



Summer Camps and Programs

"Setting the trend in youth technology education"



WORKSHOP PACKAGE 2019

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.



Pricing:

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

YOUR LOCATION (SCHOOL/COMMUNITY CENTRE ETC.)		
# of workshops	\$/workshop	Total Cost
1	75	75
2-3	70	140 or 210
4+	65	260+

ON CAMPUS (CARLETON UNIVERSITY)		
# of workshops	\$/workshop	Total Cost
1	55	55
2-3	50	100 or 150
4+	45	180+

All workshops with a  symbol will be offered for FREE in 2019!

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

Workshops with  symbol, denotes workshops on the computer (laptops provided).

DIGITAL LITERACY

WORKSHOP	DESCRIPTION	GRADE(S)	ON/OFF COMPUTER	LENGTH (HRS)
✓ LEGO Robotics 	Using LEGO Mindstorm NXTs, students will learn about gears and mechanical systems by building, programming and testing robots to accomplish desired tasks.	5-10	ON Computer (max. 30 students, laptops provided)	3 hours
	An introduction to programming concepts with no coding involved! Using Scratch, a visual programming software, students will create games and animations that enhance science and technology knowledge.	2-5	ON Computer (max. 30 students, laptops provided)	1.5-2 hours
✓ Programming 	Students will learn basic coding by taking simple drawing commands and converting them to coding in Processing.	3-5	ON Computer (max. 30 students, laptops provided)	1.5-2 hours
	Using TinkerCAD Codeblocks, a visual programming tool, students will learn the basics of the coordinate system and 3D modelling to create moving designs.	3-6	ON Computer (max. 30 students, laptops provided)	1.5-2 hours
	Children will take the basics of programming to the next level and begin to put their logical thinking to the test with Python. Learn about functions, conditional programming and begin to work with the syntax of an industry standard language!	6-10	ON Computer (max. 30 students, laptops provided)	2 hours
✓ Micro:bits 	Micro:bits are tiny computers designed for beginners in electronics and coding. Learn the basics of coding to code games and robots!	3-5	ON Computer (max. 30 students, laptops provided)	1.5-2 hours
✓ Codemakers: Run length encoding and pixel portraits 	See how images are represented on computers. Students get to try their hand at a key part of the image compression process and then create their own pixel art/portraits.	3-5	ON Computer (max. 30 students, laptops provided)	1.5-2 hours
✓ Codemakers: From Binary to Beyond	In this Codemakers workshop students will use their math skills to decode computer science! Each student will take home their very own item made with code! Zero, One, Ready, Code!	3-6	OFF Computer	1.5-2 hours
✓ Codemakers: Journey into Cryptography	Take a journey through history to learn the origins of encryption methods (testing one with a hands-on activity), and how encryption has evolved to what it is today	5-7	OFF Computer	1.5-2 hours

LIFE SYSTEMS

WORKSHOP	DESCRIPTION	GRADE(S)	ONTARIO CURRICULUM CONNECTION	LENGTH (HRS)
CSI	Learn about standard forensic techniques to solve a crime. By using procedures such as fingerprint analysis, powder analysis, and ink chromatography they will determine the discrepancies between what is show on TV and real life.	2-6	Human Organ Systems	1.5-2 hours
Digestive System	A messy way to learn how the human body digests food! Students will get messy by using household items to mimic the digestion process in the mouth, esophagus, stomach & intestines.	5	Human Organ Systems	1.5-2 hours
Respiratory System	This workshop teaches how the respiratory system works in the human body by creating a model lung to investigate how air enters our bodies and travels to our lungs.	5	Human Organ Systems	1.5-2 hours
✓ 3D Modelling	Using a 3D design tool, students will strengthen science concepts learned in class by developing their own habitats and communities.	4	Habitats and Communities	1.5-2 hours
	Using a 3D design tool, students will strengthen science concepts learned in class by developing their own human heart.	5	Human Organ Systems	1.5-2 hours

MECHANISMS & STRUCTURES

WORKSHOP	DESCRIPTION	GRADE(S)	ONTARIO CURRICULUM CONNECTION	LENGTH (HRS)
Geodesic Domes	Learn about basic architectural principles and the forces that buildings undergo on a daily basis. This workshop is a fun teamwork activity. Students will use blueprints and geometry to construct stable geodesic structures.	3-5	Strong and Stable Structures	1.5-2 hours
Engineering Structures	Civil engineers work to create strong, stable structures that can withstand powerful forces from nature. Students will learn about forces, weight, pressure and motion by participating in an engineering challenge to test constructions to their limits!	3-5	Strong and Stable Structures; Forces Acting on Structures and Mechanisms	1.5-2 hours
Pulleys and Gears	Modern machinery is a marvel! With this lesson children use Lego to take a look at the fundamentals of how the forces of our universe interact with our machinery to make our lives easier!	4	Pulleys and Gears	1.5-2 hours

MATTER & ENERGY

WORKSHOP	DESCRIPTION	GRADE(S)	ONTARIO CURRICULUM CONNECTION	LENGTH (HRS)
 Circuits	This workshop puts the power of electronics in the hands of everyone! Students will learn about circuits and electronic components like diodes and transistors. They will discover how electrical devices work by designing and testing their own electronic creations with no soldering, wiring, or programming required.	5-8	Electricity and Electrical Devices	1.5-2 hours
 Electronics	This workshop puts the power of electronics in the hands of everyone! Students will learn about circuits and electronic components like diodes and transistors. Using snap circuits they will discover how electrical devices work by designing and testing their own electronic creations with no soldering, wiring, or programming required.	1-4	Electricity and Electrical Devices	1.5-2 hours
 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.	3-6	Electricity and Electrical Devices	1.5-2 hours
Chemistry	Students will learn about fundamental principles of chemistry by getting involved in hands-on experiments using household materials. This workshop is an interactive experience to familiarize	2-4	Properties of Liquids and Solids	1.5-2 hours
	with magical chemical reactions.	8	Fluids	1.5-2 hours

EARTH & SPACE SYSTEMS

WORKSHOP	DESCRIPTION	GRADE(S)	ONTARIO CURRICULUM CONNECTION	LENGTH (HRS)
Clean Water	Students will learn about the sources and effects of water contamination in the environment. By building their own water purification systems, students will recognize the importance of water quality around the globe and get inspired to work towards the engineering challenges in water treatment processes.	2-3	Air and Water in the Environment; Soils in the Environment	1.5-2 hours
		5-8	Conservation of Energy Resources; Water Systems	1.5-2 hours
Space crafts & Rockets (a variation of pop bottle rockets)	We are currently living in the era of space technology development. With this workshop students will learn fundamental principles about flight, aerodynamics, propulsion, and space exploration. They will design and test a rocket-spacecraft module that protects an astronaut when landing back to earth.	6-9	Space, Space Exploration	1.5-2 hours
Spectroscopes	Using simple household materials, students will be making a spectroscope and telescope to aid them in observing the universe! Students will learn how astronomers determine the composition of stars and other astronomical bodies.	6	Space	1.5-2 hours
<input checked="" type="checkbox"/> Solar system with Merge Cube	Hold the solar system in the palm of your hand with the help of the Merge Cube. Learn about the different planets and how they rotate around the sun!	5-8	Space	1.5-2 hours



Carleton
UNIVERSITY

FACULTY OF
**Engineering
and Design**

A network
member of
actua.ca



Youth · STEM · Innovation

Actua provides training, resources and support to its national network of members located at universities and colleges across Canada in the delivery of science, technology, engineering and mathematics (STEM) education outreach programming. Each year, these members engage over 225,000 youth in 500 communities nationwide. Please visit Actua at www.actua.ca.