Multiplication & Division Refresh
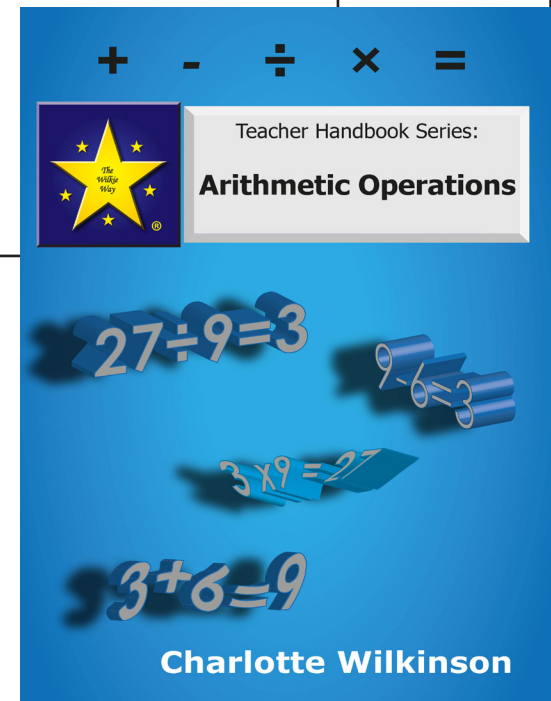
Phase 1: Multiplication & Division with identified "worry point" if not achieved during the progress.				
Must achieve during first six months	**Must achieve during first year**	**Must achieve during second year**	**Progress outcome by end of year 3 Number & Algebra**	**Maths Aotearoa**
	• Multiply and divide by making equal groups and using grouping or counting	• Multiply and divide by grouping and using number patterns	**I know that:** Multiplication and division involve recognising and working with groups, the number of groups and the total. The commutatuve property applies to multiplication (e.g. 5 x 2 = 2 x 5) The multiplicative identity is 1 (e.g. 5 x 1 = 5 4 ÷ 1 = 4) **I know how to:** • Multiply two single digit numbers or multiply a single digit and a two digit number • Divide whole digit numbers with a single digit divisor and no remainders • Recall multiplication and corresponding division facts for 2s, 5s and 10s • Use multiplicative identity (1) and commutative property.	Book 1a: Unit 4 Book 1b: Unit 2 Unit 3 Book 2a: Unit 2

Phase 2: Multiplication & Division wih identified "worry point" if not achieved during the progress			
Must achieve during year 4	**Must achieve during year 5**	**Progress outcomes by end of year 6**	
• Use the relationship between multiplication and division to divide • Recall multiplication and corresponding division facts for 3s and 4s	• Multiply two digit numbers using the distributive property • Multiply reliably and efficiently • Recall multiplication and corresponding division facts for 6s, 8s and 9s	**I know that:** Multiplication and division problems can involve equal groups, rates, comparisons, combinations, part-whole relationships, areas and volumes. The associative property applies to multiplication (e.g 3 x(2 x 7) = (3 x 2) x 7) The distributive property applies to multiplication over addition & subtraction.(e.g. 3 x(10 + 7) = (3 x 10) + 3 x 7) **I know how to:** • Multiply two and three digit whole numbers • Divide whole numbers by one or two digit divisors • Find factors of numbers up to 100 • Recall multiplication facts to 10 x 10 and corresponding division facts • Use the distributive, commutative and associative properties	Book 2b: Unit 2 Unit 5 Book 3a: Unit 1 Unit 3 Unit 5 Book 3b: Unit 1 Unit 3

Phase 3 Multiplication & Division	
Progress Outcomes by end of year 8	
I know that: Multiplying a positive number by a number less than 1 results in an answer smaller than the original number. Division can result in a remainder expressed as a whole number, fraction, or decimal. The inverse property applies to multiplication (e.g.3 x ⅓ = 1) The commutative, associative, distributive, and identity properties work the same for all numbers. **I know how to:** • Divide whole numbers reliably and efficiently • Multiply fractions and decimals by whole numbers • identify and describe the properties of prime, composite and square numbers and the divisibility rules for 2,3,5,9and 10	Book 4a: Unit 1 Unit 2 Unit 3 Book 4b: Unit 1 Unit 2
Phase 4 Multiplication & Division	
Progress Outcomes by the end of year 10	
I know that: Multiplying a fraction by an equivalent form of 1 (e.g 3/3) results in an equivalent fraction. Dividing by a divisor less than 1 gives a result bigger than the dividend. A rate compares two quantities that have different units of measure. A ratio is a comparison of two like quantities. The properties of operations (commutative, distributive, associative, inverse and identity) apply to numbers and variables. There is an oder of operations when using numbers and variables. **I know how to:** • Multiply and divide two fractions or two decimals • Use rates to model and represent change • Use and apply ratios to model everyday situations	Book 4b: Unit 2 Unit 7

Teachers need an in depth knowledge of multiplication and division concepts. This teacher handbook was written to assist teachers develop their own knowledge through the context of teaching and learning experiences.

This book is available from the online store at wilkieway.co.nz
Cost $45.00

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Teacher Handbook Series:
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$27÷9=3$
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Charlotte Wilkinson