

MTS PD Day - October 24, 2025

Manitoba Association of Math Teachers

9:00 – 10:00 Keynote

Session Title: The Joy of Math

Presenter: Howie Hua

Math class can be a place of joy! In this talk, we will focus on how we can make math class a place of curiosity, surprise, and joy.

Audience: Grades K – 12

Howie is a math instructor at Fresno State where he teaches math to future elementary school teachers. He is on the journey to show students that everyone is a math person. In 2019, Howie was awarded Outstanding Lecturer for Fresno State's College of Science and Math and in 2024, he was awarded Fresno State's Provost Award for Outstanding Lecturer. He has given talks to organizations in over 20 states and 4 countries and was the closing keynote speaker for NCTM's annual conference in 2024. One can find him on social media sharing math explainer videos, teaching tips, and math memes.

10:15 – 11:15

Session Title: Math Tricks and Why They Work

Presenter: Howie Hua

I love math tricks! In this talk, we will look at some math tricks and see why they work.

Audience: Grades 9 – 12

Session Title: Problem Solving – Two Tunnels

Presenter: Darren Kuropatwa

Problem solving isn't one thing; it's multifaceted. How do we foster a sense of curiosity, persistence and a willingness to look at things differently in our students? How do we navigate the tension between the need for students developing fluency through exercises and problem solving skills via exploring the deeper patterns underlying seemingly different situations? And what does any of this have to do with tunnels? Come find out.

Audience: Grades 6 – 12

Darren has worked in several school divisions, two provinces, and presented on 4 continents. He currently works as an Instructional Coach in SJASD. He loves to learn. And teach.

Session Title: Success with Basic Addition and Subtraction Facts

Presenter: MathImagine with Brad Ellert

It might seem these facts are easy to teach, but is this actually the case? This interactive session will first explore the number relationships that are the basis of building an understanding of these facts and then cover our Thinking Strategies series approach: “chunking” facts into groups, developing efficient thinking strategies for each chunk, and the importance of drill/practice. You will leave this session with important insights on how best to teach basic addition and subtraction facts and we will provide activities from The MathImagine Foundation resources.

Audience: Grades 1 – 3

Brad Ellert is a computer scientist, educator, and father. After obtaining an MSc in CS and working in the field, he transitioned to the Ed domain with an after degree, spurred on by his time teaching English in Japan. In addition to experience teaching in the K-12 space, he has taught sessional positions at the undergraduate level.

Session Title: What Is Retrieval Practice and How Can I Leverage It in Daily Mathematical Instruction?

Presenter: Dr. David Costello

This session will dig into retrieval practice and will highlight instructional strategies that could be incorporated into classroom routines. Instructional strategies will be shared so that participants have an understanding of the purpose, application, and points for differentiation. Within this sharing, samples will be examined so that educators can appreciate how to apply it in their classroom. Multiple classroom connections will be made.

Audience: Grades K – 8

*David is a principal, who taught and had various board roles in Prince Edward Island. David has also instructed university courses regarding curriculum, differentiation, mathematics, and literacy. He facilitates professional learning in mathematics and school development. Dr. David Costello has published four books, with two of his most recent books being: *Messing Around with Math: Ready-to-Use Problems That Engage Students in a Better Understanding of Key Math Concepts*, and *Mathematizing Student Thinking: Connecting Problem Solving to Everyday Life and Building Capable and Confident Math Learners*.*

Session Title: Grades are Boring: Discovering the JOY of Assessment

Presenter: Melissa Dean

Let's be real: Grades are boring. Assessment, though, is a much more interesting and joy-filled process. The philosophy and practices we bring to our assessment have a profound impact on the culture of our classrooms. Our learners are writing their learning story in our classrooms each day; and we can help them uncover and clarify that story. In our time together, we'll talk about the principles of authentic, engaging and

empowering assessment that fuels student learning, and investigate practical ways to bring it to life in your classroom.

Audience: Grades 5 – 12

Melissa Dean is currently a high school teacher in Niverville Manitoba. She has experience teaching 1 - 12 in a variety of settings and has also worked as Numeracy and Literacy Coach both in the Hanover School Division and the York Region District School Board in Toronto, Ontario. Melissa is passionate about assessment practices, inquiry mindsets and developing classroom culture.

Session Title: Flipping the Script: Self-Paced Mastery Learning Bringing Joy to Grade 9 Math and Beyond

Presenter: Tera Woodyard

Explore how a flipped mastery approach can bring flexibility, support, and joy to your math classroom. Centered on Grade 9 but applicable to Essentials, Applied, and Pre-Calculus streams, this session highlights how video-based instruction and outcome-based playlists can empower students to catch up, move ahead, or work at their own pace. Walk away with practical tools, a peek into real student workflows, and inspiration to reimagine how joyful learning can look in your own setting.

Audience: Grades 9 - 12

Tera Woodyard is a high school math teacher and divisional senior math pedagogical consultant in rural Manitoba. She blends flipped mastery learning with creativity and flexibility to support doable, student-paced math experiences. Tera is passionate about helping both students and teachers build confidence, curiosity, and connection through math.

Session Title: Subtraction Problem Strings

Presenters: Tara Reimer and Charmaine Hayden

Join us to learn about Subtraction Problem Strings – a powerful routine that builds deep understanding of mathematical relationships and flexible mental math thinking. Discover how a carefully crafted sequence of subtraction problems can help students move beyond using a traditional algorithm in their head to more efficient reasoning strategies. We will share Pam Harris's advice on using this routine in the classroom, as well as our own experience with students. Questions such as: How are Problem Strings different than Number Talks? Can students use paper and pencil during this routine? How do I begin? How often should I do this? How does it work if students don't have recall of their subtraction facts? What teacher moves support the success of this routine? will be addressed.

Audience: Grades 3 - 6

Charmaine has 24 years of experience exploring and navigating the changing world of mathematics education in Manitoba. Formerly of the Hanover School Division as a middle years teacher and learning coach, she can now be found in the Pembina Trails School Division in the role of math consultant and instructional coach.

Tara holds many years of classroom and administrator experience in the Hanover School Division, recently completing her Masters of Math Education which drew her back into the classroom last year.

These former colleagues share a passion for math education that draws out students' thinking and empowers students and teachers to move bravely forward in the teaching and learning of mathematics and in the development of numerate thinkers.

Session Title: The Write Stuff

Presenter: Cindy Neuschwander

Math literature is a rich addition to the study and mastery of mathematics. Learn how to take specific stories and tease out the math and how to then take those concepts and write engagingly about them. You'll get some intriguing ideas to take away and try with students.

Audience: Grades 2 – 8

Cindy lives on the Central Coast of California. She is a retired elementary school teacher with a passion for mathematics education. She is the author of 19 published picture books with mathematical themes, including the Sir Cumference series, Mummy Math series, and Amanda Bean's Amazing Dream.

Session Title: From Misunderstood to Mastery: The Power of Linguistics in Math Intervention

Presenter: Laura Masterson

This session explores how teachers and intervention specialists can use linguistic strategies, grounded in Triple Code Theory (which integrates symbolic, verbal, and magnitude representations), to better support middle and senior years students experiencing difficulty in mathematics. We'll look closely at the role of semantics - the meaning behind math words and phrases - and how it can be used intentionally to unlock student understanding and build confidence in learners, particularly those with learning disabilities, working memory, or executive functioning challenges.

Audience: Grades 7 – 9, 10 – 12 Essentials

Laura Masterson, MEd, has been a dedicated mathematics educator in southeast Manitoba for 19 years. Her experience spans classroom teaching, instructional coaching, and serving as a numeracy intervention specialist supporting students with math difficulties across Grades 2-12. Laura's work is grounded in a deep understanding of how students learn mathematics, with a focus on integrating conceptual learning trajectories, neuroscience, and research on math-specific learning disabilities. She is especially passionate about addressing student misconceptions and overcoming barriers related to mindset, helping both teachers and students build confidence and competence in math.

12:45 – 1:45

Session Title: Top 10 Numeracy Activities for Preschool/Kindergarten

Presenter: MathImagine with Brad Ellert

Join our interactive session of our top 10 numeracy activities for the preschool and kindergarten classroom. These activities are easy to implement, cross-curricular, low-cost, and fun! And you will be able to use them in the classroom the next day.

Audience: Preschool & Kindergarten

Brad Ellert is a computer scientist, educator, and father. After obtaining an MSc in CS and working in the field, he transitioned to the Ed domain with an after degree, spurred on by his time teaching English in Japan. In addition to experience teaching in the K-12 space, he has taught sessional positions at the undergraduate level.

Session Title: Different Problem Types To Support All Students

Presenter: Dr. David Costello

It can be overwhelming to teach math and to reach the learning needs of all students. One way to reach all of these needs is for teachers to provide students with a range of problems. Teachers need to have a toolbox that addresses a variety of problems, and that will support students in becoming independent problem solvers. This session examines problems that are targeted to key math concepts. These problems can be used at any point in the lesson: whole-group, guided small-group instruction, or independent practice. Teachers will leave with resources that they can immediately use in their classroom.

Audience: Grades K - 8

*David is a principal, who taught and had various board roles in Prince Edward Island. David has also instructed university courses regarding curriculum, differentiation, mathematics, and literacy. He facilitates professional learning in mathematics and school development. Dr. David Costello has published four books, with two of his most recent books being: *Messing Around with Math: Ready-to-Use Problems That Engage Students in a Better Understanding of Key Math Concepts*, and *Mathematizing Student Thinking: Connecting Problem Solving to Everyday Life and Building Capable and Confident Math Learners*.*

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Session Title: Outcome-based Assessments in Middle Years Math

Presenters: Tricia Perry and Heather Jones

“Is this for marks?” If that question sounds all too familiar, you’re not alone! Wondering if there’s a more meaningful way to assess student learning? In this session, we’ll explore outcome-based assessment: what it is, why it matters, and how you can begin implementing it in your classroom. We’ll walk you through key elements of our journey, sharing both the big wins and the honest challenges we’ve faced along the way. Whether you're just beginning to explore or ready to take the leap, you’ll leave with practical insights and ideas to help shift the focus from collecting marks to fostering meaningful learning.

Audience: Grades 6 – 8

Heather and Tricia are dedicated educators in the St. James-Assiniboia School Division, bringing a combined 56 years of middle years mathematics teaching experience. Over the years, they have collaborated on a variety of initiatives, with outcome-based assessment emerging as the most rewarding and transformative project to date.

Passionate about creating student-centred, interactive, and engaging math classrooms, they have always prioritized fostering environments where students take ownership of their learning. Outcome-based assessment has proven to be the missing piece — empowering students to take the lead in their own success. As their journey with outcome-based assessment continues, they remain committed to uncovering new ways to enhance student learning and transform classroom experiences that are more meaningful, responsive, and empowering for every learner

Session Title: Math is Beautiful, Math is Play

Presenter: Fawn Nguyen

Few of us have heard the words “beautiful” and “play” during our schooling. Let’s change this for our students by inviting them to explore the elegance of mathematical patterns and the joy of playful problem-solving. We can’t share what we don’t know or have experienced, so this session invites teachers to be in a space we ask of our students: make sense of problems and persevere. There is fun and beauty in numbers; this is the joyful mathematics we want for our students.

Audience: Grades 6 - 12

Fawn is the Director of STEM Initiatives at Amplify. She spent three years as a math coach for a K-8 school district and taught middle school math for 30 years. She was named Ventura County Teacher of the Year in 2014 and received the Math Teacher Hero Award from Raytheon in 2009. In 2005, she was honored with the Sarah D. Barder Fellowship from the Johns Hopkins Center for Talented Youth.

She has given talks and led workshops at math conferences in the U.S. and abroad, including New Zealand. Since 2011, she has been part of the UC Santa Barbara Mathematics Project Leadership Team.

In 2012, she co-founded the Math Teachers’ Circle in Thousand Oaks, California. From 2015 to 2018, she served on the Professional Development Services Committee (PDSC) for the National Council of Teachers of Mathematics (NCTM).

Session Title: Bring Math to Life – Outside!

Presenter: Sarah Melo

Discover fun and practical ways to teach math by using the outdoors as your classroom. Through real examples and videos, you’ll see how to get students counting, skip counting, measuring and using everyday nature manipulatives to explore addition, subtraction, multiplication, division and fraction talks in nature. Learn how hands-on learning outside helps kids make sense of math in concrete, visual, and symbolic ways — all while having fun and staying engaged. Each participant will have access to videos and sample activities.

Audience: Grades K – 4

Sarah Melo is a bilingual math educator, researcher, and consultant who has trained over 3,000 teachers, presented at 36 conferences, worked with 14 schools, and authored 5 teacher resource books along with 6 supplementary classroom resources in both English and French. She is the founder of Melo Math and the Math Teacher Academy, both dedicated to empowering educators with practical, research-informed strategies for effective math instruction. With a Master’s in Math Education and a background in counseling and classroom teaching, Sarah brings a holistic approach to professional learning. Her hands-on methods for teaching K–8 math through real-life contexts—like money, time, and measuring tapes—help educators build number sense

and reduce math anxiety. Her sessions are known for being engaging, actionable, and grounded in a deep understanding of how students learn math.

2:00 - 3:00

Session Title: Building Engagement and Connection in Early Math Learning (Focus on Counting)

Presenter: Sherry Perih

Engaging students in mathematics can be challenging, but building personal connections with them is essential for fostering true involvement. This session will focus on how connecting with students helps create a classroom environment where they feel motivated to learn. Participants will explore strategies such as games, children's literature, and instructional routines, all centered around foundational counting skills. Developing strong counting skills lays the groundwork for confident, successful, and joyful math learners.

Audience: K – 2

Sherry Perih has extensive experience in education, having taught students from Pre-Kindergarten through Grade 9 across northern, rural, and urban regions of Manitoba. Her career includes roles as a classroom teacher, principal, and divisional and provincial mathematics consultant, reflecting a strong commitment to educational leadership and student success. She currently serves as a Communication and Engagement Consultant with the Department of Education, where she supports initiatives that enhance sector collaboration and educational outcomes.

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Session Title: Money and Math: Learn 10 Steps to incorporating money to develop number sense!

Presenter: Sarah Melo

Teaching students about money at any age helps them develop real life-skills while building key mathematical understanding. Learn a hands-on step-by-step process to teach money that can be implemented in every grade from kindergarten to Grade 12 to help develop number sense, place value, operations, decimal numbers, fractions, number lines, interest, tax and MORE! Learn how to guide younger students to count and skip count with coins. Learn how to guide older students to fill in the gaps and develop financial literacy skills

to help them transfer their skills to high school math. Each participant will have access to money videos, steps and sample activities.

Audience: K – 12

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Session Title: Rethinking Long-Held Beliefs in School Mathematics

Presenter: Fawn Nguyen

No child starts school hating math or believing they're "not a math person." We must challenge myths like "math is always right or wrong" and "math is only for some" and shift toward instruction that empowers students to find joy and purpose in math.

Audience: K – 12

Fawn is the Director of STEM Initiatives at Amplify. She spent three years as a math coach for a K-8 school district and taught middle school math for 30 years. She was named Ventura County Teacher of the Year in 2014 and received the Math Teacher Hero Award from Raytheon in 2009. In 2005, she was honored with the Sarah D. Barder Fellowship from the Johns Hopkins Center for Talented Youth.

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Session Title: Making Thinking Visible: Using Mini-Whiteboards to Strengthen Formative Assessment in Math

Presenter: Mark Roche

Mini-whiteboards are a simple but powerful tool for increasing student thinking, making responses visible, and enhancing formative assessment. This hands-on session will explore how consistent mini-whiteboard routines can help raise the thinking ratio in your classroom and provide you with immediate, actionable insight into student understanding – without the need for digital tools.

Drawing on emerging research and classroom-tested strategies, we'll examine how mini-whiteboards support retrieval practice, reduce marking load, and encourage full participation. You'll leave the session with a ready-to-use structure, clear routines, and a short action plan you can implement in your next class.

Audience: Grades 6 – 12

Mark is a Manitoba mathematics teacher with experience teaching Grades 6 through 12 in both rural and urban settings, in English and French immersion programs. Over the years, he has worked with a wide range of learners and classroom contexts, always with the belief that all students are capable of engaging with high-level mathematics when instruction is clear, intentional, and well-sequenced.

He is a member of the Manitoba Association of Mathematics Teachers (MAMT) board, having served as both middle years and, more recently, high school representative. Mark is always developing professionally in order to improve his teaching and ultimately improve student outcomes in the classroom.

Session Title: Beyond Base Ten: Deepening Place Value Understanding in Years 6–8

Presenter: Dr. Ange Rogers

Place value is more than just knowing the value of digits- it is the foundation for number sense and mathematical reasoning. In this practical workshop, we will explore how to help students in Years 6–8 move beyond surface-level understanding of place value by engaging with different bases, comparing number systems, and creating models that reveal the magnitude of numbers. Through rich, classroom-ready activities, you will leave with strategies to challenge and extend student thinking, supporting them to generalize their understanding of place value across contexts.

Audience: Grades 6 - 8

Dr Ange Rogers is an experienced primary school teacher and Numeracy Leader from Melbourne, Australia. Ange is a passionate presenter who regularly facilitates Professional Development for teachers and schools both within Australia and internationally. In 2014 she completed her PhD in Mathematics Education focusing on the assessment and teaching of whole number place value in Years 3-6. In her PhD she developed the Place Value Assessment Tool (PVAT) and has since created a suite of teaching resources to support this assessment. Ange loves supporting schools to use evidence-informed methods to improve their Numeracy instruction, and mentoring teachers and leaders through her online website the Numeracy Teachers Academy. Ange has 4 children and is very passionate about high quality maths education.

Session Title: Would you teach math at any grade from K-8?

Presenter: Garry Strick

Knowing what you do about high school math teaching, how effective an elementary math teacher might you be? And, knowing what you know, if you were to tell elementary teachers how they should teach math, what would you tell them, and why? In this session, an examination of the elementary curriculum will be the focus, with an emphasis on critical skill development across the grades in preparation for success in high school math.

Audience: Grades 9 – 12

Garry Strick currently works as a teacher with the TMO online school, teaching high school math exclusively online. He has taught math from K-12 in large and small community schools, both urban and rural, and has worked as an administrator for much of his teaching career. He is a former executive member of MAMT, and has always had an interest in teacher professional development. Garry continues to study teacher effectiveness in the classroom as a PhD student.

Session Title: Modelmania: Ten-Frames, Number Lines, Arrays, and More

Presenter: MathImagine with Brad Ellert

Are you using models in your class for teaching numeracy, and if so, are you using them to their full potential? We will start by examining the theory behind models, including the work of Jerome Bruner, and then focus on

models you can use in your classroom, starting at the kindergarten level. We will focus on ten-frames, Cuisenaire rods, number lines, arrays, and bead strings.

Audience: Grades K – 6

Brad Ellert is a computer scientist, educator, and father. After obtaining an MSc in CS and working in the field, he transitioned to the Ed domain with an after degree, spurred on by his time teaching English in Japan. In addition to experience teaching in the K-12 space, he has taught sessional positions at the undergraduate level.