



NURIOOTPA PRIMARY SCHOOL

Approach to Numeracy



Rationale

In the Australian Curriculum, students become numerate as they develop the knowledge and skills to use mathematics confidently across other learning areas at school and in their lives more broadly. Numeracy involves students in recognising and understanding the role of mathematics in the world and having the dispositions and capabilities to use mathematical knowledge and skills purposefully. They use appropriate mathematical vocabulary, take risks and are persistent when solving mathematical problems to develop a growth mindset. Students challenge themselves mathematically, explain their thinking and reflect on their learning.

Programming & Planning

The Planning and Programming of Mathematics at Nuriootpa Primary School is designed to give students opportunities to:

- Choose and use Mathematics as outlined by the Australian Curriculum.
- Allow for the development of proficiencies of fluency, problem solving, understanding and reasoning.
- Develop positive dispositions and transversal skills such as risk taking, persistence and resilience
- Develop intellectual stretch for all students eg: Mathematical mindsets
- To enable students to be successful and powerful learners, students and teachers need appropriate tools.

Key design elements of Programming at Nuriootpa Primary School:

- Australian Curriculum Mathematics
- Learning design
- Differentiation
- Applications outside of the classroom (Whole School Engagement)
eg: STEM challenges, Learning Teams
- Problem solving opportunities
- Explicit/Guided Practice
- Effective pedagogies – incorporate the 8 effective practices.

Differentiation

Differentiation within the classroom in Mathematics and Numeracy means tailoring the learning programme to meet the needs of individual students. This could include differentiation of content, process, products, floor to ceiling tasks or the learning environment. The use of ongoing assessment and flexible grouping are ways to suit individual needs.



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Big Idea	Year Level										
	R	1	2	3	4	5	6	7	8	9	10
Trusting the Count											
Place Value											
Additive to Multiplicative Thinking											
Partitioning											
Proportional Reasoning											
Generalisation											

Mental Computations Sequence - Minimum Expectations

Rec	Year 1	Year 2	Year 3	Year 4	Year 5/6/7
Count all Subitise Count on Count back Double (10)	Skip Counting Rainbow facts 10 Turn arounds Doubles (12) Near Doubles Friendly Numbers Rainbow Facts Subtraction Open number line	Fact families Adding zero Change the order Doubles(20) Halve Number splitting Subtraction undoes addition Chunking for addition Bridge through 10 Secret code Open number line for addition Bridge back through 10	Rainbow facts 100 Compensating Chunking for subtraction Open number line for subtraction Doubles	Land mark numbers Rounding Chunking for subtraction Chunking for Multiplication Estimating Number splitting Chunking and division Zig Zag for addition	Doubles (tenths) Value based operations Bridge through 100 Rainbow facts at 100.

Elements of the Daily Maths Lesson

Fostering Engagement

Children are taught and supported to know that it is okay to make mistakes and changing your mind is part of a healthy learning process. Responsive teaching supports engagement and directs the lesson according to the students' needs at that time. In order to be responsive, teachers need to understand their students and how they learn (TfEL) and use formative assessment strategies to inform their practice.

Therefore, teachers will:

- Inspire learners through a visible passion for mathematics
- Engage learners in rich and challenging tasks
- Allow time and opportunities to make decisions
- Use maths as a tool for exploration



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What does a Maths lesson at NPS look like?

(Minimum 400 minutes of Maths per week)

Time	Activity	Purpose
25-30 min	Engagement/Mental Routine <ul style="list-style-type: none"> - Learning Intention - Mental Warmup - BiN methodologies - Explicit instruction - Skill development - Responsive teaching to guide lesson 	<ul style="list-style-type: none"> • establish clear goals, • reflect individual learning needs • establish positive dispositions
50 min	Core learning <ul style="list-style-type: none"> - Modelling - Problem solving - Investigations - Developing meta language - Relevant use of Technologies - Responsive teaching to progress the lesson 	<ul style="list-style-type: none"> • become skilful in using maths flexibly to solve conceptual problems • make connections on what learners know • collaboration to develop ability to share and reason • challenge through differentiated tasks that allow time for productive struggle
10min	Reflection and debrief <ul style="list-style-type: none"> - Review content - Share strategies - Student feedback(learning intention) - Responsive teaching in preparation for follow up. 	<ul style="list-style-type: none"> • develop a shared understanding through meaningful dialogue • develop confidence in sharing mathematical reasoning • build on the reasoning of others

Student Evidence of Learning

Teachers will work with students to ensure that they develop means of recording their learning and mathematical thinking (eg: scrapbook, journal, graph book, appropriate digital technologies, etc.).

Cycle of Learning

The use of in-class intervention frameworks should be used to address learning needs observed in the previous lesson. For instance, those students who have not grasped a concept should be drawn aside with the teacher for explicit instruction, while other students work on activities to practice their skill development (eg: dice games, problem solving, number grid games and other online games).

Monday	Tuesday	Wednesday	Thursday	Friday
Intervention BiN (30 min)	Intervention BiN (30 min)	Intervention BiN (30 min)	Intervention BiN (30 min)	Intervention BiN (20 min)
Maths lesson (60 min)	Maths lesson (60 min)	Maths lesson (60 min)	Maths lesson (60 min)	Maths lesson (40 min)



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Monitoring Student Progress

Teachers will provide regular and varied feedback to students both written and verbal. Students will be given opportunities to develop skills necessary to engage in meaningful self, peer and group assessments.

Teachers must ensure that evidence and record keeping of student learning is comprehensive to support student learning, strategic intervention and reporting to parents.

Whole school assessment:

- A-E grades, informed through collaborative moderation processes (mid-year and end-of-year)
- PAT-Maths: Years 1-7 students (Term 3)
- NAPLAN: Years 3, 5 and 7 (Term 2)
- Big Ideas in Number Assessment Kits (Twice per year)

Summative Assessment

Standardised Tests are conducted according to the outlined timeline in the NPS assessment schedule and benchmarks.

Key Numeracy Resources

Staff at Nuriootpa Primary School are working towards developing a common language and approach to the instruction of Mathematics in our school. Key resources to support this common language include:

- Australian Curriculum
- Big Ideas in Number
- I Maths
- Natural Maths – posters and concepts
- Back to Front Maths – developing questioning and confronting misconceptions
- Growth mindset language



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Expectations

	<i>You will see students:</i>	<i>You will see Teachers & Support Staff:</i>	<i>We measure this by:</i>
<i>Big Ideas in Number</i>			
<i>Explicit Teaching</i>			
<i>Problem Solving</i>			