



2009 **MATH CAMPS**



CAMPS **MATHÉMATIQUES** 2009

2009 MATH CAMPS - CAMPS MATHÉMATIQUES 2009



The CMS Math Camps are an important activity in the society's series of educational and competitive initiatives that culminate in the annual staging of the Canadian International Mathematical Olympiad team at the prestigious world championship contest for high school students. In 2009, in partnership with educational institutions, the CMS staged one national and 14 regional math camps attended by 373 participants across Canada. This year, female participants constituted one quarter of all participants.

Based upon the feedback and surveys undertaken, the camps continue to be very successful and are making a difference to the participants who indicate an increased interest in math, science and engineering, including career interests.

For 2010, the CMS hopes to expand the number of camps and introduce camps for special communities. At the same time, the CMS hopes to enrich the content through the engagement of business sectors to provide practical applications.

Attached are the summary reports for each math camp, select comments from the math camp participants, and a list of Math Camp partners and sponsors.

Some student and/or organizer comments are included at the end of this report.
Des commentaires des étudiants ou/et de l'organisateur sont inclus à la fin de ce rapport.

CMS 2009 National Math Camp
University of Windsor
Windsor, ON



This Residential Camp took place at the campus of the University of Windsor in Windsor, ON July 6-10, 2009, organized by Richard Caron. 22 students participated in the camp, 8 females and 14 males. Most of the campers were selected from among the highest scores (for Grades 9 and 10) on the COMC (the Canadian Open Math Challenge). To increase the number of female participants, invitations stressed a safe environment and that there were female “den mothers”. The Camp program consisted of lectures on topics such as Diophantine equations, the pigeonhole principal, the game of NIM, circle geometry, number theory, combinatorics and Pythagorean triples, as well as sport, cultural and social activities. The Camp will take place again in 2010 at the campus of the University of Windsor.

Prince Edward Island
University of Prince Edward Island
Charlottetown



This Residential Camp took place at the Department of Mathematics and Statistic of the University of Prince Edward Island in Charlottetown, May 1-3, 2009, organized by Shafiqul Islam. 15 students participated in camp, 8 females and 7 males. High schools in PEI were asked to nominate up to three grade 10 and Grade 11 students to participate in the camp. An invitation was given to at least one student from high schools which expressed interest in sending a student to the camp. The camp program included presentations on topics such as counterintuitive mathematics, fascinating probabilities, mathematics and finance, counting the elements in an infinite set, team relays as well as sports, cultural, and social activities. A survey of the participants at the end of the camp showed that all students have indicated increased interest in math, science, or engineering and 10 are considering math, science, or engineering careers. The Camp will take place again in 2010, in May.

Newfoundland and Labrador
Sir Wilfred Grenfell College
Corner Brook



This Residential Camp took place at Sir Wilfred Grenfell College Campus in Corner Brook, Newfoundland May 4-6, 2009, organized by Aleksandrs Aleksejevs & Yevgeny Vasilyev. 16 students participated in the camp, 12 females and 4 males. Selection process was determined by the nominations coming from the teachers of local schools. All participants were Level 1 students. The camp program included presentations on topics such as astronomy, symmetry, geometry, trigonometry and the role of mathematics in the basic sciences as well as sports, cultural and social activities. A survey of the participants at the end of the camp showed that 16 students have indicated increased interest in math, science, or engineering and 15 students are considering math, science, or engineering careers. The Camp will take place again in 2010 in May.

**New Brunswick
University of New Brunswick
Fredericton**



This Residential Camp took place at the campus of the University of New Brunswick in Fredericton, May 8-10, 2009, organized by Daryl Tingley. 23 students participated in camp, 8 females and 15 males. Students are selected on the basis of various math competitions. Most students are chosen using the New Brunswick Math Competition for Grades 7, 8 and 9, and the Waterloo contests. The camp program included presentations on topics such as geometry and the universe, basketball math, and “Fireballs, meteorites and cameras” as well as sports, cultural, and social activities. A survey of the participants at the end of the camp showed that 16 students have indicated increased interest in math, science, or engineering and 19 are considering math, science, or engineering careers. The Camp will take place again in 2010, in May.

**Québec
Camp mathématique
de l'Association mathématique du Québec
à l'Université de Sherbrooke**



Ce camp résidentiel a eu lieu sur le campus de l'université de Sherbrooke à Sherbrooke, Québec, du 14 au 21 juin 2009, organisé par Mario Lambert. 25 étudiants (niveau collégial) ont participé au camp, 5 filles et 20 garçons. Les participantes et participants au camp sont choisis parmi les gagnantes et gagnants du concours collégial de l'Association mathématique du Québec. De façon à favoriser la participation des étudiantes et étudiants des régions éloignées, au plus deux étudiants en provenance du même cégep étaient invités. Le programme du camp incluait des présentations dynamiques des conférenciers, problèmes à résoudre en groupe en soirée, matériel complémentaire aux présentations en classe, problèmes à résoudre durant les ateliers. Un aperçu des participants au camp montre que tous les étudiants ont exprimé une croissance dans leurs intérêts dans les mathématiques et les sciences et la moitié prévoit faire une carrière en math, science ou génie. Ce Camp aura lieu de nouveau en 2010.

**Québec
L'université du Québec
à Rimouski**



Ce camp résidentiel a eu lieu sur le campus de l'université du Québec à Rimouski du 21 au 26 juin 2009, organisé par Roselyne Escarras. 11 étudiants (secondaires 4 et 5) ont participé au camp, une fille et 10 garçons. Au début d'avril, une invitation par la poste a été envoyée à tous les jeunes sur la liste reçue. Des appels téléphoniques à tous les jeunes ont suivi pour les inviter personnellement. Le programme du camp incluait des présentations sur des sujets comme l'algèbre de Boole, les constructions géométriques, l'histoire des courbes et bien d'autres. Il y avait aussi des activités sportives et sociales. Un aperçu des participants au camp montre que tous les étudiants ont exprimé une croissance dans leurs intérêts dans les mathématiques et les sciences et la moitié prévoit faire une carrière en math, science ou génie. Ce Camp aura lieu de nouveau au mois de juin 2010.

**British Columbia
Simon Fraser University
Surrey**



This Day Camp took place at the campus of the Simon Fraser University, Surrey, June 24-25, 2009, organized by Kouzniak Natalia. 31 students (Grades 9 and 10) participated in camp, 14 females and 17 males. The camp program included presentations on topics such as using statistics to cure what ails you, tessellations, math mania, using math to solve real world problems and problem-solving sessions. A survey of the participants at the end of the camp showed that all 31 students have indicated increased interest in math, science, or engineering and 24 are considering math, science, or engineering careers. The camp will take place again in 2009, in June.

**Ontario
University of Ottawa
L'université d'Ottawa**



At the Campus of the University of Ottawa, two Residential Camps took place simultaneously in English and French, July 26-30, 2009, organized by Graham Wright and Joseph Khoury. 43 students participated in the camps, 12 females and 31 males. Students are selected according to their performance in national math competition like Cayely and Opti-Math. Letters of invitation are sent to school principal. The principal is asked to pass the invitation to the student(s) in his school. The camp program included presentations on topics such as math and games, logic, careers in math, and team competitions and relays as well as sports, cultural, and social activities. A survey of the participants at the end of the camp showed that 40 students have indicated increased interest in math, science, or engineering and 40 are considering math, science, or engineering careers. The Camp will take place again in 2010, in June.

**Alberta
University of Calgary
Calgary**



This Residential Camp took place at the University of Calgary in Calgary, June 28 to July 4, 2009, organized by Joseph Ling. 22 students (Grades 7 to 10) participated in camp, 7 females and 15 males. Selection was made almost entirely based on performances in various math competitions, notably the Calgary and Edmonton competitions. Attempts were made to include as many girls as possible as well as candidates from outside Calgary and Edmonton. A survey of the participants at the end of the camp showed that 18 students have indicated increased interest in math, science, or engineering and 16 are considering math, science, or engineering careers. The Camp will not take place again in 2010 in Edmonton.

**Nova Scotia
Dalhousie University
Halifax**



**DALHOUSIE
UNIVERSITY**



This Residential Camp took place at the campus of Dalhousie University, Halifax, July 5-10, 2009, organized by Suraj Sikka and Roman Smirnov. 20 students (Grades 10 and 11) participated in camp, 9 females and 11 males. Equity of distribution in terms of gender, geographical location, and the preference of a chance o those who did not get one before. Consideration was also given to the participation in Waterloo Math Contests, grades, letters of reference. The Camp will take place again in 2010, in July.

**British Columbia
Simon Fraser University
Burnaby**



This Day Camp took place at the campus of the Simon Fraser University, Burnaby July 6-10, 2009, organized by Malgorzata Dubiel. 32 students participated in camp, 12 females and 20 males. Invitations were mailed to schools and individual teachers about the camp and information was on the website. Teachers were asked to nominate their students for the camp. This year, all nominated students were accepted. The camp program included presentations on topics such as excursions with binary numbers, unexpected identities, locusts, fish and mathematics, applying your knowledge of math, and problem-solving sessions as well as sports, cultural, and social activities. A survey of the participants at the end of the camp showed that 26 students have indicated increased interest in math, science, or engineering and 5 are considering math, science, or engineering careers. The Camp will take place again in 2010, in July.

**Ontario
York University
Toronto**



**UNIVERSITÉ
YORK
UNIVERSITY**



This Day Camp took place at the campus of York University, Toronto, July 27-31, 2009, organized by Chris Wu. 28 students (Grades 9 and 10) participated in camp, 6 females and 22 males. Students were invited based on excellent results on math competitions; primarily the Pascal contest. Only 6 females attended the camp despite more females being invited than males. 5 Strong inner city students were selected by the organizer of the camp who taught the students during the school year, to give them an opportunity to experience working with some of the top math students in Canada. The camp program included presentations on topics such as puzzles and brain teasers, combinatorial games, Pascal's triangle, number theory and logic puzzles. A survey of the participants at the end of the camp showed that 22 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 2010, in July.

Ontario
University of Western Ontario
London



This Day Camp took place at the campus of the University of Western Ontario, London August 5-7, 2009, organized by Ajneet Dhillon. 32 students participated in camp, 22 females and 10 males. Students (Grade 9) were invited according to their results in the Euclid math competition results.. The camp program included presentations on topics such as do-it-yourself fractals, jumping to conclusions, math connections, and problem-solving sessions as well as team competitions and a math relay. A survey of the participants at the end of the camp showed that all 29 students have indicated increased interest in math, science, or engineering and 30 are considering math, science, or engineering careers. The Camp will take place again in 2010.

Manitoba
University of Manitoba
Winnipeg



UNIVERSITY
OF MANITOBA



This Residential Camp took place at the campus of the University of Manitoba, Winnipeg August 16-19, 2009, organized by Donald Trim and Wiliam Korytowski. 20 students (Grades 9 and 10) participated in camp, 4 females and 16 males. Daily program consisted of lectures and problem-solving, based on the lectures in the morning and afternoon. In the late afternoon and evening, students participated in sports and/or mathematical presentations. The Camp will take place again in 2010,in August.

Saskatchewan
University of Regina
Regina



UNIVERSITY OF
REGINA



This Day Camp took place at the University of Regina Campus, Regina, for one day on September 26, 2009 organized by Ara Steininger. 33 students participated in camp, 20 females and 13 males. Information packages and a bookmark for the camp were delivered to all high school mathematics teachers within the city. E-mail messages with similar information were sent to all elementary schools within the city. This camp is open to anyone who wishes to attend. The camp program included presentations on topics such as numbers, binary sequences, and the Rubiks cube. A survey of the participants at the end of the camp showed that 22 students have indicated increased interest in math, science, or engineering and 21 are considering math, science, or engineering careers. The Camp will take place again in 2010, perhaps as a residential camp in May.

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Students and Organizers Comments

- *“I really learned a lot of new mathematics concepts. I am very curious about mathematics and I want to learn more. I really enjoyed the camp. Thank you for teaching us.”* **Participant, SFU, Surrey**
- *“The Camp was amazing and I would be honored to attend the camp again next year.”*, **Participant, University of Ottawa University**
- *“The challenges and competitions motivated me to work hard, focus on the question, and really try to find the answer. It was educational and fun at the same time.”* **Participant, Sir Wilfred Grenfell College, Newfoundland**
- *“When I first heard about “math camp” from my mom I was reluctant to go, because the prospect of sitting at a camp doing math all day wasn’t very inviting to me. However, she convinced me to give it a try and I was surprised at what math camp was actually like. I found a lot of the topics really interesting and new, and the problems we were given really got me thinking. I wasn’t surprised that most of the people were on much higher levels of math than I was, because that was what I was expecting, but I certainly learned a lot during my time at the camp.”* **Participant, York University**
- *“This was definitely the highlight of my summer . . . an incentive to continue my efforts.”* **Participant, National Camp.**
- *“It shows students who enjoy math and want to be challenged outside of regular school math different things that they wouldn’t have the chance to see. The students get to meet other people who are good at math and probably enjoy it like them. Its nice to be shown math that is interesting by university students and professors.”* **Participant, UNB**
- *“The camp was very successful, due, in part, to great student helpers and presenters we had this year. Many of the students are back at SFU, attending our “A Taste of Pi” program, including the one aboriginal student who attended the camp.”* **Organizer, SFU, Burnaby**
- *“The students, the instructors, the chaperons were all pleased with the camp. Every thing went smoothly. The chaperons did a great job and were greatly appreciated by the students. There was a tremendous support from the faculty of Mathematics and Statistics from Dalhousie univ. Faculty of Mathematics & Computer Sc.from Saint Mary’s univ. and from the office staff. The camp could not have been run without their support.”* **Organizer, Dalhousie**
- *“The group was excellent this year. All activities went well both on the individual and team levels. Most students showed interest in the topics covered in the morning classes and worked hard in teams during the afternoon competitions.*

Next year, we are thinking of bringing people from governments or industries to talk a bit on how math is used in their work.” **Organizer, University of Ottawa**
- *“The Camp was a great success. Participants got along well and quite uniformly enjoyed almost all workshops. Suggestions to improve include more activities, especially in the evening, and evening snacks. A majority of the camp indicated that they would like the camp to be longer.”* **Organizer, University of Calgary**

Commentaires des participants

- *Ce camp, très intéressant, m'a permis de comprendre davantage l'importance des mathématiques dans notre vie quotidienne.* **Rimouski**
- *Les cours étaient très intéressants et les activités très diversifiées. L'horaire était très bien chargé pour toujours nous tenir occupés. J'ai déjà participé l'année passée et j'ai bien aimé l'expérience.* **L'université du Québec, à Rimouski**
- *Les cours étaient très intéressants et j'ai bien aimé le fait que toutes les activités soient en liens avec les mathématiques.* **Rimouski**
- *Le camp permet aux jeunes de découvrir que les maths, ce n'est pas juste pour l'école.* **Rimouski**
- *C'est une rare occasion de rencontrer des gens autant sinon plus motivés que nous par ce domaine qui intéresse très peu de gens habituellement.* **Camp mathématique de l'Association mathématique du Québec**
- *Le camp m'a ouvert les yeux sur les plusieurs domaines de science que je ne connaissais pas auparavant. Les questions interrogées et les applications de math dans ces domaines sont très intéressantes. Ce fait m'attire à continuer mes études reliés fortement avec les maths.* **Camp mathématique de l'Association mathématique du Québec**
- *J'ai découvert beaucoup d'applications en mathématiques, ce qui m'a permis de penser à explorer des domaines variés dans mes études futures, au lieu de simplement étudier des mathématiques et de me décider par après.* **Camp mathématique de l'Association mathématique du Québec**

About the Canadian Mathematical Society

The Canadian Mathematical Society is the main national organization whose goal is to promote and advance the 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 partnerships with others, annually sponsors math camps and competitions across Canada.

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