



Mathematics – Preparing for Success and Confidence
Presented by Laura Gini-Newman, Jocelynn Foxon, and Ivan Ruby
SummerUp 2022
Course Description

Course Name: Mathematics – Preparing for Success and Confidence

Who Should Apply: You are a Black youth, Ontario resident, and you are willing to spend part of your summer working to improve your mathematics performance. As well, you fit into one of the following two categories:

- You will be enrolled in Grade 9 in September 2022.
- You will be enrolled in Grade 10 in September 2022.

Visit the SummerUp Website: <https://lileaders.com/summerup/>

What

This SummerUp math course is designed to prepare Grades 9 and 10 students for success and confidence in mathematics. Students in each of the two grades will be taught in a separate course section.

- **Section 1** will host Grade 9 students who are preparing for or wishing to improve their understanding of the Grade 9 Math curriculum.
- **Section 2** will host Grade 10 students who are preparing for or wishing to improve their understanding of the Grade 10 Math curriculum.

In this mathematics course, students will learn by focusing on an authentic real-world challenge that may be solved using grade-appropriate math content. Students will work individually and collaboratively and will use technology including graphing calculators, and the Python computer programming platform, to solve problems for specific purposes and audiences. In the Grade 9 section students will use mathematics to help them effectively compose a short piece of music in a genre of their personal liking. In the Grade 10 section students will use mathematics to help them create a new modern-day version of a Caribbean-Mesoamerican game, Batu.

In both sections, students will build their mathematical and computational thinking competencies by programming various aspects of their designs as a way to test and improve upon their creations.

This course is for the student who is keen to improve their performance in math in Grade 9 or 10 in an interesting and enjoyable way.

Why this Matters

The academic years spanning 2020-22 were severely disrupted by COVID-19. Add to this the well-studied effects of the ‘summer slide’ which puts students out of practice. This math course provides an opportunity to make sure students are better prepared for success in the new academic year beginning in September 2022 while inspiring them to see the value of mathematics in their lives.

The objectives of this SummerUp mathematics course are to nurture in Black youth:

- a love for learning mathematics,
- the capacity to recognize, manage and solve math-related problems in everyday life,

- the capacity to make valuable connections between math, the world in which they live, and their important role in it,
- the confidence to use mathematics and related technical tools to solve everyday problems,
- a flourishing mindset in learning by being encouraged to become strong, independent decision-makers using mathematics.

Here are the opinions of three students who took this course in summer 2021:

Student #1: *“The main takeaways from the program were the teachers. I believe by them coming out and preparing the curriculum that helps us to understand and gain knowledge is what makes the program unique. Just them coming out and showing their dedication makes a difference, it shows me how much hope they have for the next generation.”*

Student #2: *“The program helped to develop [my]confidence in Math ability by giving tools that were concrete such as graph calculator and hands-on.”*

Student #3: *“Very interesting how it is geared to Black students through video and book recommendations.”*

Admissions Information

Who: You are a Black student, Ontario resident, and you want to spend this summer improving your mathematics skills in readiness for the next academic year which begins September 2022. You fit into one of the following two categories:

- You will be enrolled in Grade 9 in September 2022.
- You will be enrolled in Grade 10 in September 2022.

You have a computer and reliable access to the Internet. You are willing to commit to attending all scheduled online learning sessions (see dates and times below).

Admissions Process: All eligible applicants will be considered for admission. Refer to application deadlines at <https://lileaders.com/summerup/>. An orientation session may be provided.

Start/Stop Dates: SummerUp will offer *Mathematics – Preparing for Success and Confidence* in virtual mode over a span of six weeks starting on Tuesday July 11 and ending on Wednesday, August 17. Online classes will be two-hours duration and span 10.00 a.m. to 12.00 noon.

Meeting Pattern for Section 1

Section 1 will comprise students who will be in Grade 9 in September 2022.

Week 1: Monday, July 11; Wednesday, July 13 (10.00 a.m. to 12 noon)

Week 2: Monday, July 18; Wednesday, July 20 (10.00 a.m. to 12 noon)

Week 3: Monday, July 25; Wednesday, July 27 (10.00 a.m. to 12 noon)

Week 4: Wednesday, August 3 (10.00 a.m. to 12 noon); *Note that Monday, August 1 is a holiday.*

Week 5: Monday, August 8; Wednesday, August 10 (10.00 a.m. to 12 noon)

Week 6: Monday, August 15; Wednesday, August 17 (10.00 a.m. to 12 noon)

Meeting Pattern for Section 2

Section 2 will comprise students who will be in Grade 10 in September 2022.

Week 1: Tuesday, July 12; Thursday, July 14 (10.00 a.m. to 12 noon)

Week 2: Tuesday, July 19; Thursday, July 21 (10.00 a.m. to 12 noon)

Week 3: Tuesday, July 26; Thursday, July 28 (10.00 a.m. to 12 noon)

Week 4: Tuesday, August 2; Thursday, August 4 (10.00 a.m. to 12 noon)

Week 5: Tuesday, August 9; Thursday, August 11 (10.00 a.m. to 12 noon)

Week 6: Tuesday, August 16 (10.00 a.m. to 12 noon)

Mode: Virtual (Zoom).

Required Tool

To do well in this mathematics course, students must have ready access to the following:

1: A suitable computer and reliable Internet access. A mobile device is not suitable. Students who do not have the required device should request a loan for this equipment from their high school.

2: A Graphing Calculator. The SummerUp course will provide eligible students with a graphing calculator and access to a programming platform.

Faculty

This course will be offered by two outstanding mathematics educators and a guest instructor.

Laura Gini-Newman

Laura is a recently retired educator with over 30 years of experience working as a classroom teacher, resource teacher, coach, and instructional coordinator. She is also the math consultant with the Critical Thinking Consortium, working with students, teachers, and leaders to help learners become better critical thinkers in math across Canada, the USA, the Caribbean, Central, and South America, Europe, and Asia. She has presented her work in mathematics at various conferences across Canada and internationally. She has published and co-authored several textbooks, papers, and learning resources in philosophy, history, mathematics, and Indigenous education. Her most recent 2022 publication entitled, *Assessing Mathematical Thinking: A Focus on Reasoning Competencies*, describes a way of learning mathematics that empowers students with both the drive and capacity to learn how to effectively learn math so that they can each experience the success and joy in doing so. In 2007, Laura received the Karen LaRone Hidden Hero Award for her contributions to math learning. Prior to her career in teaching, Laura worked as an economist and accountant. She has taught at both the University of Toronto and York University. She is also a professionally trained facilitator and holds a Certificate in Applied Positive Psychology granted in March 2020. Laura is also currently working with the Alma Foundation to support the learning and socio-emotional well-being of disadvantaged Indigenous children in Peru and Bolivia, as well as the White Ribbon campaign and the Leadership by Design program. Her goal is to help all young learners flourish in learning and life.



Jocelynn Foxon

Jocelynn is an Educator and Numeracy Coordinator from Manitoba. She has taught for over ten years. She began her teaching career as an English Educator overseas and now she teaches elementary and middle school. She is passionate about creating a safe and enjoyable education for students from all cultures. She has thoroughly enjoyed her work in Muslim, Buddhist and Hutterian communities. Jocelynn is also extremely passionate about teaching math and, more importantly, critical thinking in the Math classroom. She has been in the Numeracy Coordinator position for four years and has worked with the Critical Thinking Consortium since the beginning of her Numeracy position. She completed her Math Lead Teacher Certification in 2018 and received the Class Act Award a year later. She loves working with teachers, students, and administrators on creating a math classroom of critical thinkers and learners. Her goal is to not only help all students be successful in math but to also see that math is a place to explore, be creative and expand their thinking. She is also a Level 2 Google Certified Educator.



Guest Instructor:

Ivan Gonçalves Dos Santos Ruby

Ivan Ruby is a Ph.D. Candidate in Educational Technology (Doctor of Philosophy [Ph.D.] Education), at Concordia University, Montreal, Quebec. He is from Mozambique and has always been passionate about computer programming and the opportunities it can provide for individual and community empowerment. His current research interests are in understanding the difficulties novice learners face in computer programming and exploring alternatives to overcome these difficulties. Ivan Ruby seeks to help students develop a 'coding mindset'. In a December 2018 article by Ivan Ruby and his Ph.D. supervisor, Dr. Ann-Louise Davidson, the authors wrote:



“We want to propose that beginner coders could start with an attractive and engaging activity but should also explicitly develop what could be called “the coding mindset.” This mindset represents a gradual development of computer programming knowledge and strategies, but also includes analyzing systems, solving problems, persisting in front of errors, being resourceful and collaborating.

To teach the coding mindset, educators need to include more explicit foundational computer science concepts and competencies, such as creating algorithms to solve problems, debugging existing programs, and designing systems to accomplish new tasks or gather data.

Special Note:

SummerUp is designed to serve and support the personal, educational, and professional aspirations of Ontario’s Black youth. The program is developed and presented by the **Lifelong Leadership Institute** (LLI), and it is primarily funded by the Ontario Ministry of Education. The quality of the SummerUp experience is assured by the contributions of a diverse group of individuals, educators, institutions, and corporations – all of which are committed to championing the well-being, development, and advancement of Black youth. The Lifelong Leadership Institute also offers the **Leadership by Design** program which provides intensive leadership-development opportunities to Black youth.

The **SummerUp** 2022 program is primarily funded by the Ontario Ministry of Education.

