Progressions of Number Knowledge, Place Value and Rational Numbers through NZC Phases 1 – 3 aligned with Numicon

<table>
<tr><th colspan="5">Phase 1</th></tr>
<tr><th>Must achieve during first 6 months</th><th>Must achieve during first year</th><th>Must achieve during second year</th><th>Progress outcomes by the end of the third year</th><th>Numicon</th></tr>
<tr><td>recognise instantly the total number of objects in a group of up to six</td><td>recognise instantly the total number of objects in two patterns, each of up to five objects</td><td>partition a pattern of up to 10 objects, instantly recognise the number of objects in each part, and confirm the total number in the pattern using the parts</td><td rowspan="2">I know that:
In base 10 there are ten digits symbols, and their value is defined by their position in a number. Digits in any column are worth ten times as much as those in the column to the right.
Te reo Māori and other Pacific languages explicitly describe the logic of the base 10 numbering system.
I know how to
• recognise, read, write, and order whole numbers up to 10,000
• group, partition, and recombine whole numbers up to 1,000</td><td>Firm Foundations</td></tr>
<tr><td></td><td>• partition and recombine sets of up to 10 in different ways
• recognise and represent in different ways, including in te reo Māori, the tens-and-one structure of teen numbers (11-19)</td><td>Group, partition and recombine whole numbers up to 100.</td><td>Numicon 1</td></tr>
<tr><td></td><td></td><td></td><td></td><td>Numicon 2</td></tr>
<tr><td></td><td>• recognise, and represent in different ways, halves and quarters of sets and regions</td><td>• recognise the relationships between related fractions (e.g., one half is the same as two quarters)
• find a half, quarter, or a third of a set by recognising groups and patterns rather than sharing by ones</td><td>I know that:
Fractions show parts of a whole in a region, a measurement, or a set of objects. The same amount (e.g., a half or a quarter) can be shown by equivalent fractions.
I know how to:
• recognise, read, write, represent, and order halves, thirds, quarters, fifths, sixths, and eighths
• find a unit fraction of a whole (e.g., a region, measurement, or set of objects), and add unit fractions with like denominators.</td><td>Firm Foundations</td></tr>
<tr><td></td><td></td><td></td><td></td><td>Numicon 1</td></tr>
<tr><td></td><td></td><td></td><td></td><td>Numicon 2</td></tr>
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Phase 2			
Must achieve during Year 4	Must achieve during Year 5	Progress outcomes by the end of Year 6	Numicon
• 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 infinitely. I know how to: • recognise, read, write, order, partition, recombine, and represent whole numbers up to 1,000,000	Numicon 3 Numicon 4 Numicon 5
• represent common fractions, including those greater than 1, on a number line	• compare fractions with a benchmark fraction and put them in order • convert between benchmark fractions, decimals, and percentages (e.g., 21 = 0.5 = 50%) • represent decimals, fractions, and percentages using both discrete and continuous models	I know that: • Fractions are numbers and can describe a measure, a proportional relationship, or an action on another number. • Fractions express ways of sharing that may be different from those in tikanga and mātauranga Māori. • Decimals are a set of fractions that have powers of 10 as their denominators (e.g., 7 or 7) and that can be written as numbers using a decimal point (e.g., 0.7 or 0.07). • A percentage is the number of 100ths of a whole (e.g., 7 is 7%). I know how to: • compare fractions with a benchmark fraction and put them in order • convert between benchmark fractions, decimals, and percentages (e.g., 21 = 0.5 = 50%) • represent decimals, fractions, and percentages using both discrete and continuous models	Numicon 3 Numicon 4 Numicon 5

Phase 3	
Progress outcomes by the end of Year 8	Numicon
I know that: • Decimals continue the place-value system using negative powers of ten. • On a number line, fractions and decimals occur between whole numbers, and negative numbers go to the left of 0. • Positive and negative numbers can be added and subtracted. I know how to: • represent whole and decimal numbers using powers of ten • recognise, read, write, represent, compare, order, and convert between fractions, decimals, and percentages • represent fractions in their simplest form • add and subtract integers.	Numicon 5 Numicon 6