Event Title

Bringing computational thinking and mathematical modeling into the Ontario secondary curriculum

By Callysto and Math for Real

Event Date and Time

February 21-22, 2019
9:30am - 3:00pm

Event Location

Address

LSB 107, York University

Floor Plan Map

URL

Event Description

When solving a real-world problem, we are not just interested in understanding what is happening, but also estimating what had happened in the past and predicting what will happen in the future or in different scenarios. Such a problem-solving process requires the ability to think logically to build mathematical models and to use computational skills to analyze information, validate models and simulate outcomes. Students with such skill sets will be in high demand as they enter the digital skilled future and work in interdisciplinary environment.

Because of this, teachers are now feeling the pressure to incorporate more modeling, coding and data analytics into their curricula.

Imaging you have the power to offer students a chance to have a deeper experience how mathematics can explain our world and what working with mathematics is alike in other fields such as science, engineering, health care, finance and business. Math for Real, an enriched mathematical modeling education program, provides such a platform to you and your students free.

Also, imagine being able to use a university-level analytics platform — capable of big data processing, data visualizations, build mathematical model, and run simulations — in your high school classes. And imagine this tool being cost-free, easy to use, and only needing a web browser to operate. This is a real opportunity for simple, accessible, and interactive learning — we call it Callysto.

This interactive workshop consists of two parts over two days.

- In Day 1, teachers will be introduced to the Callysto platform via rich problems that straddle different areas of the Ontario high school curriculum. Together, we'll see how these beautiful math problems lend themselves to computational thinking, and allow teachers to showcase the power and versatility of Callysto notebooks. Our team will show you how to use these modules into your classroom, and will also work with you to customize specific modules to fit your needs.
- In Day 2, teachers will have inspiring experience in modelling, programming in Callysto, and experiences the unexpected area that math take you to, and discuss how to prepare students gain confidence in the upcoming Canadian competition at the International Mathematical Modeling Challenges. At the end of the workshop, the participants will walk through the process via a mini mock contest. In addition, we will provide assistant to help you register your schools at the website.

Please bring your laptops with Chrome, Firefox or Safari web browser installed. There is no cost to attend, and teachers will be provided a free lunch on both days. **Honorariums for Ontario teachers will be provided to attend this workshop to cover teacher substitute costs.**

Agenda Day 1 - Intro to Callysto

9:30 am: Introductions and the Bridge Problem
10:00 am: Physical Literacy + takeaways
10:30 am: Coffee Break
10:45 am: Introduction to the Callysto Hub
11:15 am: Introduction to Python: Turtle Graphics
12:00 pm: Lunch
1:00 pm: Computational Thinking
1:15 pm: Callysto in the Classroom
1:30 pm: Open Data Exercise
2:00 pm: Callysto Research and Next Steps

Agenda Day 2 - Intro to Math Modelling

9:30 am: Introduction to Math for Real program and Mathematical Modeling Education
10:00 am: Introduction to Mathematical Modeling
10:45 am: Team-building activities + Coffee Break

11:15 am: Mathematical Modeling using Callysto Notebooks
11:45 pm: Modeling Exercises
12:30 pm: Lunch
1:30 pm: Take Challenges: IMMC, modeling contest for Canadian Secondary Schools
2:00 pm: How to prepare your students for the contest
3:00 pm: Head Start: register your schools in the contest