Howard Springs School Numeracy Plan 2023

Introductory Statement:

This document outlines Howard Springs Primary School's whole-school plan and commitment for continuing the improvement of the teaching of Mathematics. Our plan aligns with the Australian Curriculum framework and the schools 2023 ASIP. This plan explicitly outlines what, how and when teachers should teach, and students should learn. The curriculum delivery plan is implemented throughout the school. A strong alignment has been achieved between the overall curriculum delivery plan and classroom teaching and the regular assessment of student progress in relation to curriculum expectations. Considerable attention has been given to ensuring 'vertical' alignment of the curriculum so that there is continuity and progression of learning across the years of school, with teaching in each year building onto and extending learning in previous years.

The Whole School Approach

Curriculum

At Howard Springs Primary School teaching the Australian Mathematics Curriculum using the New Zealand (NZ) Maths framework is an expectation. All teachers are expected to teach using NZ Maths pedagogy to ensure there is a common language and approach as to how mathematics is taught at Howard Springs Primary School. Teachers' programs must reflect the use of New Zealand Maths. This document needs to be in all teacher's Mathematics program, these programs can be either electronic or hard copy, however need to be uploaded to the schools L drive. We recognize the connections between the areas of mathematics and other learning areas and work to imbed this in other curriculum areas through inquiry learning.

Pedagogy

Teaching and Learning Approaches

- All planned mathematics lessons (at least 4 hours per week) will be based around a familiar and supportive structure of:

Lesson structure guide:

Tuning In (hot spot, Number Talks)	(5/10 min)
Guided and Explicit Instruction (Whole Class)	(10/15 min)
Skill Development and Practice or Open Ended Learning Tasks (Small Group and Personalised, using Teacher Modelling Book to record anecdotal notes on student learning & development)	(25/40 min)
Self-assessment/Reflection/Share time	(5/10 min)
Timing for session will depend on individual teacher's choice of a single session or double session.	

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- Students are given opportunities to work independently and in pairs, in like and mixed ability groups to practice problem solving and share ideas and knowledge.
- Students are encouraged to use concrete materials to support their understanding of concepts.
- Teachers provide adequate concrete materials for students and model their use in explicit teaching.
- Flexible learning enables teachers to use a range of teaching and learning approaches and utilise physical spaces to maximise the opportunities for all students to succeed.

Building Inquiry into the Mathematics Curriculum:

A great resource for this is Kath Murdock's book the 'Power of Inquiry'.

One of the tools Murdock recommends is the split screen, which unpacks what students know and do not know. This can be used as an introduction tool when starting a new teaching sequence. This is also a great tool to unpack the language needed to engage with mathematics concepts.

- Mindset Mathematics: this book has inquiry lessons (Need to purchase this book)

Data

Term One: Weeks 3 to 6

New students tested: JAM/Gloss Assessment (Maths Coach)

Term One: Weeks 9 to 10

Early Years: Transition: Start *Jam Assessment (Maths coach and TA,* CT to administer 4-6 tests)

Term Two: Weeks 2 to 5

Early Years: Jam Assessment (Maths coach/support, CT to administer 4-6 tests)

Senior Years – Gloss (Maths coach/support, CT to administer 4-6 tests)
/IKAN Testing (Classroom Teacher)

Term Three: Weeks 9 to 10

Early Years: Transition: Start *Jam Assessment (Maths coach and TA,* CT to administer 4-6 tests)

Term Four: Weeks 2 to 5

Early Years: Jam Assessment (Maths coach and TA, CT to administer 4-6 tests)

Senior Years – Gloss (Maths coach and TA, CT to administer 4-6 tests)
/IKAN Testing (Classroom Teacher)

Data goal setting:

- Whole school and year level targets each year are based on the results and analysis of data from the previous years.
- Numeracy coach will provide professional development to teachers on data tracking and goal setting for each classroom.
- Targets set are achievable though still stretch student learning. They consider those year levels with a high number of students with additional needs and EAL/D learners.
- Goals reflect the whole school numeracy scope and sequence.
- Each term and semester data is monitored and evaluated.

Numeracy Leadership

The Role of the Numeracy Coach

The role of the Mathematics Coach is to plan strategically for school improvement in mathematics. The Mathematics Lead Teacher will lead their school's implementation of the T–6 Mathematics approach, through engagement in the following:

In the areas of Personalisation, Precision & Professional Learning, the Numeracy Leader will:

- Analyse the 'learning needs' of teachers to foster an engaging learning environment for staff, promoting continuous teacher learning.
- Support peer observation and learning walks as per AISP goal (ATISL)
- Coordinate opportunities for teachers to observe teacher practice and professional development through inter– school and intra–school visits.
- Build sustainability across the school for continued growth of Mathematics.
- Communicate and share professional learning with through HSPS TEAMS.

In the area of Assessment Literacy, the Numeracy Leader will:

- Coordinate assessment T–6, implementing and organising the pre- and post-testing procedures (NZ Maths Assessments, Basic Fact system, PAT M and assessment tasks designed aligning NZ Maths and the Australian Mathematics Curriculum (ACARA).
- Analyse, interpret and use formal and informal data (Gradexpert, Student profiles, NZ planning sheets, grouping tracking sheets, teacher modelling books, NAPLAN and PAT M data).
- Assist teachers to understand and utilise the assessment data gathered.
- Support teachers in using the JAM/Gloss/IKAN Assessment materials and how to interpret data to determine and plan the next steps in their teaching.
- Support teachers in analysing NAPLAN and PAT M data and examining gaps in student learning.

In the area of School & Classroom organisation, the Numeracy Leader will:

- Ensure that appropriate resources are available for effective learning and teaching
- Support teachers in setting up rotations in classes to help differentiate the teaching and learning.
- Plan with teachers individually or in teaching pairs for 1 hour each week. Start with PD to increase knowledge then support developing their understanding of the NZ framework and the teaching needed to move students forward.
- Team teach in classes depending on teacher and student needs. Ensuring equity across the school.
- Model and support teachers in the use of learning intentions and success criteria.

In the area of Home, School & Community Partnerships, the Numeracy Leader will:

- Develop strong links with the school leadership team
- Meet regularly with the Principal and Assistant Principal to discuss the progress of the School's Numeracy Improvement Plan/targets
- Promote partnerships within the school community

Resources

Based on priority needs, school leaders will determine the allocation of funds within the development and sustainability of a comprehensive Mathematics program, in line with the Schools Global Budget.

- Materials and equipment will be shared equitably between year levels.
- Each class has a numeracy trolley with resources and is maintained by teachers, coach and support staff.
- Each class has a folder for Basic Maths challenge which links to visible learning goals in classroom (discussion with teachers on future student goal setting)
- Maths reference books are in the library to assist with the development and planning of mathematical programs. (Number Talks, First Steps, numeracy picture books)
- In Maths the ICT used is in Upper Primary is Prodigy and in the Early Years Study Ladder used. When using these websites for independent learning the teacher will ensure that the tasks set are levelled as per student knowledge and skills in mathematics.
- iPADS Early Years: Todo Maths (has different learning games for the strands of mathematics).
- Number Talks:

http://www.mathsolutionsvideo.com/

Strategies for improving student outcomes

- Mathematics will be taught a minimum of 4 x1 hour sessions per week
- Students will have visible learning targets (Bump it up Walls) that are displayed in the room (This includes Basic Fact Ladder and NZ Stages posters)
- Learning intentions and success criteria will be explicitly taught and referred to in lessons
- Build on student voice through visible learning goals and Number Talks
- Students will have individual learning goals which are used in 3 Way interviews with families twice a year.

At the Classroom Level

Know the learners

At Howard Springs Primary School teaching Mathematics using *New Zealand Maths* framework is an expectation. Teachers programs must reflect the use of New Zealand Maths.

Teachers new to the NZ Maths framework gradually take on aspects of the NZ Maths framework with which they feel comfortable. Teachers are asked to select two new aspects of framework at the start of each term that they intend to employ in their program.

Non-negotiable Components of NZ Maths	
Use Whole School Scope & Sequence/Maths Maps	✓
Explicitly Teach groups in rotations	✓
Assessments: NZ Maths & Australian Curriculum (at least two a term)	✓
Task Board/Rotations	✓
Learning Intentions and Success Criteria	✓
Number Talks (At least 2 a week)	✓
Basic Facts practice (At least twice a week: Years 2-6, Transition & Year 1 will depend on students NZ Maths stage).	✓
Student Learning Goals (Visible in classroom)	✓

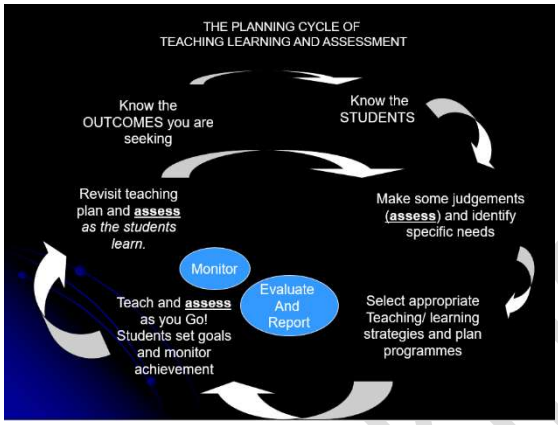
Components of New Zealand Maths		
NZ 'Modelling Book' for each group		Tuning in at start of lesson
Learning Intentions and Success Criteria Displayed		Reflection at end of lesson
Planning with: NZ Maths Books, NZ portal site, MM portal, Australian Mathematics Curriculum (ACARA) and OARS resource website (ACER)		Maths goals displayed and used in student conversation and learning
Grouping by: Mixed ability or ability based on various tools of assessment		**Within rotations student learning is designed around:** 1. Teacher group (ability/mixed ability) 2. Practice (follow on activity from teacher group) 3. Knowledge (problem solving, basic facts) 4. Activity (numeracy games/ICT)

Planning/Programming

Assessment:

We follow the schools Mathematics assessment schedule that we revise each year. Types of assessment across the school consist of NZ Maths interviews, observation, anecdotal notes, work samples etc.

All teaching is based on the assessment cycle:



Assessment is more than summative data at the end of a task. There are three types of assessment at Howard Springs:

- **Assessment FOR learning - Diagnostic**
- **Assessment AS learning - Formative**
- **Assessment OF learning - Summative**

- Make some judgements (**assess**) and identify specific needs using open tasks and diagnostic testing.
- Select appropriate teaching/ learning strategies from NZ Maths online books and plan weekly using planner with coach.
- Teach and **assess** as you go! Ask lots of questions of their thinking. Students set targets and monitor achievement
- Revisit teaching plan and **assess** *as the students learn.* Decide where to next.

Planning:

Our annual Numeracy Plan is in alignment with the Australian Curriculum and our School Strategic Plan and Annual Implementation Plan. Staff will plan across the school with teachers in similar Year Levels. Each lesson will address a specific Mathematics domain: Number & Algebra, Measurement & Geometry or Statistics and Probability which is linked to the whole school Mathematics scope and sequence.

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Data: Performance goals and targets

Numeracy Data Analysis

2022 NAPLAN MSS

YEAR 3		2017	2018	2019	2021	2022
Numeracy	School Mean	353.33	348.07	384.07	373.03	359.33
	NT Mean	341	341	336	340	341.14
	Aust Mean	409	408	408	403	399.79
	Difference NT	12.33	7.07	48.07	33.03	18.19
	Difference AUS	-55.67	-59.93	-23.93	-29.97	-40.46
YEAR 5		**2017**	**2018**	**2019**	**2021**	**2022**
Numeracy	School Mean	450.23	448.74	440.53	475.1	432.19
	NT Mean	432	434	432	426	433.10
	Aust Mean	494	494	496	495	488.29
	Difference NT	18.23	14.74	8.53	49.1	-0.91
	Difference AUS	-43.77	-45.26	-55.47	-19.9	-56.1

2022 NAPLAN % Above NMS

YEAR 3	Admin. Year	Status of Results	% At or above the NMS			Below NMS	AT NMS	Above NMS	Well Above NMS
			NT	Aust	School				
			%	%	%	%	%	%	%
Numeracy	2018	Final	78.2	95.8	45%	39%	39%	45%	12%
	2019	Final	74.2	95.5	55%	25%	25%	55%	20%
	2021	Final	73.1	95.8	56%	16%	16%	56%	22%
	2022	Final			56%	17%	55.88%		12%
YEAR 5	Admin. Year	Status of Results	% At or above the NMS		**% At or above the NMS**	**Below NMS**	**AT NMS**	**Above NMS**	**Well Above NMS**
			NT	Aust	School				
			%	%	%	%	%	%	%
Numeracy	2018	Final	77.7	95.7		29%	29%	63%	6%
	2019	Final	73.4	95.4		15%	15%	70%	0%
	2021	Final	67.3	95.3		12%	12%	72%	12%
	2022	Final				26%	46%		9%

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2022 Analysis Data (Data needs to be checked)
Howard Springs Primary School has had a 11% growth in students in Year 3 achieving well above the National Minimum Standard (NMS) in Numeracy since 2018. In 2022, 68% of Year 3 students were above or well above the NMS in numeracy.
NAPLAN data for Year 5 shows a 6% growth of students achieving above the National Minimum Standard (NMS) since 2018 in Numeracy. In 2021, there was a 14% growth in Year 5 students achieving above or well above the NMS in numeracy, with 84% of Year 5 students achieving above or well above the NMS in numeracy.
2022 Targets (Targets for 2023 need to be set and current whole school NZ Maths data needs to be added)

	2022 Targets NZ Maths Stages
T	70 % at or above stage 3
1	70% % at or above stage 4
2	75% % at or above Early-Stage 5
3	60% at or above Stage 5
4	70% at or above Early-Stage 6
5	60 % at or above Stage 6
6	65 % at or above Early-Stage 7

	Actual 2022 NZ Maths Stages
T	40 % at or above stage 3 (50% at stage 2)
1	73% at or above stage 4
2	45% at or above Early-Stage 5
3	41% at or above Stage 5
4	63% at or above Early-Stage 6
5	47 % at or above Stage 6
6	65 % at or above Early-Stage 7 (need to check on data wall)

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Focus for Mathematics based on PAT M data analysis Semester 1 2022

EC	Middle Primary	Upper Primary
Patterns/algebra	Algebra: 2 step problems Number patterns skip counting from any number picture patterns/dot patterns	Patterns
Measurement: telling time	Measurement: • counting hours • time (am/pm, calendars)	
Money	Problem solving strategies multi step worded problems	Multi step questions Problem solving
Problem solving	Reading & understanding number sentences	Complex questioning (students create their own)
Number sentences	Fractions: • decimal place value • fraction diagrams	
Mathematical language		

Through staff professional development sessions, teachers examined 2021 PAT M data to explore gaps in student learning across all year levels.

Learning intention:
To engage with various data sets used in mathematics across the school.

Success criteria:

- Know how to access HSPS PAT data
- Work with colleagues to explore gaps in student learning in numeracy across the school
- Set an area/areas in numeracy that we need to target for Term 2
- Engage with edash (time permitted)

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Teacher Survey Term 1 2023

Just a few questions so I can plan the best way to support student learning across the school.

1: What area in mathematics to you need the most support in?

eg. Planning, resources, assessment, Number talks, maths games, NZ Maths resources…

2. What area in mathematics would you share with other teachers? (Number Talks, planning documents, maths inquiry learning, student goals, student voice, class reflection)

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