

NZC Refreshed Curriculum compared with Numicon, a Structured Mastery Approach

The Progress Steps – the first full year

NZ Curriculum

Progress steps alert kaiako to specific aspects of learning that are essential and time sensitive as akonga work towards the progress outcome for this phase.

They support Kaiako to notice, recognise and respond to akonga learning in a timely fashion as kaiako offer multiples opportunities for learning and practice.

These opportunities will be meaningful for akonga if they connect with their home languages and value the ways akonga reason, communicate and make meaning (including through the use of augmentative and alternative

Numicon - **The second Six months** - Completion of Firm Foundations

CARDS 11 - 18

Assessing mathematics using Numicon involves making judgements about developments in children's mathematical communicating – both receptive and expressive. As a result, you will need to know what key developments are that you should look for. For this, you can check the assessment opportunities in each activity group and consider how these achievements would show up in children's mathematical **communicating**. Specifically, you will need to look for developments in children's **actions** (what they do and notice), the **imagery** they use and **respond to** and their use of (and **responses to**) words and symbols in their conversation.

It is also important to notice children's fluency. For example, when their communication is unsure, any gaps and hesitations, and when it flows with confidence consistently. These suggest strong connections between well-established ideas.

Assessment should be as open as possible so that children can communicate as much as possible. It is through their mathematical communicating that you will gain a real insight into how the children are thinking. This will enable you to make the most accurate assessment of their progress.

Specific challenges for the purposes of assessing are in the Explorer Progress Books. These are not designed as pass or fail, but opportunities to respond in their individual way. How they approach the task and their responses to them will inform you about their mathematical communicating and give you an opportunity to 'see' their thinking. This level of insight into their thinking will make it easier to gather meaningful and accurate assessment of where the children are in their journey.

Milestones are summaries of learning of specific points that children need to be secure before they can progress to the next section. Children learn over time and at different paces. Support their learning during this process rather than holding them back. This enables you to plan for the support to consolidate their learning so they can move on with confidence. Children need to be adequately prepared for the next step in their learning.

Subitising	recognise instantly the total number of objects in two patterns, each of up to five objects	
Number structure	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)	Inverse order of numbers 10-1 Zero as nothing Inverse order of numbers 20-1 Construction of teen numbers with rods and shapes Emphasis on the language of teen numbers Representing groups of 10 and 20 in many different ways. Number line sequence to 20 – forwards and backwards. <i>Teen numbers - This should read as 10 – 19.</i>
Operations: Addition and Subtraction	join and separate groups of up to a total of 20 objects, and find the difference between groups by grouping and counting	Representing numbers up to 10 as a group and then 20 in many different ways. Exploring fewer and take away from 10 and extending to 20. Solving these ‘fewer’ and ‘one less’ word problem. Generalising the impact of 1 less. Subtracting in how many more and how many less (fewer). Subtracting without counting. Using rods and shapes to add whole numbers. Adding two numbers can be in any order. Recalling some adding facts. Using rods and shapes to subtract whole numbers. Say how much is left when part of a shape has been covered from just looking at the remaining pattern. Can describe a ‘take away’ as a whole with a part taken away leaving the remainder. Show understanding when a group is taken away from the same number resulting in zero. Moving forwards and backwards on a number line shows adding and subtracting Can recall number facts and say number sentences (+ and -) in relation to the number line. Use structured apparatus to show adding and subtraction facts in solving problems.
Operations: Multiplication and Division	multiply and divide by making equal groups and using grouping or counting	Doubling and halving Counting in steps of 2 and 10 To notice the pattern of counting in aloud in fives.
Rational Numbers	recognise, and represent in different ways, halves and quarters of sets and regions	Creating equal sets of the whole Parts being different sizes or the same of a whole. Two equal parts being halves, one part being a ‘half’.

		<p>Halving and sharing collections. Finding half of even Numicon shapes. Finding identical number rods that are equal to a 'whole'. A 'whole' is larger than its parts. A whole is made up of parts – either the same or different.</p>
Equality		<p>Equality in rational numbers. To notice equivalences. To show an understanding of equivalence in solving problems.</p>
Patterns	copy, continue, create, and describe a repeating pattern with three elements, and identify missing elements in a pattern	To work systematically in a pattern.
Measurement	compare the length, weight, volume, and capacity of objects indirectly (i.e., by comparing each of them with another object)	<p>Using money in role-play in exchange situations – Two 1c 'coins' for One 2c 'coin' and two 10c coins for One 20c coin. Weight is not related to size. Make collections of different-sized objects that are lighter than other different -sized objects. Compare lengths using non-standard measures. To use comparative language effectively.</p>
Classification	sort and re-sort shapes and objects by features, identifying the feature chosen	<p>Finding differences in data – subtraction models. Constructing pictograms.</p>
Spatial reasoning	visualise and anticipate which smaller shapes might compose a target shape, and then check by making the 'shape'. follow and give instructions to move to a familiar location or locate an object.	<p>Mirror symmetry Use the language of position spontaneously and appropriately. Behind, beside... To notice and describe distances between objects, places and distance travelled. Can move forwards and backwards when given directions. Give clear directions to a destination.</p>
Variability		