

Year 8 Mathematics Program 2009 – St Stephen’s School, Carramar

Teachers: Wendy Brown, Simon Weaver, Jennifer Key, Stewart Bremner

Text: Nelson Maths for WA 8 Supplement lessons with Mathletics. (www.mathletics.com.au)

St Stephen’s Maths Website: www.mathxyc.com

Note: In addition to these assessments, the students will do brief resource free skills tests on a weekly basis.

Term 1

Weeks	Contents	Text Resources	CD-ROM Resources	Assessments
Chapter 1: Whole Numbers (Number)				
1-4	Assessment of prior learning		Chapter 1 Progress check	
**	1.1 Naming and writing numbers	- Investigation: Sieve of Eratosthenes - Exercise 1.1	- TLF L871 Wishball challenge: Whole numbers - Additional exercise 1.1	Investigation 1 wk 2
(Girls camp wk3 18-20 Feb)	1.2 Size and order of numbers	Exercise 1.2	Additional exercise 1.2	Friday 13/02
(Boys camp wk4 23-25 Feb)	1.3 Addition and subtraction	- Investigation: Mental arithmetic methods 1 - Investigation: Triangle Totals - Exercise 1.3	- Interactive tutorial 1.3a: Addition - Interactive tutorial 1.3b: Subtraction - TLF L102 The take-away bar: Go figure - Additional exercise 1.3	Test 1 ch 1 week 4 Friday 27/02

** As the girls and boys are going on separate camps, we will suspend the normal maths program during each camp and do some problem solving activities and Mathletics.

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	1.4 Multiplication and division	- Investigation: Mental arithmetic methods 2 - Exercise 1.4	- Teacher notes: Calculation shortcuts - Interactive tutorial 1.4a: Multiplication - Interactive tutorial 1.4b: Division - Alternative method: Multiplication and division - TLF L90 The multiplier: Go figure - TLF L82 The multiplier: Make your own multiplications - Additional exercise 1.4	
	1.5 Order of operations	Exercise 1.5	- Interactive tutorial 1.5: Order of operations - Additional exercise 1.5	
	1.6 Approximation methods	Exercise 1.6	Additional exercise 1.6	
	1.7 Powers and roots	Exercise 1.7		
	1.8 Negative numbers	Exercise 1.8	- Spreadsheet: Negative number puzzles - TLF L2001 Scale matters: Negatives - Additional exercise 1.8	

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	Revision and consolidation	- Chapter 1 summary - Chapter 1 review - Project: Ancient number systems		
Chapter 2: Patterns and rules (Algebra)				
5-7	Assessment of prior learning		Chapter 2 Progress check	Test 2 ch 2 week 7 Fri 20/03
	2.1 Patterns	- Technology: Number patterns - Exercise 2.1	- Spreadsheet: 5 squares game - Spreadsheet: Game of 31 - Spreadsheet: 5 cubes game - TLF L1922 Bridge builder: Triangles 2 - TLF L1926 Bridge builder: Complex pentagons - Additional exercise 2.1	
	2.2 Rules and number machines	- Exercise 2.2 - Technology: Guess my rule	- Interactive tutorial 2.2a: Number machines - Interactive tutorial 2.2b: Number machines - Spreadsheet: Guess my rule - Additional exercise 2.2	
	2.3 Grids and the Cartesian plane	Exercise 2.3	- TLF L350 Rainforest: Use a grid map - Additional exercise 2.3	

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	2.4 Number rules and graphs	Exercise 2.4	- TLF L1939 Circus towers: Square pyramids - Additional exercise 2.4	
	2.5 Straight-line graphs	- Exercise 2.5 - Technology: Hamburger stall	- Spreadsheet: Hamburger stall - Additional exercise 2.5	
	2.6 Backtracking	Exercise 2.6	- Interactive tutorial 2.6a: Flowcharts - Interactive tutorial 2.6b: Backtracking - Additional exercise 2.6	
	Revision and consolidation	- Chapter 2 summary - Chapter 2 review - Project: Encryption		
Chapter 3: Decimal Calculation (Number)				
8-10	Assessment of prior learning		Chapter 3 Progress check	Test 3 ch 3 week 10
	3.1 Naming, showing and comparing decimal fractions	- Investigation: Decimals by eye - Exercise 3.1	- TLF L875 Wishball challenge: Ultimate - Additional exercise 3.1	Wed 08/04

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	3.2 Addition and subtraction of decimals	- Investigation: Addition palindromes - Exercise 3.2	- Spreadsheet: Decimal game - Additional exercise 3.2	
	3.3 Multiplication and division of decimals	Exercise 3.3	- Interactive tutorial 3.3a: Decimal multiplication - Interactive tutorial 3.3b: Decimal division - Spreadsheet: Decimal practice - Additional exercise 3.3	
	3.4 Decimal approximations	Exercise 3.4	Additional exercise 3.4	
	3.5 Application of decimals	Exercise 3.5	Additional exercise 3.5	
	Revision and consolidation	- Chapter 3 summary - Chapter 3 review		

Term 2

Week	Contents	Text Resources	CD-ROM Resources	Assessments
Chapter 4: Length and perimeter (Measurement)				
1-3	Assessment of prior learning		Chapter 4 Progress check	Test 4 ch 4 week 3
	4.1 Measuring length	- Investigation: Body parts and measuring instruments - Investigation: Pacing it out - Exercise 4.1	Additional exercise 4.1	
	4.2 Converting length units	Exercise 4.2	- Interactive tutorial 4.2: Length conversions - Spreadsheet: Coin balance - Additional exercise 4.2	
	4.3 Perimeters of shapes	Exercise 4.3	Additional exercise 4.3	
	4.4 Perimeters using rules	Exercise 4.4	Additional exercise 4.4	
	4.5 Perimeters of circles	Exercise 4.5	Additional exercise 4.5	
	4.6 Scale drawings and maps	Exercise 4.6	Additional exercise 4.6	

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	Revision and consolidation	- Chapter 4 summary - Chapter 4 review - Project: Pi		
Chapter 5: Fractions and ratios (Number)				
4-7	Assessment of prior learning		Chapter 5 Progress check	Investigation 2 wk 5 Test 5 ch 5 week 7
	5.1 Naming and comparing common fractions and decimals	- Investigation: Fraction wall - Exercise 5.1	- Interactive tutorial 5.1a:Mixed fractions - Interactive tutorial 5.1b:Improper fractions - Alternative method: Equivalent fractions - TLF L135 Shape fractions - TLF L2800 Fraction fiddle: Tool - Spreadsheet: Equivalent fractions - Additional exercise 5.1	
	5.2 Addition and subtraction of common fractions	Exercise 5.2	- TLF L2806 Fraction fiddle: Reach the target - Additional exercise 5.2	
	5.3 Multiplication and division of common fractions	- Investigation: Jeweller's puzzle - Exercise 5.3	Additional exercise 5.3	

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	5.4 Ratios and rates	- Technology: Ratio divider - Exercise 5.4	- Interactive tutorial 5.4: Ratios - Spreadsheet: Ratio divider 1 - Spreadsheet: Ratio divider 2 - Spreadsheet: Ratio divider 3 - Additional exercise 5.4	
	5.5 Direct proportion	Exercise 5.5	- Alternative method: Direct proportion - TLF L2372 Biscuit factory: Complex ratios - Additional exercise 5.5	
	Revision and consolidation	- Chapter 5 summary - Chapter 5 review - Project: Unit fractions		
Chapter 6: Shapes and areas (Measurement & Space)				
8-10	Assessment of prior learning		Chapter 6 Progress check	Test 6 ch 6 week 10
	6.1 Two-dimensional shapes	- Technology: Drawing 2D and 3D figures - Exercise 6.1	Additional exercise 6.1	
	6.2 Triangles and quadrilaterals	Exercise 6.2	Additional exercise 6.2	

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	6.3 Similarity and congruence	- Technology: Drawing similar shapes - Exercise 6.3	- TLF L2310 Measures: Scaling up - TLF L2311 Measures: Scaling down - Additional exercise 6.3	
	6.4 Slides, flips, turns and symmetry	- Technology: Slide, flip and turn - Investigation: The symmetry of faces - Exercise 6.4	- Teacher notes: Symmetry of flags - Teacher notes: Polyominoes and more tessellations - Additional exercise 6.4	
	6.5 Measuring Area	- Investigation: Body areas - Exercise 6.5	Additional exercise 6.5	
	6.6 Rules for finding areas	- Investigation: Estimating large areas - Exercise 6.6	- Teacher notes: Development of area rules - TLF L145 Areas of triangles - Interactive Tutorial 6.6: Area of a sector - TLF L139 Area: Counting with Coco - Additional exercise 6.6	
	Revision and consolidation	- Chapter 6 summary - Chapter 6 review		

Term 3

Week	Contents	Text Resources	CD-ROM Resources	Assessments
Chapter 7: Money and percentage (Number)				
1-3	Assessment of prior learning		Chapter 7 Progress check	Test 7 ch 7 wk 3
	7.1 Bills and change	- Investigation: Counting change - Exercise 7.1	- Teacher notes: Counting change - Additional exercise 7.1	
	7.2 Percentages	Exercise 7.2	- Interactive tutorial 7.2: 78% of \$750 - TLF L133 Playground percentages - TLF L123 Design a city - Additional exercise 7.2	
	7.3 Money and percentage applications	- Technology: Cost price and final price - Exercise 7.3	- Interactive tutorial 7.3: Percentage profit - Spreadsheet: Percentages - TLF L768 Fish market - Additional exercise 7.3	
	Revision and consolidation	- Chapter 7 summary - Chapter 7 review - Project: Papering the classroom		

Week	Contents	Text Resources	CD-ROM Resources	Assessments
Chapter 8: Angles and direction (Measurement & Space)				
4-7	Assessment of prior learning		Chapter 8 Progress check	Test 8 ch 8 wk 7
	8.1 Naming and measuring angles	Exercise 8.1	- Alternative method: Reflex angles - Additional exercise 8.1	Investigation 3 wk 5
	8.2 Drawing and constructing angles	Exercise 8.2	- Alternative Method: Constructing a 90° angle - Additional exercise 8.2	
	8.3 Angles inside a polygon	- Investigation: Interior angles of polygons - Exercise 8.3	- Interactive tutorial 8.3: Find the missing angle - Additional exercise 8.3	
	8.4 Directions and bearings	Exercise 8.4	Additional exercise 8.4	
	8.5 Latitude and longitude	Exercise 8.5	Additional exercise 8.5	
	Revision and consolidation	- Chapter 8 summary - Chapter 8 review - Project: Using a compass		
Chapter 9: Chance and data				
8-10	Assessment of prior learning		Chapter 9 Progress check	Test 9 ch 9 wk 10

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	9.1 Collecting data	Exercise 9.1	- Interactive tutorial 9.1: Frequency tables - TLF L764 Journey planner: Quickest route 1 - Additional exercise 9.1	
	9.2 Displaying data	- Technology: Electronic circle graphs - Investigation: Teenage diets - Exercise 9.2	- Teacher notes: Histograms - Interactive tutorial 9.2: Circle graphs - Alternative method: Circle graphs - Teacher notes: Circle graph methods - Spreadsheet: Circle graphs - Teacher notes: Histograms for grouped data - TLF L2382 Mystery spinner - TLF L5911 Stem and leaf graphs - Additional exercise 9.2	
	9.3 Analysing data	Exercise 9.3	- Interactive tutorial 9.3: Find the mean - Additional exercise 9.3	
	9.4 Experimental probability	- Investigation: Buttered toast - Exercise 9.4	- Spreadsheets: Lettuce 1 - Spreadsheets: Lettuce 2 - Additional exercise 9.4	

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	9.5 Theoretical probability	Exercise 9.5	Additional exercise 9.5	
	Revision and consolidation	- Chapter 9 summary - Chapter 9 review		

Term 4

Week	Contents	Text Resources	CD-ROM Resources	Assessments
Chapter 10: Expressions and equations (Algebra)				
1-3	Assessment of prior learning		Chapter 10 Progress check	Test 10 ch 10 wk 3
	10.1 Simplifying algebraic expressions	Exercise 10.1	Additional exercise 10.1	
	10.2 Expanding brackets	- Investigation: Paperclip models - Exercise 10.2	- Interactive tutorial 10.2: Distributive law - Additional exercise 10.2	
	10.3 Equations	Exercise 10.3	- Spreadsheet: Guess and check - Additional exercise 10.3	
	10.4 Inverse operations	- Investigation: Inverses - Exercise 10.4	Additional exercise 10.4	
	10.5 Solving equations	Exercise 10.5	- Interactive tutorial 10.5: Solve the equation - Additional exercise 10.5	
	Revision and consolidation	- Chapter 10 summary - Chapter 10 review - Project: What did I sell?		

Week	Contents	Text Resources	CD-ROM Resources	Assessments
Chapter 11: Three-dimensional shapes and volumes				
4-6	Assessment of prior learning		Chapter 11 Progress check	Test 11 ch 11 wk 6
	11.1 Three-dimensional shapes	- Investigation: Centicube plans - Investigation: Making shapes from nets - Exercise 11.1	- Teacher notes: Nets - TLF L1060 Shape maker: Simple objects - TLF L588 Shape maker: Stacker - TLF L1062 Shape maker: Complex objects 2 - TLF L6245 Viewfinder - Additional exercise 11.1	Investigation 4 wk 5
	11.2 Surface area	Exercise 11.2	- Interactive tutorial 11.2: Surface area - Additional exercise 11.2	
	11.3 Cubic volume	- Investigation: Classroom cubes - Investigation: Volumes of rectangular prisms - Exercise 11.3	- TLF L165 What's in a cube: Level 1 - TLF L166 What's in a cube: Level 2 - Interactive tutorial 11.3: Volume - Additional exercise 11.3	
	11.4 Capacity	- Investigation: Common capacities - Exercise 11.4	Additional exercise 11.4	

Week	Contents	Text Resources	CD-ROM Resources	Assessments
	Revision and consolidation	- Chapter 11 summary - Chapter 11 review - Project: Atmospherics at school		
Chapter 12: Mass and time (2 weeks)				
	Assessment of prior learning		Chapter 12 Progress check	
	12.1 Mass measurement	- Investigation: Mass and weight - Exercise 12.1	- Teacher notes: Mass and weight - Interactive tutorial 12.1: Mass conversion - Additional exercise 12.1	
	12.2 Time and duration	- Investigation: Estimation of time - Technology: Electronic timetables - Exercise 12.2	- Interactive tutorial 12.2: Time difference - Alternative method: Time difference - TLF L347 Rainforest: Book a flight - Additional exercise 12.2	
	12.3 Australian time zones	Exercise 12.3	Additional exercise 12.3	
	Revision and consolidation	- Chapter 12 summary - Chapter 12 review		