Phase 1: Place Value 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**
• instantly recognise the total number of objects in a group up to 6	• recognise instantly the total number of objects in two patterns, each of up to 5 objects	• partition a pattern of up to 10 objects, instantly recognise the number of objects in each part of the patterns and confirm the total in the pattern using the parts.	**I know that:** In base 10 there are ten digits symbols and their value is defined by their position within a number. Digits in any column are worth ten times as much as those in the column to the right. Te reo Maori and other Pacific languages explicitly describe the logic of the base 10 numbering system. **I know how to:** • Recognise, read, write & order whole numbers up to 10 000 • Group partition and recombine whole numbers up to 1000	Book 1a: Unit 1 Unit 2 Book 1b: Unit 2 Unit 4 Book 2a: Unit 1 Unit 2 Book 2b: Unit 1
	• Partition and recombine sets of up to 10 in different ways. recognise and represent in different ways, including in te reo Maori the tens and ones structure of teens numbers	• Group, partition and recombine whole numbers up to 100 *(I would like to add including the use of te reo Maori)*		

Phase 2: Place Value 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**	
• Recognise, read, write, order, partition, recombine and represent whole numbers up to 10 000	• Recognise, read, write, order, partition, recombine and represent whole numbers up to 100 000	**I know that:** In our number system, each place value is a power of 10 and this continues indefinitely **I know how to:** • Recognise, read, write, order, partition, recombine and represent whole numbers up to 1 000 000	Book 3a: Unit 2 Book 3b: Unit 2

Phase 3 Place Value	
Progress Outcomes by end of year 8	
I know that: Decimals continue the place value system using negative powers of 10 **I know how to:** • Represent whole and decimal numbers using powers of ten	Book 4a: Unit 2

Phase 4 Place Value	
Progress Outcomes by the end of year 10	
I know that: Decimals can be terminating, repeating and infinite, or non repeating and infinite (irrational numbers)	

An understanding of the base 10 number system is crucial to working with numbers and developing an understanding involves using the number system so it should not be isolated from developing skills and understanding of addition, subtraction, multiplication and division. As the system is a multiplicative system (based on groups of 10) it is imperative that students develop multiplicative thinking.

Teachers need an in depth knowledge of the system. 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

Teacher Handbook Series:

Numbers & The Number System

Includes Resource CD

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Charlotte Wilkinson