

Year 7			Mathematics Term Planner – Western Adelaide Region (Draft 15/10/13)						Term 1	
Big Ideas/ Topic focus	Strand/ Sub Strand	Achievement Standard	Content Descriptor(s)	Student Prior Knowledge	Suggested Teaching & Learning Experiences	Assessment Focus/ Task	Time Frame	Resources	Links to other learning areas	
Week's 1& 2 –Revise number facts & check for understanding of mental computation strategies for addition, subtraction, multiplication & division. Consider using Peter Westwood's One Minute Maths Tests for diagnostic assessment.										
<p>-Numbers have special properties that can be used to solve problems (e.g. factor, multiple, prime)</p> <p>-Arithmetic laws are powerful ways of describing and simplifying calculations</p> <p>-An integer is any whole number that is positive, negative or zero</p>	<p>Strand: Number & Algebra</p> <p>Sub-strand: Place Value</p>	<p>By the end of Year 7 students solve problems involving the comparison, addition and subtraction of integers</p> <p>Students make the connections between whole numbers and index notation and the relationship between perfect squares and square roots</p>	<p>Investigate index notation and represent whole numbers as products of powers of prime numbers</p> <p>Compare, order, add and subtract integers</p> <p>Investigate and use square roots of perfect square numbers</p> <p>Apply the associative, commutative and distributive laws to aid mental and written computation</p>	<ul style="list-style-type: none">Efficient strategies for problem solving using the four operationsExploring number propertiesFactors and multiplesExploring, locating & ordering integersDefining terms such as integer, prime, factor, multipleExploring commutative laws	<ul style="list-style-type: none">Use a 100s chart to revise & explore properties of numbers (multiple, factor, integer, prime, composite, square, triangular) through mental routines (Natural Maths)Use mental routines to explore factors and multiples to develop fluency and automaticity for the recall of number facts and when exploring the four operations. Also use speed drills, personal bests for students who are more competent, use this time to assist other students & provide intervention.Revise efficient strategies for computation for the 4 operations through strategies such as chunking, open number lines, partial algorithms, balance & compensate, round & adjust, landmark numbers (Natural Maths –Middle Years Mental Computation)Problematised situations (Natural Maths) involving the four operations and multi-step problemsRevise number facts through factor trees and identifying multiplesUse calculators to assist with problem solvingDevelop the vocabulary associated with number properties or create a mathematics word wallExplore commutative, distributive & associative laws, through creating definitions and exploring a range of examples.Locate and order integers (positive and negative) on a number line, including revising place value & decimal place valueExplore index notation & powers of 10, i.e. The exponent (or index or power) of a number says how many times to use the number in a multiplication. 10^2 means $10 \times 10 = 100$ (It says 10 is used 2 times in the multiplication)Create posters or 'help sheets' to explain number properties and to give examples (e.g. ordering integers on a number line; number sentences to model commutative, distributive & associate laws; number sentences to demonstrate index notation)	<p>Diagnostic Assessment <i>Big Ideas in Number Test – Multiplicative Thinking (Professor Dianne Siemon)</i></p> <p>Formative Assessment Natural Maths Problematised Situations</p> <p>Work samples involving number sentences & identified strategies</p> <p>Student generated glossary or help sheets</p> <p>Doug Clarke – 'Rich Assessment Tasks' (e.g. Multi Lotto)</p> <p>Maths300 tasks (Education Services, Victoria)</p> <p>Summative Assessment Tasks (Western Adelaide Region) -7.1: 'Help!' Poster; Number Properties</p>	<p>Term 1</p> <p>(5 weeks)</p> <p>Ongoing throughout the year</p>	<ul style="list-style-type: none">Counters- single coloured (for arrays models)Number cards 0-9 or 0-6, 0-9, 1-10 diceFlashcards/ Number cards (including missing addend)1-100, 0-99 number chartsThinkboards/ Mental routine boardsNatural Maths Computation strategies postersCalculatorsFrieze tape (for open number lines)	<ul style="list-style-type: none">Literacy – creating narrated problematised situations; maths glossary of terms	
<p>-Understanding arithmetic laws leads to the understanding of algebra</p> <p>-Patterns can be represented in many ways and can consist of multiple operations and inverse operations</p>	<p>Strand: Number & Algebra</p> <p>Sub-strand: Patterns & Algebra</p>	<p>By the end of Year 7, students represent numbers using variables</p> <p>Students connect the laws and properties for numbers to algebra</p>	<p>Introduce the concept of variables as a way of representing numbers using letters</p> <p>Create algebraic expressions and evaluate them by substituting a given value for each variable</p> <p>Extend and apply the laws and properties of arithmetic to algebraic terms and expressions</p>	<ul style="list-style-type: none">Properties of numbersIntegersProblem solving involving the four operationsNumber linesFactors & Multiples	<ul style="list-style-type: none">Revise number properties & revisit efficient strategies for mental computationProblem solving situations involving multi-step and combinations of addition, subtraction, multiplication and division, including exploring how to record solutions as a step by step processProblem solving situations where there are unknown quantities or variables within quantities (if X is ..., then Y could be ... or...). This could include student generated 'guess my rule' games/activities.Explore ratio tables as a way of problem solving (search Professor Shelley Dole, Proportional Reasoning for ideas)Explore order of operations with and without digital technologiesExplore BEDMAS, including using bracket in an Excel spreadsheet. BEDMAS- 1. Calculations must be done from left to right. 2. Calculations in brackets (parenthesis) are done first. When you have more than one set of brackets, do the inner brackets first. 3. Exponents/Orders (or radicals) must be done next. 4. Multiply and divide in the order the operations occur. 5. Add and subtract in the order the operations occur.Use interactive software programs such as, Natural Maths- The Card Game & Maths300 (inexpensive for site licences)Create a word wall or 'help sheets' to display in the classroom	<p>Formative Assessment Natural Maths Problematised Situations</p> <p>Work samples & anecdotal notes</p> <p>Doug Clarke – 'Rich Assessment Tasks' (e.g. Mike and his Numbers, *Personalised Number plates - * Year 6 task, could be adapted to suit Year 7);</p> <p>Maths300 tasks (Education Services, Victoria)</p> <p>Summative Assessment Tasks (Western Adelaide Region) -7.3: Patterns & Algebra</p>	<p>Term 1</p> <p>(3 weeks)</p> <p>Ongoing throughout the year</p>	<ul style="list-style-type: none">Thinkboards/ whiteboardsMental routine boardCalculatorsMicrosoft ExcelMaths300 softwareThe Card Game- Natural Maths software	<ul style="list-style-type: none">Literacy – creating narrated problematised situations; maths glossary of terms	
Beginning of Term 2: Revise any content requiring additional teaching and development, then begin a new unit on Fractions & Decimals or Linear Relationships. (see the Western Adelaide Region Year 7 Summative Assessment Tasks for ideas)					Future Learning Considerations	What were the students able to do and show? What are the areas needing further development? What misconceptions did students have? Have these been adequately addressed? What are the next big ideas? What are the learning goals of my students? What assessment strategies will show me what students know?				