



The Wilkie Way

Newsletter July 2024

www.wilkieway.co.nz

Excerpts pertaining to Mathematics and Statistics from the Ministerial Advisory Group (March 2024) that has recently been made public.

A change in focus and intention for teaching, learning and progress in maths with a more structured, procedural learning. Teachers will need support to make this change.

The MAG recommends a structured approach to teaching maths, starting with foundational knowledge and skills and building upon them gradually. Establishing a solid foundation of interconnected knowledge and mastering skills are essential stepping stones towards more advanced problem solving. Problem solving should not be viewed as a free-form activity of creative expression, but rather a purposeful opportunity to apply knowledge and skills already learned. Procedures provide learners with structured steps to follow when solving problems. For novice learners, an incremental approach that builds on their existing knowledge and skills is fundamental to managing cognitive load and maintaining confidence.

As students gain fluency with a procedure, they have more working memory resources available to devote to higher order cognitive processes, such as understanding the underlying principles of the procedure, applying their knowledge to word problems, and making connections with prior knowledge. All of these things strengthen their conceptual understanding.

There has been a tendency to downplay the importance of repeated practice, often associated with negative connotations of rote learning without understanding. However, this overlooks an important part of the learning process: the retrieval of knowledge and skills stored in long-term memory. Repeated engagement with skills builds fluency. With increased fluency, learners may allocate cognitive resources towards higher order comprehension and problem solving rather than basic skill execution. Meanwhile repeated retrieval of knowledge creates opportunities to make connections and improve understanding.

By reframing repeated practice as a strategic and integral component of the learning process, teachers can harness its potential to develop fluent proficiency, thereby increasing capacity to tackle more complex tasks and improve understanding. Effective practice techniques include spacing out practice sessions over time for more robust long term retention and interleaving a variety of skills to be practiced within a single session to engage students with the practice in more meaningful ways

MAG recommends Te Mataiaho, The common practice model and the year by year teaching sequence be amalgamated into a single document and amplifies explicit teaching, intentional practice and formative assessment

Note: MAG recognises that teachers are creative in their work and must be responsive to the needs of their particular students.

The year by year teaching sequence is therefore intended to be a support for effective teaching, not a straitjacket.

The proposed minor and major changes to current documentation are all intended to:

- Increase emphasis on fluency and competence in arithmetic
- Move to explicit teaching of the whole class as a basis for mathematics and statistics teaching
- Ensure students practice mathematics and statistics in a purposeful and effective way
- Make the documents clear and easy to use with sufficient detail to support teachers decision making and practice
- Make sure that students make progress at a pace that enables success,
- Make sure that students have a chance to learn key aspects of the curriculum

Minor Changes:

- The year by year sequence and curriculum content need minor refinements to address issues with timing and progression.
- The 'Space' strand will be relabeled as 'Geometry' for clarity
- The Dos will be reordered to reflect progression through the curriculum.

Major Changes:

- Significant editing of Te Mataiaho and Common Practice Model content for concision and clarity, and to reflect the shift in emphasis towards fluency and progression will be undertaken.
- The Understands will be rewritten to align with a focus on big ideas on the mathematics and statistics learning area: patterns and variation, logic and reasoning, visualization, language and communication, problem solving as a human endeavor
- New content will be developed to support and amplify explicit teaching
- New content will be developed to support formative assessment.
- New content will be developed to support planning and organizing mathematics and statistics lessons and programmes.

These changes will be evident in:

- Changes to the purpose, aims and big ideas of mathematics and statistics (expressed as Understands) to make them focus on the subject matter.
- A focus on fluency and competence expressed in the phase descriptors, content descriptors and teaching practices.
- A clear articulation of what explicit teaching, intentional practice and formative assessment mean in daily mathematics and statistics teaching.
- Guidance on how to represent and teach particular ideas provided in phase descriptions and in a guidance column in the year by year sequence. This will ensure that relevant information about teaching is easily linked to key content where necessary.

MAG is proposing checkpoints after 6 months and at the beginning of each school year from year 2. The primary purpose of these checkpoints would be to identify students who are falling behind curriculum expectations in order to provide them with additional teaching as early as possible,

There is a substantial risk however, of checkpoint assessments being perceived by teachers as summative in nature, If teachers believe that assessment data will be used as a measure of the quality of their practice, they will tend to narrow the scope of their teaching to the elements of the curriculum that are directly assessed (i.e., teach to the test' rather than teaching the full curriculum) That would pose a risk to the improvements to teaching and learning that the recommended changes might otherwise deliver.

MAG believes that data gathered from checkpoint assessments should be for classroom and school use only

It is not intended that checkpoint assessments be used for any purpose other than the identification of students at risk of falling behind curriculum expectations. Nonetheless, it might also be appropriate for schools to share assessment results with parents, and to use then to plan for and allocate learning support resources.

The MAG recommends a structured approach to teaching maths, starting with foundational knowledge and skills and building upon them gradually.

Maths Aotearoa is a teaching sequence that builds on prior knowledge. Provides for a variety of learning opportunities from explicit teaching and independent practice. Applying knowledge and skills. Investigating and exploring ideas.
Available from Edify.co.nz



By reframing repeated practice as a strategic and integral component of the learning process, teachers can harness its potential to develop fluent proficiency,



Wilkie Way members have access to a total of 78 practice workbooks directly related to Maths Aotearoa plus other practice resources.

Effective practice techniques include spacing out practice sessions over time for more robust long term retention and interleaving a variety of skills to be practiced within a single session to engage students with the practice in more meaningful ways

Also for the membership area:
Under development - Maintenance sheets for year 3 to year 8

Practice in recalling and applying prior knowledge and practicing skills to maintain fluency.

Individual or school subscription available

Wilkie Way Maintenance 3a 1.1
Name: _____ Date: _____

A.
 $1. 12 + 7 =$
 $2. 5 + 13 =$
 $3. 11 + 8 =$
 $4. 14 + 4 =$
 $5. 3 + 16 =$
 $6. 7 + 8 =$
 $7. 6 + 5 =$
 $8. 9 + 6 =$
 $9. 7 + 9 =$
 $10. 7 + 6 =$

B.
 $1. 36 + 29 =$
 $2. 47 + 19 =$
 $3. 64 + 39 =$
 $4. 53 + 29 =$
 $5. 125 + 199 =$

C.
 $1. 7 \times 2 =$
 $2. 3 \times 4 =$
 $3. 5 \times 8 =$
 $4. 3 \times 10 =$
 $5. 4 \times 4 =$
 $6. 2 \times 9 =$
 $7. 3 \times 5 =$
 $8. 6 \times 3 =$
 $9. 10 \times 4 =$
 $10. 7 \times 3 =$

D. Colour in half of each shape

E.
 1. There were 23 students on the school bus. At the next stop 8 students got on the bus and the next stop 7 more students got on. The bus arrived at school with how many students?
 2. The school bus can seat 48 students. If 56 students need to catch the bus how many would have to stand?

©2024 NCWilkinsons Ltd All rights reserved. wilkieway.co.nz

MAG is proposing checkpoints after 6 months and at the beginning of each school year from year 2.

The Wilkie Way

NZ Curriculum Mathematical Number Knowledge & Skills Screening Assessment Level 1 Odd Year

Student Name _____
Year Group _____

Area of Mathematics	
Whole numbers	/18
Addition & Subtraction	/20
Multiplication & Division	/12
Total	/50

Comments: _____

Overall	Early Level 1	Mid Level 1	Upper Level 1	Early Level 2
Whole numbers				
Add/Sub				
Mult/Div				

It is a breach of copyright to photocopy this booklet. Copyright 2020 NCWilkinsons Ltd www.wilkieway.co.nz

Assessment screens for levels 1 - 4 have already been revised to be used as checkpoints at 6 months and from the beginning of year 2. I also recommend redoing the same screen at the end of the year so the students can measure their own progress. While MAG proposes the primary purpose is for identifying students at risk they are equally useful for planning the sequence of work. The screens are directly linked back to the Maths Aotearoa resource and supporting Wilkie Way resources.

Screens are available from the online store during the year while stocks last but register for a pre order form sent out in term 4 for a 15% discount.

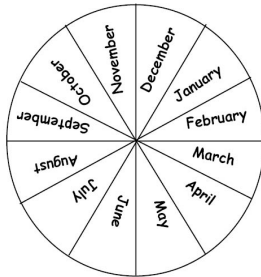
New Resources for Wilkie Way Members

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

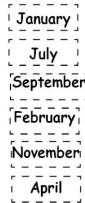
Individual \$55 - paid via paypal

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

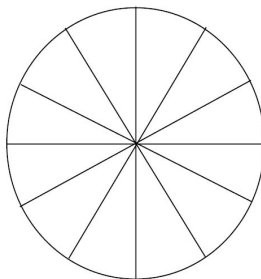
Non NZ School \$660 - paid via paypal



© 2024 N C Wilkinsons Ltd All rights reserved.



© 2024 N C Wilkinsons Ltd All rights reserved.



www.wilkieWAY.co.nz

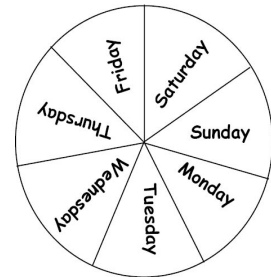


www.wilkieWAY.co.nz

Added to Equipment Resources and to Measurement

Students need to understand and appreciate the cyclic nature of the measures of time.

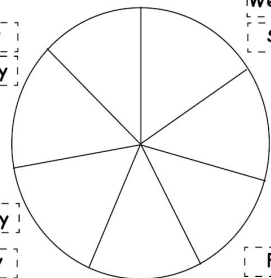
There is no beginning or end - only what you decide to be the beginning and end point.



© 2024 N C Wilkinsons Ltd All rights reserved.



© 2024 N C Wilkinsons Ltd All rights reserved.



The Wilkie Way Teacher Challenge



Amazing Maths

Think of a number
 Add 6
 Double the result
 Subtract 4
 Halve the result
 Subtract the number you first thought of.

Try with different numbers.

Think of a number
 Add 5
 Multiply the result by 3
 Subtract 9
 Divide by 3
 Subtract 2

Try this with different numbers

Can you explain why these work?

Try them out with your students and challenge them to make up a sequence of their own.