actively promote a warm, caring community where all are valued.