ROBO-GEEK - WORKSHOPS

ROBO-GEEK INC.

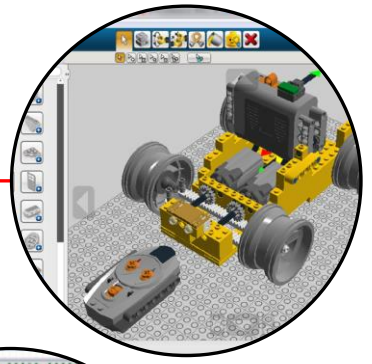
- **Robo-Geek** is a technology company founded by engineers to promote **STEM**, with the aim to foster students' confidence and "**I Can do it**" attitude.
- Our staff consists of ***passionate engineers*** who have carefully designed all the courses to ensure the best learning experience for each student.
- Our courses are designed for students in grade 2 through 12 to introduce them to the fundamentals of **Coding, Electronics and Robotics**.
- Each course includes hands-on work with computers, electronic boards, robots and unique labs that encourage self-learning and experimentation.
- Our advanced courses submerge the students in exciting subjects of **Game Programming, Computer Vision and Swarm Robotics**. Students are encouraged to experiment and ***unleash their imagination***.

ROBO-GEEK INC.

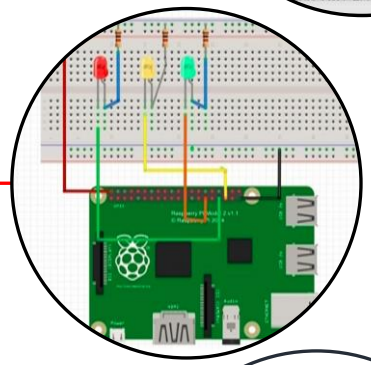
- **Hands-on Experience.** Our students learn by doing, Robo-Geek's sessions consists of fifteen minutes of lecture and 30 minutes of lab. Each Robo-Geek lab has been tested and designed to optimize topics comprehension .
- **Continuous Innovation.** Our courses are at the leading edge of technology. We pride ourselves in the development and continuous innovation of our unique labs.
- **Promotion of STEM.** Our labs and exercises focus on expanding the student's learning experience in science, technology, engineering and mathematics.
- **Swarm Robotics.** A new approach to the coordination of multi-robot systems, working together by selecting their communication patterns.

OUR PHILOSOPHY

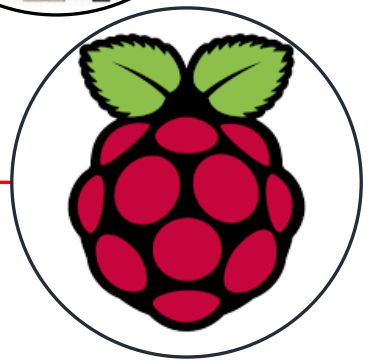
IMAGINE
THINK
CREATE



Robotics
& AI



Electronics
&
Mechatronics



Coding

MILESTONES

- Founded in 2015 at Milton location started with two courses, 10 Raspberry Pis and a lot of dreams
- In early 2016 moved to **Milton Education Village** where we have been part of an amazing community of technology entrepreneurs
- In the fall of 2016 we launched STEM Club and Robotics Club. Our commitment to stay current and innovate.
- In 2017 we solidified a Re-sellers partnership with **EZ-robots** and **Qihan Technologies**
- Summer of 2017 we opened our new location in Brampton
- Fall 2017 we launched our Self Driving car project with STEM club
- In 2018 we continue our expansion and supported multiple workshops across GTA with students from JK to G12 and with many educators
- Fall 2018, we added ROS (Robotics Operating System) in our curriculum

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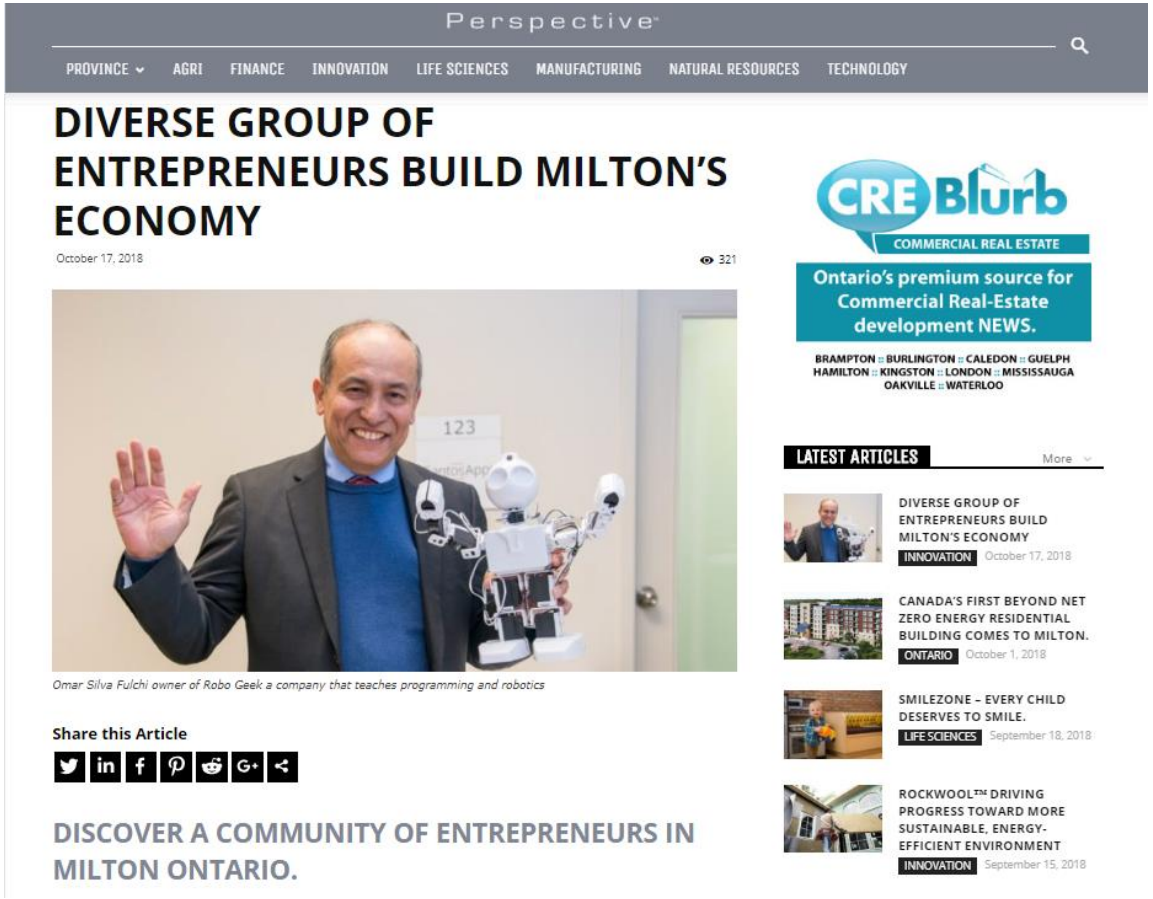
ACCOMPLISHMENTS



Perspective

PROVINCE AGRI FINANCE INNOVATION LIFE SCIENCES MANUFACTURING NATURAL RESOURCES TECHNOLOGY

DIVERSE GROUP OF ENTREPRENEURS BUILD MILTON'S ECONOMY

October 17, 2018 321

Omar Silva Fulchi owner of Robo Geek a company that teaches programming and robotics

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DISCOVER A COMMUNITY OF ENTREPRENEURS IN MILTON ONTARIO.

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ONTARIO October 1, 2018

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INNOVATION September 15, 2018

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- Over 2000 students in the past 5 years
- 27 courses now offered in our programs: RG-120 to RG-900 level
- 30 completed projects with STEM and Robotics clubs
- 30 workshops in STEM, Coding and Robotics
- Our team has grown to 5 instructors and 8 teaching assistants (students)
- Offered over $8000 in scholarships with multiple partnerships in our communities.

ROBO-GEEK WORKSHOPS

SUPPORTING EDUCATORS WITH STEM CURRICULUM

ABOUT OUR VIRTUAL WORKSHOPS

- Unique in Canada. Developed by Robo-Geek team to maximize learning process with hands-on approach to learning.
- Robo-Geek offers a variety of single day Virtual Workshops for schools and we work with private and public schools with special requests requiring multiple day workshops.
- Our workshops are aligned with Ontario Curriculum for Elementary and Secondary for Science, Mathematics and Technology
  - http://www.edu.gov.on.ca/eng/curriculum/elementary/index.html
  - http://www.edu.gov.on.ca/eng/curriculum/secondary/index.htm

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GRADES 1-8 SCIENCE AND TECHNOLOGY

STRANDS IN THE SCIENCE AND TECHNOLOGY CURRICULUM

The science and technology curriculum expectations are organized in four strands, which are the major areas of knowledge and skills in the science and technology curriculum. The four strands are as follows:

- Understanding Life Systems
- Understanding Structures and Mechanisms
- Understanding Matter and Energy
- Understanding Earth and Space Systems

Ontario Science Curriculum – Science and Technology Studies Grades 1-8

Elementary Science and Technology Curriculum Overview				
	Understanding Life Systems	Understanding Structures and Mechanisms	Understanding Matter and Energy	Understanding Earth and Space Systems
Grade 1	Needs and Characteristics of Living Things	Materials, Objects, and Everyday Structures	Energy in Our Lives	Daily and Seasonal Changes
Grade 2	Growth and Changes in Animals	Movement	Properties of Liquids and Solids	Air and Water in the Environment
Grade 3	Growth and Changes in Plants	Strong and Stable Structures	Forces Causing Movement	Soils in the Environment
Grade 4	Habitats and Communities	Pulleys and Gears	Light and Sound	Rocks and Minerals
Grade 5	Human Organ Systems	Forces Acting on Structures and Mechanisms	Properties of and Changes in Matter	Conservation of Energy and Resources
Grade 6	Biodiversity	Flight	Electricity and Electrical Devices	Space
Grade 7	Interactions in the Environment	Form and Function	Pure Substances and Mixtures	Heat in the Environment
Grade 8	Cells	Systems in Action	Fluids	Water Systems
Grade 9 and 10 Technological Education Curriculum Overview				
Grade 9	Exploring Technologies Students will be given the opportunity to explore technology concepts that they will need in order to create designs, utilize software, fabricate products, document events, and prepare goods and services. This exploratory course provides a link between the concepts and skills studied in the elementary science and technology strand called Understanding Structures and Mechanisms and the topics studied in various subject areas of broad-based technology. Students will gain awareness of educational and training requirements for technology-related opportunities.			
Grade 10	Hairstyling and Aesthetics Health Care Hospitality and Tourism	Technological Design Manufacturing Technology Construction Technology	Communications Technology Computer Technology Transportation Technology	Green Industries

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GRADES 1-8 SCIENCE AND TECHNOLOGY

Elementary Science and Technology Curriculum Overview				
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Grade 10	Hairstyling and Aesthetics Health Care Hospitality and Tourism	Technological Design Manufacturing Technology Construction Technology	Communications Technology Computer Technology Transportation Technology	Green Industries

Ontario Science Curriculum – Science and Technology Studies Grades 1-8

Available Workshops:

RG-STEM-01: Bridge Design	G 1,2,3,4,
RG-STEM-03: Solar System	G 6, 7
RG-STEM-04: Turing Machine-AI	G 6, 7, 8
RG-STEM-05: Gravity	G 4, 5, 6
RG-STEM-06: Intro to Electricity	G 6, 7, 8
RG-STEM-07: Neural Networks	G 7, 8
RG-STEM-08: Self Driving Cars	G 7, 8
RG-STEM-09: Intro to Robotics	G 5, 6, 7, 8
RG-STEM-10: Intro to Coding	G 1,2,3,4
RG-STEM-11: Intro to Python	G 5,6,7,8
RG-STEM-12: Intro to Arduino	G 5,6,7,8
RG-STEM-26: Combo Coding	G 5,6,7,8
RG-STEM-30: Plane Workshop	G 1,2,3,4
RG-STEM-31: Telephone Workshop	G1,2,3,4

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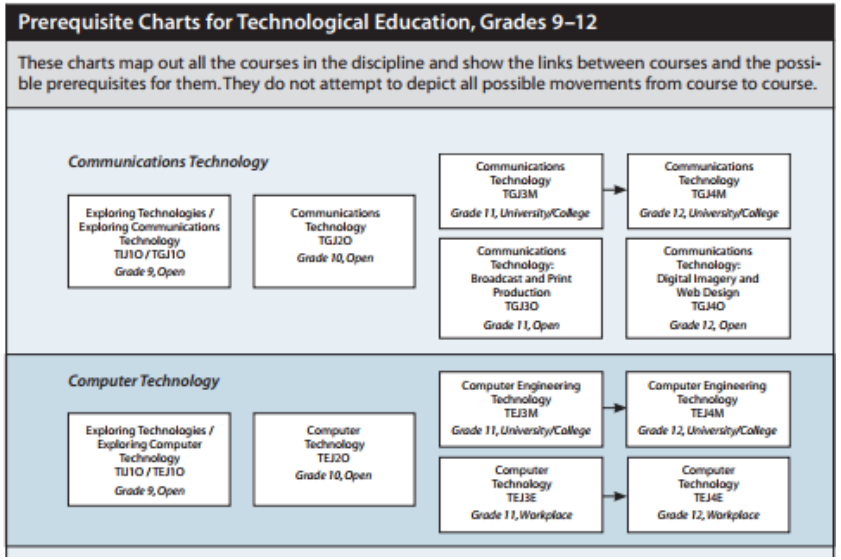
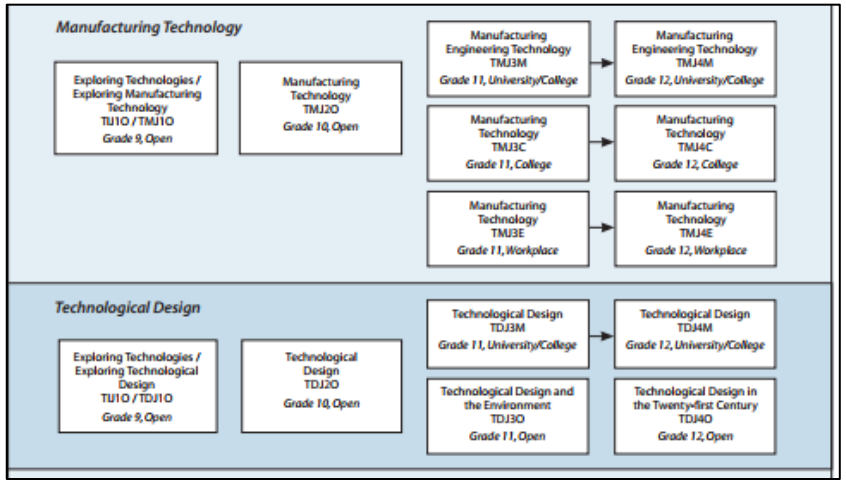
GRADES 9-12 TECHNOLOGY





Ontario Science Curriculum – Technology Education Grades 9-10

Available Workshops:

RG-STEM-04:Turing Machine -AI	G 9-12
RG-STEM-07: Neural Networks	G 9-12
RG-STEM-08: Self Driving Cars Intro	G 9-12
RG-STEM-11: Python	G 9-12
RG-STEM-15: Electronics + Arduino	G 9-12
RG-STEM-16: CV - Object Detection	G 9-12
RG-STEM-17: Self Driving Cars Advanced	G 9-12
RG-STEM-18: CV - Homography	G 9-12
RG-STEM-19: Manufacturing Workshop	G 11,12
RG-STEM-20: Internet of Things (IoT)	G 9-12
RG-STEM-21: Introduction to Java	G 9-12
RG-STEM-22: Intro to PythonRobotics (PR)	G 9-12
RG-STEM-23: PythonRobotics (PR)	G 9-12
RG-STEM-24: PR - Dijkstra Algorithm	G 9-12
RG-STEM-25: Introduction to C ++	G 9-12
RG-STEM-26: C++ Advanced	G 9-12
RG-STEM-27: CV Epipolar Geometry	G 9-12
RG-STEM-28: Deep Learning Intro	G 9-12
RG-STEM-29: Deep learning-PyTorch-Yolo	G 9-12

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WORKSHOPS REFERENCES

WORKSHOP	WORKSHOP NAME	Required
RG_STEM-04	Turing Machine –Intro to AI	
RG-STEM-07	Neural Networks	Colab Notebooks
RG-STEM-08	Intro to Self Driving Cars	
RG-STEM-11	Intro to Python	Colab Notebooks
RG-STEM-12	Intro to Arduino	Virtual Breadboard
RG-STEM-15	Electronics & Arduino & C	Virtual Breadboard
RG-STEM-16	CV: Object Detection	Colab Notebooks
RG_STEM-17	Self Driving Cars Advanced	Colab Notebooks
RG_STEM-18	Computer Vision(CV): Homography	Colab Notebooks
RG_STEM-19	Manufacturing	
RG_STEM-20	Internet of Things (IoT)	

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WORKSHOPS REFERENCES

WORKSHOP	WORKSHOP NAME	Required
RG_STEM-21	Intro to Java	Java Installation
RG-STEM-22	Intro to PythonRobotics	Colab Notebooks
RG-STEM-23	PythonRobotics	Colab Notebooks
RG-STEM-24	PythonRobotics - Dijkstra Algorithm	Colab Notebooks
RG-STEM-25	Intro to C++	Visual Studio 2019
RG-STEM-26	C++ Advanced	Visual Studio 2019
RG-STEM-27	CV - Epipolar Geometry	Colab Notebooks
RG_STEM-28	Deep Learning Intro	Colab Notebooks
RG_STEM-29	Deep learning-PyTorch-Yolo	Colab Notebooks

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LIST OF SCHOOLS FOR WORKSHOPS (ON-SITE & AT ROBO-GEEK)

Fairlawn Public School - Milton
Meadowvale Secondary School - Mississauga
St. Vincent de Paul School -Mississauga
Montessori School of Milton
Montessori School -Caledon
Halton Hills Public Library
Montessori School of Milton
Walden International School
Sterling Education – Mossley Campus
+ St. Cecilia School -Brampton
T.L. Kennedy Secondary School- Mississauga
Wali ul Asr Learning Institute
Al Huda Elementary School- Mississauga
Columbia International College - Hamilton
Grand Erie District School Board
St. Timothy's- Burlington
MM Robinson High School - Burlington
Lakeview Montessori- Windsor

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