



PATTERSON LAKES PRIMARY SCHOOL

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SCIENCE POLICY

RATIONALE

Science education contributes to developing scientifically and technologically literate citizens who will be able to make informed decisions about their lifestyle, their environment and the kind of society in which they wish to live. They will be able to see the connections between science and people, note the relevance of science and technology to past achievements and current and future development and be aware of the impact of science and technology on society, the individual and the environment.

Patterson Lakes Primary School is committed to providing a Science program that is relevant to students today and builds upon their observational techniques over time. Effective science teaching relies on understanding students' pre-existing ideas about science concepts and supporting students to develop more scientific understandings.

AIMS

Patterson Lakes Primary has identified a point of need in **scientific literacy**. The 2009 report from the National Assessment Program states that only 52% of Year 6 students attained the proficient level or better in this area. This result is a decrease of 7% in seven years. The report also mentions **poor engagement and perceptions of science** from students. Our aim is to improve in these areas by building teacher capacity and improving student learning outcomes.

The Australian Curriculum: Science aims to ensure that students develop:

- an interest in science as a means of expanding their curiosity and willingness to explore, ask questions about and speculate on the changing world in which they live
- an understanding of the vision that science provides of the nature of living things, of the Earth and its place in the cosmos, and of the physical and chemical processes that explain the behaviour of all material things
- an understanding of the nature of scientific inquiry and the ability to use a range of scientific inquiry methods, including questioning; planning and conducting experiments and investigations based on ethical principles; collecting and analysing data; evaluating results; and drawing critical, evidence-based conclusions
- an ability to communicate scientific understanding and findings to a range of audiences, to justify ideas on the basis of evidence, and to evaluate and debate scientific arguments and claims
- an ability to solve problems and make informed, evidence-based decisions about current and future applications of science while taking into account ethical and social implications of decisions
- an understanding of historical and cultural contributions to science as well as contemporary science issues and activities and an understanding of the diversity of careers related to science
- a solid foundation of knowledge of the biological, chemical, physical, Earth and space sciences, including being able to select and integrate the scientific knowledge and methods needed to explain and predict phenomena, to apply that understanding to new situations and events, and to appreciate the dynamic nature of science knowledge.

IMPLEMENTATION

- All students at our school will study three Primary Connections units a year.
- Student's individual abilities must be measured at the commencement of each unit of work, and learning opportunities must be provided that cater for the identified needs of each student.
- Student progress in both dimensions of Science will be reported in half and end of year academic reports, as well as reported in the school's annual report.
- Science study for each student will be not less than 2 hours per week.
- Science activities that reflect the topics being studied at school, and are appropriate to each child's ability, will form a component of each student's homework regime.
- A budget that provides for the needs of the Science program will be developed by staff and resourced by school council.
- A staff member will be allocated the responsibility of coordinating the school's Science program.

Primary Connections:

- Primary Connections is a sequential science course that can be used to address the achievement standards contained within the Australian Curriculum. The Primary Connections 5Es teaching and learning model is based

on the theory that students learn best when they are allowed to work out explanations for themselves over time through a variety of learning experiences structured by the teacher.

- Students use their prior knowledge to make sense of these experiences and then make connections between new information and their prior knowledge. To help students make the connections between what they already know and new information, each Primary Connections unit uses the five phases Engage, Explore, Explain, Elaborate and Evaluate.

Safety

- While the principal has overall responsibility for safety in a school, it is the responsibility of all teachers of science to ensure that science classrooms are safe areas for all students and staff.
- When selecting experiments, teachers should take into account the nature of the class, its size, its behavioural maturity, its level of skills and the facilities available. It is essential that all experiments be trialled by the teacher using the identical procedures that students are expected to follow.
- **Bacterial Cultures** - Teachers are encouraged to grow all cultures in sealed disposable containers. Teachers are reminded that students should not touch bacterial colonies. After use, care should be taken to ensure that all bacterial colonies are destroyed, and that glassware and instruments used are sterilised.
- **Animal Dissection** - Animal tissue, where it is contaminated or potentially contaminated with an infectious organism, or where it has been treated with chemicals that are known to be environmentally unsafe, must be disposed of at an Environment Protection Authority (EPA) approved biomedical waste incinerator. Other animal tissue, and animals such as those used for dissection purposes (unless they have been treated with drugs or chemicals), may be disposed of at an appropriate EPA licensed landfill if contained in leak-proof sealed bags. Uncontaminated animal material must be placed in a sealed plastic container (for example, a double-thickness tied plastic bag) with disinfectant solution before being placed in a dumpmaster that will be cleared within forty-eight hours.
- **Chemicals** - The use and storage of chemicals must be monitored effectively. In the primary school setting, the majority of chemicals will be those found in everyday use in households. The safety precautions available on the packaging of these chemicals should be carefully adhered to. Additionally, teachers should refer to the Guidelines for Storage of Science Chemicals found on Human Resources website at: www.eduweb.vic.gov.au/hrweb/ohs/worken/chem.htm

EVALUATION

This policy will be reviewed as part of the school's three-year review cycle.

CERTIFICATION

This policy was adopted at the School Council Meeting held at Patterson Lakes Primary School, on September 2013.

Signed.....
School Council President

Signed.....
Principal