



Using Maths Aotearoa and Wilkie Way to deliver the refreshed New Zealand Curriculum

The Maths Aotearoa teacher book 3B continues the sequenced approach to developing key knowledge and concepts. It is organised into units of work each containing a number of chapters. Book 3B covers all the progress outcomes as identified for end of phase 2.

More practice material for each chapter is available through write on practice workbooks downloaded from the membership area of wilkieWAY.co.nz All chapters are linked to Figure it Out activities.

Maths Aotearoa teacher books and student books are available from edify.co.nz

Phase 2: Year 6

Understand: (big ideas)

- Use maths to seek and understand patterns and relationships
- Use maths to work with and make sense of change and variation
- Use maths logic & reasoning to explain relationships and justify conclusions
- Make use of different cultural views and ideas about mathematics
- Embrace the history and evolution of mathematics

Do (practices)

Students will have learning opportunities to:

- Investigate situations:
- Represent situations:
- Connect situations:
- Generalise findings:
- Explain and justify findings.

Know: Contexts

Maths Literacy

- Continued focus on learning specialist vocabulary.
- Continued focus with reading & understanding math texts.
- Communicate and explain their mathematics using manipulatives, words, numbers symbols, diagrams and equations
- Extend knowledge of equations to include brackets
- Know the meaning of prefixes used in measurement units

Concepts being developed

- Addition and multiplication are commutative
- Addition and multiplication are associative
- Subtraction is not commutative
- Subtraction and addition are inverse relationships
- Multiplication as an array, as an allocation or rate, as a multiplicative comparison
- Division is not commutative
- Division and multiplication are inverse relationships
- Fractions as numbers between whole numbers
- The importance of zero to the number system
- Decimals as explicit fractions based on powers of ten

Key knowledge being developed

- Read, write and order numbers to 100 000
- Know the number of groups of thousands, hundreds, groups of ten and groups of one in any multi digit number
- Recall multiplication & division facts for up to 10 x 10
- Add and subtract multi digit numbers reliably and efficiently
- Convert between benchmark fractions, decimals & percentages (halves and quarters)
- Order of operations in solving equations

Maths Aotearoa Book 3B

Unit 1: Using Properties of Multiplication	Unit 2: Using the Number System for Addition and Subtraction	Unit 3: Extending Multiplicative Thinking
<p>Chapter 1 Multiplication Strategies</p> <ul style="list-style-type: none"> Understand and use the properties of multiplication (<i>commutative, associative and distributive</i>) Recall multiplication & division facts Multiply a double digit number by a single digit <p>Chapter 2 Using Multiplication</p> <ul style="list-style-type: none"> Understand and use the properties of multiplication (<i>commutative, associative and distributive</i>) Recognise and use square numbers Identify and record the appropriate equation for a word problem Solve word problems using multiplication Begin to solve more complex, multi step problems 	<p>Chapter 3 Larger Numbers</p> <ul style="list-style-type: none"> Read, write, order and compare whole numbers into the millions Give the number 10, 100, 1000 10 000 before and after any given whole number. Give the number of tens or hundreds in a multi digit number Understand the role of zero in writing large numbers in numerals <p>Chapter 4 Using Place Value</p> <ul style="list-style-type: none"> Understand and use the repeated grouping of 10 in the number system (nesting) Use zeros to represent repeated groupings in tens <p>Chapter 5 Addition & Subtraction Strategies</p> <ul style="list-style-type: none"> Reliably and efficiently add and subtract multi-digit whole numbers Use a mental method when the numbers lend themselves to using a mental method (e.g \neq 199) 	<p>Chapter 6 Extending Multiplication</p> <ul style="list-style-type: none"> Use expanded numerals and the distributive property of multiplication to multiply a multi digit number by a single digit (<i>See 4A Chapter 2 Page 13 for how this extends to double digit by double digit</i>) Use a standard written recording for multi digit multiplication <p>Chapter 7 Extending Division</p> <ul style="list-style-type: none"> Read and interpret division questions in both recorded formats Recognise division as the inverse of multiplication Use the denominator of a fraction as a divisor Explore the division of larger numbers by a single digit <p>Chapter 8 Using Multiples and Factors</p> <ul style="list-style-type: none"> Use terminology multiples and factors Recognise multiples and the closest multiple Identify factors of a given number Use a standard written form for division of a multi digit number by a single digit number. <p>Chapter 9 Fractions</p> <ul style="list-style-type: none"> Use correct fraction terminology (<i>denominator, numerator</i>) Recognise patterns in fraction sequences Recognise equivalent fractions Understand ratio as comparing fraction parts of the whole
Support Material available from Wilkie Way website wilkieway.co.nz: membership area (subscription)		
<p>Practice Workbooks</p> <p>9. (Chapters 1 & 2) Practising Multiplication</p>	<p>Practice Workbooks</p> <p>10. (Chapter 3 & 4) Whole Number Place Value</p> <p>11. (Chapter 5) Addition and Subtraction</p>	<p>Practice Workbooks</p> <p>12. (Chapter 6) Extending Multiplication</p> <p>13. (Chapters 7 & 8) Extending Division, Multiples and Factors</p> <p>14. (Chapter 9) Fractions</p>

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Unit 4: Decimals and Percentages

Chapter 10 Into the Hundredths

- Read, write and represent a two place decimal number
- Give the number one tenth or one hundredth more or less than a given number
- Compare and order up to two place decimal number

Chapter 11 Into the Thousandths

- Read, write and represent a three place decimal number
- Round a three place decimal to the closest whole number, tenth or hundredth
- Use a standard written algorithm to add and subtract decimal numbers (aligning columns correctly)

Chapter 12 Solving Problems with Decimals

- Use rounding to make an estimate
- Use mental methods, standard written methods or estimation and a calculator to solve problems involving decimals

Unit 5: Exploring Algebra

Chapter 14 Using a Calculator

- Consolidate an understanding of equality
- Focus on relationships between components of an equation
- Use a letter for a missing part of an equation
- Explore the effect of multiplying and dividing by a decimal number using a calculator

Chapter 15 Looking for Rules

- Identify rules for sequential patterns
- Explain the rule for a specific pattern
- Use a letter to represent an unknown number in a rule

Support Material available from Wilkie Way website wilkieWAY.co.nz: membership area (subscription)

Practice Workbooks

15. (Chapters 10 & 11) Decimal Fractions

Practice Workbooks

16. (Chapters 14 & 15) Exploring Algebra

Maths Aotearoa teacher books provide the guidance on how to deliver the content found in the student textbooks.

- **Information to develop and clarify your own conceptual understanding of the mathematics your students are learning.**
- **Making connections with previous work**
- **What manipulatives you could use**
- **Specific explanations required**

The teacher book is deliberately NOT SCRIPTED as I firmly believe the questions you ask should be led by the responses your students give you. The questions you ask are dependent on your understanding of the mathematics. As you better understand then the better your questioning will become.

By this level students should have a sound foundational knowledge of mathematics and need to be given plenty of opportunities to use their mathematics in unfamiliar problem solving situations. This will provide opportunities for students to challenge their own thinking about conceptual ideas and learn to explain and justify their thinking. Remember it is making mistakes that create the best learning. Each chapter is linked to Figure it Out activities. (Learning to read the texts is part of the mathematical literacy learning and students may need support.)