



Science Policy

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Rationale

At Newbridge Primary School, we base our science learning on the National Curriculum Programmes of Study. This document sets out a clear, full and statutory requirement for all children. It determines the content of what is taught, and sets attainment targets for learning. Science lessons develop the children's scientific knowledge, their ability to work scientifically and ensure that children are equipped with the scientific knowledge to understand the use and implications of science in the world in which they live.

Through the learning of science, children have opportunities to develop the school's values of Learning and Communication, Creativity and Imagination, Personal Development, Collaboration and Citizenship.

Aims

Our aims in teaching science are:

- to develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life, now and in the future.
- to build on pupils' curiosity and sense of awe of the world around them.
- to develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- to develop pupils' basic practical skills and their ability to work scientifically.
- to use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science.
- to provide opportunities for pupils to work in an investigative way and to communicate their findings in a variety of ways.
- to develop an understanding of using equipment safely and sensibly.
- to develop scientific links with other areas of the curriculum.
- to introduce pupils to the language and vocabulary of science.
- to develop pupils' use of technology and equipment.
- to promote a 'healthy lifestyle' in our pupils.

1. Organisation

Science lessons help develop the children's scientific knowledge and their ability to work scientifically.

Scientific knowledge

Units covered in each year:

Foundation stage	Understanding the world – ongoing opportunities to explore, observe and find out about the world around them.				
Year 1	Animals including humans	Everyday Materials	Plants	Seasonal changes	
Year 2	Animals including humans	Use of everyday materials	Plants	Living things and their habitats.	
Year 3	Animals including humans	Forces and magnets	Plants	Light	Rocks
Year 4	Animals including humans	States of matter	Sound	Electricity	Living things and their habitats
Year 5	Animals including humans	Properties and changes of materials	Earth and space	Forces	Living things and their habitats
Year 6	Animals including humans	Electricity	Light	Evolution and inheritance	Living things and their habitats

Further information about each unit can be found on the curriculum overviews for each year group and the yearly curriculum overviews, published on the website.

2. Working scientifically

Class teachers ensure that there are frequent opportunities for pupils to 'work scientifically' within the curriculum. 'Working scientifically' is not taught as a separate strand, but is instead embedded within each unit taught. Pupils are required to work scientifically within all areas of the science curriculum. The following skills are statutory:

- Ask questions and plan an enquiry
- Set up a scientific enquiry
- Observe and measure
- Record data
- Interpret and report findings
- Evaluate scientific evidence

The skills required for each area of working scientifically, show progression as the pupils move through the school. The TAPS assessment plan shows this progression.

	Plan		Do		Review	
	Ask questions and plan an enquiry	Set up an enquiry	Observe and measure	Record	Interpret and report	Evaluate
KS1 (age 5-7) <i>Develop 'close obs'</i>	Ask simple Qs and recognise that they can be answered in different ways*.	Perform simple tests	Observe closely, using simple equipment.	Gather and record data to help in answering questions	Identify and classify. <i>Use appropriate scientific language to communicate ideas.</i>	Use their observations and ideas to suggest answers to questions.
Lower KS2 (age 7-9) <i>Develop systematic approach</i>	Ask relevant questions and use different types* of scientific enquiries to answer them.	Set up simple practical enquiries, comparative and fair tests.	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	Gather, record, classify and present data in a variety of ways to help in answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Identify differences, similarities or changes related to simple scientific ideas and processes.	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Use straightforward scientific evidence to answer questions or to support their findings.
Upper KS2 (age 9-11) <i>Develop independence</i>	Plan different types* of scientific enquiries to answer <i>their own questions</i> , including recognising and controlling variables where necessary.	Use test results to make predictions to set up further comparative and fair tests.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	Report and present findings from enquiries, including conclusions and causal relationships, in oral and written forms such as displays and other presentations, <i>using appropriate scientific language.</i>	Explain degree of trust in results. Identify <i>and evaluate</i> scientific evidence (<i>their own and others'</i>) that has been used to support or refute ideas or arguments.

3. Assessment

EYFS

In the foundation stage children's knowledge and understanding are assessed according to the EYFS statutory framework.

KS1 and KS2

Teachers use a range of assessment methods to assess children's scientific knowledge and the progress they have made. These include: talking to the pupils, questioning, discussion, monitoring and marking of books and observation of pupils carrying out practical tasks.

In order to assess the children's ability to work scientifically, the teachers use TAPS focused assessment tasks for each unit taught. These are identified in the children's science books with an assessment symbol (A in a circle).

Teachers use the assessment information gained throughout the year in order to make a judgement as to whether the child has met or has yet to meet the end of year expectations.

4. Reporting to parents

This is carried out at Parents' Evenings in the Autumn and Spring terms. Science feedback is reported specifically on the annual end of year academic report for each pupil.

5. Equal opportunities

All children are entitled to access the science curriculum in line with the school's policy for equal opportunities.

All children are encouraged and supported to develop their full potential in science. Children who require extra support are given opportunities for consolidation and reinforcement. Activities are differentiated to meet the needs of all children.

6. Health and Safety

Pupils are taught to use scientific equipment safely when using it during practical activities. Class Teachers and Teaching Assistants check equipment regularly and report any damage, taking defective equipment out of action.