



WALLAROO MINES
PRIMARY SCHOOL
Numeracy



Standards of Achievement & Agreements

		Reception	Year One	Year Two	Year Three	Year Four	Year Five	Year Six	Year Seven
BiIn	Trusting Count								
	Place Value								
	Multiplicative								
	Partitioning								
PAT-M Scale Score		20	25	35	38.6	39.6	44.8	54.4	54.9
NAPLAN					Band 3 and above		Band 5 and above		Band 6 and above

SITE PLAN	TEACHING		ASSESSMENT & INTERVENTION	
	<p><i>For all students to receive high quality explicit teaching and become powerful learners in numeracy who can think innovatively.</i></p>		TOOL	TIMELINE
KEY AGREEMENTS	<ul style="list-style-type: none"> Each classroom will provide a minimum of 300 mins numeracy learning time each week Each classroom will run a structured Numeracy Block a minimum 4 times per week. Numeracy Block to include: <ul style="list-style-type: none"> ★ Mental/Quick Maths to automatise basic number facts and develop fluency (10 mins) ★ Whole Class Concept Instruction to communicate success indicators, activate prior knowledge, explicitly model mathematical thinking, teach mathematical vocabulary (15-20 mins) ★ Guided/differentiated skills practice (40-60mins) ★ Sharing (10 mins) Students articulate and share conceptual understandings and mathematical strategies. Teacher provides explicit summary of key ideas. All students to participate in BiIn groups 60 mins per week to develop an understanding of number and operations together with an ability to use this in flexible ways to make mathematical judgements, develop useful strategies for handling numbers and to communicate, process and interpret information. 		BiIn diagnostic tools NAPLAN PAT-M Quicksmart Numicon	Trusting the Count 1.1.1.2 •after two full terms in reception •after two full terms in Year One Place Value 2.1 2.2 2.3 2.4 •after two full terms in Year One •after two full terms in Year Two •after two full terms in Year Three Multiplicative Thinking 3.1 3.2 3.3 3.4 3.5 3.6 •after two full terms in Year Three •after two full terms in Year Four Partitioning 4.1 •after two full terms in Year Four •after two full terms in Year Five Term 2 – Yrs 3, 5 and 7 Term 3 each year all students R-7 Pre-intervention testing for identified Yr 5-7 students plus a control group of 6 students by week 6, term one Post-intervention testing for identified Yr 5-7 students plus a control group of 6 students by week 6 term three following a 20 week program. Pre-intervention testing for identified Yr 1/2 students plus a control group of 6 students by week 6, term one Post-intervention testing for identified Yr 1/2 students plus a control group of 6 students by week 6 term two following a 10 week program.
CLASSROOM EVIDENCE	<ul style="list-style-type: none"> A range of Numeracy tools are organised and easily accessible Maths games Number charts (0-99 is preferable to 1-100) Numeracy Kit Classroom allows for whole class, small group and individual task learning 		<ul style="list-style-type: none"> Maths language displayed- explanations and examples Student's work displayed in the classroom Stories/ books about maths- fiction and non-fiction Maths dictionaries Problem solving strategies displayed Examples of Numeracy in day to day classroom practices- charts, graphs, timetables etc 	

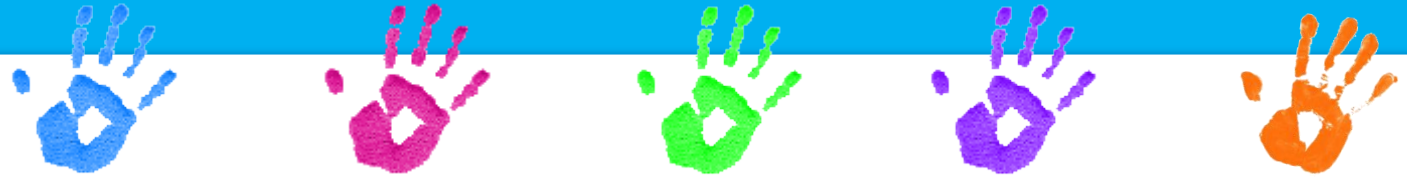
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AUSTRALIAN CURRICULUM

NUMERACY
CAPABILITY

Numeracy encompasses the knowledge, skills, behaviours and dispositions that students need to use mathematics in a wide range of situations. The Numeracy learning continuum identifies the related mathematical knowledge and skills, and contextualises these through learning area examples. When teachers identify numeracy demands across the curriculum, students have opportunities to transfer their mathematical knowledge and skills to contexts outside the mathematics classroom. These opportunities assist students to recognise the interconnected nature of mathematical knowledge, other learning areas and the wider world, and encourage them to use their mathematical skills broadly.

The Numeracy learning continuum is organised into six interrelated elements:

- Estimating and calculating with whole numbers
- Recognising and using patterns and relationships
- Using fractions, decimals, percentages, ratios and rates
- Using spatial reasoning
- Interpreting statistical information
- Using measurement

These elements are drawn from the strands of the Australian Curriculum

ACHIEVEMENT STANDARDS Foundation - 3

By the end of the **Foundation** year, students make connections between number names, numerals and quantities up to 10. They compare objects using mass, length and capacity. Students connect events and the days of the week. They explain the order and duration of events. They use appropriate language to describe location.

Students count to and from 20 and order small collections. They group objects based on common characteristics and sort shapes and objects. Students answer simple questions to collect information.

By the end of **Year 1**, students describe number sequences resulting from skip counting by 2s, 5s and 10s. They identify representations of one half. They recognise Australian coins according to their value. Students explain time durations. They describe two-dimensional shapes and three-dimensional objects. Students describe data displays.

Students count to and from 100 and locate numbers on a number line. They carry out simple additions and subtractions using counting strategies. They partition numbers using place value. They continue simple patterns involving numbers and objects. Students order objects based on lengths and capacities using informal units. They tell time to the half hour. They use the language of direction to move from place to place. Students classify outcomes of simple familiar events. They collect data by asking questions and draw simple data displays.

By the end of **Year 2**, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.

Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two-dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs.

By the end of **Year 3**, students recognise the connection between addition and subtraction and solve problems using efficient strategies for multiplication. They model and represent unit fractions. They represent money values in various ways. Students identify symmetry in the environment. They match positions on maps with given information. Students recognise angles in real situations. They interpret and compare data displays.

Students count to and from 10 000. They classify numbers as either odd or even. They recall addition and multiplication facts for single digit numbers. Students correctly count out change from financial transactions. They continue number patterns involving addition and subtraction. Students use metric units for length, mass and capacity. They tell time to the nearest minute. Students make models of three-dimensional objects. Students conduct chance experiments and list possible outcomes. They carry out simple data investigations for categorical variables.



AUSTRALIAN CURRICULUM

By the end of **Year 4**, students choose appropriate strategies for calculations involving multiplication and division. They recognise common equivalent fractions in familiar contexts and make connections between fraction and decimal notations up to two decimal places. Students solve simple purchasing problems. They identify unknown quantities in number sentences. They describe number patterns resulting from multiplication. Students compare areas of regular and irregular shapes using informal units. They solve problems involving time duration. They interpret information contained in maps. Students identify dependent and independent events. They describe different methods for data collection and representation, and evaluate their effectiveness.

Students use the properties of odd and even numbers. They recall multiplication facts to 10×10 and related division facts. Students locate familiar fractions on a number line. They continue number sequences involving multiples of single digit numbers. Students use scaled instruments to measure temperatures, lengths, shapes and objects. They convert between units of time. Students create symmetrical shapes and patterns. They classify angles in relation to a right angle. Students list the probabilities of everyday events. They construct data displays from given or collected data.

By the end of **Year 5**, students solve simple problems involving the four operations using a range of strategies. They check the reasonableness of answers using estimation and rounding. Students identify and describe factors and multiples. They explain plans for simple budgets. Students connect three-dimensional objects with their two-dimensional representations. They describe transformations of two-dimensional shapes and identify line and rotational symmetry. Students compare and interpret different data sets.

Students order decimals and unit fractions and locate them on number lines. They add and subtract fractions with the same denominator. Students continue patterns by adding and subtracting fractions and decimals. They find unknown quantities in number sentences. They use appropriate units of measurement for length, area, volume, capacity and mass, and calculate perimeter and area of rectangles. They convert between 12 and 24 hour time. Students use a grid reference system to locate landmarks. They measure and construct different angles. Students list outcomes of chance experiments with equally likely outcomes and assign probabilities between 0 and 1. Students pose questions to gather data, and construct data displays appropriate for the data.

By the end of **Year 6**, students recognise the properties of prime, composite, square and triangular numbers. They describe the use of integers in everyday contexts. They solve problems involving all four operations with whole numbers. Students connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students make connections between the powers of 10 and the multiplication and division of decimals. They describe rules used in sequences involving whole numbers, fractions and decimals. Students connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation. They make connections between capacity and volume. They solve problems involving length and area. They interpret timetables. Students describe combinations of transformations. They solve problems using the properties of angles. Students compare observed and expected frequencies. They interpret and compare a variety of data displays including those displays for two categorical variables. They evaluate secondary data displayed in the media.

Students locate fractions and integers on a number line. They calculate a simple fraction of a quantity. They add, subtract and multiply decimals and divide decimals where the result is rational. Students calculate common percentage discounts on sale items. They write correct number sentences using brackets and order of operations. Students locate an ordered pair in any one of the four quadrants on the Cartesian plane. They construct simple prisms and pyramids. Students list and communicate probabilities using simple fractions, decimals and percentages.

By the end of **Year 7**, students solve problems involving the comparison, addition and subtraction of integers. They make the connections between whole numbers and index notation and the relationship between perfect squares and square roots. They solve problems involving percentages and all four operations with fractions and decimals. They compare the cost of items to make financial decisions. Students represent numbers using variables. They connect the laws and properties for numbers to algebra. They interpret simple linear representations and model authentic information. Students describe different views of three-dimensional objects. They represent transformations in the Cartesian plane. They solve simple numerical problems involving angles formed by a transversal crossing two parallel lines. Students identify issues involving the collection of continuous data. They describe the relationship between the median and mean in data displays. Students use fractions, decimals and percentages, and their equivalences. They express one quantity as a fraction or percentage of another. Students solve simple linear equations and evaluate algebraic expressions after numerical substitution. They assign ordered pairs to given points on the Cartesian plane. Students use formulas for the area and perimeter of rectangles and calculate volumes of rectangular prisms. Students classify triangles and quadrilaterals. They name the types of angles formed by a transversal crossing parallel line. Students determine the sample space for simple experiments with equally likely outcomes and assign probabilities to those outcomes. They calculate mean, mode, median and range for data sets. They construct stem-and-leaf plots and dot-plots.