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

The Maths Aotearoa teacher books 2A and 2B provide a sequenced approach to developing key knowledge and concepts. They are organised into units of work each containing a number of chapters. Each chapter connects together appropriate learning statements from the curriculum. 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 1: Year 3

Understand: (big ideas)	Do (practices)
As students build knowledge through their use of the mathematical and statistical processes, they begin to understand: • Patterns and variation • Logic and reasoning • Visualisation and application	Students will have learning opportunities, and be guided to: • Investigate situations • Represent situations • Connect situations • Generalise findings • Explain and justify findings

Know: Contexts of Number & Algebra

Number Structure	Operations	Rational Numbers	Equations & relationships
Estimate the number of objects in a collection of less than 100 using patterns & grouping Count forwards or backwards in 2s, 3s, 5s & 10s from any whole number in range 1 - 1000 Identify, read & write, whole numbers up to at least 1000 and represent them using base 10 structure Compare & order whole numbers up to at least 1000 Partition & regroup whole numbers up to at least 1000 using a systematic approach and noticing patterns,	Use estimation to predict results and to check the reasonableness of calculations. Round whole numbers up to 1000 to the nearest 100 or 10 add and subtract numbers up to at least 100 (with renaming) Recall addition facts up to 20 & their corresponding subtraction facts including doubles & halves. Recall multiplication & corresponding division facts for 2s, 3s, 5s & 10s Multiply a 1 or 2 digit number by a 1 digit number using skip counting or known facts. Divide whole numbers by a one digit divisor with no remainders,	Identify, read, write & represent halves, quarters, fifths, sixths, & eighths as fractions of sets and regions, using equal parts of the whole and by positioning on a number line. Compare and order fractions involving halves, quarters & eighths & identify when two fractions are equivalent. Find a unit fraction of a whole numbers and identify the whole set or amount when given a unit fraction. Add & subtract unit fractions with the same denominator	Solve true or false number sentences and open number sentences involving addition & subtraction, using an understanding of the equals sign. Recognise, continue, and create repeating & growing patterns, and describe a rule to explain a pattern,
		Financial Maths Make amounts of money using one & two dollar coins and 5, 10, 20, 50 & 100 dollar notes	**Algorithmic Thinking** Create and use a set of precise, step by step instructions for carrying out a familiar routine or task.

Maths Literacy Development

• 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.
• See vocabulary list in curriculum document

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 repeated addition; • Multiplication as an array; • 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.	• Read, write and order numbers to 1000 (at least) • Recall family of facts for all numbers to 20 • Read, write, represent and order fractions • Know the number of groups of hundreds,groups of ten and groups of one in any 3 digit number • Know basic addition and subtraction facts within 10 are repeated in each column. • Know 9 is the largest digit in any column. • Recall multiplication & division facts for twos, fives and tens

Additional Resources found in the members area of Wilkie Way.co.nz (subscription)

Numbers & The Number System: - Phase One • Basic Fact patterns • Building numbers • Explicit Teaching activities • Independent Activities • Material Resources • Games • Sequencing & Ordering • Place Value problems **Addition & Subtraction - Phase One** • Add & Subtract without counting • Games • Word Problems **Multiply & Divide - Phase One** • Doubles • Games • Word Problems	**More learning experiences to add variety and challenge to your maths programme** • Graduated problems on a theme • Maths Challenges • Rich Learning Tasks • Maths from stories

Maths Aotearoa Book 2A

Unit 1: Addition, Subtraction & Place Value	Unit 2 Beginning Multiplication and Place Value
Chapter 1 Addition & Subtraction • Read straight forward word problems • Represent word problems as addition or subtraction equations • Write a word problem represented by an addition or subtraction equation • Solve word problems involving addition & subtraction within 20 • Use the commutative property of addition • Use the = symbol to represent same quantity of either side. **Chapter 2 Numbers to 20** • Recall of 10+ knowledge and corresponding subtractions • Use key knowledge of facts to 10 and 10+ knowledge when adding strings of numbers in equations and word problems. • The importance of patterns in mathematics • The importance of a group of 10 in the number system • Using the associative property of addition **Chapter 3 Using a hundred square** • Read, write and order numbers to 1000 • Understand the hundreds square as a support to thinking about 2 digit numbers • Add and subtract 10 from any two digit number **Chapter 4 Tens and Ones** • Read, write and order numbers to 1000 • Know the column heading tens represent the number of groups of ten • Know the column heading ones represents the number of groups of one • Understand a zero in a column represents none of the groups represented by the column heading • Represent two digit numbers in groups of ten and groups of one • Identify the number of groups of ten and groups of one in any two digit number **Chapter 5 Money** • Know the value of coins in circulation in New Zealand • Know 100 cents = 1 dollar • Know basic addition and subtraction facts are repeated in the tens column • Add and subtract tens numbers in the context of money	**Chapter 6 Beginning Multipication** • Know about and recognise odd and even numbers • Investigate addition and subtraction rules with odd and even numbers • Know multiples of two are even numbers • Connect knowledge of doubles to the two times table • Recall the two times table **Chapter 7 The Ten Times Table and Place Value** • Make connections between the tens times table and how numbers are written • Recall the ten times table • Begin to understand the importance of zero to the number system **Chapter 8 Exploring the Five Times Table** • Begin to move from a repeated addition concept of multiplication to an array model of thinking • Know that multiplication is commutative • Explore the relationship between the ten times table and the five times table by doubling and halving • Look for patterns in multiplication tables • Recall the five times table

Maths Aotearoa Book 2A

Unit 3: Addition & Subtraction	Unit 4 Understanding Fractions	Unit 5 Addition and Subtraction
Chapter 9 Working with tens numbers • Building on the idea that basic facts are repeated in each of the columns • Begin to see how the number system assists estimating and numeric reasoning • Consolidating addition and subtraction facts to 10 **Chapter 10 Adding and subtracting** • Use rounding to the closest decade to make a sensible estimate • Use standard partitioning to add and subtract 2 digit numbers (no regrouping) • Consolidating addition & subtraction facts to 10 **Chapter 11 Using Tens to Add and Subtract** • Use add 10 subtract 1 to add 9 to any number • Use subtract 10 add 1 to subtract 9 from any number **Chapter 12 Number facts to 20** • Recognise recurring patterns in addition and subtraction • Use knowledge of doubles to reason addition and subtraction facts to 20 • Use knowledge of teens to reason addition and subtraction facts to 20 • Recall of addition and subtraction facts to 20	**Chapter 13 Halves and Quarters** • Know half is two equal parts to complete the whole • Know quarter is four equal parts to complete the whole • Know third is three equal parts to complete the whole • Know fifth is five equal parts to make the whole • Understand the denominator represents the number of equal parts to complete the whole • Name common unit fractions • Understand the whole is equal to 1 **Chapter 14 Fractions of Numbers** • Find a unit fraction of a set of objects by equal sharing • Connect knowledge of doubles with halves • Find a quarter of a small number using doubles knowledge (half and half again)	**Chapter 15 Addition without counting** • Explore additive patterns • Use addition facts and knowledge of decades to add a single digit to a double digit number **Chapter 16 Subtraction without counting** • Explore subtraction patterns • Use subtraction facts and knowledge of previous decade to subtract a single digit number • Use complementary addition to solve difference problems
Support Material available from Wilkie Way website wilkieway.co.nz: membership area (subscription)		
Practice Workbooks 6. (Chapter 9) Add & Subtract Decades, Rounding to closest Decade 7. (Chapter 10) Multi digit addition, making use of basic facts to 10 8. (Chapter 10) Multi digit subtraction, making use of facts to 10 9. (Chapter 11) Using 10 and the decade numbers 10. (Chapter 12) Practising Number Facts to 20	**Practice Workbooks** 11. (Chapter 13 & 14) All about halves and quarters **Fractions, Decimals & Percentages: - Phase 1**	**Practice Workbooks** 12. (Chapter 15) Adding a single digit to a double digit number 13. (Chapter 16) Subtracting a single digit from a double digit numbers

Maths Aotearoa Book 2B *(for many year 3 students some of this work may be better left to year 4)*

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** • Use an array and knowledge of the 2 x table to derive the 3x table • Use an array and knowledge of the 10 x table to derive the 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 **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
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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	21. (Chapter 9) Rounding and Estimating 22. (Chapter 10) Adding 3 digit numbers 23. (Chapter 11) Subtracting 3 digit numbers