

Meadow Lane Infant School



Science Policy

Last reviewed	September 2014
Review Cycle	2 Years

SCIENCE POLICY

September 2014

This policy outlines the purpose, nature and management of the science taught in our school. The teaching of science is based on the New National Curriculum in England at Key Stage 1 framework document and the School's Creative Curriculum planner which has been developed by staff and which details schemes of work which are followed in our delivery of the curriculum. In the foundation stage science activities area planned in line with curriculum guidance for the EYFS. The implementation of this policy is the responsibility of the Head Teacher, the Science Co-ordinator and all teaching staff.

1. Introduction

Science can no longer be looked upon as a body of knowledge to be transmitted. In a rapidly changing world where new developments in Science and Technology are occurring constantly, it is inappropriate to teach children only scientific 'truths' many of which become disproved. Instead at Meadow Lane we aim to train them to think and act as young scientists; carrying out their own experiments, inferring their own conclusions and understanding the relevance of their discoveries to the world in which they live.

2. Aims

- To foster children's wonder and natural curiosity about the world they in through active engagement in learning experiences.
- To provide opportunities for children to develop knowledge and understanding of key scientific ideas.
- To develop children's scientific enquiry skills in questioning, predicting, planning, observing, measuring, fair testing, recording, interpreting and working systematically through direct experience.
- To provide children with the ability to make informed decisions based on evidence and their own experiences and be able to apply scientific knowledge to new situations.
- To teach children how to communicate their ideas effectively.
- To demonstrate interest and enthusiasm for science and to be confident to participate in explorative and investigative work.
- To develop skills in discussing and recording work, maths skills to communicate scientific ideas through diagrams and charts and ICT to extract scientific information.

- To develop values and attitudes, communicating with others, listening to ideas and treating these with respect.
- To develop an awareness and sensitivity to the living and non-living environment through access to the natural environment.
- To develop a responsibility for their own health and safety and that of others when undertaking scientific activities.

3. Management and Organisation

i. For Key Stage 1, the New Primary Curriculum is organised into the following programmes of study:

- Working Scientifically
- Plants
- Animals inc Humans
- Everyday Materials (Year 1 only)
- Uses of Everyday Materials (Year 2 only)
- Seasonal Changes (Year 1 only)
- Living Things and their Habitats (Year 2 only)

Since 2011/12 teachers at Meadow Lane have also been using 'Planning a Skills Based Creative Curriculum': Chris Quigley, in order to develop a new and more challenging lesson base.

ii. *In the Early Years, children work to the Statutory framework for the early years foundation stage (EYFS) The section 'Understanding the World' involves guiding children to make sense of their physical world and their community through opportunities to explore, observe and find out about people, places, technology and the environment.*

iii. Throughout Key Stage 1 children carry out scientific investigations to develop their skills. Children's skills in 'Working Scientifically' are assessed via 'Active Assessment' techniques built into the planning. Then at Year 1, children are more formally assessed once a year when an assessment is made of a mixed ability group of 3/4 children per class using APP Science grids, which will then inform the levels for the rest of the class. Except at the end of Year 2, when all children are assessed using SATs.

iv. *As investigations follow the needs of the children's knowledge base, teachers operate an 'open-ended' approach to timing of lesson coverage. For example some scientific investigations may engage the class in discovery for a day some for a week or more.*

- v. In Early Years and Key Stage 1, Understanding of the World and Science is taught using the teacher as a fellow investigator not the fount of knowledge, imparting his or her learning to the children.
- vi. *Library access skills are taught early at Meadow Lane School. Teachers encourage children to see books as a valuable source of information collected and organised for them to discover new ideas.*
- vii. Meadow Lane's science equipment is stored in a central area organised by subject areas. It is readily available to take into classrooms and used as needed. However teachers are careful not to pre-empt following a certain path in an investigation by introducing children to resources too early on. Instead they encourage the children's opinions and ideas first regarding resource needs or application.
- viii. *Our ICT equipment and the Internet are crucial tools in the children's investigative journey. The children are encouraged to see these tools as ways of discovering the possible answers to questions they are looking for. Therefore we place a high priority on developing the children's skills in accessing this equipment.*
- ix. All children are made aware of the relevance of health and safety when understanding work in science.
- x. *Science contributes to many subjects within the primary curriculum and opportunities are sought at the planning stage to link curriculum areas. This will allow children to begin to use and apply scientific skills and knowledge in real and relevant contexts.*

4. Planning, Assessment and Recording

- *Curriculum planning is undertaken by the year group planning team in line with the New Primary Curriculum and 'Planning a Skills Based Curriculum' document. Detailed schemes of work have been compiled and will continue to evolve, to ensure progression and breadth across the year groups.*
- All teachers at Meadow Lane School have access to 'Active Assessment in Science' books and 'Concept Cartoons in Science' CD Rom resources as a base for designing their approach to each investigative topic with their class. This approach ensures that each science theme begins with class discussions and generates problems or questions for the pupils to investigate.
- Children's skills in 'Working Scientifically' are assessed via 'Active Assessment' techniques built into the planning. Then they are more formally assessed once a year when a mixed ability group of 3/4 children are moderated against APP Science grids, which will then inform the levels for

the rest of the class. Except at the end of Year 2, when all children are assessed using SATs.

- In the Early Years attainment in Understanding of World is assessed and passed on to the Year 1 teacher and commented on in the end of year report.
- *Informal assessment is undertaken continuously by class teachers and T.A.'s whilst pupils are engaged in tasks. Immediate feedback can be given to pupils about their work and teaching points can be emphasized. This also gives pupils the opportunity to assess and review their own work.*
- Work is marked in accordance with Meadow Lane's marking policy, which emphasises a positive approach.
- *An end of year report is written to parents to outline progress. Class teachers may keep personal notes related to pupil work.*

5. SEN

Staff will ensure that the delivery of the Science curriculum meets the needs of all pupils whatever the ability. Gifted or talented pupils will be discussed at the termly special needs meeting and provision is made if appropriate. (Refer to G&T and SEN policies)

6. Differentiation:

Consideration is always given by teachers to the diversity of ages and abilities within each class. Providing a range of experiences via the planning, ensures the fullest involvement of the whole class, encouraging the less able and extending the more able.

7. Teaching and Learning

Science will be planned and delivered with specific reference to the School's Teaching and Learning Policy to ensure appropriate teaching and learning strategies are in place.

8. Children's Recording:

Although science teaching at Meadow Lane is chiefly activity-based, there are occasions when it is necessary and desirable to make a record of what has been seen, done or discovered.

Recording in this instance may take the form of:
data handling,
helping to plan an activity,
comparing data and examining patterns,
assessing data, sorting it and drawing conclusions,
challenging pre-concepts,
making further predictions from outcomes,
observation skills,
helping to assess/ evaluate what has gone on.

We encourage children to record in as many varied ways as possible. Many of the ways are cross- curricula when English, Mathematical, I.C.T. and Artistic skills may be developed at the same time.
For example: pictorial, graphical, photographic, audio, video, collage or Frieze, model making, data base, word processing, dramatization or orally.

9. I.C.T.

Many elements of Science learning can be enhanced by the use of I.C.T. Planning incorporates the use of DVDs, classroom computers, C.D. ROMs, the internet, data logging and portable laptops. These will be incorporated into the planning when they are an effective way to meet the Science learning objective but will always be available to the children if they deem them a necessary resource to aid their investigation.

10. Monitoring/Evaluation

Class Teachers continually monitor and evaluate the work of their pupils on a day to day basis. Each teacher keeps an Assessment file which is added to by the teacher and TA support staff. This informs planning, target setting and teaching.

The Science Co-coordinator undertakes a yearly questionnaire with a cross section of pupils from each class in order:

- To ensure consistency of approach across the school
- To ascertain pupils understanding of science and the science lessons they have taken part in.
- To gain an insight into all pupils' thoughts about the nature of science.

11. Review Statement

The review of this policy will be identified in the School Development Plan.

Science: Discrete and Cross Curricular lessons
within the Thematic Topics

Cycle 1 and 2	
Autumn Term	<p><u>1st Half</u> Seasonal Changes (Year 1)</p> <p><u>2nd Half</u> Everyday Materials (Year 1) Uses of Everyday Materials (Year 2)</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><u>PSHE</u> <u>Link: Science- Seasons (Yr1) Materials (Yr1&2)</u> Keeping Safe (inc: dark evenings) (W) . Safeguarding . Medicines . Road Safety (inc: visibility in Winter) . Online Safety . Germs & Diseases (inc: seasonal colds etc)</p> </div>
Spring Term	<p><u>1st or 2nd Half</u> Plants (Year 1 & 2)</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><u>PSHE</u> <u>Link: Science – Plants (Yr1&2)</u> Respecting and protecting the natural environment (C)</p> </div>
Summer Term	<p><u>1st Half</u> Animals inc. Humans (Year 1 & 2)</p> <p><u>2nd Half</u> Living Things and their Habitats (Year 2)</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><u>PSHE</u> <u>Link: Science – Animals inc Humans (Yr1&2)</u> Healthy Lifestyles: (W) . Personal Hygiene . Oral Health . Healthy Eating . Safeguarding Sex Education: (W) .Safeguarding .Secrets & Surprises</p> </div>

Science Strands KS1

Year 1	Year 2
Seasonal Changes <i>Physics</i>	
Everyday Materials <i>Chemistry</i>	Uses of everyday materials <i>Chemistry</i>
Plants <i>Biology</i>	Plants <i>Biology</i>
Animals including humans <i>Biology</i>	Animals including humans <i>Biology</i>
	Living things & their Habitats <i>Biology</i>