Canadian Mathematical Society
Société mathématique du Canada

2025

# MATH CAMP REPORT

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# About the
# CMS MATH CAMPS

Since its inception in 2000, the CMS Math Camps program has captured the spirit of mathematics from coast to coast and has inspired young minds across the country. The program offers a unique opportunity for young Canadian students to explore a side of mathematics that is not accessible in a traditional 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 2025, the CMS hosted a total of 21 camps, regional and specialty combined. These camps took place in Alberta, British Columbia, Newfoundland and Labrador, New Brunswick, Nova Scotia, Ontario, Prince Edward Island, Québec, and Yukon. On average, more than 88% of students who attended a CMS math camp in 2025 indicated an increased interest in STEM following their participation.

For 2026, a total of 24 CMS Math Camps are projected to be held around the country.

# 2025 Regional Math Camps

*Regional camps are a series of mathematics enrichment programs held as either day or overnight camps, and last anywhere from one day to two weeks.*

# Blundon Seminar Math Camp

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Memorial University<br>St. John's, Newfoundland | **Camp Dates**<br>May 29 | **% of students indicating an increased interest in STEM after camp**<br>90% |
| **Students' Grade Level**<br>Grades 10-12 | **Number of Students**<br>38 (25 m + 13 f) | **% of students considering STEM careers**<br>95% |

**Efforts made to help students with financial difficulties:**

Students were selected based on their results in various written math contests including Blundon Contest, COMC, Euclid, Fermat, etc. Efforts were made to invite students interested in mathematics from under-represented groups. This year 13 girls attended the event and 16 people of color. We hope to be able to invite more students from remote parts of the province in the future with help of our sponsors.

**STEM-related activities that took place at the camp:**

During the seminar students attended a one-hour lecture about pure mathematics. There were two problem-solving sessions and Paper Chase activity, where groups of students competed in solving mathematical problems.

**Student comment(s):**

"*I really enjoyed the lecture. I really love classes where the instructors really seem passionate about what they are teaching the class. I enjoyed the Paper Chase a lot because we were able to work as a team in a way that we all could contribute. Meeting new people from different schools was also enjoyable for me. I enjoyed the problem solving and cooperative teamwork. I liked the food and the lecture, though the subject of the lecture felt way too abstract. The part where we solved ten questions with our team was also really fun.*"

# Camp collégial de l'AMQ

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Université Laval<br>Québec, Québec | **Camp Dates**<br>June 1 to 7 | **% of students indicating an increased interest in STEM after camp**<br>100% |
| **Students' Grade Level**<br>Cégep (17-19 yr old) | **Number of Students**<br>23 (21 m + 2 f) | **% of students considering STEM careers**<br>88% |

**Efforts made to help students with financial difficulties:**

The camp is free for participants. Accommodation and meals are provided.

**STEM-related activities that took place at the camp:**

- "Fragments of infinity: representations, divisions, and approximations"
- "Wave equations: from modeling to control"
- "A Euclidean and Archimedean quartet"
- "Tiling and self-tiling"
- "Domino tiling"
- "Spherical geometry"
- "Mathematical games"
- "Conway's Game of Life"
- "Bias, Variance, and Estimation: Lessons from a Famous Problem"
- "Mathematical and Statistical Challenges"
- "The Mathematics of the Rubik's Cube"
- "Introduction to Artificial Intelligence: Neural Networks, Reinforcement Learning, and Applications in Mathematical Research"
- "Population Dynamics: The Mathematics Behind Ecosystems and Epidemics"

**Best practices/activities at the camp:**

A good balance is ensured between presentations on theory and workshops offering practical and experiential activities. In some workshops, participants work together in random teams to encourage social interaction among participants. Finally, facilitators and speakers are invited to share a meal with participants. According to surveys, participants greatly appreciated this opportunity to interact with the speakers.

# CMS-UPEI-AARMS Regional Math Camp

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>University of PEI<br>Charlottetown, PEI | **Camp Dates**<br>May 2 to 4 | **% of students indicating an increased interest in STEM after camp**<br>93.75% |
| **Students' Grade Level**<br>Grades 10-11 | **Number of Students**<br>16 (9 m + 7 f) | **% of students considering STEM careers**<br>100% |

**Efforts made to attract under-represented groups:**

Dietary needs were accommodated to reduce participation barriers. This included providing halal food for Muslim students and ensuring meals were safe for participants with nut allergies. The application form was updated to include gender-neutral language and ensuring accommodations could be made with UPEI residence for any non-binary or transgender students (although none attended this year).

**Efforts made to help students with financial difficulties:**

The camp was offered at no cost to all participants.

**STEM-related activities that took place at the camp:**

The students took part in various interactive talks and team problem-solving sessions.

**Best practices/activities at the camp:**

Team problem solving activities seem to be the most enjoyable for the students and helped to facilitate the students making friends. Having engaged undergraduate student volunteers whose demographics reflected that of the attendees.

**Student comments:**

"*I feel I learned a lot! I also liked how we worked together to solve the tougher problems.*"

"*I really enjoyed this camp! Thank you for the opportunity to come here.*"

"*With the team problem solving I got to see different ways to solve a question.*"

# AARMS-Dalhousie Senior Math Camp

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Dalhousie University<br>Halifax, NS | **Camp Dates**<br>July 20 to 25 | **% of students indicating an increased interest in STEM after camp**<br>95% |
| **Students' Grade Level**<br>Grades 10-11 | **Number of Students**<br>23 (7 m + 12 f + 1 non-binary) | **% of students considering STEM careers**<br>95% |

**Efforts made to help students with financial difficulties:**

One student of [redacted] origin was living with her mother in a remote area and could not have afforded to pay the camp registration fee. As per the camp's stated policy, the fee was waived. Transportation was also organized for the student, who was driven to and from the camp by another family living in the same rural area.

**STEM-related activities that took place at the camp:**

All of the activities were math related. Activities included: Liar's Bingo, graph colourings, puzzle solving, logic circuits, game theory, infinity, complex variables, black holes and general relativity, Monte Carlo simulation, Fibonacci numbers and the golden ratio, continued fractions, conic sections, and dynamical systems.

**Best practices/activities at the camp:**

The graduate student chaperones were very good, and the camp started with effective ice breakers on arrival day. By the time the math activities started, the students had already started to bond. They were a very tight-knit group by the end. All of the students are the top math students in their high schools. Many had gotten high scores in math competitions. So the focus of the camp definitely was not "don't be scared of math", but rather "look, there are so many kinds of amazing math".

**Student comment(s):**

"*I was already interested in math / science, but this just showed me how many different fields there are within math itself.*"

"*I enjoyed having time to talk to other campers and make new friends.*"

"*I really enjoyed learning about complex numbers, black holes, and the golden ratio.*"

"*I definitely want to study these areas in university.*"

# Math Experience

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>York University<br>Toronto, ON | **Camp Dates**<br>August 18 to 22 | **% of students indicating an increased interest in STEM after camp**<br>100% |
| **Students' Grade Level**<br>Grades 7 to 10 | **Number of Students**<br>38 (30 m + 8 f) | **% of students considering STEM careers**<br>100% |

**Efforts made to attract under-represented groups:**
Strong Grade 7, 8, and 9 students were selected based on their outstanding achievement on the Pascal, Cayley, Fermat, Euclid, Fryer, Galois, CIMC or CSMC (University of Waterloo) competitions and COMC. Preference was given to females to balance out the male: female ratio.

**Efforts made to help students with financial difficulties:**
The organizer made financial assistance available to students. In the past, when financial difficulties were brought to my attention, families were allowed to pay whatever they could afford. This year, there were 4 students who could not afford to pay for camp, and their fees were waived.

**STEM-related activities that took place at the camp:**
In several of the presenters presentations, and during the daily problem solving and competition sessions, in addition to the morning warm-up and brainteaser sessions, the "process of STEM" (identifying a problem, and developing innovative and creative problem solving strategies towards solving it) was encouraged and promoted.

**Best practices/activities at the camp:**
Students traditionally enjoy the brainteaser/warm-up (logic) problems at the beginning of camp, and the problem solving/team competitions at the end of camp. Students enjoyed ice breaker games on the first day to get to know each other. Students enjoyed our Escape Room trip on the last day of camp and the opportunity to socialize with their peers.

**Student comment(s):**
"*I really enjoyed Math Camp. The atmosphere was great, and the variety of topics with experienced speakers greatly increased my interest in math, along with exposing me to open problems that I would not have otherwise encountered. The puzzles and brain teasers were very fun, as they required logic, math and problem-solving skills, while having multiple solutions. The volunteers were hardworking and always there to help, while the other participants created a friendly and collaborative environment. Overall, my camp experience was amazing, and I hope I can be invited next year.*"

**Organizer's general comments:**
"*This year, I continued to promote mathematics through multi-layered questions with several entry points such that they are more accessible to a wider range of students and their ability levels.*

*I have been finding that the general skill set of students has gone down. Perhaps as a result of several specialized academic programs becoming lottery based as opposed to merit based. Another contributing factor could be because Grade 9 and 10 math is now de-streamed.*

*It is increasingly harder to get students to complete their camper evaluation forms.*"

# Math Quest

**Quick facts and figures**

| | |
|---|---|
| **Camp Location**<br>Queen's University<br>Kingston, ON | **Camp Dates**<br>August 10 to 15 |
| **Students' Grade Level**<br>Grades 8 to 12 | **Number of Students**<br>24 (23 f + 1 non-binary) |

**Efforts made to attract under-represented groups:**

The camp is marketed to girls interested in math and other stem subjects. Most of the advertisement is through word of mouth (lots of repeat campers), as well as being listed on several websites/lists of summer camps.

**Efforts made to help students with financial difficulties:**

There is an extensive bursary program to assist anyone who is interested in coming to be able to afford it. Thousands of dollars are given out in bursaries each year ($7500 last summer).

**STEM-related activities that took place at the camp:**

Mathematical amazing race, linear regression, beat the casino, moneyball, bridge building, Fibonacci numbers in nature, mathematical tiling, graph theory, SIR modelling, poisson random variables, cellular automata, electrical circuits, compass and straightedge geometry, set theory, contest math, genetics and conditional probability, mathemagic, and an escape room.

**Best practices/activities at the camp:**

Keeping things light and fun. Hiring a great staff to share their joy of mathematics and other subjects.

**Organizer's general comments:**

"*It was a great success again, and we thank the CMS for their continued support.*"

# MPT Math Camp

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Math Plus Tutors Learning Centre<br>Sarnia, ON | **Camp Dates**<br>July 28 to August 1 | **% of students indicating an increased interest in STEM after camp**<br>100% |
| **Students' Grade Level**<br>Grades K to 4 | **Number of Students**<br>11 (7 m + 4 f) | |

**Efforts made to help students with financial difficulties:**

Through advertisement, parents from low income families were invited to apply for a full/partial subsidy for the camp. Full subsidies (coverage of 100% of the camp registration fees) were given to families receiving financial assistance from the county, while partial subsidies (40% discount) were given to families with low income but who do not qualify for the financial assistance.

**STEM-related activities that took place at the camp:**

Number Sense and Numeration, Units, Measurements, Fractions, Ratios, Proportions, Percentages, Data Management, Surveys, Conduct a survey, Result Graphs, Introduction to Algebra

**Best practices/activities at the camp:**

1- Teaching/learning math through hands on activities;
2- Practicing differentiated learning (as we had students from K-4 grades;
3- Engaging the community by conducting a few math camp activities in partnership with neighbouring businesses and residents.

**Organizer's general comments:**

*"This camp was an energetic one where the attendants alongside camp counsellors did many outdoor activities to practice math concepts in the community. They did measurements, money math, geometry, data management and more throughout engaging activities. At the end of the camp, they didn't think that they were doing a math camp!"*

# RabbitMath

**Quick facts and figures**

| | |
|---|---|
| **Camp Location**<br>Queen's University<br>Kingston, ON | **Camp Dates**<br>July 27 to August 1 |
| **Students' Grade Level**<br>Grades 9 to 12 | **Number of Students**<br>25 (12 m + 13 f) |

**Efforts made to help students with financial difficulties:**

There is an extensive bursary program for students who apply. This amount varies depending on the request from the parent guardian, but can cover as much as the full cost of the camp.

**STEM-related activities that took place at the camp:**

There was lots of math. A lot of work with Desmos was done in the first couple of days. Students were given a series of projects to work on and told to create Desmos accounts to save their work. There was some probability work and some generally interesting problems later in the week.

**Organizer's general comments:**

"*It was a big success! First time running RabbitMath as a residential camp. Campers had a good time.*"

# Science Rocks! (Abbotsford, 3 weeks)

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>University of the Fraser Valley<br>Abbotsford, BC | **Camp Dates**<br>July 7 to 11<br>July 14 to 18<br>July 21 to 25 | **% of students indicating an increased interest in STEM after camp**<br>61% |
| **Students' Grade Level**<br>Grades 4-6 | **Number of Students**<br>15 (8 m + 7 f)<br>28 (19 m + 9 f)<br>24 (14 m + 10 f) | |

**Efforts made to attract under-represented groups:**

Advertisement is made through school districts in the Fraser Valley, and also specifically to Indigenous Principals in our local communities. Facebook, Instagram, X, UFV Blog, and social media posts are shared through our UFV Indigenous Student Centre. Also CIVL radio, and flyer distribution.

**Efforts made to help students with financial difficulties:**

Subsidies are offered for local Indigenous families, families with multiple siblings signing up, UFV students and alumni, or families signing up for multiple camps. Lunch is provided, as well as snacks are available.

**STEM-related activities that took place at the camp:**

Making (marble) roller coasters (forces), making slime (chemistry), sound experiments (doppler effect), building towers (engineering), extracting fruit DNA, scavenger hunt, 3d printing, computer lab, egg drop, Van de Graaff generator, Newton's Laws activity, mobius strips, origami, making a board game, making slushies, catapults, bottle rockets, making crystals, elephants toothpaste, play doh volcano, fire snake, predator/prey dynamics, nature walks and collections.

**Best practices/activities at the camp:**

Parents generally appreciated that lunch is included. Favourite activities include: making making slime, elephant toothpaste, volcanos (baking soda + vinegar), bottle rockets, scavenger hunt, static electricity/Van De Graaff generator, and nature exploration.

**Organizer's general comments:**

"*Our camps are well known in the community. Costs continue to go up and grant funding was less this year. We continue to struggle to keep fees affordable and cover our costs.*"

# Science Rocks! (Chilliwack, 3 weeks)

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>University of the Fraser Valley<br>Chilliwack, BC | **Camp Dates**<br>August 5 to 8<br>August 11 to 15<br>August 18 to 22 | **% of students indicating an increased interest in STEM after camp**<br>61% |
| **Students' Grade Level**<br>Grades 4-6 | **Number of Students**<br>11 (4 m + 7 f)<br>25 (14 m + 11 f)<br>17 (12 m + 5 f) | |

**Efforts made to attract under-represented groups:**

Advertisement is made through school districts in the Fraser Valley, and also specifically to Indigenous Principals in our local communities. Facebook, Instagram, X, UFV Blog, and social media posts are shared through our UFV Indigenous Student Centre. Also CIVL radio, and flyer distribution.

**Efforts made to help students with financial difficulties:**

Subsidies are offered for local Indigenous families, families with multiple siblings signing up, UFV students and alumni, or families signing up for multiple camps. Lunch is provided, as well as snacks are available.

**STEM-related activities that took place at the camp:**

Making (marble) roller coasters (forces), making slime (chemistry), sound experiments (doppler effect), building towers (engineering), extracting fruit DNA, scavenger hunt, 3d printing, computer lab, egg drop, Van de Graaff generator, Newton's Laws activity, mobius strips, origami, making a board game, making slushies, catapults, bottle rockets, making crystals, elephants toothpaste, play doh volcano, fire snake, predator/prey dynamics, nature walks and collections.

**Best practices/activities at the camp:**

Parents generally appreciated that lunch is included. Favourite activities include: making making slime, elephant toothpaste, volcanos (baking soda + vinegar), bottle rockets, scavenger hunt, static electricity/Van De Graaff generator, and nature exploration.

**Organizer's general comments:**

"*Our camps are well known in the community. Costs continue to go up and grant funding was less this year. We continue to struggle to keep fees affordable and cover our costs.*"

# SFU Math Camp (Burnaby)

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Simon Fraser University<br>Burnaby, BC | **Camp Dates**<br>July 23 to 27 | **% of students indicating an increased interest in STEM after camp**<br>90% |
| **Students' Grade Level**<br>Grades 9-10 | **Number of Students**<br>24 (10 m + 14 f) | **% of students considering STEM careers**<br>75% |

**STEM-related activities that took place at the camp:**

Cryptography was the theme of the camp this year. Students learned about a variety of crypto-systems, built cipher wheels out of paper, played with encryption and decryption, learned some elementary number theory, probability and statistics. They learned how to use these tools to crack ciphers using cryptanalysis techniques. Students also learned to use Python for cryptography and cryptanalysis. There was plenty of opportunities for students to break out into small groups and work on problems. The first two days had outdoor scavenger hunts that let the students practice what they learned for basic cryptosystems and modular arithmetic. The fourth day of the camp had a 'mystery activity', which took the form of newspaper clippings from a fictitious small town university, where students had to decode a number of encrypted messages to solve the mystery. The fifth, and final, day concluded with an escape-room styled activity which put there skills to the ultimate test. This was unanimously reported as the highlight of the camp on the survey.

**Best practices/activities at the camp:**

Outdoor scavenger hunt, decrypting the codes in newspaper clippings to solve a mystery, and the final escape room challenge. The guided/structured into to python.

**Organizer's general comments:**

*"This years' camp was fun and educational. Students were quick to digest the elements of classical cryptography and were able to excel at using python to explore cryptography and crack cipher text. New this year were the outdoor scavenger hunt activities centered on modular arithmetic. This opportunity for fresh air and testing their skills was enjoyed by all."*

# SFU Math Camp (Surrey)

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Simon Fraser University<br>Surrey, BC | **Camp Dates**<br>June 24 to 25 | **% of students indicating an increased interest in STEM after camp**<br>100% |
| **Students' Grade Level**<br>Grades 9-10 | **Number of Students**<br>48 (25 m + 23 f) | **% of students considering STEM careers**<br>96% |

**Efforts made to attract under-represented groups:**

Information about the upcoming math camp was posted on the SFU Math Department web site and sent out to the high school teachers in Greater Vancouver Reginal Area. The teachers were encouraged to nominate female students and representatives from visible minorities.

**STEM-related activities that took place at the camp:**

All presentations and competitions were STEM-related:

- "How Sure Are You? Calibrating Your Confidence" (P. Tupper) – emphasized the importance of estimates in science and engineering. Teams competed by providing reasonable estimates in length, weight, and time without using external resources.
- "Understanding Canadian Demography with Mathematics" (A. MacPherson) – applied linear algebra to Statistics Canada census data to analyze Canada's current and projected age distribution, showing how interdisciplinary STEM informs public policy.
- Problem-Solving Competition (J. Chen, V. J. Singh) – 8 teams of 6 students solved algebra, geometry, and logic problems at their school level.
- "Brain Teasers and the Game of Set" (J. Niezen) – group work on puzzles such as domino tiling, the bridges of Königsberg, magic squares, shortest path, the Game of Set, and other word problems.
- "Let's Assemble a Genome: Yes, It Is a Mathematical Question" (C. Chauve) – showed how Eulerian and Hamiltonian graphs are used to design algorithms for genome assembly.
- "Excursions with Binary Numbers" (J. Gray) – explored topics tied to binary representation, including magic cards, the chessboard legend, finger counting to 1023, betting systems, Egyptian multiplication, Towers of Hanoi, and the game of Nim.
- "Going Viral: The Mathematics of Infectious Diseases" (B. Ashby) – introduced mathematical models of epidemics, showing how they predict outbreaks and determine vaccination thresholds for herd immunity.

**Student comment:**

*"The SFU Surrey Math Camp was a great experience overall. Over the course of the camp/program, we explored various topics with workshops that were interactive and had hands on activities. Another part that I really liked was how the topics related to real life subjects and problems."*

# UNB/CMS Math Camp

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>University of New Brunswick<br>Fredericton, NB | **Camp Dates**<br>May 9 to 11 | **% of students indicating an increased interest in STEM after camp**<br>90% |
| **Students' Grade Level**<br>Grade 10 | **Number of Students**<br>19 (13 m + 6 f) | **% of students considering STEM careers**<br>90% |

**Efforts made to attract under-represented groups:**

Campers are invited based primarily on their performance on the previous year's Grade 9 NB Math Competition, although we do advertise the Camp to all NB High Schools and solicit applications from any interested Grade 10 or home-schooled students. The goal is to balance the gender ratio of the campers by maximizing the number of female students who are invited, but this ratio seems stubborn: this year, 19 campers were welcomed to UNB, six female and thirteen male. While experiments have been made with alternate recruitment strategies, the competition-based invitation format does elicit the most positive responses, with many students and teachers reporting that receiving an invitation on University letterhead based on their previous year's performance is an honour.

**STEM-related activities that took place at the camp:**

Logic puzzles, strategies for games like KenKen and Killer SuDoku, and 3D geometry via Zometool.

**Best practices/activities at the camp:**

Group activities, manipulatives, a diverse program so that each activity does not go on too long (have breaks if a longer activity is necessary).

**Student comment(s):**

"*I was worried for not knowing enough to do the math work in the camp when I first signed up but the camp isn't at all stressful!*"

"*It was a unique experience to me since I wasn't quite aware of how some abstract concepts in math might be practical in real life.*"

"*The camp is quite fun, it shows students the math that they don't usually learn about in schools, and it definitely helps the students exploring university of career life in math or math-related areas.*"

# Western Math Camp - Beta Camp

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Western University<br>London, ON | **Camp Dates**<br>July 21 to 25 | **% of students indicating an increased interest in STEM after camp**<br>94% |
| **Students' Grade Level**<br>Grades 8 and 9 | **Number of Students**<br>22 (11 m + 11 f) | **% of students considering STEM careers**<br>25% |

**Efforts made to help students with financial difficulties:**

Discount codes were offered if requested. There also was an Indigenous student Bursary to waive their registration fee.

**STEM-related activities that took place at the camp:**

The five-day camp followed a similar procedure every day. Each day had two talks (with the exception of Friday) as well as three different activities: The Morning Mysteries, The Indianapolis Tests, and The Weekly Challenge.

- During each camp nine talks --two on Day 1-4 and one on the last day-- were delivered by members of the department, teacher volunteers, or camp counselors. Details can be found in (see Appendix A). The main goal of the talks is to expose the campers to new mathematical content and show what mathematical content one can expect to learn in advanced math.
- Morning mysteries (logical and mathematical puzzles solving Teamwork): We were able to use the puzzles from previous camps. The puzzles were mainly collected by the coordinator.
- Indianapolis series (Individual tests consist of multiple-choice questions from different contents): The new parts of these questions were prepared by the assistant coordinators, in particular by Rolan Fahd and Hartman Tran.
- Week challenges (Teamwork project-based activity completed by the teams through the whole camp week): We were able to use the week challenges that were developed in the previous years by different grad students. The camp counselors helped run the Week Challenges given past years content.

**Student comment(s):**

*"I like in math camp when smaller pieces fall into a large solution."*

# Western Math Camp - Theta Camp

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Western University<br>London, ON | **Camp Dates**<br>July 14 to 18 | **% of students indicating an increased interest in STEM after camp**<br>83% |
| **Students' Grade Level**<br>Grade 10 | **Number of Students**<br>23 (14 m + 9 f) | **% of students considering STEM careers**<br>91% |

**Efforts made to help students with financial difficulties:**

Discount codes were offered if requested. There also was an Indigenous student Bursary to waive their registration fee.

**STEM-related activities that took place at the camp:**

The five-day camp followed a similar procedure every day. Each day had two talks (with the exception of Friday) as well as three different activities: The Morning Mysteries, The Indianapolis Tests, and The Weekly Challenge.

- During each camp nine talks --two on Day 1-4 and one on the last day-- were delivered by members of the department, teacher volunteers, or camp counselors. Details can be found in (see Appendix A). The main goal of the talks is to expose the campers to new mathematical content and show what mathematical content one can expect to learn in advanced math.
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- Indianapolis series (Individual tests consist of multiple-choice questions from different contents): The new parts of these questions were prepared by the assistant coordinators, in particular by Rolan Fahd and Hartman Tran.
- Week challenges (Teamwork project-based activity completed by the teams through the whole camp week): We were able to use the week challenges that were developed in the previous years by different grad students. The camp counselors helped run the Week Challenges given past years content.

**Best practices/activities at the camp:**

Flyers and post cards were distributed to students and schools. Used the email outreach contact list with about 800 names to reach out to community.

**Student comment(s):**

*"This was a good experience and really challenged me to think outside my thinking zone. And I feel like I learned skills I can use in the future."*

# 2025 Specialty Math Camps

*Specialty camps follow the same format as regional camps, but are specifically designed for underrepresented groups in math, including, but not limited to, Indigenous, Black, and female-identifying students. These camps are tailored to the needs of the community they serve, allowing students to understand mathematics in a culturally and socially relevant context.*

# Black Educators Association/DAL Math Camp

**Quick facts and figures**

| | |
|---|---|
| **Camp Location**<br>Dalhousie University<br>Halifax, NS | **Camp Dates**<br>July 6 to 11 |
| **Students' Grade Level**<br>Grades 7-9 (12-14 yr old) | **Number of Students**<br>24 (12 m + 12 f) |

**STEM-related activities that took place at the camp:**

The students were introduced to binary numbers via card tricks and games. Further sessions built on the students' knowledge of binary numbers and arithmetic. For example, they decoded Liar's Bingo cards, learnt and analyzed the middle-thirds card trick using trinary representation. Further, the students spent a half hour learning about conic sections (Prof. Roman Smirnov) and an afternoon participating in Math games.

**Best practices/activities at the camp:**

All diversity expectations were met for the camp: The camp was gender balanced in every aspect and activity. Campers came from many different regions of NS. The teaching model for the camp aspires to have a faculty member work closely with black school teacher. The rationale being that each learns from the other. The two instructors worked together on each session and usually presented the sessions together. This is a learning experience for both instructors. We endeavour to implement the same teaching model for the coding sessions in future camps.

# Connecting Math to Our Lives and Communities

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>St. Francis Xavier University<br>Antigonish, NS | **Camp Dates**<br>July 1 to August 20 | **% of students indicating an increased interest in STEM after camp**<br>100% |
| **Students' Grade Level**<br>Grades 4 to 12 | **Number of Students**<br>40 (23 m + 17 f) | **% of students considering STEM careers**<br>100% |

**Efforts made to attract under-represented groups:**

CMTOLC runs in partnership with X-Project and provides after school mathematics enrichment to students in four Mi'kmaq and one African Nova Scotian communities (Paqtnkek, Pictou Landing, We'koqma'q, & the CAEP program in Antigonish). BEd and undergrad students with a math background go to each community biweekly from the first week of October through the first week of April to engage in hands-on investigations, foster discussion, learn and make connections to community, and explore math as a way of reading and writing the world.

**Efforts made to help students with financial difficulties:**

This camp was free with transportation provided.

**STEM-related activities that took place at the camp:**

- X-Chem: Acid-base titration set up for the students to complete
- How long is Nova Scotia's coastline?
- Binary Code Station
- Memory Test
- Price Tag Challenge
- What materials make the best bridge for a car to go over
- Human Nutrition

**Best practices/activities at the camp:**

Working in partnership with communities is our highest priority. Workshops were lead by faculty, staff, students, and community elders/knowledge holders from 11:15-12:45. The workshops were free-flowing, meaning students had the hour and a half to visit their sessions of interest. We did not create a timetable, so students could move in-and-out of the workshops at different paces. The typical structure is a quick introduction to the topic, followed by a hands-on activity for approximately 15 minutes that would engage students in using mathematical thinking in context.

# Dalhousie Indigenous Math Camp - DIMC

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Dalhousie University<br>Halifax, NS | **Camp Dates**<br>July 28 to August 1 | **% of students indicating an increased interest in STEM after camp**<br>85% |
| **Students' Grade Level**<br>Grades 7-9 (12-14 yr old) | **Number of Students**<br>13 (9 m + 4 f) | **% of students considering STEM careers**<br>85% |

**Efforts made to attract under-represented groups:**

The main goal of the math camp was to increase the involvement of under-represented groups – in this case, indigenous students across Nova Scotia. All thirteen students were Mi'kmaq. The campers were split between city and country life; about half (7 out of 13) were rural, the rest urban. A special attempt was made to be inclusive with respect to culture. Elders were brought in to open and close the camp and to share knowledge. In particular, one of the smudgings took place at a newly built outdoor circular area on the Dalhousie campus (in front of the Life Sciences Centre), where both Elder Catherine Martin (Dalhousie's Director of Indigenous Community Engagement) and John R. Sylliboy (Dalhousie's Vice Provost Indigenous Relations) spoke to the group and shared knowledge, both in English and Mi'kmawi'simk. Through consultation with the indigenous community, it was ensured that there were no cultural or community holidays during the camp. The venue chosen (Dalhousie University) was wheelchair accessible, had gender neutral washrooms and was welcoming to participants from diverse communities.

**Efforts made to help students with financial difficulties:**

The camp was free to all participants.

**STEM-related activities that took place at the camp:**

The daily learning activites included:

- Mathematical puzzles
- Mathematical games (including SET)
- Statistics
- Music and mathematics (with the rental of ukuleles)
- Eulerian paths and cycles with a real life example of the Bridges of Koenigsberg
- Games

Evening activities included an ice breaker evening (including a creative toppling dominoes), a visit to the Dalhousie Indigenous Student Centre, a walk to downtown Halifax, and a karaoke evening in the Ko'jua Okuom room in the Killam library on the Dalhousie Campus.

# Entrepreneurship Camp

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>Yukon University<br>Whitehorse, YK | **Camp Dates**<br>July 21 to 25 | **% of students indicating an increased interest in STEM after camp**<br>55% |
| **Students' Grade Level**<br>Grades 6-8 | **Number of Students**<br>14 (7 m + 7 f) | **% of students considering STEM careers**<br>45% |

**Efforts made to attract under-represented groups:**

- Early registration for Indigenous youth (as sometimes getting information, funding can be more challenging)
- Split registration to support equitable registration ("girls and non-binary youth", "boys and non-binary youth") - both encouraging female participants, and giving space for gender-diverse youth
- Promotion of programming with a variety of partners (Multicultural Centre, Public Library, etc.) in order to get the word out in spaces where the university traditionally would not be the most visible

**Efforts made to help students with financial difficulties:**

Funding from CMS made it possible to offer the camp at a significantly reduced cost.

**STEM-related activities that took place at the camp:**

Camps took part in various lessons, activities and games relating to entrepreneurship and business. They used their creativity to develop budgeting and interpersonal skills, as well as create their own fictional business.

**Best practices/activities at the camp:**

- Ensuring a balance of outdoors based activities to create a fun environment for youth
- Going through a camp planning process that balances creativity, technology use, group work, individual work, movement, connection to place and skills building

**Student comment(s):**

"*I really liked learning about starting a business - I would like to learn even more about dealing with money.*"

**Organizer's general comments:**

"*We would like to thank the Canadian Math Society for helping yet again support our entrepreneurship camp. It is an extremely popular camp, with an extensive waitlist each year - and one that the youth look forward to. This way of including applied math in something that connects to entrepreneurs that they see around the community is very effective in increasing engagement & leaving youth inspired!*"

# Math Attack Summer Camp for Girls

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>University of Calgary<br>Calgary, AB | **Camp Dates**<br>June 29 to July 6 | **% of students indicating an increased interest in STEM after camp**<br>100% |
| **Students' Grade Level**<br>Grades 7-10 | **Number of Students**<br>21 | **% of students considering STEM careers**<br>90.5% |

**Efforts made to attract under-represented groups:**

Due to the intensive nature of the academic program, it's important that participants show a strong aptitude for math and are enthusiastic to participate. Participants were first shortlisted based on these attributes. Then, priority was given to diversity by balancing participants demographics (e.g., age, school, city) and by giving priority to students from other traditionally underrepresented groups. All of the campers were female students. The fact that this camp is exclusively for students who identify as girls was a draw for many of the participants.

**Efforts made to help students with financial difficulties:**

Families were encouraged to ask for financial aid if needed. Four students requested financial aid and were given full bursaries for the camp (i.e., the registration fee was waived for these four students).

**STEM-related activities that took place at the camp:**

Throughout the week, students engaged in mathematical sessions that explored topics such as cryptology, game theory, optimization, statistics, and actuarial science. They investigated how x-ray machines work using tomography techniques, engaged in a Math Murder Mystery, and competed in a math-based Escape Room.

**Best practices/activities at the camp:**

Students enjoy having interactive components during the sessions (e.g., active learning activities) and sessions that are more hands-on (e.g., math scavenger hunt).

**Sample student comments:**

"*This camp has changed the way I think about mathematics. I definitely want to explore even more branches of mathematics, and now I'm considering a degree related to mathematics.*"

"*This camp definitely encouraged me to pursue my dream of becoming a biomedical engineer, it helped me meet new people who are just as interested in math as I am, and it also did expose me to female role models who really inspired me through this journey.*"

# X-STEM Camp for Mi'kmaw and African Nova Scotian Students

**Quick facts and figures**

| | | |
|---|---|---|
| **Camp Location**<br>St. Francis Xavier University<br>Antigonish, NS | **Camp Dates**<br>May 29 to June 1 | **% of students indicating an increased interest in STEM after camp**<br>100% |
| **Students' Grade Level**<br>Grades 7-11 | **Number of Students**<br>31 (11 m + 20 f) | **% of students considering STEM careers**<br>85% |

**Efforts made to attract under-represented groups:**

Offered at no cost to participants, the X-STEM Overnight Camp is run through StFX's Faculty of Education and is organized by the same team that runs the outreach program, Connecting Math to Our Lives and Communities (CMTOLC). Similarly, the new camp allows students the opportunity to explore the value of STEM in their daily lives and focuses on exploring Mi'kmaq and African Nova Scotian ways of knowing within the STEM field by partnering with Elders and Knowledge Keepers as well as StFX faculty and staff.

**Efforts made to help students with financial difficulties:**

There was no cost for participants and travel was compensated or provided.

**Best practices/activities at the camp:**

A highlight of the three-day event included the Friday afternoon programming at Crystal Cliffs, an off-campus outdoor property owned by StFX, where the youth participated in land and sea-based learning alongside both StFX professors and Elders and Knowledge-Keepers. Community guests included Carol Ann Jeddore, who taught Mi'kmaw words for plants and nature; Terry Denny, who shared traditional woodworking knowledge; and Joe and Judy Googoo, who imparted land-based knowledge including identifying and discussing various medicines alongside StFX nursing educator Emily Peter-Paul. The team at X-Oceans organized a scavenger hunt, and the StFX Biology Department hosted an activity to learn about bugs and slugs and arranged for their summer students to suit up and swim out in scuba gear to catch ocean life such as lobster and crabs for everyone to view.

**Student comment(s):**

*"My favourite thing about the camp was meeting new people and learning new stuff about nursing."*

*"I was nervous to go at first but when I got there I felt more excited because of how nice people were."*

*"It was really fun. I would love to go back to that university."*

# Full Camp List

***Black Educators Association/DAL Math Camp** (Halifax, NS)
**"Blundon Seminar" Math Camp** (St. John's, NL)
**Camp collégial de l'AMQ 2025** (Québec, QC)
**CMS-UPEI-AARMS Regional Math Camp** (Charlottetown, PEI)
***Connecting Math to Our Lives and Communities** (Antigonish, NS)
**Dalhousie-AARMS Math Camp** (Halifax, NS)
***Dalhousie Indigenous Math Camp - DIMC** (Halifax, NS)
***Entrepreneurship Camp** (Whitehorse, YK)
***Math Attack Summer Camp for Girls** (Calgary, AB)
**Math Experience** (Toronto, ON)
**Math Quest** (Kingston, ON)
**MPT Math Camp** (Sarnia, ON)
**RabbitMath** (Kingston, ON)
**Science Rocks!** (Abbotsford, BC)
**Science Rocks!** (Chilliwack, BC)
**SFU Math Camp** (Burnaby, BC)
**SFU Math Camp** (Surrey, BC)
**UNB/CMS Math Camp** (Fredericton, NB)
**Western Math Camp - Beta Camp** (London, ON)
**Western Math Camp - Theta Camp** (London, ON)
***X-STEM Camp for Mi'kmaw and African Nova Scotian Students** (Antigonish, NS)

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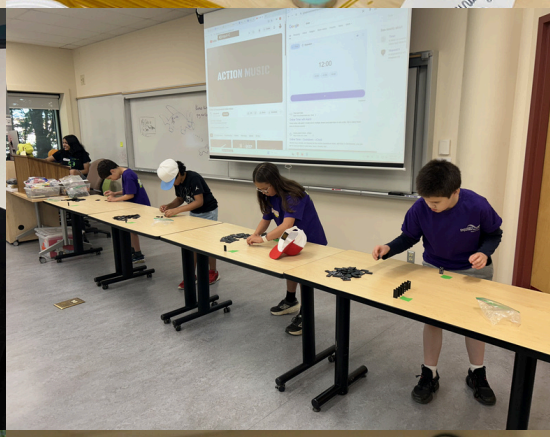
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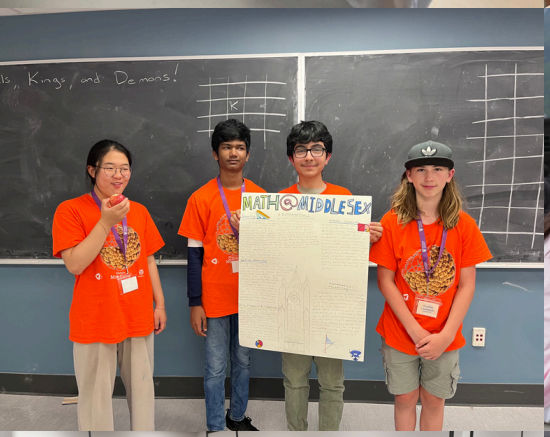
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