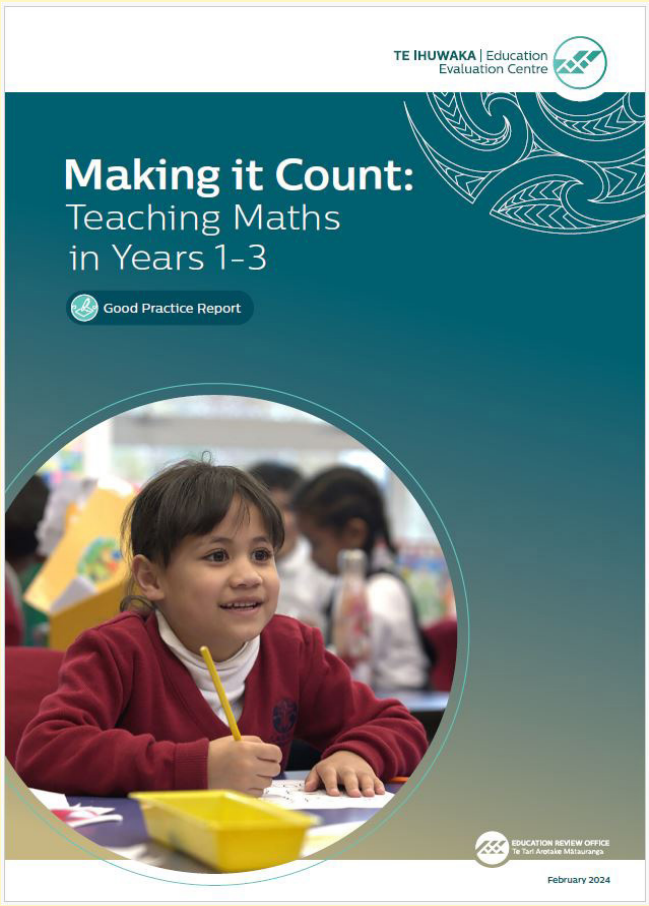
The Wilkie Way
Newsletter March 2024
www.wilkieway.co.nz

Review of recent ERO report on the teaching of Maths in Years 1 - 3



Download your copy of the report from https://evidence.ero.govt.nz/documents/making-it-count-teaching-maths-in-years-1-to-3

There doesn't seem to be any link made between this document and the common practice model and you cannot find the report by following any link from the new Tahurangi website nor from TKI.

I suspect this document would therefore disappear into the ether without most schools even knowing of its existence.
It is however a very important document and supports what many educators believe - get the foundations right and you have something to build on.
I think back to the numeracy project days and the total lack of resources for junior teachers - the man from MOE even said "Junior teachers are used to making their own resources," implying that there was no need to bother about the resources for juniors.
Another person high up in the roll out of the numeracy project said " Maths only starts at stage 5."

I am very please to read in this report, the recognition that what happens in the first 3 years of schooling is crucial to future success in both understanding mathematics and in having a positive relationship with the subject.

This report identifies 2 specific enablers - things that need to be in place before you can develop good practice and then identifies 9 practice areas (that should all feed into the common practice model if a link is ever made.)

Enabler 1: Teacher knowledge

Teachers need to be confident in their own maths knowledge and skills, to be ready to teach them to students. They also need to understand what works best for young students: the specific teaching strategies that are most effective in setting students up for this crucial time in their maths journey. This includes being clear about how to structure their teaching to develop important maths understandings over time, while avoiding misunderstandings or shortcuts which negatively impact on later learning.

Enabler 2: School culture and a whole school curriculum

Teachers' school settings can promote good maths practice through a clear, shared understanding of quality maths teaching. This involves clearly setting out what maths teaching and maths progress looks like in a documented, structured whole school curriculum, and by supporting teacher understanding with great learning and collaboration opportunities. It's useful when schools have an embedded culture of being open to learning, sharing, and continually improving.

Teacher knowledge is not just being able to do the maths. This involves understanding why you are teaching certain things, how things connect together, what concepts are you at the beginning of developing - how do the concepts develop further? How do these concepts connect with other concepts? How to assist students to see and make use of relationships? All of this is expert teacher knowledge, it is not general knowledge gained by doing maths and should be part of teacher training. I trained in the early 80's, a four year B.Ed (Hons) specialising in primary mathematics and the teaching of 3 - 9 year olds. How can primary teachers who complete a 1 year course have the level of knowledge that I was lucky enough to be equipped with when I first entered the classroom? I had sufficient knowledge on which to build further learning. The lack of MOE resources and PLD training specific for years 1 - 3 over the last 30 - 40 years has contributed to a workforce ill equiped to teach in these vital years. Numeracy project was based on a remedial programme for year 3. (Count Me in Too)
It was most unfortunate that the numeracy project became the programme even though that was never its intention at the outset. As it developed from ENP to ANP and INP the early years were neglected.

Beginning School Mathematics was developed in the 1980s and pretty much thrown out when the numeracy project came along.
The following key points embodied the features of the BSM resource
• is designed to match children's developmental stages of learning
• encourages the use of varied grouping
• is language based
• uses a variety of materials
• uses a cyclic approach to developing ideas
• shows the progression and sequence of each concept
• has objectives that show clear lesson sequences
• develops mathematical knowledge, skills, and understandings
• is activity based
• allows for the maintenance of previous learning
• allows children to make choices
• enables flexibility when planning and meeting children's needs
• includes assessment as an integral part of teaching and learning
• relates mathematics to the world in which the child lives

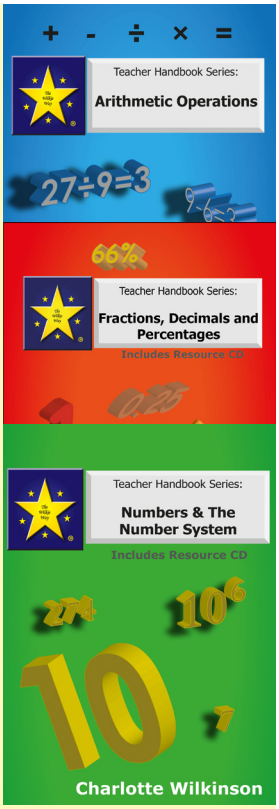
The teacher books were the centre of the resource and state:

A resource is only as good as the teacher using it.

Unfortunately many schools no longer have copies of the teacher books or the resources that supported the activities. It certainly wasn't a perfect resource - a big issue was in the larger schools where multiple classes were sharing the same cardware and storage of the plastic bags became another issue. I have also heard the stories of the time teachers spent making up the resources. Teachers not confident in the teaching of mathematics resorted to reading the script so teachers end up delivering a program rather than building their knowledge to use the resource. This is a reason why I do not like scripted resources.

Research into the use of Begining School Mathematics shows that the resource must be used flexibly and creatively in order to achieve the best mathematics learning amongst junior teachers. (Heleen Visser NZCER Journal issue Set 1997:no 2)

Practice areas as identified in the ERO report (see how many are similar to the list above)
1. Teachers use their understanding of assessment and how students learn maths to ensure they all progress.
2. Teachers use quality teaching practices in maths.
3. Teachers provide dedicated maths time every day so all students engage in meaningful learning.
4. Teachers notice when students require extra support for learning and provide targeted teaching.
5. Teachers use tools and representations to express mathematical concepts.
6. The classroom learning environment encourages mathematical thinking, collaboration, and the enjoyment of maths.
7. Teachers make the most of moments throughout the day to highlight and use maths.
8. Maths classes reflect the culture of their students and their families/whanau.
9. Teachers work in partnership with families/whanau to support maths learning.

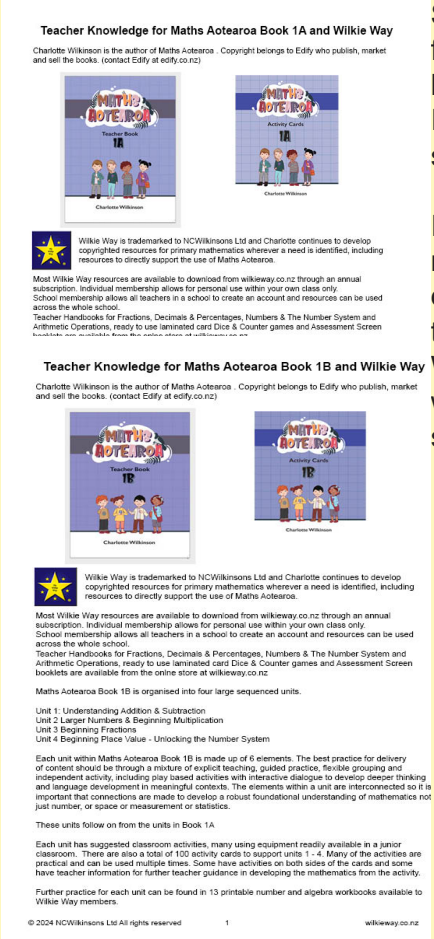


Readers of my newsletters over the years will know I am passionate about the need to upskill teacher knowledge. I produce many resources but my mantra came from the BSM books **A resource is only as good as the teacher using it.**

Over the years I have produced three teacher handbooks available from my online store. Designed specifically to build teacher knowledge in the context of teaching and learning. Each book having the why as well as the what to teach.

When I first came to New Zealand 25 years ago I was was shocked at the lack of teacher knowledge support for the teacher teaching my daughter maths so I decided I had the knowledge and skills to help her and many others in the same position. A lucky meeting with a publishing company and alot of negotiation including refusing to write for them unless they published in colour and for level 1. It took some convincing that it is possible, but much harder to produce resources that are flexible enough to meet the needs of students for whom developmental considerations, developing reading and writing skills must also be addressed as well as mathematical content.
Pearson Primary Maths was published in 2000/2001
The second edition: Pearson Mathematics was published in 2010/2011
The third edition Maths Aotearoa was published in 2021/2022

In each edition it has been the level 1 that has seen the most changes as I have tried to align a format that works flexibly as mathematical concepts in the earlier years are far more connected and related than they are separated. It is essential that the connections and relationships are developed to ensure a solid foundation on which to build. Teacher knowledge at this level is absolutely essential and has been included in the level 1A and level 1B books but I have now extracted this key knowledge to create professional readings that I have made available for all teachers under the Maths Aotearoa page on my website.



Teacher Knowledge for Maths Aotearoa Book 1A and Wilkie Way

Charlotte Wilkinson is the author of Maths Aotearoa . Copyright belongs to Edify who publish, market and sell the books. (contact Edify at edify.co.nz)

Wilkie Way is trademarked to NCWilkinsons Ltd and Charlotte continues to develop copyrighted resources for primary mathematics wherever a need is identified, including resources to directly support the use of Maths Aotearoa.

Most Wilkie Way resources are available to download from wilkieway.co.nz through an annual subscription. Individual membership allows for personal use within your own class only.
School membership allows all teachers in a school to create an account and resources can be used across the whole school.
Teacher Handbooks for Fractions, Decimals & Percentages, Numbers & The Number System and Arithmetic Operations, ready to use laminated card Dice & Counter games and Assessment Screen

Teacher Knowledge for Maths Aotearoa Book 1B and Wilkie Way

Charlotte Wilkinson is the author of Maths Aotearoa . Copyright belongs to Edify who publish, market and sell the books. (contact Edify at edify.co.nz)

Wilkie Way is trademarked to NCWilkinsons Ltd and Charlotte continues to develop copyrighted resources for primary mathematics wherever a need is identified, including resources to directly support the use of Maths Aotearoa.

Most Wilkie Way resources are available to download from wilkieway.co.nz through an annual subscription. Individual membership allows for personal use within your own class only.
School membership allows all teachers in a school to create an account and resources can be used across the whole school.
Teacher Handbooks for Fractions, Decimals & Percentages, Numbers & The Number System and Arithmetic Operations, ready to use laminated card Dice & Counter games and Assessment Screen booklets are available from the online store at wilkieway.co.nz

Maths Aotearoa Book 1B is organised into four large sequenced units.

Unit 1: Understanding Addition & Subtraction
Unit 2 Larger Numbers & Beginning Multiplication
Unit 3 Beginning Fractions
Unit 4 Beginning Place Value - Unlocking the Number System

Each unit within Maths Aotearoa Book 1B is made up of 6 elements. The best practice for delivery of content should be through a mixture of explicit teaching, guided practice, flexible grouping and independent activity, including play based activities with interactive dialogue to develop deeper thinking and language development in meaningful contexts. The elements within a unit are interconnected so it is important that connections are made to develop a robust foundational understanding of mathematics not just number, or space or measurement or statistics.

These units follow on from the units in Book 1A

Each unit has suggested classroom activities, many using equipment readily available in a junior classroom. There are also a total of 100 activity cards to support units 1 - 4. Many of the activities are practical and can be used multiple times. Some have activities on both sides of the cards and some have teacher information for further teacher guidance in developing the mathematics from the activity.

Further practice for each unit can be found in 13 printable number and algebra workbooks available to Wilkie Way members.

 1 wilkieway.co.nz

Scroll down to the level 1 books and you will find the PDF to download for each. I encourage all junior teachers to read these to enhance your knowledge of why you are teaching what you are teaching.
I believe Year 1 and 2 teachers are the most important teachers in a students learning journey. They set the scene for all that comes next.

I wonder how clearly you remember your junior teachers? I certainly remember mine and am very thankful that I was given a great start. I don't remember the content of what they taught but I remember how they made me feel valued, that when I struggled they knew how to help. When I was bored they challenged me. They encouraged risk taking and when things went wrong (which they did rather alot!) they were there to support. Effort was expected and rewarded.

Charlotte Wilkinson is the Author of Maths Aotearoa. The copyright, publishing and distribution belongs to Edify. All sales and purchases of Maths Aotearoa are through the Edify website edify.co.nz
(Pearson NZ was amalgamated with Pearson Australia and the NZ market is too small for them to bother with. Edify negotiated the copyright back to NZ shores and have invested in a third edition specifically for NZ schools.)
Charlotte also writes classroom and teacher professional resources under her own trademark "wilkieway". Most of these resources are available via a membership subscription but the teacher handbooks, laminated ready to use dice and counter games and assessment screens are available from the online store. The Maths Aotearoa page on my website "wilkieway.co.nz" is for information and support in using Maths Aotearoa.

New Resources for Wilkie Way Members

Subscriptions purchased at the online store at www.wilkieway.co.nz

Individual $55 - paid via paypal

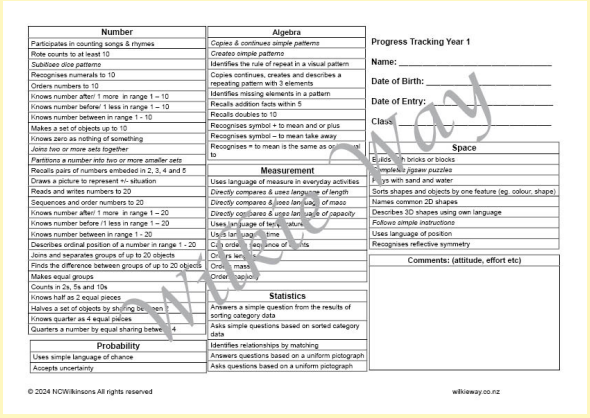
NZ School paid via invoice - complete form at online store

Under 30 Students $60 + GST 30 to 100 students $160+GST

101 - 300 students $260 + GST 301- 500 students $360 +GST

501 - 700 Students $460 + GST 701+ Students $560 + GST

Non NZ School $660 - paid via paypal



Number	Algebra
Participates in counting songs & rhymes	*Copies & continues simple patterns*
Rote counts to at least 10	Creates simple patterns
Subitises dice patterns	Identifies the rule of repeat in a visual pattern
Recognises numerals to 10	Copies continues, creates and describes a repeating pattern with 3 elements
Orders numbers to 10	Identifies missing elements in a pattern
Knows number after/ 1 more in range 1 – 10	Recalls addition facts within 5
Knows number before/ 1 less in range 1 – 10	Recalls doubles to 10
Knows number between in range 1 - 10	Recognises symbol + to mean and or plus
Makes a set of objects up to 10	Recognises symbol – to mean take away
Knows zero as nothing of something	Recognises = to mean is the same as or is equal to
Joins two or more sets together	
Partitions a number into two or more smaller sets	**Measurement**
Recalls pairs of numbers embedded in 2, 3, 4 and 5	Uses language of measure in everyday activities
Draws a picture to represent +/- situation	*Directly compares & uses language of length*
Reads and writes numbers to 20	*Directly compares & uses language of mass*
Sequences and order numbers to 20	*Directly compares & uses language of capacity*
Knows number after/ 1 more in range 1 – 20	Uses language of temperature
Knows number before /1 less in range 1 – 20	Uses language of time
Knows number between in range 1 - 20	Orders events according to time
Describes ordinal position of a number in range 1 - 20	Orders lengths
Joins and separates groups of up to 20 objects	Orders mass
Finds the difference between groups of up to 20 objects	Orders capacity
Makes equal groups	
Counts in 2s, 5s and 10s	**Statistics**
Knows half as 2 equal pieces	Answers a simple question from the results of sorting category data
Halves a set of objects by sharing between 2	Asks simple questions based on sorted category data
Knows quarter as 4 equal pieces	
Quarters a number by equal sharing between 4	**Probability**
	Identifies relationships by matching
Uses simple language of chance	Answers questions based on a uniform pictograph
Accepts uncertainty	Asks questions based on a uniform pictograph

Progress Tracking Year 1

Name: _____

Date of Birth: _____

Date of Entry: _____

Class: _____

Space
Builds with bricks or blocks
Completes jigsaw puzzles
Plays with sand and water
Sorts shapes and objects by one feature (eg. colour, shape)
Names common 2D shapes
Describes 3D shapes using own language
Follows simple instructions
Uses language of position
Recognises reflective symmetry

Comments: (attitude, effort etc)

wilkieway.co.nz

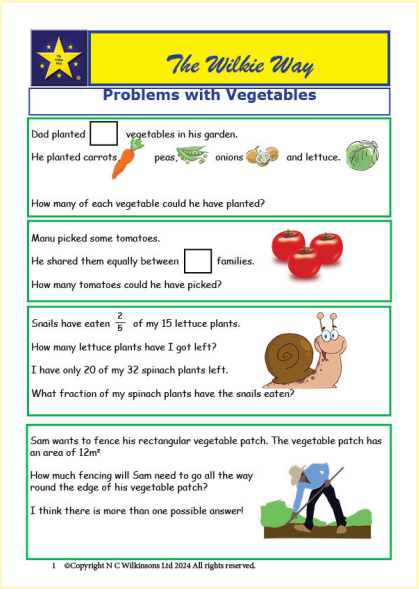
Teacher Professional Resources:
Assessment:
Student progress tracking sheets by year group set out under the refreshed curriculum headings.

Year 1
Year 2

Student Resources:
Graduated Problems on a Theme
.
Problems with Vegetables

There are now 37 sets of graduated problems.
Which makes 148 problems spanning levels 1 - 4.

(Answers and teacher notes also provided)



The Wilkie Way

Problems with Vegetables

Dad planted ☐ vegetables in his garden.
He planted carrots, peas, onions and lettuce.
How many of each vegetable could he have planted?

Manu picked some tomatoes.
He shared them equally between ☐ families.
How many tomatoes could he have picked?

Snails have eaten $\frac{2}{5}$ of my 15 lettuce plants.
How many lettuce plants have I got left?
I have only 20 of my 32 spinach plants left.
What fraction of my spinach plants have the snails eaten?

Sam wants to fence his rectangular vegetable patch. The vegetable patch has an area of 12m²
How much fencing will Sam need to go all the way round the edge of his vegetable patch?
I think there is more than one possible answer!

1 ©Copyright N C Wilkinsons Ltd 2024 All rights reserved.

The Wilkie Way Teacher Challenge

Kim and Kelly took 5 maths tests during the school year.
Kim's scores were 73, 86, 77, 82 and 92
Kelly's scores were 93. 78. 83. 74. and 87.

Who had the highest average score and by how much?

Find the shortcut .....hint: use ordering

