Mathematics Policy

(Ratified by School Council: October 2022)

1. PURPOSE:

This policy is written to guide the teaching and learning of Mathematics at Glen Waverley Primary School. Mathematics teaches us how to make sense of the world around us through developing a child's ability to reason, problem solve, understand and build fluency. It enables children to understand and appreciate relationships and patterns in both the world around them and their everyday lives. Through their growing knowledge and understanding, children learn to appreciate that Mathematics influences in all aspects of our world.

The aims of teaching Mathematics at Glen Waverley Primary School are:

- To build numerate children that are able to see the purpose behind mathematical strategies and patterns
- To understand that Mathematics can be learned through diligent effort as we are capable of figuring out and solving current and future problems
- To promote enjoyment and enthusiasm for learning through practical experiences, exploration and discussion.
- To develop logical thinking and reasoning skills through a natural curiosity and investigative approach.
- To promote confidence and competence so that children are 'proud to shine' about their achievements.
- To develop a practical understanding of how to effectively gather and present information.
- To develop a thorough knowledge and understanding of the Victorian Curriculum learning areas of Number and Algebra, Measurement and Geometry and Statistics and Probability.
- To develop an ability to solve problems through decision-making and reasoning in a range of contexts.
- To extend problem solving skills to deepen critical and creative thinking.
- To understand the importance of mathematical skills in everyday life.

2. GUIDELINES:

General

- A Mathematics Vertical Team (MVT) will be formed each year, consisting of a teaching representative from each Year Level and led by the Learning Specialist for Mathematics.
- Budget expenditure is to be coordinated by the Learning Specialist Mathematics. They are responsible for allocation of funds and the purchase of resources to support whole school priorities.
- Planning will reflect the Gradual Release of Responsibility Model and highlight differentiation to support personalised student learning needs. Programs will inclusively cater for students where English is an Addition Language (EAL) as well as students that are part of the Program for Students with Disabilities (PSD).
- The four proficiencies (Problem Solving, Understanding, Reasoning and Fluency) will underpin the planning and teaching of Mathematics, encouraging students to think critically and apply knowledge to a wider range of real-world contexts.

- Student learning goals will be created using the four proficiencies, with alignment to their most current unit of learning.
- Assessment will be guided by the requirements set by the Whole School Approach to Data Literacy and based on the Victorian Curriculum achievement standards.
- Pupil data will be collected from a range of assessments to ensure data is consistent, accurate and utilised for future goal setting and curriculum planning. These assessments include (but not limited to) NAPLAN, Essential Assessment, summative and formative assessments.
- Whole school moderation will be conducted by teachers to ensure consistent assessment and reporting within the Mathematics strands, as well as to effectively inform teaching and learning pathways for each term.
- Digital technology will be used as a complementary tool for the development of Mathematics.
- As outlined in the Curriculum Policy, a minimum of one hour of classroom instruction per day is devoted to the development of student numeracy.

2.1- Mathematics and the Victorian Curriculum

Within the Victorian Curriculum, Mathematics is a learning area that is broken into thirteen Sub-Strands which are organised into three interlinked Strands;

- Number and Algebra
- Measurement and Geometry
- Statistics and Probability

Strands	Number and Algebra	Measurement and Geometry	Statistics and Probability
Sub-strands	Number and place value	Using units of measurement	Chance
	Fractions and decimals	Shape	Data representation and interpretation
	Real numbers	Geometric reasoning	
	Money and financial mathematics	Location and transformation	
	Patterns and algebra	Pythagoras and trigonometry	
	Linear and non-linear relationships		

It is a Department of Department of Education and Training (DET) requirement that Mathematics be taught from Foundation to Year 10 as a minimum.

2.2- Planning, Assessment and Reporting

The planning of Mathematics at Glen Waverley Primary School is supported by a Pacing Calendar (scope and sequence) which is based upon the Victorian Curriculum - Mathematics.
ref: http://victoriancurriculum.vcaa.vic.edu.au/mathematics/introduction/rationale-and-aims

The proficiency strands *Understanding, Fluency, Problem Solving and Reasoning* are an integral part of the Mathematics content across the three content strands.

The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language with which to build developmental aspects of the learning of Mathematics. The Mathematics Proficiency Framework (SURF), developed in 2018 and revised in 2020 into a 5-Tiered framework encompassing Foundation, Level 1-2, 3-4. 5-6 and 7-8 is implemented within teaching and learning programs to reinforce the proficiencies. This framework provides students with focused goals that develop their reasoning and articulation of thinking strategies in increasingly complex mathematical problems.

Whole school planning at Glen Waverley Primary School is an integral part of the improvement process involving four key stages:

1. *Gathering and analysing data* – this includes students' achievements and learning needs, encompassing both formative and summative data.
2. *Planning for improvement* – this includes breadth and balance in Curriculum planning
3. *Teaching and learning* – this includes student agency, learning outcomes and content
4. *Assessment and reporting* – as outlined in the GWPS Assessment and Reporting Policy

3. IMPLEMENTATION:

3.1- Timetabling

The teaching of Mathematics is timetabled to occur in each class for a minimum of one hour per day, five days per week. This teaching may be inclusive of and make explicit linkages to other areas of the curriculum which are being studied, as this helps to promote transfer between Mathematics and other areas of the curriculum.

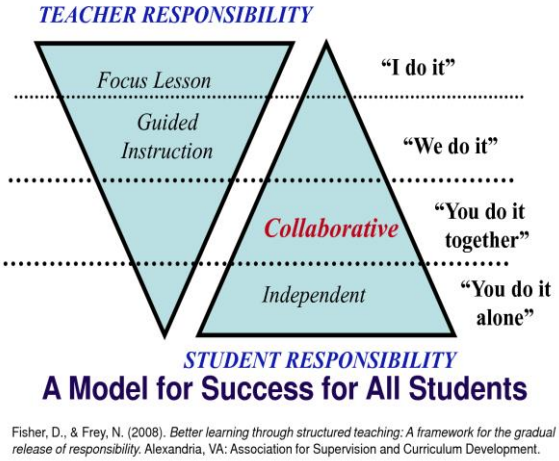
The school's instructional model 'The Gradual Release of Responsibility' applies to the teaching of Mathematics from Foundation-Year 6.

During daily Mathematics sessions there will be a balance between whole-class learning, group teaching and individual practice that is personalised to meet the ability levels of students within the classroom.

3.2- Lesson Structure

The effective teaching of Mathematics incorporates a whole school approach with common vocabulary. Each classroom will develop with students a rich classroom environment that facilitates the use of Maths Talks and Learning Norms.

Each mathematics lesson is to be based upon the Gradual Release of Responsibility and may include:



Fisher, D., & Frey, N. (2008). *Better learning through structured teaching: A framework for the gradual release of responsibility.* Alexandria, VA: Association for Supervision and Curriculum Development.

The Mini Lesson: (10 – 15 minutes)
Identify, articulate and explicitly teach mathematical concepts.
Model strategies and make connections between mathematical Proficiencies.

The Learning Task:(20 – 25 minutes)
Students to work independently or collaboratively to apply their understanding of the concept through differentiated challenging and engaging learning tasks.

Share/Reflection: (5 – 10 minutes)
Students to reflect on their learning, how they've applied their goals, strategies or possible misconceptions.

Maths Talk: (Minimum once a week)
Students to;

- Engage in problem solving that is linked to the learning intention and success criteria
- Apply their Mathematics goals and strategies learnt.
- Share and learn strategies from each other through justifying and challenging each other's thinking.

Maths Talk can happen before the Mini Lesson to act as a warmup task (5 – 10 minutes) or as the Mini Lesson (10 – 15 minutes) or after the Learning Task (10 – 15 minutes).

The Gradual Release of Responsibility provides students with the opportunity to have their learning scaffolded and enables a structure for personalised teaching. During a lesson, all students work towards the achievement of individualised, proficiency based mathematical learning goals, which reflect their point of need and are evidence-based. Students with additional educational needs may have their mathematical learning goals documented in an Individualised Learning Plan (ILP) to further support their achievement and promote opportunities for learning success.

In accordance with the Digital Technologies Policy, the teaching of Mathematics is to provide students with access to relevant technology to enhance their learning.

In accordance with the Home Learning Policy, the content of Mathematics is to be included as a Home Learning Task from Foundation to Year 6. These tasks should build upon understanding already taught within the classroom, providing students with an opportunity to further consolidate their learning.

3.3- Assessment and Reporting

The assessment and reporting of Mathematics is conducted in line with the Assessment and Reporting Schedule which is reviewed and produced by the Data Literacy Team Vertical Team each year.

At Glen Waverley Primary School, diagnostic assessment is gathered from students where they can demonstrate learning via concrete, pictorial and abstract representations. The assessment program Essential Assessment is used to conduct 'General All' assessments within the three content strands, these are conducted at the beginning, mid and end of each school year. Student data will be transferred into new class groups at the beginning of the school year, so teachers are provided with current and relevant data.

Each semester as part of a student report, the school provides families with a documented report which assesses the student's progress against the three content strands. Teacher comments will be based on the student's ability to demonstrate the four proficiencies and will reflect their progress towards achieving their mathematics learning goal.

As part of the Assessment and Reporting Timeline, at least two sessions of whole-school moderation will occur each year in the domains of Mathematics. Both formative and summative data is also gathered utilising the Essential Assessment program (Mathematics).

3.4- Mathematics Vertical Team

The Mathematics Committee will be formed each year, known as the 'Mathematics Vertical Team (MVT)'. It will consist of at least seven members of teaching staff, representing each year level from Foundation to Year 6 and will be led by the Learning Specialist for Mathematics. The Learning Specialist will also be a member of the School Executive Team. The MVT will meet on a regular basis to discuss curriculum matters and monitor progress against goals outlined in the School Strategic Plan (SSP) and the Annual Implementation Plan (AIP).

3.5- Budget Expenditure

The Mathematics Sub-Program Budget is to be managed by the Maths Learning Specialist. The funds available to the team may vary in accordance with whole school priorities and the distribution of funds as outlined in the annual Student Resource Package, Indicative Budget and Confirmed Budget.

4. RELATED LEGISLATION:

Department of Education and Early Childhood Development (DET) Early Childhood - Department of Education, Australian Government

Victorian Curriculum and assessment Authority (VCAA)

https://www.vcaa.vic.edu.au/Home - Victorian Curriculum (vcaa.vic.edu.au)

Australian Curriculum and Assessment and Reporting Authority (ACARA)
https://www.acara.edu.au/

Council of International Schools (CIS)
http://www.cois.org/

5. RELATED POLICIES:

Curriculum Policy
Data Literacy Policy
Home Learning Policy
Digital Technologies Policy

6. POLICY EVALUATION:

Evaluation will be conducted every two years by the Mathematics Vertical Team.

7. DUE DATE FOR REVIEW:

Due for review in October 2024.