



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

The Maths Aotearoa teacher book 3A continues the sequenced approach to developing key knowledge and concepts. It is organised into units of work each containing a number of chapters. Book 3A covers all the progress steps highlighted as necessary for achievement in year 5 and provides the foundations for the progress outcomes for year 6. 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 5

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;
- Fractions as numbers between whole numbers;
- 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
- 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 or derive multiplication & division facts for up to 10×10
- 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 3A

Unit 1: Properties of Multiplication	Unit 2: Using the Number System for Addition and Subtraction	Unit 3: Patterns & Relationships in Multiplication, Division & Fractions
<p>Chapter 1 Multiply and Divide by 6</p> <ul style="list-style-type: none"> Derive the multiplication facts (distributive property or doubling) Recall of six times table Recall of division facts Solve multiplication & division word problems <p>Chapter 2 Multiply and divide by 8</p> <ul style="list-style-type: none"> Derive the multiplication facts (distributive property or doubling) Recall of eight times table Recall of division facts Solve multiplication and division word problems <p>Chapter 3 Multiply and divide by 7</p> <ul style="list-style-type: none"> Derive the multiplication facts (distributive property) Recall of seven times table Recall of division facts Solve multiplication and division word problems 	<p>Chapter 4 Addition</p> <ul style="list-style-type: none"> 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 <p>Chapter 5 Subtraction</p> <ul style="list-style-type: none"> 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 <p>Chapter 6 Place value and larger numbers</p> <ul style="list-style-type: none"> Read, write numbers to 100 millions Round numbers Estimate with larger numbers Read and say larger numbers in te reo Maori 	<p>Chapter 7 Multiplication and Division</p> <ul style="list-style-type: none"> Recognise patterns within and between multiplication tables Graph multiplication tables and interpret the gradient Introduce a new method of recording division)[—] <p>Chapter 8 Fractions and Division</p> <ul style="list-style-type: none"> Represent a proportion using fractions Compare and order fractions on a number line Use the denominator of a fraction as a divisor Add and subtract fractions with the same denominator
<p>Support Material available from Wilkie Way website wilkieway.co.nz: membership area (subscription)</p>		
<p>Practice Workbooks</p> <p>1. (Chapters 1 - 3) Multiply by 6,7 & 8</p> <p>Maths Gym</p> <p>6. Doubling x 4 x 8 9. Doubling x 3 x 6 x 12 10, Seven times table Agility Course Two</p>	<p>Practice Workbooks</p> <p>2. (Chapters 4 & 5) Addition & Subtraction 3. (Chapter 6) Larger Numbers</p>	<p>Practice Workbooks</p> <p>4. (Chapter 7) Multiplication & Division 5. (Chapter 8) Fractions</p>
<p><i>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.)</i></p>		

Maths Aotearoa Book 3A

Unit 4: Beginning Decimals

Chapter 9 Measurement and the Decimal Point

- Know the relationship between metres and centimetre
- Know the relationship between litres and millilitres
- Know the relationship between grams and kilograms
- Represent tenths using decimal notation

Chapter 10 Building Decimals

- Read and write decimal fractions
- Represent tenths using manipulatives and make diagrammatic representations
- Give the number one tenth more or less than any number
- Sequence and order one place decimals
- Convert between fractional notation and decimal notation

Chapter 11 Adding and Subtracting with Tenths

- Round decimals to nearest whole number
- Extend additive strategies to one place decimals
- Understand and use basic facts repeated in each of the columns includes decimal columns

Unit 5: Beginning Algebra

Chapter 12 Using a Calculator

- Use of brackets in a mathematical equation
- Use a calculator efficiently including estimation and checking reasonableness of the answer
- Use the memory function

Chapter 13 Finding and Following Rules

- Use a table to collect information to identify a rule
- Create rules for simple word problems
- Follow the rules given in a table

Chapter 14 Number Patterns

- Introduce the idea of negative numbers
- Identify and follow the rule to continue a number sequence
- Create a sequence and write the rule

Chapter 15 The Four Operations

- Write an equation for a result unknown situation
- Write an equation for a specific additive comparison situation
- Understand why the subtraction function is used to calculate the unknown in an addition comparison situation.
- Use a letter instead of an empty box in an equation
- Generalise the properties of addition and subtraction
- Focus on relationships between the parts of an equation
- Understand and use equality

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

Practice Workbooks

6. (Chapters 9 - 11) Decimals - Tenths

Practice Workbooks

7. (Chapters 13 & 14) Finding and Following Rules
8. (Chapter 15) The Four Operations

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.