Science policy
MELBOURNE JUNIOR SCHOOL
March 2025

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Policy Statement

This document is a statement of the aims, principles and strategies for the teaching and learning of Science at Melbourne Junior School.

Science is one of three core subjects in the National Curriculum and plays equal importance alongside English and Maths. A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes.

National Curriculum Aims

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Programmes of study

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. The MJS Science Progression Map demonstrates how we ensure progression in knowledge and working scientifically skills for each year group.

Teaching and Learning

At Melbourne Junior School we use a variety of teaching and learning styles in Science lessons, with the emphasis on developing the whole child through a practical approach to the subject. We make cross-curricular links with other subjects wherever possible, in order to make learning real for the children and seek contributions from local and parental STEM links wherever possible. We encourage the children to ask and answer scientific questions in order to develop their understanding and provide rich vocabulary and retrieval opportunities

to help with the retention of key learning. We aim to smash all stereotypes and show the children that anyone can be an incredible scientist. They can:

- use a variety of data, such a statistics, graphs, pictures and photographs
- use ICT in Science lessons where it enhances their learning
- take part in group discussions
- present reports to others
- engage in a wide variety of problem-solving investigative activities
- take part in activities both inside and outside the classroom environment

We recognise that there are children of different scientific abilities in all classes and that SEND and disadvantaged children may need adjustments to reach their full potential. We ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this by:

- providing resources of differentiated complexity
- encouraging children to do choose their own level of challenge so as not to inhibit their learning
- setting open-ended tasks which can have a variety of responses
- using adults in the classroom to support individuals or groups of children

Science Week is an important time in the MJS calendar. Each year, we plan exciting activities which include visits from external science experts; whole school assemblies introducing the theme of Science Week and then celebrating the work completed; fun experiments in class and participating in a whole-school poster competition.

Science Planning

Curriculum planning is in accordance with the National Curriculum with an emphasis on working scientifically.
Long term planning maps the topics studied in each year group and medium term planning is based on the objectives outlined in the National Curriculum. Class teachers are responsible for updating short term plans, which list learning objectives, expected outcomes and areas of working scientifically covered. The Science Coordinator will monitor these plans and review them with class teachers. Science should be taught once a week; however, some units may be blocked to allow for a more flexible teaching sequence.

Working Scientifically

Class teachers must ensure that there are frequent opportunities for pupils to 'work scientifically' within the curriculum. 'Working scientifically' specifies the understanding of the nature, processes and methods of science. Pupils are required to work scientifically within all areas of the science curriculum. The statutory skills for working scientifically, for each year group, can be found in the National Curriculum.

In every year group, each academic year will begin with a working scientifically lesson involving a carousel of activities linked to Science. The activities may be linked to the first Science topic or may be on a one-off theme of interest to the children. The aim is for all children to understand the different types of working scientifically and the progression of these skills from their previous year group into their current one.

Links With Other Curriculum Areas

English

Many strong links are made between Science and English, as Science actively promotes the skills of reading, speaking, listening and writing. Some texts studied in Literacy are of a scientific nature and opportunities for cross-curricular writing in both subjects are regularly explored. Recounts of observations, written reports of investigations and explanations of conclusions are some of the writing skills developed through Science lessons.

Maths

Science contributes to the teaching of Maths in many ways. Children learn to use and apply number using weights and measures. They learn to estimate and predict in the context of investigation, and they develop accuracy and ways of recording events. Cross-curricular links are made whenever possible, particularly in the teaching of data handling strategies.

ICT/Computing

Children use ICT in Science when appropriate. They learn to choose appropriate programs and equipment (e.g. data loggers) to record, present and interpret data, and then to review, modify and evaluate their work and improve on its presentation.

Spiritual, Moral, Social and Cultural Development

Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science also raises many social and moral questions, for example, children have the opportunity to discuss the effects of smoking. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

Health and Safety

All staff will follow COSHH guidance. Teachers must plan safe activities for science and complete a risk assessment if necessary. Teachers and teaching assistants need to be aware of health and safety procedures when using equipment/food in science lessons.

When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils will be taught:

- to recognise hazards, assess consequent risks and take steps to control the risks to themselves and others
- to use information to assess the immediate and cumulative risks
- to manage their environment to ensure the health and safety of themselves and others
- to explain the steps they take to control risks

Recording in Science

Science outcomes, including from investigative work, may take many forms, including oral work, notes, group presentations, posters, annotated photographs, mind maps and written work.

Whenever possible, written work is recorded in Science books, which are then passed up to the next teacher with the children. Any worksheets are stuck into these books to show the progress that children make.

Assessment

Assessment in Science includes:

Talking to the pupils and asking questions.

- Discussing the work with the pupil.
- Marking work against the learning objective (see school's marking guidelines and policy).
- Observing the pupils carrying out practical tasks.
- Pupils self evaluation of their work.

These judgments inform future planning and enable teachers to differentiate accordingly.

At the end of a unit teachers will assess against objectives on the Insight Tracking tool.

Teacher will assess each child at the end of each academic year, using the following descriptors:

Working towards age-related expectations

Working at age-related expectations

Working above age-related expectations

Monitoring

It is the responsibility of the Science co-ordinator to monitor the standards of children's work and the quality of teaching in Science. The co-ordinator is also responsible for supporting colleagues in the teaching of Science, being informed about current developments in the subject and providing a strategic lead and direction for Science in school.

Resources

Most Science resources are stored centrally in the resources room, in labelled boxes for each topic. General apparatus is also in labelled boxes/baskets. Each teacher is responsible for borrowing and returning the resources they require. Some resources specific to particular year groups are stored in bay cupboards.

Equal Opportunities

We believe the Science curriculum should provide access for all children to learn regardless of ability, gender, race and religion. We aim to deliver the curriculum in a broad, balanced and differentiated manner as each child should be given the same opportunity to learn.

Evaluation and Review

This policy will be observed in practice by the Head Teacher and the Science co-ordinator as part of the monitoring process.