

Canadian Mathematical Society
Société mathématique du Canada



CMS Math
Camps Report

2017

Rapport des Camps
mathématiques
de la SMC

20 Regional Camps 3 National Camps 2 Specialty Camps

“The camp is so fun, it helps students to develop interest in math and gives students who are interested in math an opportunity to communicate with each other and to improve together. I love this camping experience; I’m sure others like it too. Please keep it going!”
–Student

20 camps régionaux 3 camps nationaux 2 camps spécialisés

« Le camp est vraiment amusant, il aide les élèves à développer leur intérêt pour les mathématiques et il permet aux élèves intéressés par les mathématiques de communiquer entre eux et de s’améliorer ensemble. J’adore l’expérience du camp et je suis sûr que d’autres adorent aussi! Surtout, n’arrêtez pas! »
- Élève participant

About CMS Math Camps

Since its inception in 2000, the CMS Math Camps program continues to capture the spirit of mathematics from coast to coast and to inspire young minds across the land. The program offers a unique opportunity for young Canadian students to explore a side of mathematics that is not accessible in a classical classroom setting. Although the CMS gives local organizers the freedom to choose the topics and activities of their camps, the main goal of a typical camp is to engage students in an authentic learning environment in mathematics and its broad applications to Science, Technology and Engineering. This is achieved through stimulating presentations, hands-on activities, building projects and competitions. Students who attend the camps leave with new friends who share the same passion for the subject, new ideas to explore, and a fresh outlook on mathematics and the role it plays in our lives.

In 2017, a total of 20 camps were held across Canada with more than 1000 students and volunteers participating. Organizers are encouraged to engage students from visible minority communities and to have as many gender balanced camps as possible. Like in previous years, regional CMS Camps were a combination of weekend camps, day camps and week-long overnight camps. There were some specialty camps, such as, the math camp for Quest Girls, in (Kingston), the math camp for Black students at Dalhousie, and math Olympiad training camps in Toronto and Oaxaca, Mexico.

Camps mathématiques de la SMC

Depuis sa création en 2000, le programme de camps mathématiques de la SMC continue de diffuser l’esprit des mathématiques d’un océan à l’autre et d’inspirer les jeunes esprits de tout le pays. Le programme offre une occasion unique aux jeunes canadiens d’explorer un aspect des mathématiques auquel ils n’ont pas accès dans une salle de classe ordinaire. Bien que la SMC laisse les organisateurs locaux choisir les sujets et les activités de leurs camps, l’objectif principal d’un camp typique est de faire participer les élèves à un milieu d’apprentissage authentique en mathématiques et à ses vastes applications en science, en génie et dans les technologies. Cet objectif est atteint grâce à des présentations stimulantes, des activités pratiques, des projets de construction et des concours. Les élèves qui participent aux camps se font de nouveaux amis animés d’une passion commune pour le sujet, ils ont de nouvelles idées à explorer ainsi qu’une nouvelle perspective des mathématiques et de leur rôle dans nos vies.

En 2017, 20 camps ont été organisés un peu partout au Canada et ont accueilli plus de 1000 participants et bénévoles. Les organisateurs sont encouragés à inciter la participation des élèves de minorités visibles et à offrir le plus possible des camps auxquels participent autant de garçons que de filles. Comme les années précédentes, les camps régionaux de la SMC étaient des camps de fin de semaine, des camps de jour ou des camps d’une semaine. Il y avait des camps spécialisés, comme le camp de mathématiques Quest Girls à Kingston, le camp pour élèves noirs à Dalhousie ainsi que les camps d’entraînement pour les olympiades mathématiques à Toronto et à Oaxaca, au Mexique.

2017 Regional Camps

Alberta



University of Calgary July 2-8, 2017

Participants: 6 girls and 15 boys, Grades 7-10

Camp Leader: Professor Michael Cavers - University of Calgary

Topics: Geometry, Graph Theory, Combinatorics and Problem-Solving



"I learned a lot about branches in math and sciences and the interesting topics opened my mind to new things."

- Student

British Columbia



Simon Fraser University – Burnaby Campus June 26-30, 2017

Participants: 16 girls, 19 boys, Grades 8-10

Camp Leader: Professor Malgorzata Dubiel - Simon Fraser University

Topics: Problem-solving, Spherical Geometry, Axioms, Parallel lines & Triangles and Logic and games.



Simon Fraser University – Surrey Campus (in cooperation with PIMS) June 27-28, 2017

Participants: 23 girls and 21 boys in Grades 9 and 10

Camp Leader: Professor Natalia Kouzniak - Simon Fraser University



University of Fraser Valley July 17-21, 2017

Participants: 7 girls and 8 boys

Camp Leader: Professor Robin Endelman - University of Fraser Valley

"The lessons showed me things I never knew you could do with math."

- Student



Manitoba

University of Manitoba July 23-26, 2017

Participants: 11 girls and 13 boys from Grades 9 and 10

Camp Leader: Professor Don Trim - University of Manitoba

Topics: Problem-solving, Games and Sports.

“I liked how we explored different aspects of math and had talks from the professionals in the field.”

– Student



New Brunswick

École Mgr-Martin de Saint-Quentin le 28 juin au 5 juillet, 2017

Participants: 14 filles et 35 garçons 5^e, 8^e et 12^e années

Chef du camp: Professor Donald Violette - University of Moncton

Sujets: Les ateliers de constructions d’objets mathématiques, les jeux mathématiques et les rallyes truffés d’énigmes mathématiques.

« On a adoré les conférences »

– Étudiant



University of Moncton –Shippagan Campus July 2-8, 2017

Participants: 13 girls and 7 boys from Grades 7 to 9

Camp Leader: Professor Jules de Tibeiro – University of Moncton



University of New Brunswick May 12-14, 2017

Participants: 7 girls and 31 boys from Grades 10-11

Camp Leader: Professor Patrick Reynolds - University of New Brunswick

Topics: Problem-solving sessions, Guest lecturers and Group work.

“I had a great time and hope to come back next year. Really enjoyed it, please continue.”

– Student





Newfoundland and Labrador

Memorial University of Newfoundland May 17-18, 2017

Participants: 6 girls and 30 boys from Grades 11 and 12

Camp Leader: Professor Margo Kondratieva - Memorial University of Newfoundland (MUN).

Topics: Two talks: “Calculating Pi using Pythagorean Theorem and Regular Polygons” by Dr. Fabrizio Donzelli and “How to Have Fun While Doing Math: The game of Hex and the Brouwer Fixed Point Theorem by Dr. Graham Cox. The camp also included three Problem Sessions.

“The camp makes math interesting and encourages me to continue.”

– Student

Nova Scotia

Dalhousie University July 9-14, 2017

Participants: 10 girls and 10 boys from Grades 10-11

Camp Leader: Professors Roman Smirnov - Dalhousie University

Topics: Problem-solving, Math games and several sessions including “The Mathematics of Winning” by Danielle Cox, “A Mathematical Mystery Tour: Large Numbers and Great Mathematicians” by Karl Dilcher, “Symmetry” by Keith Taylor and “Radical Relay” by Ben Cameron and Marie B. Langlois.

“I like being with people interested math like me.”

– Student

St. Francis Xavier University May 19-21, 2017

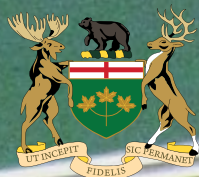
Participants: 20 girls and 7 boys from Grades 10 and 11

Camp Leader: Professor Joe Apaloo - St. Francis Xavier University

Topics: Math Relay, Team Problem-solving and Guest Presenters.

“I saw problems during the camp that were pretty challenging but really fun to work through and figure out.”

– Student



uOttawa



uOttawa

Ontario

Brock University (Department of Mathematics and Statistics)
August 14-25, 2017

Participants: 2 girls and 16 boys from Grades 6-12

Camp Leader: Professor Thomas Wolf - Brock University

Topics: Daily mini courses covering topics such as Group Theory, Number Theory, Combinatorics, Set Theory, Proofs, and Programming.

"I enjoyed it very much and it was way better than my expectations."

- Student

University of Ottawa June 25-30, 2017

Participants: 21 girls and 27 boys from Grade 10 (Ontario) and secondaire 4 (Québec)

Camp Leaders: Professor Joseph Khoury - University of Ottawa and Dr. Graham Wright - Canadian Mathematical Society.

Topics: Math Games, Problems-solving and Project Presentations.

"The camp furthered my passion for math, and encouraged me to find more time for myself to hone my skills in the subject. I am considering a career in a STEM field."

- Student

Université d'Ottawa June 25-30, 2017

Participants: 21 filles et 27 garçons de 10^e année (Ontario) et secondaire 4 (Québec)

Chefs des camps: Professeur Joseph Khoury - Université d'Ottawa et professeur Graham Wright de la Société mathématique du Canada

Sujets: Jeux de maths, la résolution de problèmes and les présentations sur différents sujets des mathématiques.

« On a touché à beaucoup de domaines et cela m'a permis de mieux comprendre ce que j'aime dans les maths »

- Étudiant

Western University July 18-20, 2017

Participants: 14 girls and 17 boys from Grade 9

Camp Leader: Professor Gord Sinnamon

Topics: Problem-solving skills, Do it yourself fractals, Investigating division rules, Math relays and Mathematical connections.

"I enjoyed meeting people who shared an interest in math and problem solving. I liked being challenged to understand the concepts that were taught in the lectures."

- Student

York University July 10-14, 2017

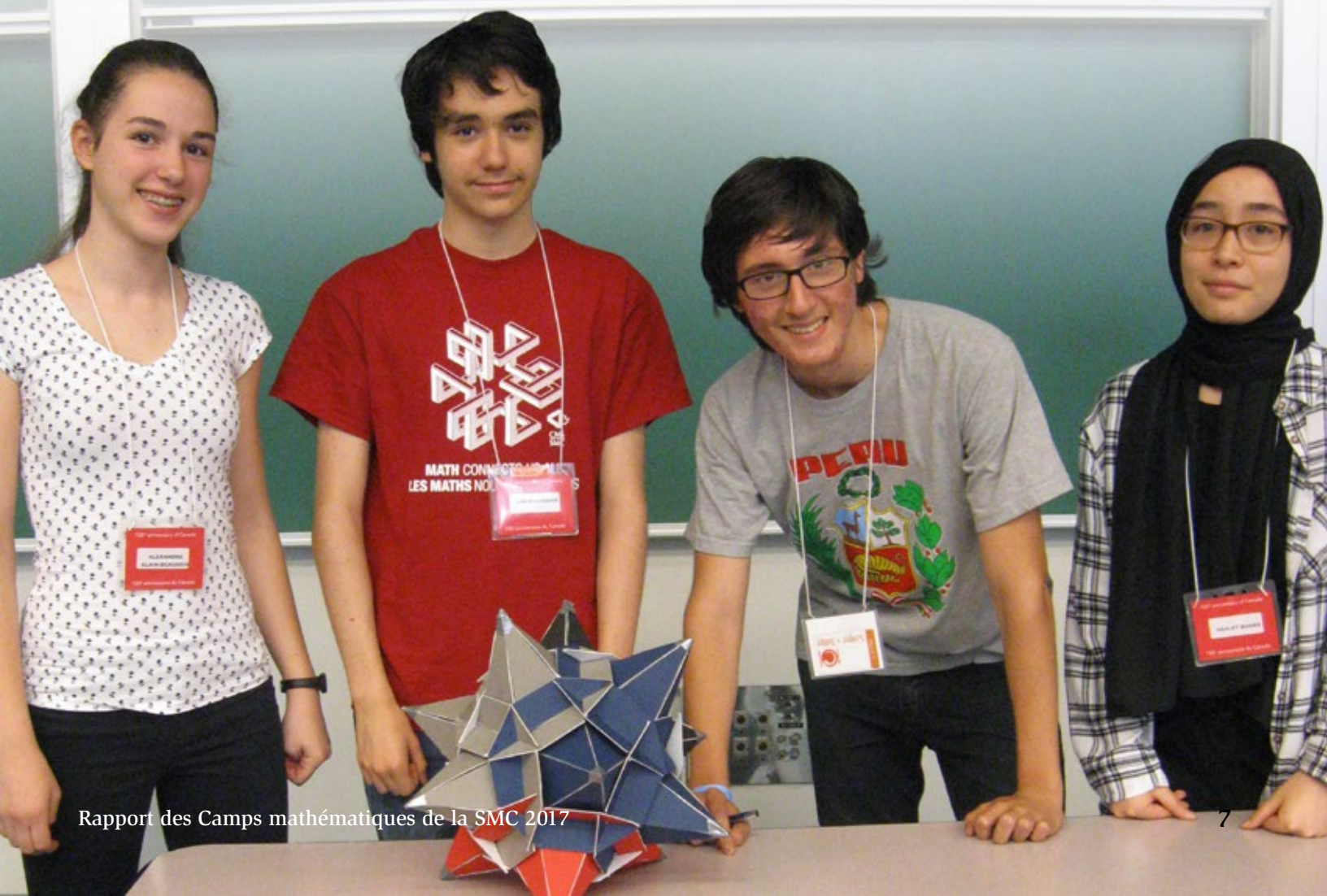
Participants: 10 girls and 26 boys from Grade 9

Camp Leader: Mr. Chris Wu

Topics: Algebra and Substitutions, Problem-solving and Competitions.

"I loved the curriculum. Many of the topics on the agenda were already on my bucket list."

- Student





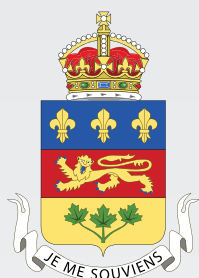
Prince Edward Island

University of Prince Edward Island May 5-7, 2017

- Participants:** 14 girls and 5 boys from Grades 10 and 11
- Camp Leaders:** Professors Ken Sulston and Shannon Fitzpatrick - University of Prince Edward Island
- Topics:** Team Problem-solving, Games, Puzzles and Graphs, Probabilities and the Golden Ratio.

It was pretty cool to meet some new people who are also interested in math.”

– Student



Québec

Dawson College (in conjunction with the Association mathématique du Québec (AMQ)) le 25 au 30 juin

- Participants:** 7 filles et 15 garçons de 10^e au 12^e année
- Chef du camp:** Professeure Andreea Panait - Dawson College
- Sujet:** Cryptography, Escape Games and Problem-solving.

“I like being with people interested in math like me.”

– Student



Université de Montréal du 28 mai au 4 juin

- Participants:** 5 filles et 19 garçons du niveau Cégep
- Chef du camp:** Professeure Christiane Rousseau de l'Université de Montréal
- Sujets:** La finance mathématique, deux activités en recherche opérationnelle dont une se déroulant en laboratoire, une activité en statistique (Challenger et la statistique), une activité en cryptographie.

« J'ai toujours aimé les maths, mais le camp a réussi à piquer ma curiosité sur des nouveaux domaines mathématiques. »

– Étudiant



Saskatchewan

University of Regina on March 11, 2017

Participants: 38 girls and 49 boys from Grades 1-12

Camp leader: Professor Patrick Maidorn

Camp Program: Students were separated by grade and participated in varied mathematical program including Grade 1-2: Counting Coins and Patterns, Giant Maze Room, City Maps and Plinko, Math Games and Puzzles. Grade 3-4: Spirolaterals, Math Games and Puzzles, Giant Maze Room, Counting Coins/Patterns/City Maps. Grade 5-6: Giant Maze Room, Pet Insurance, Math Games and Puzzles, Math Games and Probability Bingo. Grade 7-12: Geometry of Spheres and Rings, River Crossing Puzzles, Mayan Arithmetic, Giant Maze Room.

“My kids were in the 5-6 class. They had fun in everything, but seemed to really enjoy the giant maze room the best. They talked excitedly about the pet insurance game as well. They told me to change nothing! So glad this was offered. They definitely want to go back next year.”

-Camp Parent



2017 Specialty CMS Math Camps

Math Camp for Black Students

Dalhousie University from July 9-15, 2017

Participants: 23 girls and 6 boys from Grades 6-8

Camp Leader: Dr. Rajendra P. Gupta

Camp Activities: Math problem-solving skills, mathematics and computers, career counselling, bowling. The students also visited the Black Cultural Centre.

“The Camp has been very successful as many campers from previous years have gone for higher education.”

– Camp Organizer



Math Quest Camp for Girls

Queen's University August 14-17, 2017

Participants: 16 girls

Camp Leader: Dr. Siobhain Broekhoven

Camp Program: The camp focused on Fractals/complex numbers, Particle Physics, Modular Arithmetic, and Graph Theory.

“I had a wonderful experience and look forward to returning next year!”

– Student





2017 National CMS Math Camps

Winter IMO Training Camp

York University January 3–7, 2017

Participants: 14 students. Potential members of Math Team Canada 2017 to start advanced training for the International Mathematical Olympiad (IMO)

Camp Leader: Professor Neal Madras

Camp Program: Intensive Training for potential members of Math Team Canada 2017



Summer IMO Training Camp

Banff International Research Station (BIRS) Oaxaca, Mexico July 2-15, 2017

Training organizers: Professor Jacob Tsimmerman (Toronto), Rogelio Valdez (Mexican leader), and James Rickards (IMO Team Leader), Sarah Sun (Deputy Leader), and Matthew Brennan (Observer).



National CMS Summer Camp

University of Toronto. July 29-August 5, 2017

Participants: 7 girls and 18 boys in Grades 7-10

Camp Leader: Joanna Sheridan, Outreach and Special Projects Officer, Department of Mathematics at the University of Toronto

Camp Program: This training camp is for members of Math Team Canada prior to traveling to Rio de Janeiro to compete in the 58th International Mathematical Olympiad.

Campers took part in math contest preparation, research and other math exploration activities.

The camp also included trips to the Lake Shore, The Royal Ontario Museum and Fort York.

“I really enjoyed meeting all the campers. That was by far the most exciting part, because it’s much easier to talk about your ideas to people that actually understand them.”

– Student





Sponsors

The CMS Math Camps program is only possible thanks to the hard work of all the organizers and volunteers. The CMS wishes to thank all sponsors, universities, teachers, camp organizers, volunteers, parents and students whose valuable contribution made the 2017 CMS Math Camps program another great success story!

Le programme des camps mathématiques de la SMC est rendu possible grâce au travail acharné de tous les organisateurs et bénévoles. La SMC tient à remercier les commanditaires, universités, enseignants, organisateurs de camp, bénévoles, parents, étudiants et élèves dont la précieuse contribution a fait du programme des camps mathématiques 2017 de la SMC une autre grande réussite!

Sponsors / Commanditaires



University Partners / Partenaires universitaires



Government Partners / Partenaires gouvernementaux



Partner Organizations / Partenaires Institutionnels



For more information about CMS please contact / Pour plus d'information au propos des camps mathématiques de la SMC, veuillez communiquer avec :

Dr. Joseph Houry

*Chair – Math Camps Committee/
Président – comité des camps
mathématiques, University of Ottawa/
Université d'Ottawa*

chair-mcampc@cms.math.ca

Dr. Graham Wright

*Executive Secretary/ Secrétaire
exécutif, Canadian Mathematical
Society/ Société mathématique
du Canada*

gpwright@cms.math.ca