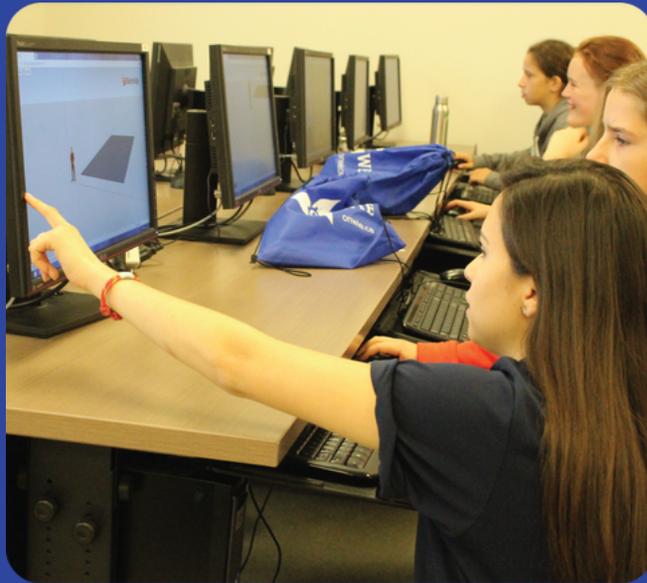


STEM OUTREACH  
VIRTUAL  
VENTURES  
PROGRAMS

*"Setting the trend in youth technology education!"*



**WORKSHOP PACKAGE FALL 2022**

Virtual Ventures offers a wide range of workshops in Science, Technology, and Engineering. Although our workshops are designed by grade, some accommodations may be made to provide a workshop for grades other than those listed. Please contact us to discuss prior to booking. All workshops will be delivered in-person, led by Instructors who will come to your school!

## IN-PERSON OPTIONS

- Each Virtual Ventures workshop is between 1.5-3 hours in length (specified in package), led by two university instructors and intended for 20-30 students.
- We supply all materials needed for both the material based workshops and the technology workshops. For our computer-based lessons if your school has access to this equipment, then you are all set! If your school does not, it can be supplied through Virtual Ventures.

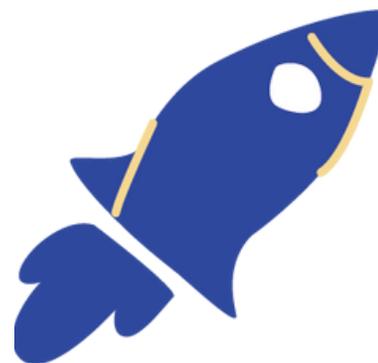
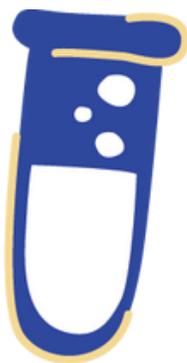
## PRICING

*To receive the multiple booking workshop pricing below, workshops must be booked on the same day.*

# OF WORKSHOPS	\$/WORKSHOP	TOTAL COST
1	\$100	\$100
2-3	\$95	\$190 or \$285
4+	\$90	\$360+

All workshops with a **FREE** symbol will be offered for FREE in Fall 2022!

If free workshop(s) and paid workshop(s) are booked on the same day, we will honor the multiple booking prices above.



## DIGITAL LITERACY

WORKSHOP	DESCRIPTION	GRADE(S)	ON/OFF COMPUTER	ONTARIO CURRICULUM CONNECTION	LENGTH (HRS)
	An introduction to programming concepts with no coding involved! Using <b>Scratch</b> , a visual programming software, create games and animations that enhance science and technology knowledge.	2-5	ON Computer	Coding	1.5-2 hours
 Programming	Learn basic coding by taking simple drawing commands and converting them to coding in <b>Processing</b> .	3-5	ON Computer	Coding	1.5-2 hours
	Using <b>TinkerCAD Codeblocks</b> , a visual programming tool, learn the basics of the coordinate system and 3D modelling to create moving designs.	3-6	ON Computer	Coding	1.5-2 hours
	Take the basics of programming to the next level and begin to put logical thinking to the test with <b>Python</b> . Learn about functions, conditional logical and begin to work with the syntax of an industry standard language!	6-10	ON Computer	Coding	2 hours
 Micro:bits	Micro:bits are tiny computers designed for beginners in electronics and coding. Learn the basics of coding to make animations and games!	3-5 5-8	ON Computer	Coding	1.5-2 hours
 LEGO Robotics	By using LEGO Mindstorms students will build and program their own robots to complete a variety of tasks. This teaches students the basics of block coding and the importance of robotics in everyday life.	3-9	ON Computer	Coding, Robotics	Minimum 3 hours

## STRUCTURES AND MECHANISMS

WORKSHOP	DESCRIPTION	GRADE(S)	ON/OFF COMPUTER	ONTARIO CURRICULUM CONNECTION	LENGTH (HRS)
Pulleys and Gears	Students will learn about 5 simple machines; pulleys, levers, wheels and axels, inclined planes and wedges.	3-6	OFF Computer	Movement, Pulleys and Gears	1.5 hours
Geodesic Domes	Learn Architecture, important shapes and concepts in the field and difference factors that influence building.	3-6	OFF Computer	Forces Acting on Structures and Mechanisms	1.5 hours
Engineering Structures	Learn about the forces that act on a structure and how civil engineers work to create strong and stable structures. Learn in terms of earthquakes and how to protect towers against them.	3-8	OFF Computer	Forces Acting on Structures and Mechanisms. Natural Disasters	1.5 hours

## MATTER AND ENERGY

WORKSHOP	DESCRIPTION	GRADE(S)	ON/OFF COMPUTER	ONTARIO CURRICULUM CONNECTION	LENGTH (HRS)
 Makey Makey	By mimicking a keyboard and mouse the Makey Makey lets you control any computer program with everyday objects. Students will create controllers and emit electrical signals to control the computer.	2-5	ON Computer	Electricity and Electrical Devices	2 hours
		7-10	ON Computer	Electricity and Electrical Devices	2 hours
 Connecting the Circuit	This workshop puts the power of electronics in the hands of everyone! Using an online software, discover how circuits work by designing and testing your own with no wiring required.	4-6	ON Computer	Electricity and Electrical Devices	1.5-2 hours
Chemistry	Learn about fundamental principles of chemistry by getting involved in hands-on experiments using household materials in an interactive experience to see magical chemical reactions.	4-6	OFF Computer	Properties of Liquids and Solids	1.5-2 hours
		7-10	OFF Computer	Fluids	1.5-2 hours
 Magical Matters	Using Scratch - an online block-coding software, create an online game to learn about the properties of matter.	1-3	ON Computer	Properties of Liquids and Solids	1.5 hours
 Putting out the Fire	Learn about properties of light and sound by building and coding a fire alarm system on TinkerCAD Circuits	4-6	OFF Computer	Understanding Light and Sound	1.5 hours

## LIFE SYSTEMS

WORKSHOP	DESCRIPTION	GRADE(S)	ON/OFF COMPUTER	ONTARIO CURRICULUM CONNECTION	LENGTH (HRS)
 Habitats in 3D	Using a 3D design tool, strengthen science concepts learned in class by developing your own habitats and communities.	2-5	ON Computer	Habitats and Communities	1.5-2 hours
 Virtual Ecosystems	Using Scratch – an online block-coding software, create a video game while learning about ecosystems! Add in characters and code them to interact with one another!	4-6	ON Computer	Growth and Changes in Animals, Growth and Changes in Plants	1.5-2 hours
 Species Invaders	Using Scratch – an online block-coding software, create a video game to represent the relationship between invasive species and the environment	3-6	ON Computer	Habitats and Communities, Biodiversity	1.5-2 hours
 Cell-Ify in 3D	Learn about the biology of plant cells by creating a cell in 3D using TinkerCAD	7-9	ON Computer	Biology, Plants and Cells	1.5-2 hours
 OzoBees	Understanding growth and changes in plants through pollination as demonstrated using Ozobots	1-3	ON Computer	Growth and Changes in Plants	1.5-2 hours
CSI	Learn about crime scene investigation and the importance of science in forensics while completing this fingerprinting activity.	1-5	OFF Computer	Forensics, Chemistry	1.5-2 hours

## EARTH AND SPACE SYSTEMS

WORKSHOP	DESCRIPTION	GRADE(S)	ON/OFF COMPUTER	ONTARIO CURRICULUM CONNECTION	LENGTH (HRS)
Clean Water	Learn about the sources and effects of water contamination in the environment. By building your own water purification systems, recognize the importance of water quality around the globe and get inspired to work towards the engineering challenges in water treatment processes.	1-3	OFF Computer	Air and Water in the Environment; Soils in the Environment	1.5-2 hours
		5-8	OFF Computer	Conservation of Energy Resources; Water Systems	1.5-2 hours
 Super Solar	Learn about space by creating your own model of the solar system using TinkerCAD Codeblocks.	4-6	ON Computer	Understanding Earth and Space Systems; Space	1.5-2 hours
 Growing Greener	Students will understand the ins and outs of conservation of energy and resources using Ozobots.	4-6	ON Computer	Conservation of Energy and Resources	1.5-2 hours
 Climate Change with Micro:bits	Discover the ways Climate Change is affecting the world around you, and with coding, take action and make a difference!	8-10	ON Computer	Climate Change; Earth's Dynamic Climate	1.5-2 hours
 Dissecting the Earth	Learn about the Earth's layers using TinkerCAD codeblocks.	1-4	ON Computer	Soils in the Environment	1.5-2 hours
 Flowing Through Canada	Learn about water systems in Canada and the water cycle while reviewing Canadian Geography using Ozobots.	7-8	ON Computer	Water Systems, Canadian Geography	1.5-2 hours

## OUR SUPPORTERS



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With funding from

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