



## Kangarilla Primary School Numeracy Agreement Dated 19/08/2016

'The maximum number of children engaging in the maximum amount of mathematics for a maximum amount of time.' Ann Maree Gervasoni, 2000

'High expectations for growth and achievement for every child.' Sea and Vines Partnership 2016

Using the Sea and Vines Partnership Goals of Numeracy, Literacy and powerful learners.		Proficiency Strands	
A: Track, monitor and respond to every learner's growth in numeracy achievement and engagement is tracked, monitored and responded to.	B: Have a numeracy improvement cycle evidence informed improvement cycles are being monitored at the site and classroom level	Understanding Knowing Why?	Fluency Knowing How?
C: Enact changes in pedagogical practice pedagogical practices engage and intellectually stretch learners, develop resilience and growth mindsets, and improve numeracy achievement?	D: Identify and enact clear intervention processes intervention processes are underpinned by intentional teaching and are responsive and differentiated to meet the needs of every learner.	Problem Solving Finding Out How?	Reasoning Finding Out Why?

**Developed Using: 'Eight Effective Practices That Develop Numeracy B-18 With Question Prompts', Draft V3 12/5/15**

1. Fostering Engagement
2. Making Connections
3. Collecting & Responding to Evidence
4. Identifying Learning Goals
5. Building Fluency From Conceptual Understanding
6. Facilitating Meaningful Collaboration and Dialogue
7. Providing Challenge
8. Using Digital technology to Connect

**Problem Solving + Reasoning + Mastery = Higher Order Maths**

**Fluency + Understanding = Mastery**

**School Belief Statement**

**Quality Curriculum Access For All Students Building Numerate Individuals**

**At Kangarilla Primary School**

We believe that:

- A whole school approach to Maths teaching and numeracy is necessary to support and challenge all students to create a community of mathematical learners. Learning should be made relevant to real life experiences and a hands on approach will allow for further understanding and development. Our approach will deliver consistent and cohesive mathematical experiences that allows for continuity and development from R-7.

**At Kangarilla Primary School**

We commit to:

- Making cross curriculum connections
- Making learning engaging and purposeful
- Having clear expectations for students and staff
- Having a strong understanding of the goal for the lessons and the outcomes to be achieved
- Providing differentiating challenges with multiple entry points
- Collecting and responding to evidence to adjust instruction and future planning/lessons
- Promote fluency through mental processes, reinforcement, transferring learnt skills
- A structured one hour Maths block each morning to allow for learning goals to be met

**Pedagogy: A Consistent Approach**

**Numeracy Learning Environment**

**At Kangarilla Primary we use the Australian Curriculum scope and sequence as it guides our programming and planning, while TfEL influences our pedagogy.**

We use:

- Student voice and choice
- Number of the day
- Targeting Maths
- Australian Numeracy Continuum
- PAT M Data, NAPLAN, I Can Do Maths

In order to create and sustain a community of mathematical thinkers we believe it is essential that we present a whole school approach to teaching mathematics. As a school we will explicitly teach the language of Mathematics, allowing students, staff and parents to explore and communicate mathematical concepts. We provide digital learning resources to improve and enhance Mathematics programmes and provide staff with professional development opportunities to deepen their learning and the delivery methodology via their pedagogy.

**At Kangarilla Primary School we believe a numeracy learning environment should:**

- Use common language based on correct Mathematical terminology as evident in the curriculum and approaches to Mathematical teaching such as 'The Big Ideas in Number'
- Present problems in a variety of ways
- Allow students to use a variety of resources to work out the solution to the problem such as concrete materials
- Provide numeracy displays and anchor charts co-constructed
- Incorporate the use of digital technology tools, apps, and programs to deepen understanding and engagement while providing opportunities not otherwise available
- Use open ended tasks that cater for differentiation

**Quality Teaching Facilitates and Motivates Students Engagement and Understanding**

Problem Solving and reasoning

- Problematised situations
- Higher order thinking (open-ended questions and real world connections)
- Cubes (circle, underline, box, evaluate, solve)
- Rice (read, illustrate, compute, explain)

**Numeracy**

**'Students become numerate as they develop the knowledge and skills to use mathematics confidently across all learning areas in school and in their lives more broadly. Numeracy involves students in recognising the role of mathematics in the world and having the dispositions and capacities to use mathematical knowledge and skills purposefully.'**

**Australian Curriculum**

**At Kangarilla Teachers Will:**

- Allocate 300 minutes of learning time each week

**Part 1 Weekly Lesson Structure**

**At Kangarilla Primary School we believe:**

<ul style="list-style-type: none"> <li>• Approximately 15 minutes of instruction time per lesson</li> <li>• Allocate at least 60 minutes of Mathematical thinking per day</li> <li>• Differentiate instruction to allow for engagement</li> <li>• Allow for higher order thinking</li> <li>• Encourage students to take risks</li> <li>• Encourage curiosity</li> <li>• Focus on problem solving, skills, and concepts</li> <li>• Present real world examples</li> <li>• Develop a strong number sense in all students</li> </ul>	<ul style="list-style-type: none"> <li>• ACARA achievements are the guide</li> <li>• Lessons should flow on from prior lessons</li> <li>• Pre-assessment and formative-assessment embedded in practice</li> <li>• Mental routines and warm up activities such as interactive math games will be used to begin most lessons</li> <li>• A minimum of 2 lessons on number per week</li> <li>• Provide open ended investigations to develop all four proficiencies (fluency, problem solving, reasoning, and understanding)</li> </ul>
<p><b>At Kangarilla Students Will:</b></p> <ul style="list-style-type: none"> <li>• Listen</li> <li>• Ask questions</li> <li>• Take risks</li> <li>• Justify their answers and show their working out</li> <li>• Work individually and in pairs/small groups</li> <li>• Problem solve</li> </ul>	<p><b>Part 2 Daily Lesson Structure 'The one Hour Maths Lesson'</b></p> <p><b>At Kangarilla Primary School we believe:7</b></p> <ul style="list-style-type: none"> <li>• Introduction (5 minutes)</li> <li>• Explicit teaching time (10-15 minutes). Structured, systematic instruction that is explicit, teacher directed, and includes guided practice and corrective feedback</li> <li>• Student activities (30-35 minutes)</li> <li>• Reflection/share time (5-10 minutes)</li> </ul>
<p><b>At Kangarilla Our School Specific Data Goals:</b></p> <p>All teachers will strive for satisfactory achievement of the Australian Curriculum Foundation Standard in Mathematics (Receptions) and</p>	<p><b>Whole School Numeracy Behaviours</b></p> <p><b>At Kangarilla Primary School we believe</b>  <i>Leadership team: Leads teachers in professional development, to ensure</i></p>

**Achievement at 'C' or above in Australian Curriculum Mathematics (Year 1- Year 7)**

- Term 1: I Can Do Maths A (Receptions/Year One)
- Term 4: I Can Do Maths B (Year 2)
- Term 2: NAPLAN Assessment (Year 3, 5, and 7)
- Term 2 and 4: Student Reports, aligned with the Australian Curriculum Achievement Standards.
- Term 3: PAT Maths Tests Year 1 to Year 7 students
- Other formative assessments are collected via observation checklists and rubrics.

our teachers have a deep understanding and knowledge to to deliver and teach the curriculum.

**Teachers:** Need to have a fundamental understanding of the mathematical content of the AC and research based delivery methodology. They plan and set tasks that challenge and require higher order thinking skills. They differentiate instructions to allow for maximum engagement for all students. They extend students' thinking and abilities beyond what they already know through scaffolding. Teachers will continue to form a strong foundation for further mathematical learning and use the power of peer support and modelling as a way to develop a positive maths culture.

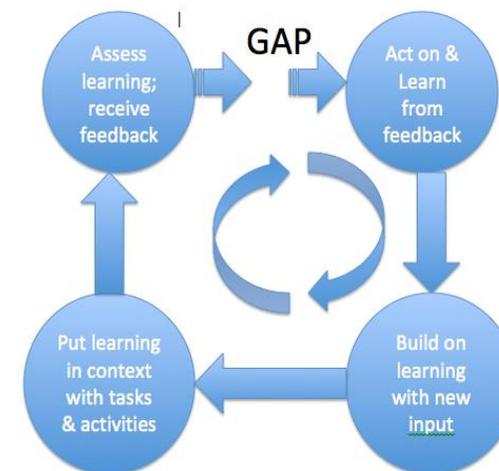
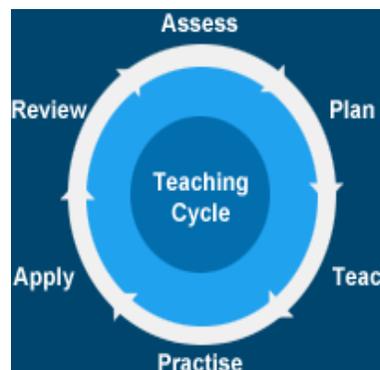
**Students:** Will participate in all learning experiences, have a conceptual understanding and think mathematically. They will apply strategies and show adaptive reasoning. Students will actively construct their own solutions to mathematical problems (constructivist approach). Students will have opportunities to take control of their own mathematical learning, create and share strategies.

**Our School Testing Program (insert or complete table provided)**

	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Term 1	**							
Term 2	>>	>>	>>	>> ==	>>	>> ==	>>	>> ==
Term 3		++	++	++	++	++	++	++
Term 4	** >>	>>	>>	>>	>>	>>	>>	>>

\*\* I Can Do Maths  
 ++ Pat Maths  
 == NAPLAN  
 >> Student Reports

**Numeracy Improvement Cycle / Other Images**



## At Kangarilla Scaffolds Used Will Include

**WORD PROBLEM STEPS**

**R** Read and Record the problem.

**I** Illustrate your thinking.

**C** Compute.

**E** Explain your thinking.

**C** Circle the Numbers

**U** Underline the question

**B** Box the Key Words

**e** Evaluate and Draw

**S** Solve and Check!

**Problem Solving**  
**Read and Think**

**Understand**

**Plan**

**Choose a Strategy**

Front	Back
2	6
3	9

**Do**

**Solve the Problem**

$$3 + 3 + 3 = 9$$

**Check**

Explain Your Work  
"I made three hops of 3 on the number line"

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## All used as reference

\*<http://4.bp.blogspot.com/-NuRs9pXZNN0/UTpA1rj2UtI/AAAAAAAAABrc/5hrc2u9Xp4/s1600/color+rice.png>

\*<http://2.bp.blogspot.com/-qnotoHu11Fk/UBPUMwCfuol/AAAAAAAAADX4/q9TQmiXoBf0/s1600/Primary+UPDC.PNG>

\*[http://1.bp.blogspot.com/RSCDy4e1qic/UTAH7YFNjZI/AAAAAAAC\\_Q/buF9aqYkoiM/s320/Word+Problem+Steps+Pic.png](http://1.bp.blogspot.com/RSCDy4e1qic/UTAH7YFNjZI/AAAAAAAC_Q/buF9aqYkoiM/s320/Word+Problem+Steps+Pic.png)

\*<http://www.learningatstonehenge.org/wp-content/uploads/2014/07/Closing-the-Gap.png>

\*<http://www.mathsmap.co.uk/images/teaching-cycle.gif>