



Primary Mathematics Association
ONE DAY SEMINAR 2017

25 Years
Celebrating Maths

WAIPUNA CONFERENCE CENTRE

Saturday March 25, 2017

Registration Cost: \$130.00 / Full Time Student: \$100.00

Enrolment and payment must be received by Friday March 10, 2017

Workshops will be allocated on receipt of payment. Confirmation of registration will be sent to the email address you have provided. There will be no refunds offered. If you are unable to attend, please send someone in your place. As we are not GST registered receipts will not be issued.

Enrolment is via our website www.pma.org.nz

Online bank payments are direct to our bank account
(See details on next page)

Any further queries and student registrations please contact
Angela Spavin - a.spavin@auckland.ac.nz

SEMINAR TIMETABLE

| Time | Event |
|---------------|--|
| 08:20 – 08:40 | Registration / Tea & Coffee |
| 08:45 – 09:45 | Keynote Address |
| 09:45 – 09:50 | Administrative Briefing |
| 10:00 – 11:15 | Workshop One |
| 11:15 – 11:45 | Morning Tea |
| 11:45 – 13:00 | Workshop Two |
| 13:00 – 13:45 | Lunch |
| 13:45 – 14:00 | Back to Auditorium for Prize Giveaways |
| 14:00 – 15:15 | Workshop Three |

ENROLMENT

- There will be no refunds offered. If you are unable to attend, please send someone in your place. As we are not GST registered receipts will not be issued.
- Online registration form is through submission on the PMA website www.pma.org.nz. Individual forms must be submitted for each attending teacher. Bulk payment is possible with cheques or through online banking. Workshop confirmation emails will be issued only on receipt of payment. If you register your school online you will be charged unless you contact us before Friday 10 March 2017.
- Once you have submitted your form you/your school must then make payment, either:
 - **Online:**
 Primary Mathematics Association
Account Number: ASB:12-3089-0071203-00 include
Particulars: *School Name*
Code: *number of teachers attending*
Reference: *Contact name*
 - Or
 - **Cheque:** **made out to Primary Mathematics Association**, please send this to 93 Konini Road, Titirangi 0604.
- You are encouraged to print out your workshop choices **prior** to submitting your Google form as a reminder for the conference

KEYNOTE ADDRESS

Making Big Mathematics Ideas Accessible to all Learners

Shelley Dole

Big mathematics ideas take time to develop. Helping children develop meaningful mathematics knowledge requires rich learning experiences that actively engage them in thinking and reasoning. Educational psychologist Jerome Bruner (1915-2016) theorised that any learner at any age is capable of learning any material so long as it is packaged and delivered in an organised way. Bruner also suggested that structuring learning experiences that progress through a sequence of enactive (doing) to iconic (physical/diagrammatic) to symbolic representation supports connected knowledge and understanding. Both these ideas have major implications for designing mathematics instruction. Drawing on these notions, examples of classroom activities that immerse learners in the big ideas of mathematics despite their starting level knowledge, are presented. All activities are designed to promote and build proportional reasoning, a big idea that threads throughout the school mathematics curriculum. Examples for early learners, primary and middle school learners will be presented, and potential adaptations described.

Shelley Dole is an educator and mathematics education researcher. Over the 25 years she has been in education, she has taught in primary, secondary and tertiary teaching institutions throughout Australia. Her research interests include mathematics curriculum change and innovation; learning difficulties, misconceptions and conceptual change associated with learning mathematics; and particularly rational number topics of ratio and percent and the development of proportional reasoning and multiplicative structures.

Shelley has led two major Australian Research Council projects focusing on numeracy across the curriculum and the development of proportional reasoning, with teachers and schools in Queensland and South Australia. She has been involved in several major research projects in Queensland, Tasmania, Victoria and South Australia including middle years literacy and numeracy; early years literacy and numeracy and distance education; mental computation, number sense and invented algorithms; teaching and learning percent in the middle school; basic facts in the early years, as well as teacher professional development projects.

In 2009, Shelley won a University of Queensland Award for Teaching Excellence, and in 2010 was the recipient of an Australian Award for University Teaching. She is currently on the Register of Experts in Higher Education for the Australian Tertiary Education Quality and Standards Agency and a research assessor for the ARC and OLT.

WORKSHOP OPTIONS

1. Celebrating Algebra for All

[Years 2 - 8]

Do you want to understand how to work with number puzzles, and write and solve equations? This is the session for you! Jeanette will show you the power of BEDMAS, apply the big idea of doing and undoing and turn you into a confident back-tracker. Come along and experience algebra as you may never have before.

Jeanette Saunders is a skilled facilitator who loves working with teachers to build curriculum knowledge. Her background is teaching from Year 7 – 13 and she has worked for the last four years as a mathematics and statistics facilitator for Te Toi Tupu. Jeanette is committed to making mathematics and statistics accessible to all.

2. Dissecting Decimals

[Years 5 - 8]

This is a hands-on workshop exploring some of the difficulties and frustrations associated with the teaching and understanding of decimals. It explores the connections and complex relationship between place value, multiplication and division, fractions, and decimals.

Judith Mills works as a mathematics education lecturer at the University of Waikato, teaching both undergraduate and postgraduate papers. This follows on from many years as a classroom teacher and numeracy adviser. She has presented many mathematics workshops nationally and internationally covering a wide range of topics including content knowledge and effective pedagogy.

3. Developing Number Sense through Number Talks and Good Questions

[Years 1-3]

This workshop will unpack how number talks provide a vehicle for students to develop number sense and numerical reasoning from an early age. The setting of the classroom norms and use of good questions is key to this development. Practical ideas and examples will be explored.

Anne Milburn is an experienced junior school teacher and is passionate about younger children's learning. She always tries to provide practical and real contexts to facilitate this learning. Recently Anne has had nine years working as a mathematics facilitator across primary and intermediate schools in Otago and Auckland.

4. Digital Technologies – Enhancing our Mathematics Programmes [Years 1-7]

How can we use digital technologies to enhance our maths programmes and provide student agency? Donna will share ways she has used digital technologies to encourage independence in students and provide digital activities that are pedagogically sound. Using a variety of tools – ipads, chromebooks and laptops that work across multiple platforms – Donna will show you that the device is irrelevant and the task is the focus. She will share what's worked for her school, and what they've learned along the way – task design, websites, apps – it's always a work in progress, it's the journey, not the destination.

Donna Golightly is Assistant Principal at Hauraki School and teaches in a year 5/6 BYOD composite class. She is the lead teacher for maths across the school and shares the role of lead teacher of digital technologies.

She works across all levels within the school to support teachers with implementing pedagogically sound mathematics programmes and ensures that the integration of digital technologies is purposeful. She is a Google Level 2 certified teacher and is always keen to learn.

5. Develop your Students into Mathematicians! [Years 1–8]

Are you interested in supporting the students in your classroom to work like mathematicians? This hands-on workshop will introduce you to ways that you can set up your classroom so your students can work together to solve problems like mathematicians. It will introduce strategies and tools for you to get your students to talk and engage in mathematical practices including giving explanations, providing justifications and generalizing ideas. As a group we will have a look at some tasks and then look at the mathematical ideas that you could draw out. This workshop includes activities for students from year 1 to Intermediate and is suitable for students working at a range of achievement levels.

Jodie Hunter is currently a senior lecturer in mathematics education at Massey University. She has recently returned from the USA where she spent six months on a Fullbright award. Her research interests include facilitating early algebraic reasoning in primary classrooms, culturally responsive mathematics teaching and developing inquiry mathematics classrooms. Previously Jodie taught at a number of schools around Auckland.

6. Celebrate Confidence in Understanding Fractions Through the Years [Years 1-8]

This workshop will cover the key mathematical ideas in developing an understanding of fractions, their relationships that lead to addition/subtraction and multiplication/division through hands-on problem solving activities using non-structured and structured apparatus. Conversations that use related words and terms is a feature of this workshop. You will leave with some great activities to use with your class.

Margi Leech has been a classroom teacher for over 20 years and is now a consultant to schools with the aim of building confidence for both teachers and students in Maths. Her passion (especially for children who struggle) has led to the introduction of the Numicon Approach to NZ and Australia. This workshop will use material and apparatus that is available in all schools.

7. The Mathematics of Craft

[Years 1-8]

Enjoy craft? Then you probably enjoy mathematics too, you just may not know it. This makes craft a fun and non-threatening way to introduce students to mathematical concepts. In this workshop we'll show you how to build a fractal sculpture, make a Möbius strip, and fold an origami dodecahedron. And while we build, twist and fold, we will discuss the mathematics behind each of the objects we're creating.

All materials are supplied, and we'll provide handouts on each of the crafts we cover in the workshop. No special craft skills are required; we'll teach you everything you need to know.

Drs Jeanette McLeod & Phil Wilson are Senior Lecturers in mathematics at the University of Canterbury, and co-organisers of this year's highly successful Maths Craft Festival at the Auckland Museum (mathscraftnz.org). Together they also run a 'Stitch n Bitch' group in the School of Mathematics & Statistics, which won a Well-Being Award in 2015 from the University of Canterbury, and allows staff and postgraduate students to escape from the stresses of academia by taking part in craft activities. **Sarah Mark** is a postgraduate student at the University of Canterbury who is passionate about mathematics and craft.

8. Fractional Art

[Years 1-8]

Come along and enjoy this fun hands-on workshop integrating teaching geometry and fractions. This workshop offers something for everyone across curriculum levels 1 – 4. Participants will need to bring scissors and a glue stick please.

Kim Bulluss began working in teacher professional development in mathematics in 2011. During this time she has presented on a range of topics from place value to pedagogy, including presenting at PMA and MAV. Kim has a special interest in combining the arts and mathematics across all her work. Prior to this role, her experience includes fifteen years as a general primary teacher, with leadership roles in numeracy, literacy and music.

9. The Power of Deep Counting

[Years 0-2]

Being a successful learner of mathematics relies on a solid foundation of concrete counting. For our NE/Year 1 students, it is important that we spend considerable time developing a deep conceptual understanding of the concrete value of numbers before moving on to more abstract understandings. A solid foundation of counting is strongly associated with strong calculating skills later. While counting may seem simple, it comprises several sub-skills or principles. This workshop will introduce the five principles of counting and how through a combination of explicit and play-based learning teachers can develop a deep conceptual understanding of counting during the first 40 weeks of school.

Anna Noy is the Education Manager at Scholastic New Zealand. She received a Bachelor of Education from The University of Auckland, Diploma of Children's Literature from University of Canterbury and Master of Education from Charles Sturt University. Over the past 15 years she has taught at a range of levels and has also worked as a teacher assessor for the NMSSA. She now oversees the adoption and implementation of PRIME Mathematics into New Zealand schools.

10. Accelerating Struggling Students' Achievement? Yes! It can be done! [Years 3-4]

Bringing the relevance and creativity into maths, working with small groups of students to create a growth mindset and supporting their belief they can achieve in mathematics no matter where they are at. In this workshop Kim will share with you her approach, successful results and ideas/resources that you can take away and use for your students.

Kim Madden is a New Zealand primary trained teacher who has been teaching for nearly 20 years. She went into this vocation because she was passionate about children and had a special interest in most subjects, especially the arts, not so much maths. This all changed when she observed and worked as the school ALiM (Accelerated Learning in Mathematics) teacher. It was during this training and the MST (maths support teaching) that she learnt the key to accelerating mathematics for students below and well below National Standards.

11. Inquiry Math; Empower your Students through Questions and Inquiry! [Years 1-7]

Maths is all about reasoning, judgment and evidence.... Hook the students' engagement and motivation through rich open-ended tasks!! Enjoy learning mathematics with your students in your classroom and have FUN.

Bina Kachwalla has been an accredited mathematics consultant for Years 1-8 in New Zealand Schools. She has worked as a consultant for the past eight years. When she delivers professional development to teachers, she encourages and motivates teachers to change and modify their beliefs through recent research materials on best practice in teaching. Bina inspires teachers to implement culturally responsive pedagogy and differentiated learning to cater to students' needs in the classroom. Promoting 'discourse based collaborative approach' to mathematics has been the highlight of her career as mathematics advisor.

12. Learning Maths through Play [Years 1-8]

Best Evidence Synthesis states that students in Years 1-3 should be 'Learning through Play'. This workshop will explore ways in which teachers can focus their teaching to ensure students are engaged and having fun with their focused learning with improved outcomes. It's about the teacher working smarter not harder and the students being engaged in more focussed thinking. This workshop will assist teachers to identify how the strands can be the vehicle for teaching number.

Helen Walters is an education consultant who focuses on 'quality teaching and learning strategies' with mathematics as the vehicle. She has been involved in mathematics education for over 25 years.

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14. Place Value

[Years 1-8]

This will be a conversation-based and hands-on workshop using a variety of approaches and materials to illustrate the concept of place value and fractions leading into decimals. All materials will be supplied. We will be making numbers!

Margi Leech has been a classroom teacher for over 20 years and is now a consultant to schools with the aim of building confidence for both teachers and students in Maths. Her passion (especially for children who struggle) has led to the introduction of the Numicon Approach to NZ and Australia. This workshop will use material and apparatus that is available in all schools.

15. Creating a Balance

[Years 3-8]

Are you wondering how collaborative problem solving can fit with your current mathematics programme? This workshop will engage participants in a practical collaborative problem designed to replicate how mixed ability problem solving can run in a classroom. The workshop will also show how this can then lead to needs-based teacher-led workshops for students.

Jo Knox is a private mathematics consultant of her own company - Mathematics Development. She has extensive experience and knowledge having specialised in mathematics education for 20 years in both the UK and New Zealand and has been involved in teacher professional development in mathematics and statistics since 2007. Her work has included lecturing pre-service students, providing regional mathematics meetings for mathematics lead teachers, designing needs-based professional development for schools and supporting ALiM and MST teachers with inquiry-based teaching designed to accelerate learning for targeted students. She completed a Master's degree in mathematics education in 2016 and is embarking on her PhD this year.

16. Using Meaningful Contexts to Develop Students' Understanding of Number [Years 0-3]

Research has identified that students learn more effectively through applying concepts and skills in interesting and realistic contexts. This workshop explores cross-strand (measurement, geometry, statistics) opportunities that can be used to allow students to consolidate and extend their understanding of early number concepts.

Pamela Perger has been involved in mathematics education for over thirty years. She has taught at all levels of the primary school (New Entrants to Year 6) and is currently a lecturer in mathematics education at the University of Auckland. She has an interest in exploring the use of students' voice and realistic contexts in the teaching and learning of mathematics.

17. Rich Maths Cards using Data Cards [Years 3-8]

Rich tasks enable students at all levels to engage in mathematical and statistical thinking. In this hands-on workshop we will experience some rich statistical and mathematical tasks developed around data cards. Data cards can also be used in various games and activities developing skills in ordering, sorting and numeracy, as well as for statistical investigations. **Claire Cheeseman** will share her experiences using data cards with her Year 5/6 class at Laingholm Primary. Dragonistics data cards, created by Nicola, will be used, but the activities do not require them.

Nicola Petty (Dr Nic) loves to teach anything mathematical. After 20 years teaching statistics and operations research at University, Nic set up Statistics Learning Centre with her colleague, Dr Shane Dye. Their resources are used in over a hundred NZ high schools. Her blog, Learn and Teach Statistics, is read by more than 30,000 people per month, and her statistics videos have been viewed over 2 million times. Dr Nic is known for her enthusiastic and creative ideas and inspiring workshops.

18. Knowledge is Power [Years 1- 4]

This workshop will focus on developing and maintaining the number knowledge component of your maths programme so that it caters for each student according to the curriculum level and strategy stage they are working at. However you teach the strategy and problem solving component of your maths programme, these ideas will work alongside, to ensure what has been learnt is built upon. Some useful organisational ideas around classroom practice and home learning will be shared, along with games and activities that encourage learning. For teachers with students working from strategy stages 1 to 5, or curriculum levels 1 to 2.

Jo Patrick is an Associate Principal at Long Bay Primary School. She has long held a passion for maths teaching and was a numeracy facilitator for seven years with Team Solutions. Jo shares the teaching of a Year 3 and 4 class.

19. Patterns to Recipes [Years 4 - 8]

This workshop will show you how to use a problem progression that moves from a pattern to a recipe to help students see the relationship between geometry and algebra. This includes the use of Desmos, Pattern Blocks app, spreadsheets, as well as pop sticks, counters and shapes.

Melissa Jackson teaches a Year 5 & 6 class at Waimauku School.

20. Memorisation – from Concrete to Abstract

[Years 0 - 6]

When was the last time that you multiplied? I mean really multiplied two numbers together (aside from your role as a teacher).

TIME TABLES – have wasted many hours in the curriculum. Many students struggle to appreciate their worth; teachers spend hours pushing a skill that can be elegantly gained without effort; parents get involved with a power struggle called homework; with little to show for it (many adults still do not know times-tables, and many have no need for it).

Can I introduce to you an elegant and simple, empowering approach to moving to memorisation of number facts from concrete to abstract? Based on the Montessori approach to mathematics these ideas are freely and easily reproducible in any classroom, can be made with almost no resources, and deliver the poetry and majesty back to mathematics.

Steven Arnold has a strong interest in mathematics teaching. He is a teacher in mathematics from ECE, primary and Secondary, and also at tertiary level. He has a pedagogy in Montessori Mathematics, which is an individual child-centred approach that uses materials to support the child's exploration of the subject. Steven is a parent, teacher, principal, and university lecturer. His interest in mathematics is in rediscovering the joy and poetry of magical ideas; that sometimes get ground into rote learning.

21. Using Student Evidence for Professional Learning

[Years 1-8]

What does student evidence look like in mathematics? How can we assist students to make the recorded evidence they provide us with a useful tool for improving our practice as well as showing us what the student has achieved? This workshop will include using student evidence as part of the teacher inquiry model to improve outcomes for teaching and learning. This workshop will use evidence from a case study developed from an in depth professional learning over a period of three years.

Workshop participants will be enlightened to use the same data in another way not to collect more data.

Charlotte Wilkinson is a private education consultant specialising in the teaching and learning of Primary Mathematics. She has worked in schools, colleges and universities over a period of 35+ years as a classroom teacher, deputy principal, teacher trainer and advisor. She works extensively with schools through whole school professional learning and through a series of short workshops for teachers held at venues around New Zealand.

Charlotte is the author of Primary mathematical texts and teacher guides for New Zealand, Nigeria and Zimbabwe.

She designs and produces numeracy resources under her own trademark 'The Wilkie Way'.

22. Modern / Innovative Measurement

[Years 2-8]

This workshop focuses on developing a measurement unit that is suitable for an innovative / modern learning environment, whether in large open spaces or a single classroom. Teachers will experience practical hands-on measurement activities; make things, complete challenges and take part in engaging competitions that develop key measurement concepts, knowledge and skills. During the workshop teachers will collaborate and start to plan a measurement unit for their environment. They will hear what other teachers have done, develop tracking and assessment processes, and student self-managing templates. They will discuss common issues with working in student-led environments and how to develop student agency.

Ian Stevens, Maths Adventures Ltd, is an enthusiastic and knowledgeable facilitator, making learning an exciting adventure. Ian has developed many maths resources, including his iPad app Math Slide, Knowledge Builder numeracy games, 'Data Squares' and 'Fold and Cut' on nzmaths as well as leading the development of AliM when he was team leader at the Ministry of Education. Developing exciting and worthwhile activities, and using technology appropriately to enrich, empower and accelerate learning, are ongoing inquiries for Ian, particularly doing this in an equitable and accessible way.

www.mathsadventures.co.nz/ www.instagram.com/ianstevensnz/

23. Developing Culturally Responsive Tasks for the Maths Classroom

[Years 1 - 8]

Mathematics is integrated into all cultures and it is important for students to see themselves as coming from a mathematically rich background. This workshop will explore tasks which integrate number, geometry and algebra based on patterns from Pasifika and Maori art-work and cultural activities. During the workshop we will look at some tasks and then look at the mathematical ideas which you could draw out. We will also work together to develop culturally responsive tasks which draw on the cultural background of the students that you teach. This workshop includes activities for students from Year 1 to Intermediate and is suitable for students working at a range of achievement levels.

Jodie Hunter is currently a senior lecturer in mathematics education at Massey University. She has recently returned from the USA where she spent six months on a Fulbright award. Her research interests include facilitating early algebraic reasoning in primary classrooms, culturally responsive mathematics teaching and developing inquiry mathematics classrooms. Previously Jodie taught at a number of schools around Auckland.

24. Problem Solving with Real World Maths

[Years 3 - 8]

"Why do I have to learn that, and when will I ever use it? So often we hear this from students who don't see how maths is connected to their life outside of school and are therefore less engaged. How can we create problems that are worthwhile? What are some useful contexts for problems that our students can relate to?"

This hands-on workshop will explore the development of proportional thinking (with a particular focus on ratios) through practical real world authentic contexts that will engage all learners.

Marie Hirst has been a mathematics and statistics facilitator for over 15 years and has worked extensively with many schools across Auckland. Focusing on mathematics she supports professional learning by developing content and pedagogical content knowledge, effective pedagogy, assessment and leadership. She has presented at maths conferences at NZAMT and PMA in New Zealand as well as internationally at MERGA and MAV.

Her passion is to provide all students with opportunities to reach their potential through worthwhile engaging activities, clear progressions, and an environment where maths is exciting and fun.

25. Using Apps for Learning Primary Mathematics

[Years 2 - 8]

Based on our TLRI funded research project into the use of apps to enhance learning in mathematics, this workshop will explore ways to best use apps in the teaching and learning of mathematics. Participants will explore some apps for classroom use and consider how the TPACK model can help decision-making in using apps more effectively in the classroom.

Nigel Calder comes from a teaching background and is now involved with mathematics education and postgraduate studies. His recent work has been with the use of mobile technologies in the teaching and learning of maths, with reluctant teenagers, Years 4-6, and early years learners. He has also worked in classes using student-centred inquiry approaches.

Carol Murphy has been lecturing in primary mathematics education for over fifteen years in both the UK and in New Zealand. She is currently lecturing and engaging in research at the University of Waikato and her research interests are in children's active engagement in mathematics, talk and collaborative group work.

This workshop builds on the recent research that Carol and Nigel are carrying out on the use of iPads in the teaching and learning of primary mathematics.

26. What's the Point?

[Years 5 – 10]

What is the point of our mathematics programs? What is the point of the mathematics activities we provide for our students? Do our students get the point of their mathematics sessions? This workshop will explore the ongoing journey and experiences of a primary teacher, who is currently teaching Year 9 & 10 Mathematics. If you are ready to explore other options for your mathematics programme then...let's get to 'the point'.

Angela Stensness is the Specialist Classroom Teacher and Learning Area Coordinator for Numeracy year 7 – 10 at Papamoa College. She has taught students from New Entrants through to Year 10. Angela is passionate about real-life, contextualized learning. In addition, she believes that 'just-in-time' learning is crucial for long-term retention and ensuring that students find relevance. She sees herself as a facilitator, and is committed to enabling students to take ownership of their learning journey.

27. Fun Fractions

[Years 0 - 2]

Do you want to hook your young learners of mathematics into learning about fractions by making it fun, multi-sensory, meaningful and relevant? Be prepared to experience a range of hands-on, engaging activities that will help children to develop the understanding of fractions.

Ingrid Cheung is a teacher at Edendale Primary School. She is always on the look-out for fun, effective ways to teach fractions at junior levels. Recently she has completed her Masters thesis on mathematics discourse in multi-cultural classrooms.

28. Transitioning Students from Counters to Additive Thinkers

[Years 1 - 4]

In this workshop, explicit strategies through hands on activities will be explored to support teachers in transitioning students from counters to additive thinkers. This workshop aims to make an explicit focus on principles of effective pedagogy and number framework. Exploring and establishing connections between subitising, place value, basic facts and strategy will be an integral part of this workshop.

Reena Kaur has worked in NZ primary schools for 20 years and her teaching experience has been predominantly with Maori and Pasifika students. She has been a lead teacher at Manurewa East School and has been involved in leadership community of Manurewa cluster. Reena has been involved with AliM (Accelerated learning in Mathematics) and MST (Maths Support Teacher) project for the past three years. She is very passionate about junior mathematics and accelerating students.

29. Fostering Proportional Reasoning in the Middle Primary Years [Years 5 - 8]

This hands-on workshop shares practical activities to promote proportional reasoning of students in the middle primary years. In this workshop, simple activities using scrap paper and counters for refreshing children's part-whole fraction understanding will be explored. These activities can be used with children from Year 3 up to junior secondary (and beyond). This workshop will also explore the number line and how this can be used to extend children's understanding of numbers from Year 1 through to the junior secondary school. This workshop will also revisit concepts of multiplication as a basis for proportional reasoning.

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In 2009, Shelley won a University of Queensland Award for Teaching Excellence, and in 2010 was the recipient of an Australian Award for University Teaching. She is currently on the Register of Experts in Higher Education for the Australian Tertiary Education Quality and Standards Agency and a research assessor for the ARC and OLT.

30. Collaborative Group Skills

[Years 4-8]

In a true maths talk community teachers create an inquiry environment and encourage constructive discussion of problem solving methods through well-defined classroom activity structures. Learn about these structures that are crucial to success where students listen, share and collaborate to gain mathematical understanding. Learn about the components of complex instruction, which make up a collaborative problem solving approach and methods to implement these.

Sue Pine has over 20 years teaching experience in New Zealand and abroad. She has held various leadership responsibilities including mathematics, assessment and literacy. Sue is passionate about mathematics and through her various roles she has been able to work alongside teachers to inquire into their own practice and collaborate with leaders to design professional learning programmes to develop effective mathematics teaching and learning to accelerate student achievement in mathematics.

Session One (10:00 – 11:15)

| ID | Presentation Title | Presenter |
|-----|--|---|
| 1. | Celebrating algebra for all | Jeanette Saunders |
| 2. | Dissecting Decimals | Judith Mills |
| 3. | Developing number sense through number talks and good questions | Anne Milburn |
| 4. | Digital technologies – Enhancing our mathematics programmes | Donna Golightly |
| 5. | Develop your students into mathematicians | Jodie Hunter |
| 6. | Celebrate confidence in understanding fractions through the years | Margi Leech |
| 7. | The mathematics of craft | Jeanette McLeod, Sarah Mark and Phil Wilson |
| 8. | Fractional Art | Kim Bulluss |
| 9. | The power of deep counting | Anna Noy |
| 10. | Accelerating struggling students achievement? Yes! It can be done! | Kim Madden |

Session Two (11:45 – 13:00)

| ID | Presentation Title | Presenter |
|-----|--|---|
| 11. | Inquiry math: empower your students through questions and inquiry | Bina Kachwalla |
| 12. | Learning maths through play | Helen Walters |
| 13. | The mathematics of craft | Jeanette McLeod, Sarah Mark and Phil Wilson |
| 14. | Place Value | Margi Leech |
| 15. | Creating a balance | Jo Knox |
| 16. | Using meaningful contexts to develop students' understanding of number | Pamela Perger |
| 17. | Rich maths tasks using data cards | Nicola Petty and Claire Cheeseman |
| 18. | Knowledge is power | Jo Patrick |
| 19. | Patterns to recipes | Melissa Jackson |
| 20. | Memorisation – from concrete to abstract | Steven Arnold |

Session Three (14.00 – 15:15)

| ID | Title | Presenter |
|-----|--|-----------------------------|
| 21. | Using student evidence for professional learning | Charlotte Wilkinson |
| 22. | Modern / Innovative measurement | Ian Stevens |
| 23. | Developing culturally responsive tasks for the maths classroom | Jodie Hunter |
| 24. | Problem solving with real world maths | Marie Hirst |
| 25. | Using apps for learning primary mathematics | Nigel Calder & Carol Murphy |
| 26. | What's the point? | Angela Stensness |
| 27. | Fun Fractions | Ingrid Cheung |
| 28. | Transitioning students from counters to additive thinkers | Reena Kaur |
| 29. | Fostering proportional reasoning in the middle primary years | Shelley Dole |
| 30. | Collaborative group skills | Sue Pine |