



**WORKING TOWARD ACHIEVEMENT OF STANDARDS**

**Number & Algebra**

Level 5	Level 6	Level 7
Students use estimation and rounding for all four operations, with and without the use of technology for calculation. They solve multiple digit problems involving addition, subtraction, multiplication and division by single digit divisors with remainders. Students represent, compare and order unit fractions, and decimal fractions, and represent them on a number line. They construct simple budgets for familiar events and activities. They solve numbers sentences involving division, and create number patterns involving fractions and decimals	<ul style="list-style-type: none"> <li>In Level 6, students work with prime, composite, square and triangular numbers and carry out mental, written and technology based computation to solve whole number problems involving all four operations. They explore everyday situations involving integers, and use a number line to represent them. They scale decimals by powers of ten, and add and subtract decimals with and without technology, and estimate their answers. Students calculate simple percentage discounts, multiply decimals by whole numbers, carry out divisions with terminating decimal remainders, and use simple fraction, decimal and percentage equivalences with and without technology. They create sequences involving whole numbers, fractions and decimals, describe their rules, and use brackets and order of operations to write number sentences involving multiple operations.</li> </ul>	In Level 7, students work with powers of whole numbers, use index notation, represent numbers as products of powers of prime numbers, and investigate square roots of perfect squares. They use number properties to assist with calculation and order, and to add and subtract integers. Students find equivalent fractions, represent positive and negative fractions and mixed numbers on a number line and add, subtract, multiply and divide fractions and decimals with and without the use of technology. They express one quantity as a fraction of another, round to a specified number of decimal places, and convert between fractions, decimals and percentages. They find percentages of quantities and one quantity as a percentage of another. They solve simple ratio problems and calculate best buys with and without the use of technology.

**Measurement & Geometry**

Level 5	Level 6	Level 7
Students choose and use suitable metric and other units for measurement of length, angle, area, volume, capacity and mass. They calculate the perimeter and area of rectangles, and construct specified angles using protractors and other relevant technologies. Students use 12 and 24 hour time systems, with measurements and conversions to seconds. They use grid reference systems to describe location and connect three-dimension objects with two-dimensional representations. They translate, reflect and rotate shapes with and without the use of technology, and identify point and line symmetries. They explore similarity of familiar shapes through enlargement.	Students use decimals for metric measurement, convert between units, recognise the prefixes used in metric measurements, and relate and compare measures and units, including capacity and volume. They develop and use timetables. Students investigate combinations of transformations with and without technology, and use the Cartesian coordinate system to describe location in the plane. They investigate the sum of angles at a point on a line and vertically opposite angles.	Students use formulas for calculating areas of triangles, rectangles and related shapes, and volumes of cubes and rectangular prisms. They form two-dimensional representations of prisms, buildings and other structures. They use simple combinations of transformations, with and without technology, to create geometric patterns and identify line and point symmetry, apply parallel line and transversal angle properties, angles sums in triangles and quadrilaterals, classify triangles and quadrilaterals, and construct them using compass and straight edge and dynamic geometry technology.

**Statistics & Probability**

Level 5	Level 6	Level 7
Students pose questions to collect categorical and numerical data by observation and survey, and represent the data in a variety of ways with and without the use of technology. They describe and interpret data sets in context. Students recognise that probabilities are measured on a scale of 0 to 1 (inclusive), and represent the probability of events from simple experiments using fractions.	Students carry out experiments involving chance with and without technology, compare variation in frequencies across experiments with expected frequencies, and use fractions, decimals and percentages to describe probabilities. They interpret a range of data displays, including those for two categorical variables, and interpret data presented in the media.	Students construct sample spaces for simple experiments involving chance, and assign probabilities to outcomes. They use data from primary and secondary sources to investigate issues of interest, and employ data displays such as dot plots and stem and leaf plots to compare data sets, and calculate measures of centre and simple measures of spread to analyse and interpret the data.

**Links to Capability & Digital Technologies Content Descriptors (Mathematics specific)**

<b>Critical and Creative Thinking</b>	<b>Digital Technologies</b>
<p>By the end of Level 6, students apply questioning as a tool to focus or expand thinking. They use appropriate techniques to copy, borrow and compare aspects of existing solutions in order to identify relationships and apply these to new situations.</p> <p>Students distinguish between valid and sound arguments and between deductive and inductive reasoning. They explain how reasons and evidence can be evaluated. They explain and apply basic techniques to construct valid arguments and test the strength of arguments.</p> <p>Students represent thinking processes using visual models and language. They practice and apply learning strategies, including constructing analogies, visualising ideas, summarising and paraphrasing information. Students disaggregate ideas and problems into smaller elements or ideas, develop criteria to assess and test thinking, and identify and seek out new relevant information as required.</p>	<p>By the end of Level 6, students explain the functions of digital system components and how digital systems are connected to form networks that transmit data.</p> <p>Students explain how digital systems use whole numbers as a basis for representing a variety of data types. They manage the creation and communication of ideas, information and digital projects collaboratively using validated data and agreed protocols.</p> <p>Students define problems in terms of data and functional requirements and design solutions by developing algorithms to address the problems. They incorporate decision-making, repetition and user interface design into their designs and develop their digital solutions, including a visual program. Students explain how information systems and their developed solutions meet current and future needs taking sustainability into account.</p>

<b>Purpose:</b>	<b>Teaching &amp; Learning Approaches – non-negotiables</b>	<b>Special Events/Dates:</b>
<b>Structure/Organisation:</b>		
<b>Language Features:</b>		
<b>Performance Outcome/Product of Learning:</b>		<ul style="list-style-type: none"> <li>Thursday 25 April – Anzac Day</li> <li>Monday 10 June – King’s Birthday</li> </ul>

<b>Tune In</b>	<b>Target Teach</b>	<b>Try Out</b>	<b>Tune Up</b>	<b>Take Off</b>	<b>Tie Together</b>
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Weeks & Dates	Learning Focus			Assessment Charts
	Number & Algebra	Measurement & Geometry	Statistics & Probabilities	
<b>Week 1</b> <b>Addition &amp; Subtraction</b>	<p><b>Number - Addition &amp; Subtraction (4 sessions)</b>  <b>Additive Thinking</b>  <b>Booker Pg 87-89</b></p> <ul style="list-style-type: none"> <li>- Build up the basic facts: Ensure automatic response</li> </ul> <p><b>Additive Thinking</b>  <b>Booker pg 206</b></p> <ul style="list-style-type: none"> <li>- Thinking in tens: Extend basic facts to tens.</li> </ul> <p><b>Number - Addition &amp; Subtraction</b>  <b>Additive Thinking</b>  <b>Booker pg 206</b></p> <ul style="list-style-type: none"> <li>- 2 digit and 2 digit addition. Renaming 10 ones as 1 ten.</li> <li>- 3 digit and 3 digit addition. Renaming both ones and tens.</li> <li>- Addition of more than two numbers</li> </ul> <p><b>Addition and Subtraction</b></p> <p><b>Grade 3</b>  <b>Number</b>            Recognise and explain the connection between addition and subtraction (VCMNA132)</p> <p>Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (VCMNA133)</p> <p><b>Grade 4</b>  <b>Patterns and algebra</b>            Use equivalent number sentences involving addition and subtraction to find unknown quantities (VCMNA163)</p> <p><b>Grade 5</b>  <b>Fractions and decimals</b>            Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator (VCMNA188)</p> <p><b>Patterns and algebra</b>            Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction (VCMNA192)</p> <p><b>Grade 6</b>  <b>Number</b>            Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers and make estimates for these computations (VCMNA209)</p> <p><b>Fractions and decimals</b>            Solve problems involving addition and subtraction of fractions with the same or related denominators (VCMNA212)</p>			Addition & Subtraction pre-test (Booker).
<b>Week 2</b> <b>Addition &amp; Subtraction</b>	<p><b>Number - Addition &amp; Subtraction</b>  <b>Additive Thinking</b>  <b>Booker pg 206</b></p> <ul style="list-style-type: none"> <li>- Addition with decimal fractions</li> <li>- Addition with common fractions, unlike fractions, need for equivalent fractions.</li> </ul> <p><b>Addition and Subtraction</b></p> <p><b>Grade 3</b>  <b>Number</b>            Recognise and explain the connection between addition and subtraction (VCMNA132)</p>			Addition Post-Test Booker.

	<p>Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (VCMNA133)</p> <p><b>Grade 4</b> <b>Patterns and algebra</b> Use equivalent number sentences involving addition and subtraction to find unknown quantities (VCMNA163)</p> <p><b>Grade 5</b> <b>Fractions and decimals</b> Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator (VCMNA188)</p> <p><b>Patterns and algebra</b> Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction (VCMNA192)</p> <p><b>Grade 6</b> <b>Number</b> Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers and make estimates for these computations (VCMNA209)</p> <p><b>Fractions and decimals</b> Solve problems involving addition and subtraction of fractions with the same or related denominators (VCMNA212)</p>			
<p><b>Week 3</b> <b>Addition &amp; Subtraction</b></p>	<p><b>Number - Subtraction:</b> Developing the initial subtraction concept. Build up basic facts and strategies. Thinking in tens - Extend basic facts to tens.</p> <p><b>Booker Pg. 234-252</b></p> <p><b>Addition and Subtraction</b></p> <p><b>Grade 3</b> <b>Number</b> Recognise and explain the connection between addition and subtraction (VCMNA132)</p> <p>Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (VCMNA133)</p> <p><b>Grade 4</b> <b>Patterns and algebra</b> Use equivalent number sentences involving addition and subtraction to find unknown quantities (VCMNA163)</p> <p><b>Grade 5</b> <b>Fractions and decimals</b> Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator (VCMNA188)</p> <p><b>Patterns and algebra</b> Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction (VCMNA192)</p> <p><b>Grade 6</b> <b>Number</b> Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers and make estimates for these computations (VCMNA209)</p> <p><b>Fractions and decimals</b> Solve problems involving addition and subtraction of fractions with the same or related denominators (VCMNA212)</p>			
<p><b>Week 4</b></p>	<p><b>Number - Subtraction</b> Subtraction with larger numbers.</p>			<p>Subtraction Post-Test (Booker).</p>

<p><b>Addition &amp; Subtraction</b></p>	<p>Subtraction with decimal fractions. Subtraction with common fractions.</p> <p><b>Booker Pg. 247 - 265</b></p> <p><b>Addition and Subtraction</b></p> <p><b>Grade 3</b> <b>Number</b> Recognise and explain the connection between addition and subtraction (VCMNA132)</p> <p>Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (VCMNA133)</p> <p><b>Grade 4</b> <b>Patterns and algebra</b> Use equivalent number sentences involving addition and subtraction to find unknown quantities (VCMNA163)</p> <p><b>Grade 5</b> <b>Fractions and decimals</b> Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator (VCMNA188)</p> <p><b>Patterns and algebra</b> Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction (VCMNA192)</p> <p><b>Grade 6</b> <b>Number</b> Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers and make estimates for these computations (VCMNA209)</p> <p><b>Fractions and decimals</b> Solve problems involving addition and subtraction of fractions with the same or related denominators (VCMNA212)</p>			
<p><b>Week 5</b> <b>Data Representation</b></p>			<p><b>Booker Pg. 509 - 526</b></p> <p><b>Data Representation- Grade 3:</b> Identify questions or issues for categorical variables. Identify data sources and plan methods of data collection and recording (VCMSP148)</p> <p>Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (VCMSP149)</p> <p>Interpret and compare data displays (VCMSP150)</p> <p><b>Grade 4:</b> Select and trial methods for data collection, including survey questions and recording sheets (VCMSP178) Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values (VCMSP179)</p> <p>Evaluate the effectiveness of different displays in illustrating data features including variability (VCMSP180)</p> <p><b>Grade 5:</b> Pose questions and collect categorical or numerical data by observation or survey (VCMSP205)</p> <p>Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies (VCMSP206)</p>	

			<p>Describe and interpret different data sets in context (VCMSP207)</p> <p><b>Grade 6:</b> Construct, interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables (VCMSP235)</p> <p>Interpret secondary data presented in digital media and elsewhere (VCMSP236)</p> <p>Pose and refine questions to collect categorical or numerical data by observation or survey (VCMSP237)</p>	
<p><b>Week 6</b> <b>Financial Mathematics</b></p>	<p><b>Financial Maths- Number - Addition &amp; Subtraction</b></p> <p><b>Additive Thinking</b> <b>Booker pg 235</b></p> <ul style="list-style-type: none"> <li>- Build up the basic facts: Think of subtraction strategy, ensure automatic responses.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>- Thinking in tens - extend basic facts to tens</li> </ul> <p><b>Booker pg 235</b></p> <ul style="list-style-type: none"> <li>- 2 digit subtract 2 digit vertical: Renaming 1 ten as 10 ones. Base 10.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>- 2 digit subtract 3 digit (decimals?)</li> </ul> <p><b>Booker pg 235</b></p> <ul style="list-style-type: none"> <li>- 3 digit subtract 3 digit with internal 0's.</li> <li>- Subtraction with large numbers.</li> </ul> <p>Grade 3: Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents (VCMNA137)</p> <p>Grade 4: Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies (VCMNA160)</p> <p>Grade 5: Create simple financial plans (VCMNA191)</p> <p>Grade 6: Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies (VCMNA218)</p>			<p>Essential Assessment - G/A mid-year assessments.</p> <p>Assessment week for reports?</p>
<p><b>Week 7</b> <b>Financial Mathematics</b></p>	<p><b>Financial Maths- Number - Addition &amp; Subtraction</b></p> <p><b>Additive Thinking</b> <b>Booker pg 235s</b></p> <ul style="list-style-type: none"> <li>- Strategies for estimation.</li> <li>- using calculators</li> <li>- Subtraction with decimal fractions.</li> </ul> <p><b>Booker pg 235</b></p> <ul style="list-style-type: none"> <li>- Subtraction with common fractions: Like fractions, need equivalent fractions and unlike fractions.</li> </ul> <p>Grade 3: Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents (VCMNA137)</p> <p>Grade 4: Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies (VCMNA160)</p> <p>Grade 5: Create simple financial plans (VCMNA191)</p> <p>Grade 6: Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies (VCMNA218)</p>			

<p><b>Week 8</b></p> <p><b>Length, Perimeter, Area.</b></p>		<p><b>Booker Pg. 408-418</b></p> <p><b>Grade 3:</b> Using units of measurements Measure, order and compare objects using familiar metric units of length, area, mass and capacity (VCMMG140)</p> <p><b>Grade 4:</b> Using units of measurements</p> <p>Use scaled instruments to measure and compare lengths, masses, capacities and temperatures (VCMMG165)</p> <p>Compare objects using familiar metric units of area and volume (VCMMG166)</p> <p>Shape Compare the areas of regular and irregular shapes by informal means (VCMMG169)</p> <p><b>Grade 5:</b></p> <p>Choose appropriate units of measurement for length, area, volume, capacity and mass (VCMMG195)</p> <p>Calculate the perimeter and area of rectangles and the volume and capacity of prisms using familiar metric units (VCMMG196)</p> <p><b>Grade 6:</b></p> <p>Connect decimal representations to the metric system (VCMMG222)</p> <p>Convert between common metric units of length, mass and capacity (VCMMG223)</p> <p>Solve problems involving the comparison of lengths and areas using appropriate units (VCMMG224)</p>		
<p><b>Week 9</b></p> <p><b>Length, Perimeter, Area.</b></p>		<p><b>Booker Pg. 408-418</b></p> <p>Using units of measurements</p> <p>Measure, order and compare objects using familiar metric units of length, area, mass and capacity (VCMMG140)</p> <p><b>Grade 4:</b> Using units of measurements</p> <p>Use scaled instruments to measure and compare lengths, masses, capacities and temperatures (VCMMG165)</p> <p>Compare objects using familiar metric units of area and volume (VCMMG166)</p> <p>Shape Compare the areas of regular and irregular shapes by informal means (VCMMG169)</p> <p><b>Grade 5:</b></p> <p>Choose appropriate units of measurement for length, area, volume, capacity and mass (VCMMG195)</p> <p>Calculate the perimeter and area of rectangles and the volume and capacity of prisms using familiar metric units (VCMMG196)</p> <p><b>Grade 6:</b></p> <p>Connect decimal representations to the metric system (VCMMG222)</p> <p>Convert between common metric units of length, mass and capacity (VCMMG223)</p> <p>Solve problems involving the comparison of lengths and areas using appropriate units (VCMMG224)</p>		
<p><b>Week 10</b></p> <p><b>Volume, Capacity, Mass.</b></p>		<p><b>Booker - Pg. 425-432.</b></p> <p>Grade 3: Using units of measurements</p>		

		<p>Measure, order and compare objects using familiar metric units of length, area, mass and capacity (VCMMG140)</p> <p><b>Grade 4:</b> Using units of measurements</p> <p>Use scaled instruments to measure and compare lengths, masses, capacities and temperatures (VCMMG165)</p> <p><b>Grade 5:</b> Choose appropriate units of measurement for length, area, volume, capacity and mass (VCMMG195)</p> <p>Calculate the perimeter and area of rectangles and the volume and capacity of prisms using familiar metric units (VCMMG196)</p> <p><b>Grade 6:</b></p> <p>Connect decimal representations to the metric system (VCMMG222)</p> <p>Convert between common metric units of length, mass and capacity (VCMMG223)</p> <p>Solve problems involving the comparison of lengths and areas using appropriate units (VCMMG224)</p> <p>Connect volume and capacity and their units of measurement (VCMMG225)</p>		
<b>Week 11</b> <b>Volume, Capacity, Mass.</b>		<p><b>Booker Pg. 425-432.</b></p> <p><b>Grade 3:</b> Using units of measurements</p> <p>Measure, order and compare objects using familiar metric units of length, area, mass and capacity (VCMMG140)</p> <p><b>Grade 4:</b> Using units of measurements</p> <p>Use scaled instruments to measure and compare lengths, masses, capacities and temperatures (VCMMG165)</p> <p><b>Grade 5:</b> Choose appropriate units of measurement for length, area, volume, capacity and mass (VCMMG195)</p> <p>Calculate the perimeter and area of rectangles and the volume and capacity of prisms using familiar metric units (VCMMG196)</p> <p><b>Grade 6:</b></p> <p>Connect decimal representations to the metric system (VCMMG222)</p> <p>Convert between common metric units of length, mass and capacity (VCMMG223)</p> <p>Solve problems involving the comparison of lengths and areas using appropriate units (VCMMG224)</p> <p>Connect volume and capacity and their units of measurement (VCMMG225)</p>		
<b>Week 12</b>		<b>Revision</b>		
<b><u>Ongoing Comments/Reflections</u></b>				