

LIVING MATHS

A SEQUENTIAL COURSE FOR NON-UNIVERSITY BOUND STUDENTS

The following information pertains to the development and implementation of the Living Maths course. It is recommended teachers read through this information when making decisions as to how to implement the course.

WHY IMPLEMENT THE COURSE?

- SEQUENTIAL DEVELOPMENT
- APPROPRIATE CONTENT
- APPROPRIATE LEVEL OF DIFFICULTY
- COMPLETE PACKAGE

Previously courses for non-university bound students have consisted of a watered down version of academic courses or a theme based approach that treated objectives in an ad-hoc manner. It was found that these students saw little purpose in much of the content and it was often too difficult. Courses based on a thematic approach were often under-resourced and not sequential.

To solve these problems it was decided to develop a course for students not bound for university that was well resourced, well structured, well sequenced and provided the right type of learning experiences to both prepare students for life and to develop important essential concepts and skills. Hence, Living Maths was created.

WHICH STUDENTS IS IT FOR?

- NON UNIVERSITY-BOUND STUDENTS AGED ABOUT 14 and 15.

The material in the course is designed to provide about two years of learning experiences for students who are not intending to study university entrance mathematics courses in upper school. This may vary from about 70% of the year cohort in some schools to about 30% in others depending on the students' abilities and aspirations.

WHAT IS THE CONTENT BASED ON?

- ALL OF THE FOUNDATION LIST OF OBJECTIVES
- PARTS OF THE 'NATIONAL STATEMENT ON MATHEMATICS FOR AUSTRALIAN SCHOOLS'

To initiate the planning of the content in the course we looked to these documents to form a basic structure. This has been embellished by the thoughts of the people involved in writing the materials and modified in places based on students' responses during the trial period.

HOW DOES THE COURSE RELATE TO THE OUTCOME STATEMENTS REQUIRED IN WESTERN AUSTRALIA?

- COVERS ALL SIX STRANDS
- GENERALLY ABOUT LEVEL 3 TO LEVEL 5 STANDARD

Our content is what we believe these students are capable of achieving across each of the six strands; Working Mathematically, Space, Measurement, Chance and Data, Number and Algebra. The learning experiences are structured to both develop processes sequentially and to allow opportunities for mathematical thinking. Our planning takes into account the sequencing of concepts within each of the strands and integrates the strands throughout the course.

The course attempts to move this body of students from a level of development which averages about level 3 standard up to about level 5 standard. However, because we have designed this course to be used with classes of mixed ability we have provided a range of difficulty at each point of the course. This allows teachers to pick appropriate work for different classes and students.

THE STRUCTURE OF THE LIVING MATHS COURSE

The table below shows how the materials are intended to be sequenced although while trialling the material we have realised that for some classes it might also be appropriate to only cover books 1A to 3B over the two years. There is adequate material for this if the classes do not contain students from about the 40th to 60th percentile.

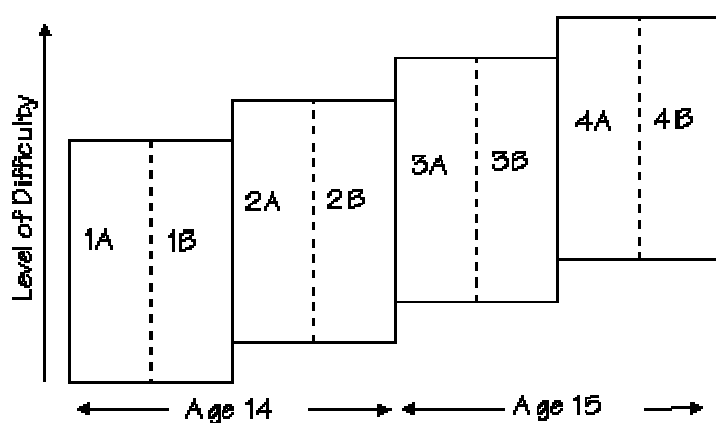
Part of the plan when writing these materials was to make them flexible enough to suit different teachers and different students so we would like to think that whatever structure people adopt it will work.

AGE 14	TERM 1	Book 1A
	TERM 2	Book 1B
	TERM 3	Book 2A
	TERM 4	Book 2B
AGE 15	TERM 1	Book 3A
	TERM 2	Book 3B
	TERM 3	Book 4A
	TERM 4	Book 4B

THE DEVELOPMENT OF LEVEL OF DIFFICULTY:

Initial discussion on the type of course these students required to progress in their level of achievement suggested that they needed repetition of ideas over a long period of time. In keeping with this idea the Living Maths course enables students to study each content area four times over the two years. Each time there is revision of previous ideas followed by a progression into new concepts. To stop this being repetitive the texts alternate between two different sets of topics and use new contexts wherever possible when returning to content previously studied.

The diagram below shows how this development is intended to take place.



THE CONTENT TOPICS OF LIVING MATHS

A STRAND	B STRAND
1. TIME	14. DIRECTION
2. TOPOLOGY	15. PERCENTAGE
3. NUMBER	16. COORDINATES
4. MEASUREMENT	17. POWERS
5. MONEY	18. AREA
6. NEGATIVE NUMBERS	19. 3D SHAPES
7. STATISTICS	20. RATIO AND PROPORTION
8. FRACTIONS	21. VOLUME
9. 2D SHAPES	22. CHANCE
10. AVERAGES	23. RATES
11. LENGTH	24. TIME SERIES DATA
12. MASS	25. SCALE DRAWING
13. ANGLE	26. FORMULAE

These twenty six topics evolved from the initial structuring of what we thought these students should learn. They have been modified, their names have been changed, and they have been resequenced as a result of further developments and trialling. There is an attempt to balance types of units between strands, and time has been spent trying to ensure prerequisite knowledge was available when needed. As they stand, they provide a framework on which to put together all of the different learning experiences included in the course.

THE TYPES OF MATERIAL IN THE LIVING MATHS TEXTS

The table below shows the **approximate** number of learning activities provided in each book. It is obvious from this table that there is a wide range of types of learning experiences in all of the books. There are two ideas behind this. We want to ensure that everything a teacher might need is included in the book and we want to provide a surplus of material so that each teacher can develop a sequence of lessons to suit their students and their teaching style.

We also hoped to cover such diverse requirements as mathematical literacy, use of technology, and library skills. All of these items are programmed into the course at the appropriate time and place and are readily available to the teacher.

	1A	1B	2A	2B	3A	3B	4A	4B
GRADED EXERCISES	68	54	66	53	67	53	61	56
PUZZLES	7	10	12	12	7	12	10	10
NEWSPAPER SEARCHES	11	8	8	7	4	7	8	8
PROJECTS	3	3	6	4	4	5	4	4
COMPUTING ACTIVITIES	1	2	1	1	1	4	2	2
GAMES	3	2	1	2	1	1	2	2
CROSSWORD PUZZLES	4	4	4	4	4	4	4	4
EXTENSION & ENRICHMENT	3	3	5	6	5	7	3	7
LIBRARY RESEARCH	1	1	2	1	1	1	1	2
WORD SLEUTHS	1	0	0	1	1	1	1	1
NUMBER FACT TABLES	8	8	8	8	8	8	8	8

SPECIFIC OBJECTIVES OF THE TOPICS IN LIVING MATHS

1. TIME

1.1 Tell the time and understand times expressed in terms of 12 hour and 24 hour clocks.

1.2 Choose and use appropriate techniques and tools to measure time.

1.3 Perform operations on time units.

1.4 Convert between time units.

1.5 Calculate the interval between two given times, and the finishing time, given the starting time and the duration.

1.6 Use a bus or train timetable.

2. TOPOLOGY

2.1 Describe, follow and record vertices, paths, regions and routes using networks.

3. NUMBER

3.1 Understand place value in numbers up to billions and five decimal places.

3.2 Possess confident recall of addition and multiplication facts up to $15 + 15$ and 15×15 and the related subtraction and division facts.

3.3 Understand and make use of interrelationships of the kind:

$$13 \times 8 = (10 \times 8) + (3 \times 8).$$

3.4 Select the appropriate operation (addition, subtraction, etc.) for use in the solution of a variety of practical problems.

3.5 Appreciate the need for careful ordering of operations when using a calculator.

3.6 Understand and use the decimal system in practical situations and problems.

3.7 Describe the development of various counting and numeration systems.

3.8 Investigate and use number patterns and relationships.

3.9 Investigate and extend number sequences.

3.10 Round numbers up to four decimal places and millions.

4. MEASUREMENT

4.1 Have a 'feel' for the size of various units in relation to common objects within the students' experience.

4.2 Read scales, meters and dials of various types.

4.3 Understand the use of metric prefixes to unify measurements in a coherent way.

5. MONEY

- 5.1 Add and subtract decimals involving up to two decimal places in the context of measurement (including money).
- 5.2 Recognize coins and notes and know that $100c = \$1$. Handle money with confidence.
- 5.3 Carry out simple transactions, performing necessary calculations either mentally or on paper.
- 5.4 Add and subtract small sums of money without a calculator.
- 5.5 Multiply or divide a sum of money by a single digit without a calculator.
- 5.6 Perform more complex calculations involving money using any appropriate method.
- 5.7 Interpret the language of and deal with matters of personal finance.

6. NEGATIVE NUMBERS

- 6.1 Count, order, read and write positive and negative whole numbers and use them in context, e.g. what is the rise in temperature from -3°C to 10°C ?

7. STATISTICS

- 7.1 Organize systematically the collection and tabulation of simple data.
- 7.2 Read and interpret simple graphs and charts and extract specific information from them; draw graphs by hand and using spreadsheet packages.
- 7.3 Extract information presented in tabular form.

8. FRACTIONS

- 8.1 Use the language and notation of simple fractions in appropriate context, e.g. half of a kilometre, two-thirds of the class.
- 8.2 Add and subtract fractions with denominators 2, 4 or 8 in the context of measurement.
- 8.3 Know the decimal equivalent of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{1}{10}$, $\frac{1}{100}$, and also that $\frac{1}{3}$ is about 0.33.
- 8.4 Convert fractions to decimals with the help of a calculator.

9. TWO DIMENSIONAL SHAPES

9.1 Recognize and name simple plane figures.

9.2 Understand and use terms such as side, diagonal, perimeter, area, angle.

9.3 Understand and use terms relating to the circle: centre, radius, diameter, circumference, chord.

9.4 Draw a simple plane figure to given specifications.

9.5 Use translations, rotations and reflections and the relationships between them.

10. AVERAGES

10.1 Understand the differences among the various measures of average and the purpose for which each is used.

10.2 Summarise and interpret data using visual representations and measures of location and spread.

11. LENGTH

11.1 Measure length using appropriate metric units.

11.2 Understand the relationships among millimetres, centimetres, metres and kilometres.

11.3 Have a 'feel' for the size of these units in relation to common objects within the students' experience.

11.4 Find the perimeter of planar figures.

11.5 Understand and use the fact that the circumference of a circle = π x diameter; know that π is a little more than 3.

11.6 Add and subtract decimals involving up to two decimal places in the context of measurement .

11.7 Choose and use appropriate techniques and tools to measure length.

12. MASS

12.1 Measure weight using appropriate metric units.

12.2 Understand the relationships among grams, kilograms and tonnes.

12.3 Have a 'feel' for the size of these units in relation to common objects within the students' experience.

12.4 Add and subtract decimals involving up to two decimal places in the context of measurement.

12.5 Choose and use appropriate techniques and tools to measure mass.

13. ANGLE

13.1 Measure angles in degrees.

13.2 Identify angle types.

13.3 Understand bearings and the ways in which they are measured.

13.4 Choose and use appropriate techniques and tools to measure angles.

14. DIRECTION

14.1 Identify vertical, horizontal and oblique objects.

14.2 Understand the relationships parallelism and perpendicularity.

14.3 Understand the directions clockwise and anticlockwise.

15. PERCENTAGE

15.1 Calculate a percentage of a sum of money.

15.2 Increase or decrease a sum of money by a given percentage.

15.3 Appreciate the use made of percentages in everyday life.

16. COORDINATES

16.1 Understand the Cartesian coordinate system.

16.2 The use of coordinates to locate areas (as on a street map) and points (as on an Ordnance Survey map).

16.3 Follow and give directions on a map.

16.4 Determine distances on a map using a scale.

16.5 Interpret contour maps.

16.6 Draw and interpret scattergraphs.

17. POWERS

17.1 Understand and use powers of numbers.

17.2 Use scientific notation to represent small and large numbers.

18. AREA

18.1 Find the area of planar figures.

18.2 Choose and use appropriate techniques and tools to measure area.

19. THREE DIMENSIONAL SHAPES

19.1 Recognize and name common solid shapes: cube, rectangular block, sphere, cylinder, cone, pyramid.

19.2 Be able to visualize and understand simple mechanical movement, including the working of simple linkages.

19.3 Use translations, rotations and reflections and the relationships between them.

20. RATIO AND PROPORTION

20.1 Understand the use of ratio as applied to such things as mixtures, e.g. 4 parts sand to 1 part cement, and recipes, e.g. work out the quantities required for six people from a recipe which serves four.

20.2 Understand informally simple ideas of direct and inverse proportion.

21. VOLUME

21.1 Find the volume of a rectangular solid.

21.2 Find the volume of solids using formulae.

21.3 Measure capacity, using appropriate metric units.

21.4 Understand the relationships among millilitres, litres and kilolitres. Know that 1 litre is equivalent to 1000 cubic centimetres. Convert between units.

21.5 Have a 'feel' for the size of these units in relation to common objects within the students' experience.

21.6 Understand the relationship between volume and capacity.

21.7 Choose and use appropriate techniques and tools to measure capacity and volume.

22. CHANCE

22.1 Appreciate basic ideas of randomness and variability.

22.2 Know the meaning of probability and odds in simple cases.

23. RATES

23.1 Understand and use simple rates, e.g. dollars per hour, kilometres per 100 litres.

23.2 Solve simple problems involving time, distance and speed.

23.3 Understand and use the derived measures of density, speed and other rates.

24. TIME SERIES DATA

24.1 Draw inferences and construct and evaluate arguments based on sample data.

24.2 Draw freehand sketches of and interpret graphs which model real phenomena qualitatively.

24.3 Use graphs to model real situations and make predictions including those based on interpolation, extrapolation, slope and critical points.

25. SCALE DRAWING

25.1 Appreciate the concept of scale in geometrical drawings and maps.

25.2 Use similarity and Pythagoras' theorem for indirect measurement in two and three dimensions.

26. FORMULAE

26.1 Substitute numbers in a simple formula expressed in words, and evaluate the answer.

26.2 Understand the use of variables in formulae.

26.3 Use formulae to find values.

CONTENTS OF THE TOPICS IN LIVING MATHS

	TOPIC	AREA	BOOK 1A	BOOK 2A	BOOK 3A	BOOK 4A
1	Time	Units of time and conversions	Seconds, minutes, hours and days (whole number conversions only)	Seconds, minutes, hours and days (conversions with fractions and decimals)	Weeks, fortnights, months, years, decades and centuries (whole number conversions only)	Weeks, fortnights, months, years, decades and centuries (conversions with fractions and decimals)
		Choose appropriate units of time	Choose from seconds, minutes, hours and days for a given situation	Comparing units of time given different units (seconds, minutes, hours and days)	Choose from weeks, fortnights, months, years, decades and centuries for a given situation	Comparing units of time given different units (weeks, fortnights, months, years, decades and centuries)
		Tell time in 12 and 24 hour format	Conversions of 12 to 24 hour time	Setting alarm clocks	Setting ovens	Setting videos and TV programming
		Reading clocks, stopwatches and calendars	Reading clocks Drawing clock faces to given times	Reading calendars Stopwatches	Reading calendars World Time Zones	Australian Time Zones
		Time calculations	Addition and subtraction (no carrying) Elapsed times	Multiplication and division (no carrying)	Addition and subtraction (with carrying) Elapsed times	Multiplication and division (with carrying) Elapsed times
		Bus and Train Timetables	Reading timetables	Reading timetables	Reading timetables	Reading timetables
2	Topology	Networks	Vertices and paths	Vertices and paths Regions Euler's Rule	Routes Shortest routes	Vertices, regions and paths Shortest route Shortest connection
3	Number	Number Facts	To 10	To 12	To 12	To 15
		Place Value (inc. Numbers	Up to thousands Three decimal	Up to millions Three Decimal places	Up to millions Four Decimal places	Up to billions Five decimal places

		Words)	places			
		Choosing operations	One stage	One or two stages	One to three stages	One to four stages
		Number Sequences	Linear (Positives only)	Linear (+ & -) Quadratic (+ & -)	Linear Quadratic Exponential ($r > 1$)	Linear Quadratic Exponential
		Rule of Order	BMDAS One level of brackets Up to 3 operations	BIMDAS Two levels of brackets Indices only Power 2 Up to 4 operations	BIMDAS Brackets to include vinculum - up to two levels Other powers to be included Up to 5 operations	BIMDAS Up to three levels of brackets including vinculum Indices to include roots Up to 6 operations
		Number Patterns	Number Patterns	Number Patterns	Number Patterns	Number Patterns
		Distributive Property			Distributive property (addition only)	Distributive property (addition and subtraction)
		Counting Systems	Hindu Arabic	Japanese	Roman	Binary
		Rounding		Nearest 1, 10, 100, 1000 One decimal place	Nearest 1, 10, 100, 1000 Up to 2 decimal places	Nearest 1, 10, 100, 1000, ... Up to 5 decimal places Rounding money
4	Measurement	Measurement	Metric system Common units Reading scales, meters and dials	Drawing scales Reading scales, meters and dials	Comparison with Imperial system	Reading scales Metric units Conversions Imperial units
5	Money	Coins and notes	Money conversion	Money conversion	Money conversion	Money conversion
		Add and subtract money	Money calculations Rounding	Money calculations Rounding	Money calculations Rounding	Money calculations Rounding
		Money transactions	Choosing operations - one stage	Choosing operations - one stage	Choosing operations - one and two stage	Choosing operations - one and two stage
		'Mental' money computations	Mental computations (two amounts) Estimation	Mental computations (two amounts) Estimation	Mental computations (two or three amounts)	Mental computations (two to four amounts)
		Calculations and Personal Finance	Change Money rates Shopping Pay rates	Foreign currency and exchange rates Earning an income Banking	Foreign currency Earning an income, time cards and taxation Hire purchase Budgeting	Hire purchase Buying a car Cheque accounts Costs of living Earning an income

					Cheque accounts	
6	Negative Numbers	Positive and negative numbers	Understanding positive and negative numbers Count, order and read numbers	Understanding positive and negative numbers Problems in context	Understanding positive and negative numbers Problems in context	Understanding positive and negative numbers Problems in context
7	Statistics	Data collection	Collection of data	Collection of data	Collection of data	Collection of data
		Representing data - graphs	Reading tables	Histograms, line graphs	Circle/Pie graphs	Multiple column graphs Divided bar graphs
		Representing data - tables	Construct and interpret tables - two columns	Tables involving class intervals	Tables - construction and interpretation involving multiple columns	Tables - construction and interpretation involving multiple columns and continuous data
8	Fractions	Understanding fractions	Understand the notation and meaning of simple fractions	Know decimal equivalents for fractions with denominators 2,3, 4, 5, 10 and 100		Conversions of fractions to decimals with a calculator Equivalent fractions
		Fraction operations	Add simple fractions Complete questions of the type $\frac{3}{4}$ of \$60	Add simple fractions	Add and subtract fractions with simple numerators	Add and subtract fractions Further questions of the type $\frac{3}{4}$ of \$60
9	2D Shapes	Polygons	Square, rectangle and triangle Label parts of shapes	Parallelogram, rhombus, kite and trapezium Label parts of shapes	Pentagon, hexagon and octagon Properties of polygons Angles in polygons Label parts of shapes	Compound shapes Label parts of shapes
		Circles	Parts of a circle	Labelling circle parts	Sector, segment, quadrant	Labelling circle parts
		Drawing plane figures	Draw squares, rectangles, triangles and circles to given dimensions	Draw parallelograms, rhombi, kites, trapeziums and circles to given dimensions	Compass drawings	Draw complex figures
		Transformations	Translations of squares, rectangles and triangles	Reflections of shapes from books 1 and 2	Rotations of shapes from books 1, 2 and 3	Combinations of transformations
10	Averages	Mean, mode, median and range	Understand and calculate these measures	Understand and calculate these measures	Understand and calculate these measures	Understand and calculate these measures Combined means Missing values
		Graphical representation		Dot frequency diagrams Frequency tables	Averages from column graphs Stem and leaf plots	Averages from graphs
11	Length	Length	Units of length Imperial length units Estimating lengths	Measuring lengths Estimation of length Use of units and conversions	Estimation of length Use of units	Conversions of lengths

	TOPIC	AREA	BOOK 1B	BOOK 2B	BOOK 3B	BOOK 4B
		Perimeter	Perimeter of plane figures	Circumference of circles	Perimeter of compound shapes	Perimeter of compound shapes
12	Mass	Understanding mass and mass units	Units of mass Conversions Choosing units Operations with mass	Conversions Operations with mass Imperial measures	Conversions Scales and meters	Units and conversions Operations with mass Mass and weight
13	Angle	Angles	Understanding angles Angle measurement Estimating angle sizes Drawing angles Angle types	Drawing and measuring angles Angles in triangles Drawing triangles Scale drawings	Drawing figures including angles Scale drawing with angles	Drawing figures including angles Reflex angles Scale drawing with angles
		Bearings	True bearings Common directions - N, S, E, W, NE, SE, SW and NW	Angles and bearings Bearing from one location to another	Bearings to locate objects Diagrams showing bearings	Bearings to locate objects Relative bearings Diagrams showing bearings Angles and directional bearings
14	Direction	Understanding directions	Horizontal, vertical and oblique in 2D Clockwise and anti-clockwise	Parallel and perpendicular in 2D Clockwise and anti-clockwise	Horizontal, vertical and oblique in 3D	Parallel and perpendicular in 3D
15	Percentage	Understanding percentage	Fundamentals of percentage Percentage calculations	Percentage calculations	Percentage calculations	Percentage calculations
		Applications	Commission Discount Sales Tax	Commission Sales Tax Simple Interest Inflation and percentage increase Depreciation and percentage decrease	VAT Simple Interest Compound Interest Inflation and percentage increase Depreciation and percentage decrease	Simple Interest Compound Interest Reducible Interest Inflation and percentage increase Depreciation and percentage decrease

TOPIC		AREA	BOOK 1B	BOOK 2B	BOOK 3B	BOOK 4B
16	Coordinates	Locate and draw points	1st quadrant	1st and 2nd quadrant	All quadrants	All quadrants Latitude and longitude
		Bivariate Data	Two points	More than two points	Scattergraphs	Scattergraphs Line of best fit
		Maps	Grid references	Six figure grid references Scales Contour maps	Six figure grid references Scales Contour maps	Six figure grid references Scales Bus routes
17	Powers	Understanding and using powers	Squares and square roots Cubes and cube roots	Powers of integers	Scientific notation	Scientific notation
18	Area	Areas of planar figures	Concept of area Units of area Estimating areas Areas of squares, rectangles and triangles	Estimating area Areas of squares, rectangles, triangles, parallelograms and circles Area by dissection	Areas of squares, rectangles, triangles, parallelograms and circles Area by dissection Conversions of units of area	Areas of squares, rectangles, triangles, parallelograms and circles Area by dissection and subtraction Conversions of units of area Perimeter/Area relationships
19	3D Shapes	Common solid shapes	Cubes and rectangular prisms - Nets - Euler's rule - Cross-sections - Drawing - Relationships of parts	Other prisms - Nets - Euler's rule - Cross-sections - Drawing - Relationships of parts	Pyramids - Nets - Euler's rule - Cross-sections - Drawing - Relationships of parts	Polyhedra - Nets - Euler's rule - Cross-sections - Drawing - Relationships of parts
		Mechanical movement	Circular motion Pulleys and belts	Circular motion Pulleys and belts	Circular motion Gears and ratios	Circular motion Pulleys and belts Gears, cogs and ratios
		Transformations	Translations	Dilations	Reflections	Rotations
20	Ratio and Proportion	Understanding and calculations	Unitary method Direct proportion only Ratio	Unitary method Direct and inverse proportion	Ratio method Direct proportion	Ratio method Direct and inverse proportion

TOPIC		AREA	BOOK 1B	BOOK 2B	BOOK 3B	BOOK 4B
21	Volume	Volumes of solids	Concept of volume Units of volume and capacity Conversions	Volume of rectangular prisms Conversions Volume and capacity relationships	Volume of prisms Conversions Volume and capacity relationships Volumes of cylinders and cones	Volume of spheres Units of volume and capacity Conversions Volume and capacity relationships Inverse calculations
22	Chance	Understanding chance	Chance Randomness Outcomes	Chance Randomness Outcomes	Chance Randomness Outcomes	Chance Randomness Outcomes
		Probability and Odds	Simple probability	Tree diagrams and sample spaces Probability from a sample space	Odds Simulations	Probability from tree diagrams Relative frequency
23	Rates	Understanding and using rates	Concept of a rate Examples of rates Direct calculations	Further examples of rates Inverse and direct calculations	Car rates Further calculations Comparative rates Speed = Distance/Time	Derived quantities Density, frequency, pressure and acceleration
24	Time Series Data	Interpreting graphs	Distance time graphs	Graphs relating two variables	Graphs relating two variables Drawing graphs relating two variables	Graphs relating two variables Drawing graphs relating two variables
		Line Graphs	Draw and interpret line graphs	Draw and interpret line graphs	Draw and interpret line graphs Trends Extrapolation and interpolation	Draw and interpret line graphs Trends Extrapolation and interpolation
25	Scale Drawing	Similar figures	Grid enlargements	Projection method	Scale factors Distortions	Enlargements and reductions by percentage
		Scale drawings	Reading scale drawings	Reading scale drawings	Reading scale drawings	Reading scale drawings
		Scales on Maps	Measure and convert using scales	Using scales to calculate distances	Using scales to calculate distances	Using scales to calculate distances
		House Plans	Finding measurements from house plans	Finding measurements from house plans Calculating areas	Finding measurements from house plans Rooms and furniture sizes	Finding measurements from house plans Rooms and furniture sizes
		Pythagoras	Finding hypotenuse	Finding short sides	Finding sides including decimal approximations	Finding sizes in three dimensions

TOPIC		AREA	BOOK 1B	BOOK 2B	BOOK 3B	BOOK 4B
26	Formulae	Use and understanding of formulae	Substitution into formulae (words) - one variable Meaning of common algebraic notation	Substitution into formulae (words) - several variables Meaning of common algebraic notation Substitution into algebraic formulae	Substitution into multiple variable algebraic formulae	Substitution into more complex formulae Inverse problems

If you wish to find out more about the Living Maths series please contact Mark at **OTRNet.com.au** by email: mark@otrnet.com.au.