



2-DAY SUMMER CONFERENCE for **GRADE 7 and 8** TEACHERS of MATHEMATICS

The Centre for Education in Mathematics and Computing provides professional development opportunities for mathematics teachers. Our programs respond to the need for practical and enrichment information that can be implemented immediately in the classroom.

Problem solving forms the basis of effective mathematics programs. The sessions on curriculum will focus on problem solving. This conference will increase your tools and skills and enhance your teaching of mathematics. Teachers from any province or country will benefit. Teachers should have some previous teaching experience in an elementary or high school.

Whatever your personal, professional or mathematical goals, our conference can give you the edge you want.

Wednesday, August 22 to Thursday August 23, 2018

(Registration Deadline: Monday, June 18, 2018)

*Participant cost of **\$120** includes meals, conference fee materials, and harmonized sales tax (HST)*

A limited number of rooms (double occupancy) are available in a nearby hotel with no additional cost

Registration Now Open!

Follow the link <http://www.cemc.uwaterloo.ca/events/mathteachers-winnipeg.html> to register

The CENTRE for EDUCATION
in MATHEMATICS and COMPUTING
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Le CENTRE d'ÉDUCATION
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Faculté de mathématiques
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200, avenue Université Ouest
Waterloo (ON), Canada N2L 3G1

Grades 7 and 8 Program

- Dates:** Starting Wednesday, August 22 at 8:00 a.m., ending Thursday, August 23 at 3:30 p.m.
- Location:** St. John's Ravenscourt School, Winnipeg, MB
- Program:** The focus is on presentations as well as attendee participation in mathematical activities and problem solving. These resources are intended to supplement your teaching program.

Wednesday, Aug. 22	Activity
8:00 am – 9:00 am	Registration, coffee & networking
9:00 am – 10:30 am	Plenary Session: Let's Solve Some Problems! <i>Ian VanderBurgh</i>
10:30 am – 10:45 am	Break
10:45 am – 12:15 pm	Session 1: Growth Mindset Mathematics, Increasing Patterns and Learning Algebraic Expressions. <i>Cara Butler</i>
12:15 pm – 1:00 pm	Lunch
1:00 pm – 2:30 pm	Session 2: Conceptual Understanding of Fraction Operations. <i>Lam Nguyen</i>
2:30 pm – 2:45 pm	Break
2:45 pm – 3:30 pm	Plenary Session: There Are Still Frontiers in Math – and Many of Them Are Accessible for Kids. <i>Clay Kellough</i>
Thursday, Aug. 23	
8:00 am – 9:00 am	Registration, coffee, networking
9:00 am – 10:30 am	Plenary Session: Games for Mathematicians. <i>Sherri Burroughs</i>
10:30 am – 10:45 am	Break
10:45 am – 12:15 pm	Session 3: Supporting Students as Problem Solvers in the Middle Year. <i>Bob Beaudry</i>
1:00 pm – 2:30 pm	Session 4: Using Manipulatives in Problem Solving. <i>Tricia Perry</i>
2:30 pm – 2:45 pm	Break
2:45 pm – 3:30 pm	Plenary Session: A Hike Through the History of Mathematics. <i>Wayne Loutet</i>

Register, view program online, by visiting <http://www.cemc.uwaterloo.ca/events/mathteachers-winnipeg.html>

Registration Fee: \$120 per registrant



Synopses of Sessions for Math Teachers' Conference – Grade 7 and 8 Teachers

Plenary:

Let's Solve Some Problems!

Ian VanderBurgh

It is a rare time to be able to sit down for 90 minutes to just solve some problems. It is also important to get the chance to stretch our brains by working on some problems that are harder, but still accessible. In this session, we will work through a handful of problems, aiming to talk through approaches to some harder, but still accessible, problems that could be interesting for use as enrichment and discussion in the classroom. We will also talk about the hard task of teaching problem solving.

Session 1:

Growth Mindset Mathematics, Increasing Patterns and Learning Algebraic Expressions

Cara Butler

Using the work from “Mathematical Mindsets” by Jo Boaler, learning patterns and algebraic expressions without using a table and magically producing a formula. Offering students a constructivist approach to using expressions in mathematics.

Session 2:

Conceptual Understanding of Fraction Operations

Lam Nguyen

Move past “invert and multiply” and help students gain a deeper understanding of what is happening with operations with fractions. We will look at how to use visual models to make sense of all of the operation ‘rules’, why you don’t really have to “find a common denominator” to add and subtract fractions, and what multiplying and dividing fractions is all about!

Plenary:

There Are Still Frontiers in Math – and Many of Them Are Accessible for Kids

Clay Kellough

In this session we will explore topics that lead to problem solving inquiry, and hopefully fun, as we explore the math world’s recent developments, its tantalizing mysteries, and its open-to-anyone puzzles. When I think about student engagement, I sometimes wonder what math is doing wrong, that the sciences are doing right. As any science teacher will tell you, students often learn about science’s new discoveries, its controversies, its big open questions, from media around them outside of the classroom. They are hooked before they even hit the door, with their own questions and curiosities about black holes, dark matter, global warming, etc. What can we do to build that sense of awe, wonder, and drive to learn when it comes to math? Some of the activities I will lead the group through will be aimed at elementary school-aged learners, others will tend towards the high school set.



Plenary:

Games for Mathematicians

Sherri Burroughs

Description TBA

Session 3:

Supporting Students as Problem Solvers in the Middle Years

Bob Beaudry

Resilience, determination, flexibility, and creativity – how can we foster these characteristics in our students through problem solving in math? This session will explore differentiation and assessment practices that support students' growth and development into skilled problem solvers.

Session 4:

Using Manipulatives in Problem Solving

Tricia Perry

Description TBA

Plenary:

A Hike Through the History of Mathematics

Wayne Loutet

From the megalithic builders through the ancient Greek, Egyptian, Persian, Indian and Chinese mathematicians into western European and American mathematics from the last 6000 years, we will hit all the highlights. With two of my favourite studies, history and mathematics, combined, I will leave with many questions for you to take with you. We'll go from megalithic yards to computers and fractals, with many stops in between.