

**Science Policy**

2024-2025

**Intent**

At Manor Farm Academy, we believe that the teaching of science is a cornerstone of the curriculum in order to nurture the natural curiosity and enquiry of pupils. Our science curriculum aims to cultivate a progressive, fun and engaging route into science with scientific enquiry at the heart of our curriculum. Through logical sequencing of learning, our pupils have a practical accessibility to working scientifically throughout the school to engage with and challenge stimulating questions. We strive to develop curious and ambitious pupils ready to explore and enter the world of science around them.

**We will deliver a curriculum that:**

* Equips pupils with the skills required to work scientifically and conduct a range of scientific inquiry types (see below).

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| Classify and Identify | Pattern Seeking | Observation over Time | Fair and Comparative Testing | Research |

* Builds on the previous year group’s knowledge and skills.
* Imparts knowledge of vocabulary through scientific inquiry, teacher-talk and class discussions.
* Encourages pupils to make predictions, ask questions, analyse findings and make conclusions about subject matter.
* Celebrates and questions scientific knowledge of the past and present, exploring the scientists that have impacted our lives and our environment both locally and nationally.
* Engages children with the fascinating world of science!

**Implementation**

The Subject Leader for science will lead and monitor, evaluate, review and celebrate good practice. ***Science will be taught for 2 hours a week in KS2 and 1 hour and 30 minutes in KS1.***

**Each unit of learning in science will have:**

* A pre-assessment at the beginning of the unit and a post-assessment completed at the end of the unit to show the end point of the unit: teachers use AfL to assess attainment in science.
* Lessons which use enquiry questions as a driving force - these will be displayed on the science working wall each week.
* Opportunities for previous learning to be recalled and recapped to ensure previous knowledge is retained.
* Medium-Term plans that address misconceptions; teachers have planned for ‘common misconceptions’ on their Medium-Term Planning so will have pre-empted these before teaching each lesson.
* Subject content that encourages pupils to be curious and ask questions about the wider world.
* Addressed all scientific enquiry types at least once, as well as a working-scientifically statement from the framework.
* Ensure all pupils are being ambitious by planning opportunities for pupils to grapple with their learning.
* Evidence of pupils celebrating the scientific discoveries scientists have made in the past or the present (Only KS2).
* Provide opportunities to consolidate their maths skills (already taught through White Rose Maths) when generating and recording findings.

**In addition:**

* The science subject leader will seek appropriate and relevant training and the opportunity to keep developing their own subject knowledge, skills and understanding, so they can support curriculum development and their colleagues throughout the school.
* All teaching staff have access to ReachOut Science CPD. This is completely optional and is a CPD opportunity for teachers who feel they need additional support with specific units within the science curriculum.
* Some units will have planned visitors or experiences to enhance the curriculum being delivered (these include: STEM ambassadors, workshops and external gardening club).
* Science week is celebrated each year and an at-home competition for science is ran three times a year.

**Impact**

**At Manor Farm Academy, our pupils:**

* Know what science is and why it is important to them and their future
* Understand that science is all around them and in everything they do.
* Enjoy science and show inquisitiveness and curiosity through questioning, prediction making, conducting inquiries and forming conclusions.
* Feel challenged and supported to reach their full potential in science.

**In addition, we measure the impact of our curriculum through the following methods:**

* Pre-assessments and Post-assessments
* Monitoring the use of Working Walls
* Marking & Feedback (in line with Marking Policy)
* Book Looks
* Learning walks
* Pupil Discussions

**Lesson Planning & Delivery**

Science planning and lesson sequencing follows the Primary Science Teaching Framework which ensures that subject knowledge is taught progressively and through appropriate enquiry. Teachers have the autonomy to adapt and amend planning to suit the needs of their children, with the main aim of ensuring that learning is ambitious for all.

We show success in science through:

**Lesson Planning & Delivery:**

* Science is taught for 1 and a half hours a week in KS1 and 2 hours a week in KS2. This consists of a **pre-assessment** and subsequent lessons linked to the three questions on the pre-assessment. A post-assessment will also be completed at the end of the unit to assess the pupil’s final outcome.
* All pre-assessments inform future planning and necessary amendments are made to meet the needs of children to ensure learning is personalised e.g. where a child shows they are secure in an area of the pre-assessment, they will access more challenging work. This will be reflected within their learning journey found in their science books.
* Working walls should be used in every lesson to record the lesson’s enquiry question, area focused on (e.g. the prediction or conclusion) and to have ensured the findings are on the wall by the end of the lesson.

**Books:**

* Presentation is to a high standard and displays children’s pride in their learning.
* Each lesson will have a ‘Learning Target’ and ‘Working Scientifically’ objective in books with a scientific enquiry symbol.
* Learning journeys reflect the outcome of the pre-assessment, e.g. children who have shown a vast subject knowledge should have a different learning journey to the children who have little knowledge about the unit of work.
* Worksheets are only be stuck in when needed to enhance and/or support the learning taking place e.g. providing an additional scaffold, scientific diagrams and tables of findings (Y1 only).
* Where possible, children are encouraged to record work in their books.

*Ideas for evidencing work in books (****see appendix 1*** *for examples)*:

-Drawing scientific diagrams.

-Writing written investigation (with a lesson focus on an element of this, rather than the entire investigation).

-Recording of findings through diagrams, tables and printed photographs.

-Mind map about the scientist of the term (KS2 only).

-Pic collage evidence of practical enquiry when the pupils are not expected to record their findings in their science book.

**Effective Feedback:**

* Pre-assessments and subsequent lessons are marked in line with the Feedback Policy
* Live feedback and marking is used to move learning forward, to either address misconceptions or through scaffolded support or challenge.

**Scaffold & Challenge:**

*Ideas for scaffold:*

* Pre-teaching and/or Point of Need Intervention
* Modelling (silent/verbal/written in books)
* Working Walls
* Highly scaffolded/worked examples (generic layers of support) that can be reduced. This could be scaffolded on the working wall for pupils to access.
* Spelling banks (found at the bank of their book and on separate key vocabulary lists provided by teachers).
* Guided group work evidenced by a GW.

*Ideas for challenge:*

* Reasoning with real life concepts (e.g. if you know how a circuit works, can you explain how a set of traffic lights work?)
* Investigate further enquires (e.g if you know that light travels in a straight line, how can you manipulate light to be able to see around the corner?)
* Written/verbal questioning
* Telling the children an answer and asking them what the question might be (e.g. The answer is red blood cell. What is the question? The questions could be, what carries oxygen and carbon dioxide? Which cell carries haemoglobin and how do you know?

*Challenges do not always needed to be printed in the form of a sticker/additional task (at the end of a lesson).*

**Appendix 1:**









