



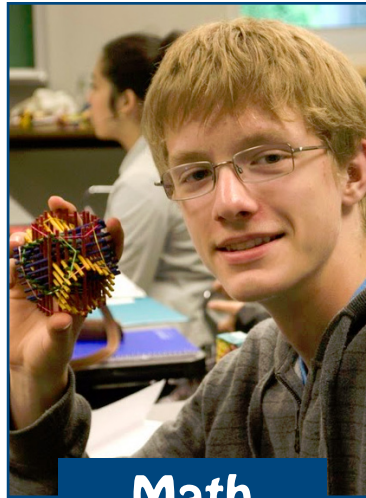
CMS Math Camps 2011

Canadian Mathematical Society





CMS



Math



Camps

2011 Report

Each year the CMS Math Camps Program reaches students all across Canada and provides them with an opportunity to experience math as they never have before. Those who attend the camps leave with new friends, new ideas, and a new outlook on mathematics.

This year 18 camps took place across Canada, with at least one camp in each province. The camp program included a National Camp with student participants from all across Canada, a math problem solving camp for girls, and a camp for African-American students. Students attending the camps ranged from grades 7-12 (and Cégep in Quebec). All camp participants had one thing in common - their love of mathematics.

The feedback collected from students after each camp clearly illustrates the positive impact CMS Math Camps have on the participants. They comment on the interesting math concepts they learned, the skills and confidence they developed, and most of all the fun they had at Math Camp.

Camp surveys also show that CMS Math Camps are highly effective in motivating students to explore the world of mathematics and science. Students consistently report a heightened interest in mathematics, science, and engineering, and a desire to pursue a career in these areas.

This report contains a summary of each math camp, comments collected from the math camp participants, and a list of CMS Math Camp partners and sponsors.



CANADIAN MATHEMATICAL SOCIETY
SOCIÉTÉ MATHÉMATIQUE DU CANADA

The Canadian Mathematical Society is the national organization whose goal is to promote the advancement, discovery, learning and application of mathematics. The Society's activities cover the whole spectrum of mathematics including: scientific meetings, research publication, and the promotion of excellence in mathematics education at all levels. The CMS, in partnership with others, annually sponsors math camps and competitions across Canada.

Student Feedback

This camp was a great chance to meet new people and learn fascinating facts about math which aren't always taught in school.

- Simon Fraser University camp participant

I have met many new friends from very different parts of Canada. I have learned a lot of new math ideas, and feel that the camp was a very worthwhile experience.

– National Camp participant



The camp was great. It was a time where I could meet new people and learn together to develop my mathematical skills. I love math and physics and this camp made me love them even more.

- University of Calgary camp participant

"The camp was a great chance to meet other students who have the same passion and interest in math and to exchange a lot of ideas."

– University of Ottawa camp participant

I had rarely been in an environment where mathematical creativity and reasoning was required, other than the few contests we had at school. My ability in dealing with problems that had multiple steps and required deeper thinking improved with this camp, and so did my ability to reason and deduce. Basically, my mathematical ability was stretched beyond my comfort zone, but I really enjoyed the challenges. - York University camp participant

It's one of very few enrichment programs in place for gifted students in NB, and I find it very refreshing to actually be challenged and stimulated with my academics. To be honest, school is boring, and this camp has largely restored my faith and interest in my studies, since I know the kind of challenges that I can expect later on in my academic career.

- University of New Brunswick camp participant



J'ai aimé la dynamique du groupe : se retrouver avec des gens très motivés est valorisant. Les ateliers et les conférences étaient intéressants.

- Cégep de Lévis-Lauzon camp participant

Student Feedback

I enjoyed many things at math camp, from the atmosphere to the vast combined knowledge to the stories from Mr. Wu that do not differ far from stand-up comedy; math camp was by far one of the best experiences of my life! The intense problem solving seems ideal for growth in the subject and has taught me in a week more than I can learn myself in a month.

- York University camp participant

The camp opened my eyes to a lot interesting and useful applications of mathematics. I did not know that mathematicians could be in demand outside of the academic world.

-University of Ottawa camp participant

This camp was very influential and has motivated me to further pursue mathematics. The lectures were very helpful.

- National Camp participant

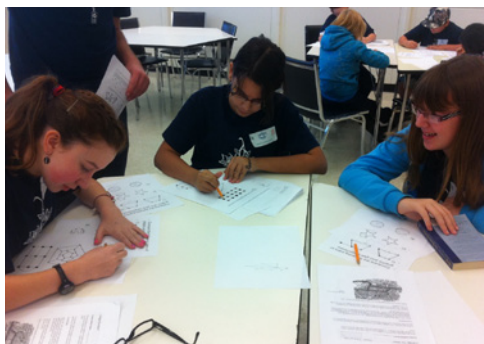


"Lots of fun math, cool things that we don't learn in school. The math was challenging and I learned a lot."

- University of Western Ontario camp participant.

Math has always just been one of my strongest subjects, but I've never really liked it because I've always found it too boring. After this camp, I've become a lot more interested in math because now I'm trying to expose myself to harder questions, problems, puzzles, etc. outside of what I'm taught in the normal math class.

- York University camp participant



My least favourite aspect of the camp was the length, which was much too short in my opinion. 4 days was just enough to get me started.

- University of Victoria camp participant

I had a great time at math camp. It was a great opportunity to represent my school and to show my mathematical skills.

- Simon Fraser University camp participant

I realize, as I realized well before I came here, that not many other students our age would enjoy waking up at 7:30 and being taught difficult mathematics for more than five and a half hours each day. However, my friends and I would like to say that we thoroughly enjoyed this experience. - University of Manitoba camp participant

Alberta

University of Calgary



UNIVERSITY OF
CALGARY

This residential camp took place at the University of Calgary from July 3-9. The camp was organized by Joseph Ling, a senior instructor in the Mathematics and Statistics Department. 24 students from grades 6 to 10 participated in the camp; 6 females and 18 males. Students were selected via recommendations from previous camp organizers and published results of various math competitions. The camp program included a magic and puzzle show, a math photo scavenger hunt, and team relay contests. A survey of the participants at the end of the camp showed that 19 students indicated increased interest in math, science, or engineering, and 17 are considering math, science, or engineering careers. The 2012 Alberta camp will take place at the University of Alberta in Edmonton.

British Columbia

Simon Fraser University Burnaby Campus



This day camp took place at the Burnaby campus of Simon Fraser University from June 27-30. The camp was organized by Malgorzata Dubiel, senior lecturer in the Mathematics Department. 42 students from grades 8 to 11 participated in the camp; 14 females and 28 males. Students are nominated by teachers from local schools to attend the camp. The organizers accepted many more students than originally planned due to the popularity of this year's camp. The camp program included a MathAmaze tournament, the mathematics of billiards, and Amazing Algorithms. A survey of the participants at the end of the camp showed that 19 students indicated increased interest in math, science, or engineering, and 20 are considering math, science, or engineering careers. The camp will take place again in 2012, in July.

Simon Fraser University Surrey Campus



This day camp took place at the Surrey campus of Simon Fraser University from June 29-30. The camp was organized by Natalia Kouzniak, senior lecturer in the Mathematics Department. 54 students from grades 8 to 10 participated in the camp; 23 females and 31 males. Students are nominated by teachers from local schools to attend the camp. The program included a presentation on solving real world problems with math, origami, and team projects. A survey of the participants at the end of the camp showed that 46 students indicated increased interest in math, science, or engineering, and 42 are considering math, science, or engineering careers. The camp will take place again in 2012, in June.

University of Victoria



**University
of Victoria**

This day camp took place at the University of Victoria from June 27-30. The camp was organized by Kseniya Garaschuk, graduate student in the Mathematics and Statistics Department. 17 students from grades 9 to 10 participated in the camp; 10 females and 7 males. Students were invited based on teacher recommendations. The camp program included cryptography, a puzzle scavenger hunt, and mini presentations on interesting math topics from graduate students. A survey of the participants at the end of the camp showed that 12 students indicated increased interest in math, science, or engineering, and 12 are considering math, science, or engineering careers. The camp will take place again in 2012, in June.

Manitoba

University of Manitoba



**UNIVERSITY
OF MANITOBA**

This residential camp took place at the University of Manitoba in Winnipeg from August 21-24. The camp was organized by Donald Trim, professor in the Mathematics Department. 21 students from grades 9 and 10 participated in the camp; 13 females and 8 males. The camp program included talks on symmetry and graph theory, puzzles, problem solving sessions, and mathematical movies. A survey of the participants at the end of the camp showed that 15 students have indicated increased interest in math, science, or engineering, and 18 are considering math, science, or engineering careers. The camp will take place again in 2012, in August.

New Brunswick

University of New Brunswick Fredericton



This residential camp took place at the University of New Brunswick in Fredericton from April 29 - May 1. The camp was organized by Daryl Tingley, a professor in the Mathematics and Statistics Department. 28 students from grades 10 and 11 participated in the camp; 7 females and 21 males. Students are selected on the basis of various math competitions, as well as to ensure female and rural participation. The camp program included presentations on topics such as Big Bangs and Black Holes, What's a Zero Between Friends?, and Basketball Math. A survey of the participants at the end of the camp showed that 23 students indicated increased interest in math, science, or engineering, and 22 are considering math, science, or engineering careers. The camp will take place again in 2012, in May.

Newfoundland and Labrador

Memorial University Blundon Seminar



This residential camp took place at Memorial University in St. John's from May 18-20. The camp was organized by Margo Kondratieva, professor in the Mathematics and Statistics Department. 37 students from grades 10 to 12 participated in the camp; 8 females and 29 males. Students are invited based on the results of the provincial Blundon contest as well as national contest results. The camp program included lectures from Memorial professors, Paper Chase, and problem solving sessions. A survey of the participants at the end of the camp showed that 31 students indicated increased interest in math, science, or engineering, and 32 are considering math, science, or engineering careers. The camp will take place again in 2012, in May.

Nova Scotia

Dalhousie University



This residential camp took place at Dalhousie University in Halifax from July 3-8. The camp was organized by Suraj Sikka, C.C.A. Sastri, and Roman Smirnov from the Mathematics and Statistics Department. 20 students from grades 10 and 11 participated in the camp; 11 females and 9 males. The selection process attempted to ensure equity in the distribution of gender and geographical location, and preference was given to those who had not attended a camp in previous years. The camp program included Ray Tracing (generating photorealistic images based on geometric models), Sudoku and Kenken, and a Mathematical Mystery Tour. The camp will take place again in 2012, in July.

Math Camp for Black Students



This residential camp took place at Dalhousie University in Halifax from July 9-16. The camp was organized by R. P. Gupta, professor in the Mathematics and Statistics Department. The camp is a joint initiative of Dalhousie University and the Black Educators Association of Nova Scotia. (BEA). 26 students from grades 6 to 8 participated in the camp; 14 females and 12 males. Two teachers also attended. The camp program included visits to the Nova Scotia Discovery Centre and the Black Cultural Centre. The camp will take place again in 2012, in July.

Ontario

University of Ottawa *Université d'Ottawa*



uOttawa

Two residential camps took place simultaneously in English and French at the University of Ottawa from June 25-30. The camp was organized by Graham Wright and Joseph Khoury from the Mathematics and Statistics Department. 48 students participated in the camps; 17 females and 31 males. Students are selected according to their performance in national math competitions. The camp program included presentations on topics such as math and games, logic, probability and its applications, and team projects as well as cultural and social activities. A survey of the participants at the end of the camp showed that 45 students indicated increased interest in math, science, or engineering and 30 are considering math, science, or engineering careers. The camp will take place again in 2012, in June.

Queen's University *Explore Mathemagics*



This day camp took place at Queen's University in Kingston from August 29 to September 2. The camp, specifically for girls with a focus on problem-solving, was organized by Maja-Lisa Thomson from the Mathematics and Statistics Department. 15 girls in grades 9 to 11 participated in the camp. 2011 was the first year this camp was offered, and a decision was made to take all students who applied. The camp program included problem-solving sessions in number theory, graph theory and probability, as well as math puzzles and games. The camp will take place again in August 2012.

University of Western Ontario



This day camp took place at the University of Western Ontario in London from July 26-28. The camp was organized by Gord Sinnamon, professor in the Mathematics Department. 28 grade 9 students participated in the camp; 11 females and 17 males. Students were invited according to their results in the Pascal math competition. The camp program included Do-it-Yourself Fractals, a Math Relay, and team competitions. A survey of the participants at the end of the camp showed that 28 students indicated increased interest in math, science, or engineering and 27 are considering math, science, or engineering careers. The camp will take place again in 2012 in July.

**York University
Math Experience**



This day camp took place at York University in Toronto from August 8-12. The camp was organized by Chris Wu, teacher with the Toronto District School Board. 21 students in grades 9 and 10 participated in the camp; 8 females and 13 males. Students were invited based on excellent results on math competitions, primarily the Pascal contest. Preferential invitations were sent to females who made the honour roll. The camp program included brainteaser warm-ups, the 10 Greatest Problems of All Time, and problem solving competitions. A survey of the participants at the end of the camp showed that 20 students have indicated increased interest in math, science, or engineering and 20 are considering math, science, or engineering careers. The camp will take place again in 2011, in July.

Québec

Cégep de Lévis-Lauzon



Ce camp résidentiel a eu lieu sur le campus du Cégep de Lévis-Lauzon, du 4 au 8 juillet 2011, organisé par Lucie Nadeau. Les 22 étudiants (secondaires 4 et 5) ont participé au camp, 5 filles et 17 garçons. Les participantes et participants au camp sont choisis parmi les gagnantes et gagnants du concours de l'Association mathématique du Québec. L'organisateur dit que "le camp a été une réussite sur toute la ligne." Le programme du camp incluait des différents ateliers offerts par les professeurs de mathématiques du département, observation astronomique au Mont-Cosmos, et un tournoi de Math en jeu. Un aperçu des participants au camp montre que tous les étudiants ont exprimés une croissance dans leurs intérêts dans les mathématiques et les sciences et 16 étudiants prévoit faire une carrière en math, science ou génie. Ce camp aura lieu de nouveau en 2012.

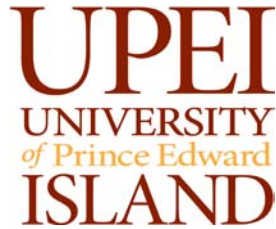
**Université de Sherbrooke
Camp de l'AMQ**



This residential camp took place at the Université de Sherbrooke from June 12-17. The camp is a joint initiative with the Association Mathématique du Québec. The camp was organized by Mario Lambert from the Mathematics Department. 25 Cégep students attended the camp. The students were selected based on the results of the AMQ math contest. The camp program included presentations from dynamic speakers, group problem solving sessions, and workshops. The camp will take place again in 2012.

Prince Edward Island

University of PEI



This residential camp took place at the University of Prince Edward Island from May 13-15. The camp was organized by Ken Sulston, professor in the Mathematics and Statistics Department. 18 students participated in the camp; 7 females and 11 males. Students were selected from teacher recommendations from all PEI high schools, with a view to gender and geographic balance. The camp program included sessions in mathematical finance and history, math trivia, relays, and team problem solving. In a survey of the participants at the end of the camp 9 of 16 indicated increased interest in math, science, or engineering and 13 of 16 are considering math, science, or engineering careers. The camp will take place again in 2011, in May.

Saskatchewan

University of Regina



This day camp took place at the University of Regina on October 15. The camp was organized by Ara Steininger, program coordinator with the Mathematics and Statistics Department. 39 students from grades 7-12 participated in the camp; 16 females and 23 males. The camp was also attended by two teachers. This camp is open to anyone who wishes to attend. The camp program included M&M Probability, Pirates of Wascana Creek, and a math games room. A survey of the participants at the end of the camp showed that 27 students have indicated increased interest in math, science, or engineering and 23 are considering math, science, or engineering careers. The camp will take place again in 2012.

CMS 2011 National Camp

University of Windsor



This residential camp took place at the University of Windsor from July 11-16, 2011. The camp was organized by Richard Caron, professor in the Mathematics and Statistics Department. 22 students participated in the camp; 8 females and 14 males. Student selection was based predominantly on the results of the Sun Life Financial Canadian Open Mathematics Challenge. The camp program included Statistical Magic, Mathematical Rhythms, and a mock Olympiad competition. A survey of the participants at the end of the camp showed that 19 students have indicated increased interest in math, science, or engineering and 19 are considering math, science, or engineering careers. The 2012 National Camp will take place at the University of Toronto.

Math Camp Partners

University of Calgary

Dalhousie University

Cégep de Lévis-Lauzon

University of Manitoba

Memorial University

University of New Brunswick

University of Ottawa

University of Prince Edward Island

Queen's University

University of Regina

Université de Sherbrooke

Simon Fraser University

University of Victoria

University of Western Ontario

University of Windsor

York University



Math Camp Sponsors

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Government of Manitoba
Government of New Brunswick
Government of Newfoundland and Labrador
Government of Nova Scotia
Government of Yukon

Government of Nunavut
Government of Ontario
Government of Prince Edward Island
Gouvernement du Québec
Government of Saskatchewan

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