

Making Maths Real

Growing learners to love Maths













What are schools looking for?

- To improve the experience of learning for the students –
 becoming engaged and LOVING Maths
- To improve the experience of teaching
- Lift students' results
- Enrich the interconnectedness of Maths



Why Numicon?



- Builds understanding and develops fluency by using a visual, practical base to develop conceptual understanding and fluent recall
- Develops confidence. Children solve problems in everyday life contexts through using structured concrete materials
- Enjoyment! All children are engaged and love maths!

Why Numicon?



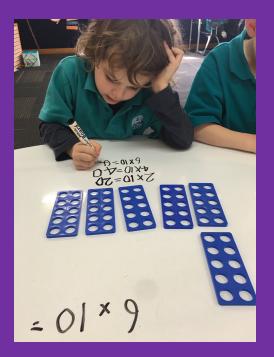
- Provides a balanced coverage of all Strands in the New Zealand Curriculum in a structured, interconnected and progressive approach for the whole school.
- Assessment based on a formative approach with 'student voice'
- Exciting progress of all our students in every school. No gaps in the learning with Numicon!
- IT MAKES SENSE!





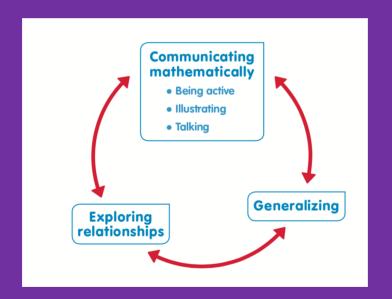
Flexible learning activities giving teachers and students confidence together

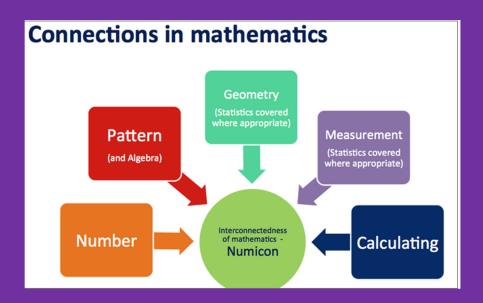




Why Numicon?





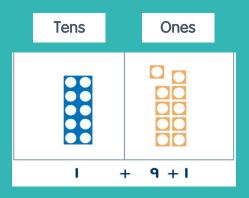


- Learning through exploration/play
- Inquiry learning
- Problem-solving
- Structured, explicit teaching

Number sense



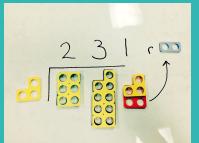
Place Value



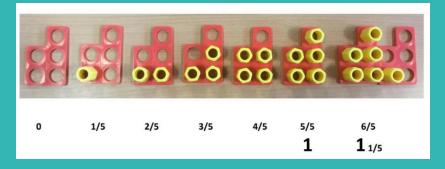


Operations





Fractions





A whole school approach

NZC NUMICON TABLE													
NZC Level	1		1	2		3		4					
Year	0/1		2	3	4	5	6	7	8				
NP Stages (Approx.)	0-3		4	Early 5	Late 5	6	7	8					
Numicon	FF		1	2	3	4	5	6					
Intervention	Numicon Intervention Programme												
Learning Needs	Breaking Barriers												
Acceleration	eleration Big Ideas - Suitable for students in Years 5 – 9 as a catch-up												

Creating consistency and inclusion for the students in their learning

OXFORD

We provide



- Professional Learning Support from one year to one hour...
- Free support through numicon.co.nz

Contact us at admin@Edushop.nz

Teaching and Assessment – everything is provided for you!



Number, Pattern, Calculating



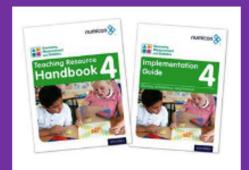




Geometry, Measurement,
Statistics



Student problemsolving activities, going deeper



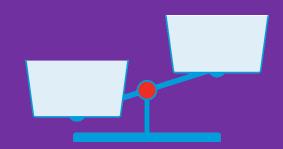




Numicon Online and Firm Foundations Online



- Editable long, medium and short term planning documents
- Informative and directive Implementation videos
- Online Teaching Handbooks
- Teacher support videos
- Classroom display supports
- Planning and Assessment
- IWB/computer software
- Activity supports









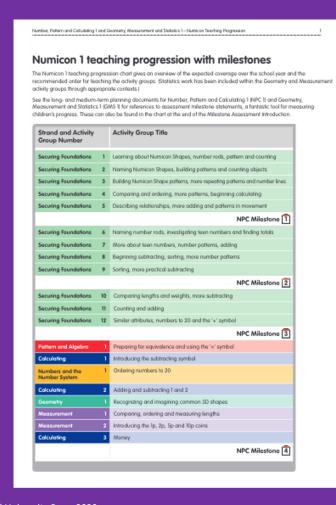


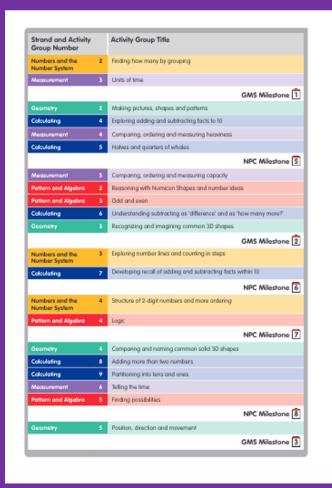


And using what you already have!



A year's sequence building confidence





Weekly planning provided - EASY! numicon



Calculating 4: Exploring adding and subtracting facts to 10

Key mathematical ideas Adding, Subtracting, Pattern, Inverse, Mathematical thinking and reasoning

Educational context

As they work on this activity group, children make some important steps towards developing fluency. The activities begin by looking at zero when adding and subtracting so children experience that, if zero is added or subtracted, it just leaves everything as it was. The activities move on to exploring the adding and subtracting facts for all numbers to 10 (in random order, since numbers do not come up in order in everyday life). At this stage, the emphasis is very much on exploring and making discoveries, rather than finding all combinations for any number independently. However through exploring and organizing adding facts and relating adding to subtracting, children will start to build a repertoire of known facts. In all the activities, children are encouraged to notice the triadic (three-way) associations between numbers (e.g. 4 + 2 = 6, 6 - 2 = 4, 6-4 = 2) and to explain these relationships in their own way. This provides opportunities for them to begin to notice the inverse relationship between adding and subtracting, although at this stage it is not taught explicitly. The activities continue with revising doubling numbers 1-5 and how knowing 'double facts' can help with related calculations. Near doubles are also explored. Children should always be encouraged to make up their own number stories relating to the problems. The activities will provide assessment opportunities related to perseverance, understanding and systematic ways of working, as well as the extent to which children are able to recall known facts.

As these facts are such an important foundation for children's ongoing calculating, the whole-class focus on each number may last several days; and numbers may be revisited for those children who are insecure. There are limited independent practice suggestions as we recommend giving children practice for each number using the ideas from another number, especially those using the Pan Balance, the Post Box and the Parts and Wholes photocopy master. Exploring all the numbers with both number rods and Numicon Shapes gives further important practice.

Learning opportunities

- To understand what happens when zero is added or subtracted.
- To become fluent with adding and subtracting facts for numbers to 10 and to recognize that these can be useful in many different
- To recall doubles of numbers 1-5 and recognize that these can be useful when faced with related calculations.
- To experience situations when it is useful to use adding and subtracting facts for numbers to 10.
- To know when to look for patterns and that it is easier to spot them when work is organized systematically.
- To begin to see when to use the inverse relationship between adding and subtracting to solve problems.

Words and terms for use in conversation

combine, add, plus, total, compare, subtract, take away, minus, difference, equals, facts, pattern, similar, different, combination, organize, systematic, how many ways?

Assessment opportunities

Look and listen for children who:

- Use the above words and terms effectively in discussion.
- Understand what happens when zero is added or subtracted.
- Recognize when it is important to be well-organized and to work systematically, e.g. those who show adding facts in order, with or without structured apparatus.
- · Are beginning to have fluent recall of adding and subtracting facts to 10 and who know when to use these to help when adding and subtracting.
- Have fluent recall of doubles totalling no more than 10 and use them to help when adding and subtracting adjacent numbers.
- Are beginning to recognize that there is a relationship between adding and subtracting facts that can be helpful when solving mathematical problems.

Explorer Progress Book 1b, pp. 16-17

Explore More Copymaster 25: Winning Row

Focus activities

1. Adding with zero 2. Subtracting with zero

Exploring 4 – finding adding facts using two numbers

Exploring 4 – finding adding facts using the Numicon Pan Balance

5. Exploring 4 – finding subtracting facts

Exploring 4 - parts and wholes

Exploring 6 - finding adding facts

8. Exploring 6 - finding subtracting facts

9. Exploring 5 – finding subtracting facts

10. Exploring 5 - finding adding facts

11. Exploring 8 - finding adding facts

Exploring 8 - finding subtracting facts

13 Exploring 9 - finding adding facts

14. Exploring 9 – finding subtracting facts

15. Exploring 7 - finding adding facts

16. Exploring 7 – finding subtracting facts

17. Exploring 3 – finding adding facts

18. Exploring 3 - finding subtracting facts

19. Exploring 10 - finding adding facts

20. Exploring 10 – finding subtracting facts

21. Double the amount Relationships between adjacent numbers

NZCO Number and Algebra

Number Strategies

Use a range of counting, grouping, and equal-sharing strategies with whole numbers and fractions.

Number Knowledge

Know the forward and backward counting sequences of whole numbers to 100.

Know groupings with five, within ten, and with ten.

Equations and Expressions

Communicate and explain counting, grouping, and equal-sharing strategies, using words, numbers, and pictures.

Patterns and Relationships

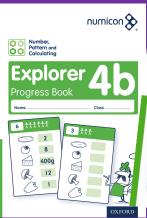
Generalise that the next counting number gives the result of adding one object to a set and that counting the number of objects in a set tells how many.

Create and continue sequential patterns.



Assessment built in - EASY!

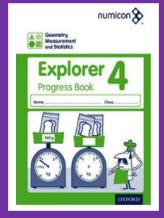










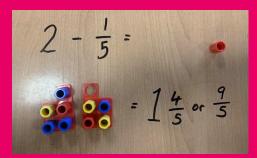


			None Name Name Name Name					
	By this point, children should be able to:	I Valle.	The state of	Page 100	Page 100	THURS.	The same	
	Round any 2-digit number to the nearest multiple of 10.							
	Explain relationships between the positions of numbers on the number line and positions of numbers on a 100 square.							
	Make comparisons between numbers in the range 0 to 100.							
	Know doubles of each number to 10 and derive related subtracting facts.							
	Know how to adjust calculations and compensate when adding and subtracting 9 and when to use this relationship.							
	Understand that multiplying is a form of calculating used instead of repeated adding.							
Westone	Know that Times' means how often an object or action is repeated and that the 'x' symbol is conventionally called the multiplying sign for symbol).							
•	Read and write multiplying sentences using the "x" symbol and understand and use the word "product".							
	Recall multiplying facts from 2, 3, 5 and 10 times tables.							
	Derive a commutative fact from a multiplying sentence.							
	Explain the inverse relationship between doubling and halving.							
	Recall known facts and place value understanding to add and subtract single digits to and from 2-digit numbers.							
	Bridge through a multiple of 10 when adding or subtracting and explain how this was done, in two steps, using adding and subtracting facts.							
	Use a range of strategies when adding of least three numbers that total less than 20, looking for relationships between numbers, to help decide the most efficient method for calculating.							
٠	Calculate rather than count in ones to find a total.							
Metons	Explain that they use adding and subtracting facts within 10 and understanding of place value to find efficient solutions when adding and subtracting multiples of 10 and 1-digit numbers to and from 2-digit numbers (without cassing multiples of 10 to 10.							
	Use knowledge of facts within 10 to add and subtract 2-digit numbers to and from 2-digit numbers without bridging a multiple of 10.							
	Confidently use different strategies for calculating and communicate effectively about them.							
	Recall adding and subtracting facts within 20 fluently and use efficient strategies to calculate those not known.							

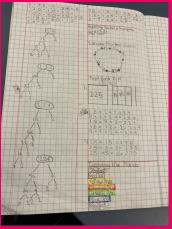
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There's no magic in the plastic, it's what you do with it that counts!

Purchase Numicon Resources including Numicon Online at



