



# The Wilkie Way

## Newsletter October 2024

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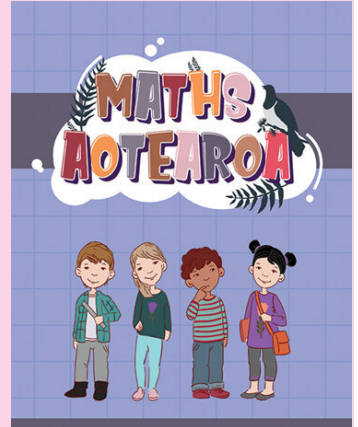
### Can we still use Maths Aotearoa as our maths programme?

Yes you can - the four “approved programmes” are approved for funding. They have not been reviewed and peer approved by maths experts - only by their own maths experts who of course believe in their own products.

Maths Aotearoa was not even given the opportunity to participate in the procurement process (which is now under a number of OIA investigations) It has come to light that at least one of the chosen four knew they were a supplier before the procurement process was initiated. Ministry used a closed tender despite telling publishers it would be an open tender. Edify (the NZ independent publisher of Maths Aotearoa) was not included in the closed tender with no reason given.

I have attached to this newsletter a document to show what you could have had if Maths Aotearoa had been included in the tender and answered the same questions that each of the publishers have answered in advertising why you should choose their products. Schools can still self fund Maths Aotearoa if they feel it meets their needs and beliefs about maths education.

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Charlotte Wilkinson is an author for maths resources for both companies.



### Maths Mastery - what does the term mean?

I have been in the UK for the last five weeks, and UK schools have been following a maths mastery approach for at least 10 years - so I did a bit of digging.

*Content for this article comes from a paper written by David Benson - a maths educator at the University of Derby where he discusses the pros and cons of Maths Mastery.*

**Maths Mastery was founded by Dr Helen Drury, a pioneer of teaching and learning for mastery in UK schools - back in 2012.**

Mastery mathematics has been adopted as a term by the National Centre for Excellence in Teaching of Mathematics (NCETM) since 2014. It has many roots in well established pedagogical approaches in high achieving East Asian countries.

Defining Mastery Mathematics is a complex business.

Dr Helen Drury explains the definition when she says : A mathematical concept or skill has been mastered when through exploration, clarification, practice and application over time, a person can represent it in multiple ways, has the mathematical language to be able to communicate related ideas, and can think mathematically with the concept so that they can independently apply it to a totally new problem in an unfamiliar situation.

Mastery therefore suggests we understand a concept at a deep level. However depth of understanding of a concept is dependent on the knowledge we have - so what is deep for one person may be shallow for another. However if a concept is “mastered” one would expect the learner to be able to apply their knowledge and skills effectively to solve new problems and also to demonstrate a growing ability to explain as well as justify their thinking.

Reading of key figures in the history of educational thought on the learning of mathematics would suggest that mastery is far from a new idea and that similar principles have underpinned much academic writing for more than 40 years.

## Does Mathematics Mastery work in the classroom?

Only by looking at the classroom implementation and evaluation of experiences can we begin to ascertain the potential benefits and shortcomings of a mastery approach. David's research finding came from working with 100 teachers over 20 schools giving the following pros and cons

### The pros of Mathematic Mastery

- Teachers feel less constrained by planning structures and are at ease with the idea of carrying more in their head with less detail in their written plans.
- Participants see the value of “dwelling on” topics for longer periods as beneficial because it helps provide a more secure base for learning.
- The balance between “pacey” activities to support fluency and richer exposition and tasks which demand more reasoning and problem solving skills could be beneficial to pupils progress.
- Teachers have developed their own subject knowledge by engaging with a mastery approach.
- Many have experimented with grouping pupils in alternative ways. Although grouping by ability is still used, many have begun to recognise the potential benefits to learning of mixed ability groupings.
- Generally, participants report that pupils are strengthening verbal reasoning skills more obviously than developing confident written explanations of their thinking.

If you are going to benefit from the pros of Maths mastery in your classroom you will need to consider very carefully how you are going to use the resources you decide on for your mathematics programme. It will be vitally important to view the teacher guidance available as this is what will make the difference - not the student workbooks.

Rob Profitt White has uploaded a very good video <https://bit.ly/Mathsproducts> which provides an informative and thought provoking approach - don't just follow what the school down the road is doing or what you think you should be doing. Make informed decisions.

As all programmes on offer have an online component, whether it be the whole teacher guide or extra supporting material be aware that there will be an ongoing cost to schools beyond 2026. Likewise if the resource has write on workbooks, be prepared for an on going financial committment.

### The cons of Mathematic Mastery

- Losing the awe and wonder of learning mathematics
- Providing adequate intervention
- Dealing with differentiated learning needs
- Managing pace of lessons and learning
- Maintaining variety and creativity in pedagogical approaches.


The question of how to provide intervention for those pupils falling behind the expected pace of learning has persisted among teachers.

*Thinking that this new approach is going to magically wipe away all the concerns about our “long tail” of under achievement is a myth.*

The “curse of mastery” could be the way in which has become yet another educational initiative which seeks to control rather than liberate the potential of professional practice. With their plethora of strategies for improving outcomes in mathematics , recent governments have tended to de-professionalise teachers by denying them genuine opportunities to exercise professional judgement and instead creating cultures of fear in which teachers feel constrained to be seen to be engaged in expected practices. *(Don't believe the NZ government is any different to the UK government in terms of making Education a political football)*

Although well intended, and fundamentally persuasive at heart, if Mastery Mathematics becomes regarded as some kind of perfect “recipe” official directive or solution for teaching mathematics, we shall once again find ourselves in a position where the potential to promote childrens’s learning in mathematics will be lost.

*(well said David)*



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## NZ School Subscription

via invoice

Individuals please purchase a membership before creating an account as your account will not be activated unless a payment has been made. (\$55 via Paypal)  
There is no automatic roll over of subscriptions - members will be notified close to expiry and invited to re subscribe by purchasing a new subscription.

Schools can add new members at any time during the time their subscription is valid.  
All email addresses are added to the newsletter list. If the email is no longer valid the member will be removed from the school listing.  
If a school fails to pay their renewal invoice before the end of the month of their renewal all email addresses will be deactivated.

### School membership - via invoice

Under 30 students \$60 + GST  
31 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

It will shortly be time to preorder assessment screens for 2025

Odd year screens will be supplied - these have been updated to reflect the refreshed curriculum and percentages are given for alignment to expected progress by year group.

- Screen One: for years 1 and 2
- Screen Two: for years 3 and 4
- Screen Three: for years 5 and 6
- Screen Four for years 7 and 8


For students who are well above or below their year expectation then use the appropriate screen to find their next learning steps.

Curriculum levels are still used in the scoring to enable schools who have been collecting achievement data over time to continue making progress comparisons.

Finding out students next learning steps is instrumental in using a resource for the benefit of your students. While these assessment will tell you where to go in the Maths Aotearoa resource they can also be used to identify where is a good place to start in any other structured resource.

Schools who are current users of the resource will automatically receive a pre order form.

If you would like to receive a pre-order form to receive the discounted price then please register your email address and school with [charlotte@ncwilkinsons.com](mailto:charlotte@ncwilkinsons.com)



## The Wilkie Way Mathematical Number Knowledge & Skills Assessment Screen Two Teacher Guide & Answers

**Odd Year**

**It is a breach of copyright to photocopy this booklet.**

This screening assessment is designed by Charlotte Wilkinson, A private education consultant specialising in the teaching and learning of primary mathematics. (MOE Accredited ID 654)

The purpose behind the mathematical screening assessment is to find out what your students know to ensure a firm foundation for the building of further mathematical concepts. The screening will also show up specific weak areas or areas not yet covered in the classroom programme within the level band that will require further teaching and learning experiences.

The areas of mathematics screened in this assessment are:

<b>Whole Numbers</b>	Can name columns (up to 5 digits), expand up to 4 digit numbers. Knows 10 more/10 less, groups of 10 in 2 & 3 digit numbers, groups of 100 in 3 & 4 digit numbers. Can round numbers to closest 10 or 100.
<b>Addition &amp; Subtraction</b>	Basic addition & subtraction facts to 10, teens & doubles. Recalls or derives facts to 20. Can add and subtract 2 digit numbers.
<b>Multiplication &amp; Division</b>	Can make equal groups. Understands multiplication as repeated addition. Recognises an array to represent multiplication and knows multiplication is commutative. Understands a division statement as equal grouping or equal sharing. Recalls or derives multiplication & division facts.
<b>Fractions</b>	Recognises half as 2 equal parts and quarters as 4 equal parts. Identifies a unit fraction of a shape or quantity. Writes non unit fractions. Understands half as a counting unit, the denominator represents the size of the unit in relation to the whole, the numerator as how many units. Fractions as a result of a division (sharing). Can find a unit fraction of a number. Can find a non unit fraction of a number.

This screening assessment can be used to identify groups of students with common weaknesses to create targeted intervention booster groups. Students scoring in the level 3 band should be re-screened using Assessment Screen Three to provide information for teaching and learning next steps.

	Mid Level 1	Upper Level 1	Early Level 2	Mid Level 2	Upper Level 2	Early Level 3
<b>Overall Score</b>	0 - 8	9 - 24	25 - 50	51 - 74	75 - 90	91 - 100
<b>Whole Number PV</b>	0 - 2	3 - 5	6 - 14	15 - 22	23 - 26	27 - 30
<b>Add/Sub</b>	0 - 2	3 - 7	8 - 14	15 - 22	23 - 24	25 - 26
<b>Mult/Div</b>	0 - 1	2 - 5	6 - 11	12 - 16	17 - 22	23 - 24
<b>Fractions</b>	0 - 3	4 - 7	8 - 11	12 - 14	15 - 18	19 - 20

Refreshed Curriculum Expectations

Beginning year 3	15 - 25%
End Year 3	40% - 60%
Beginning Year 4	
End Year 4	80% - 100%

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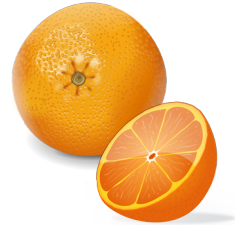
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## Problems with Fruit & Fractions

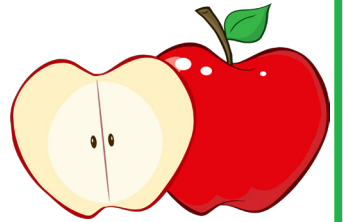
4 oranges were cut into halves. How many halves are there?

The halves were then cut in half again - how many pieces of orange are there now?

What fraction of an orange is each piece of orange?



16 children each had three quarters of an apple for a snack. How many whole apples have been cut?



Stacy was sharing out a large bag of fruit.

The ratio of fruit in the bag was 1:2:3

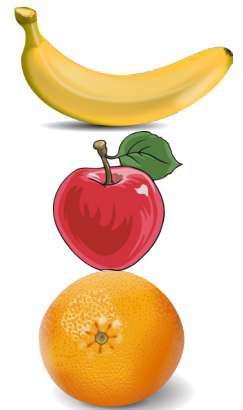
There were 12 bananas, and the rest were apples and oranges.

How many pieces of fruit were in the bag?

What fraction of the bag are a)bananas?

b) apples?

c) oranges?



Dave, Ratu and Silah were picking apples in the orchard.

A basketful is 0.125 of a full box.

Dave picked 30 basketfuls

Ratu picked  $3\frac{1}{2}$  full boxes

Silah picked 2 full boxes and 6 basketfuls

What was the total amount of apples picked?

What percentage of the total amount did each person pick?

