

The CENTRE for EDUCATION
in MATHEMATICS and COMPUTING
Faculty of Mathematics
University of Waterloo
200 University Ave. W.
Waterloo, ON, Canada N2L 3G1



www.cemc.uwaterloo.ca

Le CENTRE d'ÉDUCATION
en MATHÉMATIQUES et en INFORMATIQUE
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Université de Waterloo
200, avenue Université Ouest
Waterloo (ON), Canada N2L 3G1

2-DAY SUMMER CONFERENCE for GRADES 9 to 12 MATHEMATICS TEACHERS

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

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Grades 9 to 12 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 conference will help to supplement your teaching of mathematics on problem solving and provide some new resources and teaching strategies.

Wednesday, Aug. 22	Activity
8:00 am – 9:00 am	Early 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: Let's Make it Count! <i>Mike Szeştapalow</i>
12:15 pm – 1:00 pm	Lunch
1:00 pm – 2:30 pm	Session 2: Visualizing Mathematical Solutions. <i>Ian Donnelly</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: Primes and Number Theory. <i>Carole Bilyk</i>
1:00 pm – 2:30 pm	Session 4: Building Thinking Classrooms with Vertical Non-Permanent Surfaces and Collaboration. <i>Lam Nguyen</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 – Grades 9 to 12 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:

Title TBA

Mike Szeształow

Exploring counting and the world of combinatorics.

Session 2:

Visualizing Mathematical Solutions

Ian Donnelly

Circle Geometry is a Grade 9 topic in Manitoba. In this session we will explore and extend the concepts of circle geometry as we investigate rich problems involving circles. The problems will be of interest to students and leaders of Grade 9 to 12 Mathematics.

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:

Primes and Number Theory

Carole Bilyk

Come explore some of the interesting mathematics associated with prime numbers. What interesting discoveries happened in 2013 regarding prime numbers? How can we use this to bring mathematics alive for our students?

Session 4:

Building Thinking Classrooms with Vertical Non-Permanent Surfaces and Collaboration

Lam Nguyen

A thinking classroom is “a classroom that is not only conducive to thinking but also occasions thinking, a space that is inhabited by thinking individuals as well as individuals thinking collectively, learning together, and constructing knowledge and understanding through activity and discussion.” Tackle significant issues around teaching and learning such as student engagement, differentiation, and time management. Develop learners who are divergent thinkers, collaborators, and persevere through challenges. Accomplish this through a dynamic learning environment that incorporates vertical spaces, random groups, and rich tasks. Help a wide range of students from struggling learners to high achievers by not only “playing the school system”, but by developing as thinkers and learners.

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.