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
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.

<table>
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<tr>
<th>Wednesday, Aug. 22</th>
<th>Activity</th>
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<tr>
<td>8:00 am – 9:00 am</td>
<td>Registration, coffee &amp; networking</td>
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<tr>
<td>9:00 am – 10:30 am</td>
<td>Plenary Session: Let’s Solve Some Problems! Ian VanderBurgh</td>
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<td>10:30 am – 10:45 am</td>
<td>Break</td>
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<tr>
<td>10:45 am – 12:15 pm</td>
<td>Session 1: Growth Mindset Mathematics, Increasing Patterns and Learning Algebraic Expressions. Cara Lee Butler</td>
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<tr>
<td>12:15 pm – 1:00 pm</td>
<td>Lunch</td>
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<td>1:00 pm – 2:30 pm</td>
<td>Session 2: Conceptual Understanding of Fraction Operations. Lam Nguyen</td>
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<td>Session 3: Supporting Students as Problem Solvers in the Middle Year. Bob Beaudry</td>
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Register, view program online, by visiting [http://www.cemc.uwaterloo.ca/events/mathteachers-winnipeg.html](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 Lee 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. Patterns used are from VisualPatterns.org.

**Session 2:**
Conceptual Understanding of Fraction Operations
*Lam Nguyen*

Description TBA

**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.