MANOR PARK INFANT SCHOOL & NURSERY

Learning Together, Success Forever

Whole School Policy for

Science

Reviewed: September 2024

Next review: September 2025

Signed _____ (Chair of Governors)

Signed _____ (Head teacher)

Intent

1. Our rationale for teaching Science

Science is a body of knowledge built up through the experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills. Science is also a collaborative activity where ideas and suggestions are shared and investigated together. Through practical activities and team work, children experience and learn how to work together have mutual respect for one another and value social cohesion.

We believe that a broad and balanced science education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability. Our aims in teaching science include:

- Preparing our children for life in an increasingly scientific and technological world.
- Fostering concern about, and active care for, our environment.
- Helping our children acquire a growing understanding of scientific ideas.
- Helping develop and extend our children's scientific concept of their world.
- Developing our children's understanding of the international and collaborative nature of science.

Attitudes

- Encouraging the development of positive attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work cooperatively with others.
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills.
- Developing the skills of investigation - including observing, identifying, classifying, measuring, experimenting, communicating, recording data, presenting data, asking questions, interpreting, explaining.
- Developing the use of scientific language, recording and techniques.
- Developing the use of ICT in investigating and recording.
- Enabling our children to become effective communicators of scientific ideas, facts and data.

2. Our teaching aims

- Teach science in ways that are imaginative, purposeful, well managed and enjoyable.
- Encourage and support children to ask questions about the world and use scientific processes to try and answer them.
- Support children to make links between science and other subjects such as ICT, DT, literacy and numeracy.

Science is a core subject in the National Curriculum.

Implementation

3. How Science is structured through the school

Planning for science is a process in which all teaching staff are involved. Delivering a broad and balanced science education to our children is a core principle of our school. Science teaching in the school is about excellence and enjoyment. We adapt and extend the curriculum to match the unique circumstances of our school.

Science is taught throughout the school from Foundation 1 to Year 2 every Friday afternoon. Science is also taught where other opportunities arise and links can be made within the wider curriculum such as through following the children's interests, continuous provision in EYFS or topics and themes.

In KS1 and Foundation stage, a minimum of one third of lessons overall include practical scientific enquiry.

The school ensures that a broad and balanced science curriculum is followed in which enquiry is at the heart of our children's scientific learning.

Our science scheme of learning is available on the school website and was agreed after whole-staff discussion. It ensures progression between year groups and guarantees topics are revisited. Teachers adapt and modify the model plans to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available. As a maintained school we ensure that any modification does not omit any of the NC.

To better suit the needs of individual classes or mixed-age groups, units may have been moved between years or amalgamated, where appropriate. However, science is taught every half term throughout the school year. Some units may be taught in collaboration with outside agencies, including neighbouring secondary schools.

4. Our approach to Science

- We use the EYFS Development Matters in Foundation. In KS1 alongside skills ladders we use the *PLAN working scientifically skills*, *PLAN Knowledge Matrices* and *PLAN examples of work*.
- We use ICT widely in science. Children are given the opportunity to practice science skills and enhance presentations using carefully-chosen software.
- We use ICT for enquiry work, including microscopes with digital cameras, video capture, activities, and data logging.
- We use the school's intranet to share science resources e.g. videos and software.
- The school combines these secondary sources with first-hand scientific enquiries, building children's science skills.
- We actively teach science skills, and reinforce learning with selected enquiry simulations only when a hands-on practical activity cannot be done.
- We encourage children to ask and answer their own questions as far as practicable.
- Children complete at least two full enquiries each term, taking increasing responsibility for their planning, carrying them out and recording/interpreting the results.
- We use homework to support school and class activities. This relates to the school's overall homework policy.
- We sometimes use cross-curricula links to teach science with, for example, technology units.
- We develop science informally through school visits, parent meetings and other out-of-school activities.

5. Equal opportunities in Science

Science is taught within the guidelines of the school's equal-opportunities policy.

- We ensure that all our children have the opportunity to gain science knowledge and understanding regardless of gender, race, class, physical or intellectual ability.
- Our expectations do not limit pupil achievement and assessment does not involve cultural, social, linguistic or gender bias.
- We aim to teach science in a broad global and historical context, using the widest possible perspective and including the contributions of people of many different backgrounds.
- We draw examples from other cultures, recognising that simple technology may be superior to complex solutions.
- We value science as a vehicle for the development of language skills, and we encourage our children to talk constructively about their science experiences.
- In our teaching, science is closely linked with literacy and mathematics.
- We recognise the particular importance of first-hand experience for motivating children with learning difficulties.
- We exploit science's special contribution to children's developing creativity; we develop this by asking and encouraging challenging questions and encouraging original thinking.

Impact

The impact of the science curriculum at Manor Park and its contribution to the education of all our children is evaluated against our intent.

We also measure the impact of the science curriculum through formative and summative assessment.

6. Assessment and recording in Science

We use assessment to inform and develop our teaching.

Children's work is assessed against the Foundation Stage and National Curriculum expectations of progress and levels. Teachers should refer to the school's policy for Assessment, Recording and Reporting. The assessment of children's achievement is planned into Science teaching and used to guide subsequent lessons. Records of children's achievement should provide information for target setting. Teachers should evaluate their teaching on a weekly basis.

- Topics begin with an assessment of what children already know.
- We assess for learning (AfL). Children are involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve. Activities during, and at the end of, each topic record achievement and celebrate success.
- We mark work, according to the schools marking policy We mark work positively, making it clear verbally, or on paper, where the work is good, and how it could be further improved. Children's work is compared with age appropriate exemplification. We moderate children's work termly to ensure consistency. Assessment records are reviewed regularly.
- By the end of a unit of work, teachers have a clear insight into how children work and their level of development. They will use notes, discussion, photos, and work in the children's individual topic books and class floor books as evidence. At Foundation Stage this information about individual children is recorded in their learning journeys on Tapestry. Children are assessed according to the criteria in the *PLAN primary science assessment resources* which support the planning and assessment of the science National Curriculum. These documents have been produced by a National Curriculum Expert Group for science and provides an age-related interpretation of the requirements as set out in the statutory programme of study. These are used to support teacher assessment.
- We have a tracking system to follow children's progress. The school science coordinator monitors progress through the school by sampling children's work at regular intervals. Children who are not succeeding, or children who demonstrate high ability in science, are identified and supported.
- Assessment data is used to highlight areas where intervention or catch-up work is needed. Equally important is the continuous assessment of children's work, much of which is informal. This assessment is used to inform teaching throughout the school.
- At the end of the Foundation Stage a child's work in science will contribute to their EYFS profile and UW ELG's. This is then reported as meeting expected levels of development, exceeding expected levels, or not yet reaching expected levels ('emerging') in line with statutory requirements.
- At the end of Year 2 the teacher decides which level descriptor from the National Curriculum best fits an individual child's achievement in each of the attainment targets. This is then recorded and reported as part of the statutory End of Key Stage One Assessment Arrangements. At Key Stage 1 the only statutory requirement is teacher assessment. AT1 (Scientific Enquiry) is given a 50% weighting in determining the overall level.
- Reports to parents are made verbally each term, and written once a year, describing each child's attitude to science, his/her progress in scientific enquiry and understanding of the content of science.

This Science policy was compiled by Manor Park staff and written by the Science Coordinator.
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