St. Therese's School, Essendon

Mathematics Policy

Rationale

Mathematics has developed into a sophisticated, complex body of knowledge that pervades all aspects of our lives. It has applications in all human activities and everyday situations. Competence in Mathematics enhances our understanding of the world and the quality of our participation in society.

The Mathematics Curriculum at St. Therese's is an important and integral part of the total school program. It aims to enhance the mathematical experiences and guide students through the various developmental stages so they are equipped with competent and flexible numeracy skills.

Goals

Through learning Mathematics at St. Therese's the students will work towards the following goals:

- acquire mathematical skills and knowledge so they can deal confidently and competently with daily life
- develop knowledge and skills in using mathematics for employment, further study and interest
- be able to interpret and communicate quantitative and logical ideas accurately
- recognise the fundamental importance of mathematics to the functioning of society
- understand and appreciate the nature of mathematical thinking, the processes by which mathematics changes and its cultural role
- use technology appropriately and effectively to support the learning of mathematics, and in carrying out mathematical activities in context
- be confident in their knowledge and application of mathematics and ability to apply new knowledge and skills where needed
- be empowered through knowledge of mathematics as a numerate citizen

Teaching & Learning

Fulfillment of these goals requires that learning mathematics at school is a positive experience in which students develop confidence and a sense of achievement from what they learn.

Learning mathematics involves mastery of several components:

- knowing mathematical facts (such as the multiplication facts, doubles, tens facts, the distributive law or the meaning of polygon)
- being able to carry out mathematical procedures (such as adding numbers or drawing a graph)
- being able to use mathematics in solving problems and describing and understanding the world.

For this reason, students at every level of schooling will engage in activities that develop:

- knowledge of facts and technical skills
- depth of conceptual understanding

- ability to communicate using clear and precise mathematical language
- ability to tackle non-routine problems systematically
- ability to apply what has been learned to solve real problems
- ability to conduct investigations using mathematics
- logical reasoning and a conception of the nature of proof
- practical ability in estimating, measuring and making sensible use of calculators and computers.

All students benefit from exposure to the full range of these activities.

Content

The content of the Mathematics Program at St. Therese's follows the Victorian Curriculum.

This curriculum aims to ensure that students:

- develop useful mathematical and numeracy skills for everyday life, work and as active and critical citizens in a technological world
- see connections and apply mathematical concepts, skills and processes to pose and solve problems in mathematics and in other disciplines and contexts
- acquire specialist knowledge and skills in mathematics that provide for further study in the discipline
- appreciate mathematics as a discipline – its history, ideas, problems and applications, aesthetics and philosophy
- develop an increasingly sophisticated understanding of mathematical concepts and fluency with processes, and are able to pose and solve problems and reason in Number and Algebra, Measurement and Geometry, and Statistics and Probability.

The Victorian Curriculum Mathematics is being used loosely as a scope and sequence. Many resources are used to supplement the Mathematics Program, most of which are centrally located. Each class has a supply of basic number materials, e.g. MAB, die, etc.

Current Practice

The Mathematics program is implemented through the use of a variety of approaches, which share the following characteristics:

- teaching from a base of concrete experience
- using a variety of modes of classroom activity (such as partner work, small group work, whole class activities)
- emphasising applications
- recognising individual differences and different learning styles and needs
- emphasising the sensible use of mathematics, with attention to checking the reasonableness of results, choosing and using tools appropriately and effectively and being alert to finding reasons why ideas do, or do not work
- allowing time for growth
- investigations and problem solving, open-ended tasks, multiple representations
- a greater emphasis on articulating thinking, the importance of mental computation and building on the known

Implementation of the Mathematics Curriculum occurs during a numeracy block across all levels. The numeracy block is divided into three main sections, a tools / introductory session, whole class focus which could include group work, and a feedback/ reflection session. Planning is recorded on numeracy planning sheets, which contain common elements across the school.

Digital Technologies

Within the Mathematics Program, technology is an important aspect. It enables the students to further enhance their experiences and understanding of mathematical concepts.

Learning technologies are used to prepare the students for the demands of a technological society. Each classroom has been fitted with an interactive whiteboard and teachers access various websites to enhance learning. Each class in Prep to Year 4 has access to classroom iPads, and each Year 5 and 6 student has a Chromebook.

Assessment

A variety of ways are used to assess the students in Mathematics. These are some of the strategies employed:

- maths interviews
- pre and post tests
- observation
- questioning, asking students to explain processes
- discussion with the individual student
- problem solving activities
- anecdotal records
- progress checks
- development of self-evaluation
- speed and accuracy
- formal / informal testing
- student self assessment and work samples

Professional Learning Teams

Professional Learning Teams have been established and meet on a fortnightly basis. These meetings are used for professional reading, to promote strategies, to discuss issues regarding the teaching of numeracy, to analyse data and determine directions.

Evaluation

The program will be evaluated through:

- monitoring of student progress and response and adjusting the curriculum as necessary
- development of appropriate attitudes such as interest and participation in the program
- reviewing topics and appropriate resources available
- monitoring staff needs in professional development and ensuring a common understanding of current teaching practices of mathematics in the classroom.

This Policy will be reviewed as part of a cyclical process in accordance with the School Improvement Plan (SIP).

Document Control

Version	Author	Purpose/Change	Date
0.1	Various STS L'ship Members	Initial policy drafting	Pre 2018
1.0	S. Graham	Various updates throughout policy	Mid 2019