



Mathematics – Solving Math Problems in Everyday Contexts
Presented by Ron Lancaster, University of Toronto, and
Laura Gini-Newman
SummerUp 2021
Description

Program Name

Mathematics – Solving Math Problems in Everyday Contexts

What

This SummerUp math program will be divided into two sections. One section will host Grades 9 and 10 students, and the other section is for Grade 11 and 12 students.

In this mathematics program, students will learn by focusing on authentic real-world experiences and challenges that may be solved using grade-appropriate math content. Students will work individually and collaboratively in groups and will use technological supports to solve problems for specific purposes and audiences. In the Grade 9-10 program students will use mathematics to solve challenges that may include the design of a hypothetical fair “Guessing Booth” to raise funds for a charity or other student-selected cause; the creation of a song with music and lyrics; the redesign of a mini-golf course; or the creation of a new game of cultural value for Black youth. In the Grade 11-12 program, students will solve optimization problems using mathematics, physical models, technology, and coding which figures prominently in the well-regarded book [Hidden Figures](#).

In this program students will have an opportunity to fine-tune their mathematics skills during the summer break and build confidence going into the fall semester. This summertime mathematics is for the student who is keen to improve performance in an enjoyable way.

Why this Matters

The 2020-21 academic year was severely disrupted by COVID-19. Add to this the well studied effect of the ‘summer slide’ which puts students out of practice. This math program provides an opportunity to make sure students are better prepared for success in the new academic year beginning in September 2021 while inspiring them to see Math relevancy and importance.

The objectives of this SummerUp mathematics program 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. The flourishing mindset is rooted in attributes such as resilience, hope and optimism, self-efficacy, how to leverage emotions, character strengths and self-awareness, positive relationships, collaboration, and leadership.

Required Tools

To do well in this mathematics program, students should have ready access to the following:

1. A computer and a mobile device that allows them to access Zoom.
2. Eligible students will be provided a Graphing Calculator.

Admission Details

Who: You are a Black youth, Ontario resident, and are enrolled in Grade 8 - 12 during the 2020-21 academic year. You are interested in boosting your mathematics performance in readiness for an effective start to the 2021-22 academic year. You have a reliable computer and the ability to consistently access learning online. You are willing to commit to attending all scheduled learning sessions (see dates and times below).

Start/Stop Dates: *Mathematics – Solving Math Problems in Everyday Contexts* runs for five (5) weeks starting Tuesday, July 13 – Thursday, August 12, on two days a week.

Meeting Pattern: Meets Tuesdays and Thursdays for one hour – 10:00 am – 11:00 am each day.

Mode: Online. Students must have a graphing calculator, a suitable computer device and internet access. Students who do not have the required equipment should request loan of this equipment from their high schools. If this does not work, communicate your equipment needs to admissions@lileaders.com

Admission: To be considered for admission, candidates must attend a program orientation at 5.00 p.m., Thursday, June 24. This orientation will be co-hosted by the Leadership by Design program, Ron Lancaster and Laura Gini-Newman.

Register for the orientation using the following

link: https://us02web.zoom.us/webinar/register/WN_T8VqtApQSNS9_nltUGta6Q

Program Leaders

This program will be offered by two outstanding mathematics educators.

Ron Lancaster

Ron is an Associate Professor at the Ontario Institute for Studies in Education of the University of Toronto (OISE/UT) where he has taught mathematics methods courses for pre-service elementary and secondary teachers since 2004. Before being hired at OISE/UT, Ron was a middle and high school mathematics teacher at co-ed public schools and an all-girls school for 23 years. Ron's professional activities include consultations for international, private and public schools, technology companies, museums and public broadcasters. Ron has been a presenter at hundreds of conferences, including the highly regarded Anja S. Greer Conference on Mathematics and Technology at Phillips Exeter Academy. Ron has been a prolific author for the *Mathematics Teacher*, published by the National Council of Mathematics Teachers (The Mathematical Lens & Media Clips) and the *Ontario Mathematics Gazette*, published by the Ontario Association for Mathematics Education (Mathematical Snapshots). Ron was a member of the writing team for *Principles and Standards for School Mathematics*, published by the NCTM. He wrote mathematical activities, distributed by *Words and Numbers*, for high school students that were based on episodes of the prime time series *NUMB3RS* on CBS TV. Ron is the recipient of the 2015 Margaret Sinclair Memorial Award Recognizing Innovation and Excellence in Mathematics Education awarded by the Fields Institute.



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, in 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 textbooks, papers and learning resources in philosophy, history, mathematics, and Indigenous education. 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 March 2020. Laura is also currently working with the Alma Foundation to support the learning and socio-emotional well-being of disadvantaged 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.



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