



The Wilkie Way

Newsletter May 2023

www.wilkieway.co.nz

Supporting Learners in the Classroom

Every teacher would love to have an extra adult in the classroom to support learners. Having an adult with appropriate knowledge and skills to support specific learners is even better.

It is good to see MOE providing funding for teacher aides through the Teacher aide Professional Learning and Development Fund

<https://pld.education.govt.nz/find-pld/teacher-aide-professional-learning-and-development-fund-2023-2024/>

The funding recognises the important role Teacher Aides have in supporting education outcomes and provides financial support for professional learning opportunities related to that role.

The Fund remains open until the SSSCA (support staff in schools collective agreement) expires on 19 February 2024, or the available funding is fully allocated - whichever happens sooner. PLD accessed via this fund needs to be completed by the expiry of the Collective in February 2024.

The Fund opened to applications on 24 April 2023.

Individual Teacher Aides will be able to apply for up to \$1,000 of funding to access PLD over the term of the Collective Agreement (to 19 February 2024, or until funds are exhausted – whichever is sooner).

Apply as soon as possible as the funding in the Pilot very quickly ran out.

I am now able to offer some courses for teacher aides that can be funded. Search for the courses on the website (as above) under the set category PLD look for Learning Adventures or go direct to the Learning Adventures website <https://learningadventures.nz/> to enrol on a course.

Learning Adventures is offering a lot of teacher aide courses delivered by a wide range of specialist facilitator not just in Maths.

I am offering two courses:

Course A: **Supporting Students Learn and Progress in Mathematics**

Offered by Charlotte Wilkinson in Cambridge, Tokoroa, Gisborne, Whanganui & Palmerston North

Course B **Overcoming Maths Anxiety**

Offered by Charlotte Wilkinson in Cambridge and Tokoroa

Maths courses in other locations available through Learning Adventure facilitators

Shirley Collins - Rotorua

Marie Hirst & Dr. Jo Knox - North Auckland

Sue Graham - North Canterbury

You will need to have an application reference number (ARN) obtained through your ESL at the MOE

Enrol on any of these courses through <https://learningadventures.nz/> Teacher Aide PLD courses

If you do not have funding and your school is happy to fund your attendance at one of my courses then you can enrol direct with me at charlotte@ncwilkinsons.com using the enrolment form accompanying this newsletter.

Supporting Students Learn and Progress in Mathematics

This course consists of 2 x 2 hour workshops and will focus on understanding the progress steps in mathematics and supporting students understanding and learning using concrete materials
(All venues to be confirmed)

Location	Workshop 1	Workshop 2
Cambridge	Tuesday 6 June 11am – 1pm	Tuesday 20 June 11am - 1pm
Tokoroa	Wednesday 7 June 11am - 1pm	Wednesday 21 June 11am - 1pm
Gisborne	Friday 18 August 9am - 11am	Friday 8 September 9am - 11am
Whanganui	Wednesday 30 August 11am - 1pm	Wednesday 13 September 11am - 1pm
Palmerston North	Thursday 31 August 11am - 1pm	Thursday 14 September 11am - 1pm

Overcoming Maths Anxiety

This course consists of 2 x 2 hour workshops and is for both teacher aides with a maths anxiety and teacher aides working with maths anxious students. It will focus on causes and steps to address this learning barrier and develop confidence and success.
(Both venues to be confirmed)

Location	Workshop 1	Workshop 2
Cambridge	Tuesday 17 October 11am - 1pm	Tuesday 31 October 11am - 1pm
Tokoroa	Wednesday 18 October 11am - 1pm	Wednesday 1 November 11am - 1pm

All courses are made up of 2 x 2 hour workshops
Cost \$200 + GST (both workshops are included in this price)

New Resources for Wilkie Way Members

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

Individual \$50 - paid via paypal

NZ School paid via invoice - complete form at online store

Under 30 Students \$50 + GST 30 to 100 students \$150+GST

101 - 300 students \$250 + GST 301- 500 students \$350 +GST

501 - 700 Students \$450 + GST 701+ Students \$550 + GST

Non NZ School \$650 - paid via paypal



Teacher Professional Resources New section **Common Practice Model**

I am developing a series of discussion documents to assist teachers to understand and begin to implement the common practice model pedagogies.

Just a friendly reminder that under the terms and conditions you agree to when taking out a subscription means you cannot share the resources with a third party. An individual subscription is for you only.

A school subscription allows anyone with a school email address to create an individual account. New teachers can be added during the duration of the subscription.

It is not permitted to download classroom resources onto a school server.

Permission is granted to use and alter the word documents under the planning section to make these documents your own and these altered documents can be stored on your school server.

Common Practice Model Pedagogical Approach

Supporting student relationships with maths

Students (and teachers) have unique, complex, and dynamic relationships with maths that are inextricably linked to their cognitive processes. These relationships encompass feelings and emotions related to maths, beliefs about the nature of maths, and its usefulness and importance. Relationships with maths also include mathematical knowledge, habits of engagement, expectations of success, and how they view themselves as mathematicians. As students experience maths, these relationships develop through interactions between students, teachers, family and wider society, and through the ways mathematics is portrayed and used in homes, communities and societies.

What do I believe maths is?

Identify where you use mathematics in your everyday life.

The teacher's relationships with maths impact the ways they deliver a maths task. A confident teacher generally allows for more challenging tasks. They are less likely to worry about whether a student can do something they cannot, or do something different they hadn't anticipated.

It is no longer acceptable to say "I am not good at maths"

A maths anxious teacher, lacking in confidence is more likely to keep tasks within their comfort zone leading to less challenge and effectively puts a ceiling on student achievement.

Where do you fit on the maths confidence scale?

Maths Anxious	Totally Confident
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How can you support each other to build confidence within your team/school?

What resources would help to build confidence?
(Professional development, physical resources e.g. teacher guides/texts)

Curriculum Refresh Update

Phase 1 of the Common Practice Model is now available focusing on the Principles and Pedagogical Approaches. Download the full pdf <https://www.education.govt.nz/our-work/changes-in-education/curriculum-and-assessment-changes/common-practice-model/>

Explicit teaching is an approach that teachers currently use in mathematics and it needs to be **combined** with other pedagogical approaches throughout the teaching and learning process.

I have taken the following directly from the Common practice model document to focus in on the pedagogical practices as they pertain to the teaching of mathematics. I have changed the order putting critical pedagogies last instead of first for no other reason than I believe the importance of critical pedagogy increases over the time a student is in school and the amount of knowledge they have to be critical about. I have put supporting relationships with maths first as without this, learning barriers are created and students are shut out of mathematics. If teachers do not have a good relationship with mathematics themselves it will be very hard to implement any of the other pedagogies.

1. Supporting student relationships with maths

Ākonga have unique, complex, and dynamic relationships with maths that are inextricably linked to their cognitive processes. These relationships encompass feelings and emotions related to maths, beliefs about the nature of maths, and its usefulness and importance. Relationships with maths also include mathematical knowledge, habits of engagement, expectations of success, and how they view themselves as mathematicians. As ākonga experience maths, these relationships develop through interactions between ākonga, kaiako, and whanau, and through the ways mathematics is portrayed and used in homes, communities and societies.

Ākonga relationships with maths impact the ways they engage with each task, the emotions they experience during that task, their learning outcomes, and the ways they make sense of and integrate maths in their lives. Ākonga develop positive and functional relationships with maths when kaiako notice these emotions and use them as signals to encourage ākonga to persevere, learn from mistakes, try different pathways, or discuss the task with others. When ākonga build positive and functional relationships with maths, they see how maths is used in society and connect maths to their communities and other areas of their learning.

Teacher Role:

- know ākonga as a member of whānau and communities, and as individuals with a dynamic relationship with maths
- have high expectations, and are explicit with ākonga that maths capabilities can develop over time
- provide explicit opportunities to develop skills and dispositions of ākonga in perseverance, cooperation, independence, taking risks, and adaptability
- are actively engaging in maths themselves, model confusion and mistake-making, and reflect on their own relationship with maths
- build, along with their ākonga, a positive and supportive learning environment
- provide a variety of rich, open tasks and lesson sequences that vary in contexts, complexity, ways of working, structure, and autonomy
- provide regular opportunities for both challenge and consolidation.

Expected Student behaviours

- have a broad view of maths and see the usefulness, creativity, and beauty of maths
- have confidence in their own developing mathematical and statistical capabilities
- are resilient, expect challenge, and embrace confusion
- are reflective about their engagement with maths



2. Communicating pedagogies

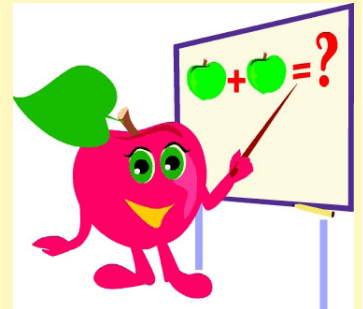
Communicating in maths is used to develop ākonga understanding of maths and to explain and justify their mathematical thinking. Through interactions between kaiako and ākonga, and ākonga and their peers, ākonga build understanding of maths concepts, facts, and procedures. Kaiako need to explicitly encourage and teach communicating in maths so that ākonga can articulate and describe their thinking. This gives them access to a wider range of mathematical ideas. Maths has a specific language and a range of tools that represent and express thinking. Communicating mathematically and doing maths are inseparable. In mathematical communication, ākonga use their everyday language as well as unique mathematical terminologies, syntax, representations, and meanings. Communicating in maths involves using and transitioning between multimodal aspects of maths. Communicating also involves ākonga reflecting upon, clarifying, and expanding their ideas of mathematical relationships, arguments, and concepts. Access to a variety of ways of communicating allows all ākonga to access mathematical thinking and concept development.

Teacher role:

- set up a safe, supportive environment for ākonga to communicate in ways that ensures equitable participation
- orchestrate opportunities for ākonga to discuss and present their thinking
- encourage discussions and oral rich learning settings that include and honour ākonga home languages and values
- explicitly teach ākonga how to communicate their mathematical thinking in multi-modal ways, for example, drawing, writing, listening, talking, viewing, signing, gesturing, and modelling
- use mathematical language appropriate to the context and purpose
- model the language of mathematics by accepting informal and tentative talk while adopting disciplinary language over time
- use different types of maths genre for written and multi-modal communication, for example, procedural, explanatory, dissemination, justifying
- choose mathematical tasks which promote rich discussion and encourage all aspects, systems, and processes of wānanga
- use technology to support ākonga to communicate maths and make meaning using multiple representations to compare, contrast, and critique.

Student role:

- communicate ideas and thinking in maths language, including correct mathematical syntax
- transition between multiple maths representations to communicate thinking
- work with peers to share ideas and build understanding in maths
- communicate ideas and thinking about maths with their whānau and communities.



3. Planned Interactive Learning Investigations using maths

Investigations using maths involves kaiako providing opportunities for ākonga to explore situations when the direction and outcome or the solution method is unknown at the beginning. The investigation can be prompted by kaiako, the local context, or ākonga.

An investigation often involves a cycle or process of inquiry such as problem solving, statistical inquiry, or mathematical modelling. In collaboration with their peers, ākonga are supported to use multiple tools and representations, build connections between ideas, and attend to underlying structures.

Maths investigations give ākonga opportunities to apply and develop maths knowledge and understanding through investigating situations of interest to them and their communities. Learning through play, exploration, and investigation encourages mathematical curiosity and critical thinking to make sense of their world.

Teacher Role:

- find or design tasks which are open and accessible, as well as variety in duration from short, contained tasks to longer-term investigations
- design tasks around interests of ākonga and local communities, including through responding flexibly to playful and inquiry-based explorations of ākonga
- anticipate and respond to different ākonga approaches and are open to unanticipated interpretations and unexpected solutions
- use a combination of explicit teaching, guided exploration, and independent discovery
- challenge thinking of ākonga by using appropriate questioning and provocation, such as adding or removing scaffolded support
- promote mutual understanding, collaboration, and all aspects, systems, and processes of wānanga encourage use of technologies to support ākonga
- to interrogate, manipulate, and experiment in their investigation
- summarise and reflect the learning journey with ākonga.

Expected student behaviours

- become familiar with the investigation context or situation through exploration, play, and wondering
- use their existing knowledge or working theories to develop evolving ideas and concepts and purposefully move beyond following existing procedures
- use intuition, systematic exploration, and mathematical and statistical practices, such as conjecturing, reasoning, and justifying
- persevere, cooperate, work independently, take risks, and become flexible
- cultivate shared responsibility among peers as they work through the process and task.

4. Thinking and Working Mathematically

Thinking and working mathematically involves recognising patterns and relationships, as well as making conjectures, forming generalisations, connecting different ideas, and building maths explanations and arguments. These mathematical processes are used to explore, solve problems, investigate situations, and understand concepts.

Mathematical thinking is a pathway to deeper understanding of concepts and the world which goes beyond remembering and working with facts and procedures. It can be messy and often involve false starts, getting stuck and not always being correct. By thinking and working mathematically, ākonga views of maths are broadened to realise mathematical creativity and beauty. Ākonga understand why patterns hold, why strategies work, how data tells a story, and can reason whether statements are true.

Teacher Role

- help ākonga take advantage of opportunities for exploration, problem solving, remembering, predicting, and making comparisons and to be enthusiastic about finding solutions together
- explicitly teach how to engage with maths processes, including making conjectures, forming generalisations, and connecting different ideas
- set up the learning environment to promote questioning, collaborating, communicating, and mathematical argumentation
- recognise maths thinking, such as noticing ākonga conjectures and working theories, and responding to it at an appropriate time
- promote the use of technological skill, knowledge, and tools to support ākonga, including the application of these
- technologies to create, enhance, form ideas, replicate and be innovative within mathematical processes
- provide space for reflecting on learning

Expected student behaviours

- become curious, innovative; questioning assumptions, and being sceptical while developing mathematical intuition and instinct
- use and learn mathematical processes, such as wondering, noticing patterns and structures, making conjectures and predictions

- make connections between multiple representations, concepts and ideas, reasoning and justifying, generalising, and proving
- experiment and use trial and improvement to find solutions to problems
- use previous experience as a basis for trying out alternative strategies
- become sense makers, explore different perspectives, give reasons for their choices, and argue logically
- use technology effectively, efficiently, and for innovation
- transition between multiple mathematical representations, for example objects, pictures, words, symbols, tables and graphs, and concrete to abstract.

5. Critical Pedagogies

A critical maths pedagogical approach uses maths to develop critical awareness about wider social, environmental, political, ideological, and economic issues. Critical maths recognises the importance of understanding, interpreting, and addressing issues of power, social justice and equity in the community and the wider world. Ākonga are encouraged to interrogate dominant discourses and assumptions, including that maths is benign, neutral and culture free.

The goal is to develop the agency of ākonga as critically aware mathematical and statistical thinkers who can communicate their position on issues. A critical pedagogical approach encourages ākonga to question mathematical and statistical processes, assumptions, representations, including models and graphs, and ways of interpreting context.

Teacher Role

- develop a learning culture where ākonga equitably participate in all aspects of learning maths
- consider and evaluate both the intended and unintended consequences of what maths is taught and the ways it is taught
- encourage ākonga to use cultural tools to participate and contribute to the world
- support ākonga to pose probing and critiquing maths and socio-cultural questions at every stage of their working processes
- are open to different perspectives and experiences of thinking in maths
- conduct discussion, analysis, and examination of dimensions of socio-cultural issues in maths investigations
- explore, develop, and apply ethical understanding in maths learning
- support ākonga to understand the relationship between mathematics, technologies, innovations, and people and how they interact to address social justice and equity.

When ākonga are critically aware mathematical and statistical thinkers, they are open to robust conversations where they draw from maths justification and argumentation. They ask critical questions and challenge assumptions made from maths findings.

Next steps in professional learning:

I suggest you take one of the pedagogical practices outlined here and really unpack what it might like like in your maths class. As a school or a syndicate reflect on your current practice and consider what changes you may make in your classroom.

I have started adding professional discussion support into the members area - starting with the relationships with maths.

It is much easier to focus on the practices when you have a sound knowledge of the mathematical progressions and confident mathematical knowledge yourself. It is no longer alright to consider yourself more of a literacy person than a maths person. You must confidently be both. Critical pedagogies, communication pedagogies and planned interactive learning are pedagogical approaches shared by both literacy and numeracy.

Please don't throw the baby out with the bath water and don't try and change everything at once. Change of practice takes many years and a good teacher of 10 years is unlikely to be teaching in the same way he/she taught 10 years ago if he/she has continually reflected on their practice. Know your students and know your subject matter.