

Science Policy

Meir Heath Academy



Approved by:
Mrs M Southern

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What is Science?

- Science is a body of substantive knowledge which is built up overtime and explored through the experimental testing and enquiry of ideas.
- Science is also a methodology (disciplinary knowledge) which is a practical way of finding reliable answers to questions we may ask about the world around us.
- Emphasis is placed on our surrounding environmental and ecological issues which are prevalent now making the teaching and learning of science essential.
- Science Capital enables pupils to contextualise their learning through real world experiences and encounters.

Intent

At Meir Heath Academy our intent is:-

- Pupils will develop scientific knowledge and understanding through the specific disciplines of biology, chemistry and physics.
- Pupils will develop an understanding of the nature, processes and methods of science through different types of scientific enquiry to help answer questions about the world around them.
- Pupils will be equipped with the scientific knowledge required to understand the uses and implications of science today and in the future.

Implementation – Curriculum

Our science curriculum is based on the three main principal of biology, chemistry and physics. It includes the elements of the National Curriculum programs of study, and is delivered through the schemes Plymouth (mixed age planning) in Key Stage 1 and 'Switched On Science' in Key Stage 2. Each year group's units of science provide a sequential and progressive approach, enabling all pupils to develop their subject knowledge, whilst also understanding the world around them. Spaced learning and high quality retrieval tasks, ensure that the children maintain their knowledge and understanding throughout each unit. End of unit tasks and focused formative assessment ensure that pupils have the knowledge and skills required for future learning.

Implementation—Curriculum in Early Years Foundation Stage

In EYFS at Meir Heath Academy, pupils are provided with a broad and balanced range of exciting opportunities to develop both their subject knowledge and their working scientifically skills. This is delivered through carefully planned, high quality engaging topics and child initiated learning, within all areas of provision.

Implementation—Enquiry Skills

At Meir Heath Academy disciplinary knowledge (working scientifically skills) are taught holistically as part of our science curriculum.

All units and lessons have focus substantive knowledge (subject knowledge) and

disciplinary knowledge (working scientifically skills) incorporated into them. Through targeted assessment and planning, teachers ensure that direct teaching and the pupils own application of their knowledge and skills is carefully balanced, so as to address any misconceptions that may be formed, whilst promoting pupil progress in science.

Inclusion

At Meir Heath Academy teachers set high expectations for **all** pupils. Teachers take account of their duties under the equal opportunities legislation that covers race, SEN / disability, gender, religion or belief and sexual orientation. They plan using adaptive teaching methods in order to stretch those pupils who are working significantly above expected standards, and for those pupils who have low levels of prior attainment and or are from disadvantaged backgrounds. Teachers use appropriate assessment in order to set deliberately ambitious targets. Teachers ensure that there are no barriers to learning and that **all** pupils access the full curriculum.

Cross—Curricular Links

Throughout the year and where appropriate cross-curricular links are made with other areas of learning, examples being:-

English

Reading, writing, spoken language and use of technical language.

Mathematics

Statistics, measurement and recording, vocabulary and data handling.

Computing

Use of digital technologies.

Geography

Developing an understanding of the world around us.

Art— Observational drawings.

PE— Pupils learn about staying healthy and the impact of exercise on their bodies.

Science Capital

At Meir Heath Academy we actively seek opportunities for pupils to enhance their science capital. This is achieved by enabling children to contextualise their learning through real world experiences and encounters. Some examples of these include:-

- Animal visits - such as Rent a Beast rainforest animals.
- Class pets - such as Rent a Beast stick insects.
- Trip to Leicester Space Centre.
- Outdoor Learning in the school garden and outdoor classroom.
- Zoo trips (EYFS)

Impact

- Pupils at Meir Heath Academy have a good understanding of the subject science.
- They enjoy learning in science; especially when applying their developing subject knowledge to enquiry based learning.

Through our science curriculum pupils:-

- Understand the relevance of their learning in science to the wider world.
- Have the ability to solve problems, to reason, to think logically, and to work systematically and accurately.
- Can ask questions, plan and set up an enquiry, observe and measure, record findings, interpret and report on data and evaluate the findings and data.

TIME ALLOCATION

Every pupil within the school will receive weekly teaching of science ensuring all objectives from the curriculum are covered to the highest standard.

THE ROLE OF THE SCIENCE COORDINATOR

The Science coordinator will:

- Take the lead in policy development and the production of schemes of work, (Switched On Science), designed to ensure progression and continuity throughout the school;
- Support colleagues and give help, when required, in their implementation of the scheme of work;
- Monitor progress in science and advise the principal on any action required;
- Oversee the assessment of science and the procedures for reporting to parents on pupils' progress in this area of the curriculum;
- Take responsibility for the purchase and organisation of central resources for science;
- Keep up-to-date with developments in science education and brief colleagues as necessary;
- Identify staff development needs and arrange appropriate INSET.

THE ROLE OF THE CLASS TEACHER

It is the responsibility of every class teacher:

- To provide high quality science teaching and learning, within the legal guidelines and the school's science policy and scheme of work, to all children.
- To assess, monitor and record pupil's progress in the subject, adhering to the schools policy and systems.
- To prepare reports to parents on pupils' progress.
- To seek advice where necessary from the science coordinator.

TEACHING STRATEGIES TO BE ADOPTED

All pupils will gain a variety of learning experiences through a combination of whole class work, group work and individual activities. Activities that encourage Scientific Enquiry (disciplinary knowledge) will be central to all lessons.

Effective Assessment of Science

- Live assessment is most effective when completing a task and through the 'on the spot' discussion and observation between the children and the teacher.
- Encourages pupils to think critically about their own learning, successes and next steps.
- Uses retrieval practice to enable children to continue to recall previous learning and where appropriate linking this to future learning.
- Use of an exit question, linked to the lesson's WALT, at the end of each lesson provides opportunity to assess the children's learning and progress to the lessons objective.
- All staff complete the Plymouth Science (KS1) or Switched on Science (KS2) knowledge based unit assessments, at the end of each unit. These are supplemented with AI technology where appropriate.
- All staff to use and update the science progression grids, half-termly and to use these to inform attainment at data entry points and to identify next steps for teaching and learning, as part of assessment for learning.

PLANNING AND MONITORING

All teachers will:

- Plan lessons in accordance with the sequence and time-scale indicated in the scheme of work; (Plymouth Science / Switched on Science), and Meir Heath Academy Science Curriculum Overview.
- Keep a record of work covered and adaptations which have to be made in light of pupils' progress and other factors influencing school life;
- Save all flipchart planning and upload to Showbie on the iPads, adapting when needed.
- Make any necessary adaptations to their work in accordance with the advice given by the science coordinator.
- Teachers will ensure that flipchart planning includes, retrieval practice, key vocabulary, a knowledge organiser, WALT (linked to the NC aims and skills) relevant lesson content and an exit question.
- Evidence of children working scientifically, through practical enquiry based tasks will be recorded on the iPads, in Science folder.