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

The Maths Aotearoa teacher book 2B continues the sequenced approach to developing key knowledge and concepts. It is organised into units of work each containing a number of chapters. The overlap with year 3 progress outcomes is significant, providing time to consolidate and generalise ideas they may have already met. Book 3A has work on the standard written form for addition and subtraction which you may choose to use in year 4. More practice material for each chapter is available through write on practice workbooks downloaded from the membership area of wilkieway.co.nz

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

Phase 2: Year 4

Understand: (big ideas)	Do (practices)
• Maths is about seeking patterns and relationships • Maths is about working with change and variation • Maths involves reasoning - from observations and prior knowledge • Maths develops within different cultures • Maths is created by humans and therefore has a history and continues to evolve.	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 and diagrams.
• Confidently use the operational symbols + - x ÷
• Confidently use relationship symbols = < >

Concepts being developed	Key knowledge being developed
• Addition and multiplication are commutative; • Addition and multiplication are associative; • Subtraction as takeaway and difference; • Subtraction and addition are inverse relationships; • Multiplication as an array, as an allocation or rate, as a multiplicative comparison • Division as equal sharing and equal grouping; • Fractions as equal sharing and equal partitioning; • Division and multiplication are inverse relationships; • The importance of a group of ten to the number system. • The importance of zero to the number system	• Read, write and order numbers to 10 000 • Recall family of facts for all numbers to 20 • Read, write, represent and order unit fractions • Read, write, represent and order fractions with the same denominator • Know the number of groups of hundreds, groups of ten and groups of one in any 4 digit number • Recall multiplication & division facts for twos, fives ,tens, threes & fours

Maths Aotearoa Book 2B

Unit 1: Addition, Subtraction & Place Value	Unit 2: Multiplication & Division	Unit 3: Addition and Subtraction
Chapter 1 Working with Numbers up to 20 • Recognise the difference between relationship symbols (= < >) and operational symbols (+ - x ÷) • Balance equations using the equals symbol • Use relationship symbols < less than and > more than • Represent a variety of types of story problems using addition and/or subtraction equations **Chapter 2 Addition with 2 Digits** • Use standard partitioning to add two digit numbers • Use the closest decade when adding two digit numbers • Use compensation when adding two digit numbers **Chapter 3 Subtraction with 2 Digits** • Use standard partioning to subtract two digit numbers • Use difference as a subtraction strategy **Chapter 4 Numbers to 999** • Read write and order numbers to 1000 • Expand numbers into hundreds, tens and ones • Know one more/less and ten more/less than any 3 digit number • Know the number of groups of ten in any 3 digit number **Chapter 5 Addition and Subtraction with Money** • Know the conventions for writing money values in dollars and cents using a decimal point • Use Addition & subtraction in the context of money	**Chapter 6 Deriving Multiplication Facts** • Uses an array and knowledge of the 2 x table to derive the 3x table • Recall of 3 x table • Use an array and knowledge of the 10 x table to derive the 9 times table • Recall of 9 times table • Explore patterns and relationships between x 3 and x 9 **Chapter 7 Doubling and Halving** • Recognise and use the relationship beteen x 2 and x 4 • Recall of 4 x table **Chapter 8 Sharing or Grouping** • Use an array to find the equal share or equal group • Understand division facts as the inverse of multiplication facts	**Chapter 9 Rounding numbers** • Round a three digit number to the closest hundred • Round a three digit number to the closest ten • Know the position of a number in the sequence of non consecutive numbers **Chapter 10 Addition with 3 Digits** • Use standard partitioning for addition (demonstrate recording in a vertical format) • Use the closest hundred and compensate for addition • Make addends into easy to add numbers • Estimate and use a calculator for addition **Chapter 11 Subtraction with 3 Digits** • Use standard partition for subtraction (takeaway) • Explore closest hundred and compensate to subtract (difference) • Estimate and use a calculator for subtraction

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

Practice Workbooks 14. (Chapter 2) Addition of 2 digit numbers 15. (Chapter 3) Subtraction of 2 digit numbers 16. (Chapter 4) Numbers to 999 17. (Chapter 5 Working with Money	**Practice Workbooks** 18. (Chapter 6) Working with the 3 & 9 times tables 19. (Chapter 7) Doubling, x 2, x 4, x 8 20. (Chapter 8) Equal Sharing and Equal Grouping **Maths Gym - Learning Multiplication Tables** 5. Exploring Division 6. Doubling x 4 x 8 7. Three times table 8. Nine times table	**Practice Workbooks** 21. (Chapter 9) Rounding and Estimating 22. (Chapter 10) Adding 3 digit numbers 23. (Chapter 11) Subtracting 3 digit numbers

Maths Aotearoa Book 2B

Unit 4: Understanding Fractions	Unit 5: Arithmetic Operations
Chapter 12 Fractions • Recognise halves, quarters, thirds and fifths of a region • Understand the word "whole" refers to one region • Understand the size of the fractional part is dependent on the size of the whole • Compare unit fractions (of the same size region) • Recognise non unit fractions, including improper fractions (greater than 1) for halves and quarters • Place halves and quarters on a number line (including greater than 1) • Look for patterns and relationships between equivalent fractions **Chapter 13 Fractions of Numbers** • Understand the "whole" represents the total quantity in the group • Beginning to see a connection between multiplication, equal sharing and fractions	**Chapter 14 Focus on Division** • Use the division symbol ÷ for equal sharing and equal grouping situations • Understand and uses divided between, divided into, and divided by • See the connection between division and fractions **Chapter 15 Multiplication and Division** • Use known multiplication facts to recall division facts • Solve multiplication & division problems • Write an appropriate equation for a multiplication or division problem • Create a word problem for a given multiplication or division equation • Explore square numbers **Chapter 16 Using Calculators** • Use a calculator to explore relationships between numbers • Use guess and check as a problem solving strategy • Use a table to look for patterns and relationships **Chapter 17 The Four Operations** • Identify the appropriate operation to solve a word problem • Use inverse operations • Use an appropriate equation to communicate solution method • Read and solve more complex problems.
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Practice Workbooks 24. (Chapters 12 & 13) Understanding Fractions	**Practice Workbooks** 25. (Chapter 14 & 15) Understanding Division, Multiples and Factors 26. (Chapter 17) The Four Operations

Maths Aotearoa Book 3A
Unit 2: Using the Number System for Addition and Subtraction

Chapter 4 Addition
- Extend knowledge of addition strategies for 3 digit numbers
- Use a standard written (vertical) form for addition of 3 digit numbers
- Make estimates for addition

Chapter 5 Subtraction
- Extend known subtraction strategies in 3 digit numbers
- Expand a standard partition and convert from canonical to non-canonical form
- Use the non canonical form to understand the vertical algorithm for subtraction
- Use a standard written (vertical) form for subtraction of 3 digit numbers
- Make estimates for subtraction

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Practice Workbooks
2. (Chapters 4 & 5) Addition & Subtraction

Note: Be careful not to spend too much time on addition and subtraction at the expense of foundational work for multiplicative thinking (including fractions). While you might be certain of "ticking the box" for addition and subtraction progress steps it will have a significant negative effect on student progress beyond year 4.

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 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.