



SCIENCE POLICY

Section 1: Introduction to the Policy

Purpose

The purpose of this policy is to set clarify Meadowfield School's expectations regarding the teaching and learning of Science within Meadowfield School.

Aims

The aim for pupils at Meadowfield School is to have access to Science as part of their weekly learning as well as multiple opportunities to explore, discover and investigate in their school life. These opportunities based on real and meaningful experiences will enable students to understand the world in which they live. Through building on a child's natural curiosity, we will develop skills such as;

- Resilience
- problem solving
- questioning
- communication
- independence

This policy is based on our five values of honesty, understanding, respect, kindness and teamwork. This policy helps to support creativity and enjoyment of learning through developing programmes of study based on, and relevant to, pupil interests. There is an emphasis on developing independence and lifelong learning skills tailored to individual pupils' needs. The curriculum provides challenge, supports differing needs and learning styles and is accessible to pupils with English as an additional language. The cultural diversity of the local, national and global community is celebrated throughout the curriculum.

The Intent, the Implementation and the Impact of our Science Curriculum

The Intent

It is our intention that all pupils in Meadowfield School work towards the National Curriculum objectives 2014, through the pre-key stage skills for Science, considering their individual learning needs, previous knowledge and barriers to learning. Our learning intentions are aspirational and set each term through a medium-term plan using skills taken from the long-term plan. Learning will challenge and motivate individuals to aspire to meet the Learning Intentions set forth, this will be measured through the personalised success criteria on the short-term plan for each student. The outcomes on the short-term plan inform future learning and planning aimed at preparing the pupils for the next phase of learning through to preparation for adulthood.

This curriculum is not defined by age, but by learning need and achievement; pupils are therefore able to move flexibly from one level to the next at any point during their school career. Lessons are planned to ensure that these skills are taught in an age appropriate manner, recognising that the social and emotional skills of the learner may be different to their cognitive ability. A learner in year 7 may still be following the KS1 skills if these are appropriate to their development and learning needs.

The Implementation

To ensure high standards of teaching and learning in Science, our Curriculum works towards the National Curriculum objectives 2014, through pre-key stage skills for each subject, taking into account their individual learning needs, previous knowledge and barriers to learning. Aspirational learning intentions are set each term through a medium-term plan using skills in the long-term plan. Learning intentions will challenge and motivate individuals to aspire to meeting these intentions, which will be measured through the personalised success criteria on the short-term plan. The outcomes on the short-term plan inform future learning and planning aimed at preparing the pupils for the next phase of learning through to preparation for adulthood.

The study of Science at Meadowfield will:

- Promote enjoyment and enthusiasm for learning through practical activity and exploration.
- Develop pupils' confidence in handling of concrete equipment.
- Provide experiences of measuring, pouring and weighing in a range of contexts.
- Equip learners with language and skills to communicate their scientific thoughts, and answer their own questions through problem solving opportunities
- Be aspirational and promote STEM through collaborations with museums, science centres and industry links.
- Develop a greater depth of understanding of science concepts so that pupils are able to apply these skills and concepts to other areas of the curriculum.

The expectation at Meadowfield School is for one timetabled discrete Science lesson to be taught weekly with multiple opportunities for understanding the world to be embedded throughout. Thus, developing a greater depth of understanding of science concepts so that pupils are able to apply these skills and concepts to other areas of the curriculum. All students at Meadowfield school follow a thematic approach to their learning. Pupils in the EYFS department follow the Development Matters Framework which is based on the understanding of the world. This is subsequently broken down into three sub categories:

- The World,
- People & Communities and
- Technology.

Pupils in KS1, KS2 and KS3 will follow the National Curriculum based upon their developmental age and understanding.

Pupils in KS4 will have access to the WJEC Accreditation within their Science Journey. This course is especially designed to support GCSE pupils who face significant barriers in recall, literacy and engagement. The aim for students at Meadowfield School is that all these experiences combined as well as opportunities to access and implement their knowledge in the wider community will promote a rich cultural capital allowing students to play a full and active part in society.

Pupils will both develop their conceptual and substantive knowledge whilst on their learning journey at Meadowfield. This will comprise of developing their "working scientifically" skills which are an important part of science and are mapped out by the teachers to ensure progression, however, these are not used as mechanisms for teaching the knowledge and concepts but a tool for demonstrating them. Knowledge and concepts will be taught alongside these skills by teachers. We will be measuring pupil's progress against KSENT agreed science levels for Biology, Chemistry, Physics and Working Scientifically which all link to the National Curriculum.

Science is personalised for each of the departments and targets are individual to each pupil. Whole class teaching topics are based on the whole school long term plans which are mapped out and aligned to specific scientific enquiry skills. Pupil progress is assessed and tracked throughout school using EFL. To ensure each child's learning is supported to make progress personalised pupil assessment sheets are used in each lesson. The assessment sheets follow the school marking policy to guarantee a cohesive whole school approach. This system makes certain that our curriculum and teaching is constantly aspirational and meeting the individual needs of our pupils with SEND. This is done through initially following a TREACL approach to learning (see appendix 1). Pupils work is uploaded according to the school's assessment schedule with clear context and next steps to inform future planning as per the Feedback Policy.

The curriculum is coherently planned to ensure that knowledge and skills are taught in sequential order. This allows for learners to transfer knowledge and skills from their working memory to their long-term memory allowing students to make connections in their everyday life. Pupils are encouraged to link the science learnt and every day events they experience in day to day life. The overarching sequence is broken down into manageable chunks, each chunk fits into a lesson and

accompanied with a relevant practical learning task. One piece of Science per term is expected to be set on Seesaw for pupils to access as home learning.

The Impact

The impact of the science curriculum is that pupils are ready for the next stage of their learning. With access to range of qualifications all pupils with SEND achieve the best possible outcomes. All pupils will have equal access to science regardless of gender, cultural origin or ability. Pupils will be able to use their subject knowledge across the wider curriculum and the transfer these skills into further education & post 16. For example, cooking & life skills, measurement, data handling, analytical thinking skills, geography, understanding the natural world, robots, coding & practical skills are essential in allowing our pupils to play a full and active role in society.

Measuring the Impact

- Assessment is seen as a vital part of the learning process, which establishes progress and contributes to future target setting:
- Individual pupil learning intentions are recorded on short term planning and progress to these documented on the plans.
- Pupil progress is recorded on Evidence for Learning in line with the schedule provided at the beginning of the academic year.
- Data analysis of progress will be provided to all teachers following the analysis of data.
- Pupils at risk or not on track to their targets will be highlighted to the Curriculum lead, Assistant Principal and teacher who will then need to implement additional interventions and monitor progress.
- A range of methods contribute to assessment this may include questioning and observing, varying the context as an indicator of understanding.
- A range of evidence can be used to support assessment which may include photographs, video clips, audio clips and annotated work.
- Evidence of progress is uploaded to Evidence for learning. In KS1 to KS 4 two pieces of Science per pupil across two terms will be uploaded.

Monitoring and Evaluation

The subject leads will ensure that the following monitoring and evaluation processes are implemented:

- To provide yearly Curriculum Action Plans.
- To provide guidance and support to staff implanting the science curriculum
- To attend any relevant courses on new developments and communicate these developments back to colleagues
- To oversee internal and external science moderation meetings.
- To provide science training to help with upskilling teachers and addressing misconceptions to ensure teachers are able to model correct terminology.
- To organise and maintain health & safety requirements for the science room and chemicals/chemical storage.
- To ensure staff use 'best practice' in implementing science, by performing learning walks, observations, monitoring medium term, long term and short-term plans.
- To evaluate data and pupil progression across all strands of science
- To support the intent & coherency of the planned sequenced lessons.

Section 2: Procedures and Practice

Roles and Responsibilities

The Science Lead both provide an overview of the subject across the school through the long-term Plans which informs staff planning as well as supporting staff to deliver the curriculum in an effective and engaging way through the Progression of Skills documentation. The Science Lead has an up-to-date knowledge of the subject requirements by continuously keeping up to date with new documentation as it arises, as well as having an overview of assessment. They are responsible for ensuring that an overview of the subject is available on the school website through the Science Policy. The Science Lead also has a sound knowledge of the resources, which are available within school, and ensures that resources are replenished and updated as necessary. The Science Lead is responsible for the planning and implementation of any subject specific curriculum days throughout the year and are responsible for hosting Curriculum Focus Meetings linked to Science. The Science Lead will also attend and engage in KSENT moderation meetings. Individual teachers are responsible for the day to day planning, delivery and assessment of the Science curriculum.

How British Values are integrated in the Science curriculum

Democracy

In Science, all children are given equal opportunity to communicate. Pupils will be taught and receive opportunities to develop their understanding of fairness both through practical tasks and the importance of listening and considering every one's views and opinions.

Individual Liberty

Through Science, pupils will be encouraged to make choices and respect the choices of other pupils. Science lessons will encourage children to share their choices taking responsibility and demonstrating the importance of those choices.

Rule of Law


When Science is delivered, there are opportunities to investigate and participate in different practical experiences. Pupils are encouraged to follow safety rules to ensure the safeguarding of all pupils.

Mutual Respect and Tolerance of Different Faiths and Beliefs

Through the teaching of Science pupils will demonstrate the mutual respect and tolerance of different individuals and their needs. Staff will model and promote respectful behaviour towards other pupils, staff and the environment to develop student's understanding of mutual respect. Science investigations allow opportunities to question, discuss with each other scientific discoveries, and demonstrate respect for every one's views.

Other Documents and Appendices

The Science policy should be read in conjunction with our policies for curriculum, teaching and learning and assessment. It is also supplemented Key Vocabulary list for Science and the TREACLE Approach (Appendix 1).

 School Policy Approved by Leadership	
Policy Adopted	Date: September 2023
Policy Approved	Date: 24 th November 2023
Next Review	Date: Academic Year 2024/25

Appendix 1

TRREACLE: A QUICK GUIDE

T

Tolerate involvement

R

React to change

R

Respond, greater attention to change

E

Engagement, focus, consistent attention to changes

A

Anticipate outcomes, approaching turn or sequence

C

Choose to join in, seek involvement

LE

Link experiences in the past with current activity