

## POLICY: MATHEMATICS

### PURPOSE:

The Victorian mathematics curriculum provides students with essential mathematical skills and knowledge in **Number and Algebra, Measurement and Geometry, and Statistics and Probability**. It develops the numeracy capabilities that all students need in their personal, work and civic life, and provides the fundamentals on which mathematical specialties and professional applications of mathematics are built.

### AIMS:

- To provide a supportive and stimulating learning environment that encourages students as risk takers and fosters a real enjoyment and fascination with mathematics
- To ensure that students are confident, creative users and communicators of mathematics, able to investigate, represent and interpret situations in their personal lives and real life situations
- To 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
- To recognise connections between the areas of mathematics and other disciplines.
- To provide learning activities that are developmental, that build on what the child already knows and caters for individual needs and styles of learning
- To encourage students to write and talk about mathematics as a means of expressing and clarifying ideas and to monitor their own learning
- E-Learning will be included as a tool to support the development of mathematical understanding.
- To ensure students are exposed to a diverse range of mathematical experiences demonstrating transference of knowledge and skills

### IMPLEMENTATION:

- Mathematics is organised around the interaction of three content strands and four proficiency strands. The content strands are Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiency strands are Understanding, Fluency, Problem Solving, and Reasoning
- Specific mathematical skills to be explicitly taught for 5 hours each week in Foundation through to 6. The structure of whole-part-whole is to be adopted for mathematical learning. Three of the weekly sessions are to have a Number and Algebra focus. Each mathematics session has to demonstrate differentiated activities for ability levels in the classroom, with at least one session involving problem solving
- The mathematics program will actively involve students in their learning, using concrete materials, "hands on" approach, as well as, mental maths strategies, implementing the Big Ideas in Number, open ended and rich tasks including mathematical projects
- Learning technologies to be incorporated into the mathematics program to enhance the students' mathematical skills. The following programs will be used: Mathletics, Targeting Maths, iTune U, Mathantics, Prodigy and appropriate apps
- Assessment and evaluation will be an ongoing collection of information to identify how students are progressing and determine their learning goals. The information will be gathered via benchmarking data, NAPLAN data, work samples, checklists, anecdotal records and on-going assessment tools.
- A whole School Benchmarking Schedule is to be planned and implemented
- Staff will be encouraged to develop skills and knowledge in line with their School Professional Development Plan
- Parental involvement will be encouraged through the provision of workshops, whole school activities, classroom participation and student Individualised Learning Improvement Plans (ILIPs)
- Students will celebrate their successes through classroom and school newsletters, school displays and whole school activities

- A balanced mathematics program will cover the three strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability

### **NUMBER AND ALGEBRA:**

- Students will apply number sense and strategies for counting and representing numbers. They will explore the magnitude and properties of numbers. Mental strategies, subitising cards, 10 frames will be employed to promote the learning of number facts
- Students will apply a range of strategies for computation and understand the connections between operations. The learning of number facts and times tables will be reinforced at home through homework tasks
- Students will recognise patterns and understand the concepts of variable and function
- Students will build on their understanding of the number system to describe relationships and formulate generalisations
- Students will recognise equivalence and solve equations and inequalities
- Students will apply their number and algebra skills to conduct investigations, solve problems and communicate their reasoning through open-ended rich learning tasks

### **MEASUREMENT AND GEOMETRY:**

- Students will develop a deeper understanding of size, shape, relative position and movement of two-dimensional figures in the plane and three-dimensional objects in space
- Students will investigate properties and apply their understanding of them to define, compare and construct figures, objects and geometric conceptualisations
- Students will make meaningful measurements of quantities, choosing appropriate metric units of measurement. They build an understanding of the connections between units and calculate derived measures such as area, volume and capacity

### **STATISTICS AND PROBABILITY:**

- Students will recognise and analyse data and draw inferences. They will represent, summarise and interpret data and undertake purposeful investigations involving the collection and interpretation of data
- Students will assess likelihood and assign probabilities using experimental and theoretical approaches. They will develop an increasingly sophisticated ability to critically evaluate chance and data concepts and make reasoned judgments and decisions, as well as building skills to critically evaluate statistical information and develop intuitions about data
- Strategies to approach mathematical problems include:
  - Working backwards
  - Acting out the problem
  - Making a table or list
  - Looking for a pattern
  - Drawing a diagram or graph
  - Using smaller numbers
  - Guessing and checking
  - Using materials
  - Thinking of a similar problem
  - Using consistent mathematical language F-6

### **REVIEW:**

This policy will be reviewed in 2025.

**APPROVED BY SCHOOL COUNCIL: 24/5/2022**