

2020 Competitions Report

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2020 has been a year of firsts for CMS Competitions! Due to the pandemic, our national teams competed in the first online European Girls Mathematical Olympiad (EGMO) and the first online International Mathematical Olympiad (IMO). This year, the CMS also introduced a new competition called the Canadian Mathematical Gray Jay Competition (CMGC) aimed at younger students wishing to compete in a fall math competition. This competition was created to capture the interest of young students who are passionate about mathematics and to celebrate 75 years of CMS!

The EGMO was slated to take place in Egmond aan Zee, Netherlands from April 15 to 21, but quickly pivoted to a virtual competition. The training camp took place in Toronto at the Fields Institute this past February with Leader Dorette Pronk (Dalhousie) and Deputy Leader Diana Costaneda Santos (Waterloo) training our 2020 team; Anna Krokhhine, Siyu (Elaine) Liu, Jennifer Wang and Amelie Zhou. There were many other individuals who helped with the training including Daniel Spivak, Jacob Tsimerman, Mike Pawliuk, Lindsey Shorser, and Byung Chun.

The competition started with virtual opening ceremonies and the leaders worked with the parents to supervise the students. The girls worked hard and won one silver for Jennifer, one bronze for Anna and an honourable mention for Elaine. Deputy Leader, Diana Castaneda Santos, was very pleased with the results and said: "Our team came up with unique and original solutions to some of the problems and I was impressed to see the level of creativity and involvement from all the members on our team." She acknowledged the challenges of writing the competition virtually under COVID restrictions: "Under these new conditions, we all adjusted our schedules and managed to stay connected each day of the competition. I am glad that our team succeeded in this competition. Their efforts and commitment during the competition and the days following show the effectiveness of EGMO in keeping math discussions active among our girls."

See the [EGMO report](#) for more information.

The CMS also sent a team to participate in the CMC (Cyberspace Mathematical Competition) put on by the MAA. With 8 team members including 2 girls, Canada placed 9th out of 75 countries or 4th by medal counts.

This year the CMS successfully held a Canadian Junior Mathematical Olympiad (CJMO) to support younger students in an Olympiad style competition. The invitation to the CJMO was based on the results of the 2019 COMC and the Repechage. Invitees are students in grade 10 and below. The CJMO was written at the same time as the CMO on Thursday March 12th, 2020. A total of 10 students from 17 schools wrote the competition.

The IMO was slated to take place in St. Petersburg, Russian Federation in July, but made the decision to hold the competitions virtually in September. The team members this year were Thomas Guo, Michael Li, Zixiang (Peter) Zhou, Edgar Wang, Eric Shen and David Tang. The IMO regulations determined that all students must write from an IMO testing location. The Fields Institute in Toronto graciously allowed CMS and the IMO team to use their facilities to write the competition. Bryan Eelhard at Fields was instrumental in helping to make this happen. This year's team was coached by leaders and previous IMO medal winners, Alex Song (Citadel LLC) and Byung Chun (Royal St. George's College) and assisted by Victor Rong in the training.

The opening ceremony for the IMO took place on September 20th online and the contest was held from September 21st to the 22nd at each country's writing centres. Since our leaders could not travel to the destination due to COVID restrictions, some CMS friends, including Ed Barbeau, Dani Spivak, and Bryan Eelhard, helped to invigilate the competition. Given the extraordinary circumstances in which the team wrote the two day competition, it was a great year for Canada! We tied our medal record from 2012 with 3 gold, 1 silver and 2 bronze. James Rickards, the chair of the IMO committee rejoiced at the results: "Despite the new challenges, the Canadian team had one of the best performances in our history!".

Ed Barbeau who helped to invigilate said "I was impressed with the smoothness of the operation, considering that the IMO organizers had to collaborate with 100 countries and supervise even more test venues. Also, I am very grateful to the Fields Institute for providing the facilities and looking after the technical arrangements. The conditions were comfortable for the students."

See the [IMO report](#) for more information.

Given the circumstances this year, the CMS decided that the COMC and the new Gray Jay Competition would be offered both online and in person. This new virtual format took a tremendous amount of work and effort but it allowed for the participation of a great number of students who would not have been able to write the exam otherwise.

The new Canadian Mathematical Gray Jay Competition was aimed at students in grades 5-8 but any student was welcome to compete. CMS formed a new Gray Jay Committee with mathematicians from across Canada to create an exam with 15 multiple-choice questions. Overall, Gray Jay had 2204 exams purchased across Canada and internationally. 1279 of those were online and 925 print exams. It was a very successful first year.

This year, the CMS formed a new partnership with the Thai-Canadian Alumni Association which ran our competitions in Thailand with great success! Many Thai students were excited to participate in a Canadian competition for the first time.

This year's pandemic created a very tough situation for teachers across the country and many schools could not participate in COMC. Schools that still participated did so either online or with smaller cohorts of students. Overall, there were 2317 online exams written and 3526 paper exams written across Canada and internationally. Marking is currently underway for COMC and we look forward to announcing the results soon.