Virtual Ventures

Summer Camps and Programs
“Setting the trend in youth technology education”

School Workshops 2017

Tel: (613) 520-2600 ext 5007
Email: vv.director@carleton.ca
Website: carleton.ca/vv
Time:
All workshops are approximately 1.5 hours long unless otherwise stated.

Location:
Workshops can be held in school or at Carleton University unless necessary equipment stated is not accessible in school, in this case it would be required to be at Carleton University.

In School:
It is requested that instructors have access to a computer and projector for most workshops. Further details will be provided during the booking process.

Grade Ranges:
Workshops are modified to suit group’s age. Ages range from grade 1 to grade 10.
General Workshop Information

Workshops:
Virtual Ventures offers a wide range of workshops in Science, Technology, and Engineering.

Click the images/topics below to skip to these workshops

- Matter & Energy
- Earth & Space Systems
- Programming
- Life Systems
- Mechanisms & Structures

Cost:

In School

<table>
<thead>
<tr>
<th>Number of Workshops</th>
<th>Cost per Workshop</th>
<th>Total Cost in School</th>
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<tbody>
<tr>
<td>1</td>
<td>$65</td>
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<tr>
<td>2 or 3</td>
<td>$55</td>
<td>$110 or $165</td>
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<td>$200</td>
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On Campus (Carleton University)

<table>
<thead>
<tr>
<th>Number of Workshops</th>
<th>Cost per Workshop</th>
<th>Total Cost in School</th>
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<tbody>
<tr>
<td>1</td>
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<tr>
<td>2 or 3</td>
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<td>$50 or $75</td>
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<tr>
<td>4</td>
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Matter & Energy

Energy & Electricity:

This workshop focuses on how electricity is produced from different sources of renewable and non-renewable energy. Students will participate in the construction of an environmentally friendly device to generate power.

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. They will discover how electrical devices work by designing and testing their own electronic creations with no soldering, wiring, or programming required.

Chemistry Magic:

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 with magical chemical reactions.

Grades 4-6
Grades 3-8
Grades 1-10

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Earth & Space Systems

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.

Grades 1-8

Spacecraft & 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.

Grades 3-10

Rock Out!:
The earth has been around for millions and millions of years. It has gone through huge changes, both in what is living on it, and what the environment is. However, despite these changes happening, a few things have stayed the same. One of these is rocks. There are rock samples that date back to before the dinosaurs, and some that a relatively new. But how did we end up with rocks with different ages?

Grades 3-5

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LEGO Robotics:

Using LEGO Minstomy NXTs, students will learn about gears and mechanical systems by building, programming and testing robots to accomplish desired tasks. From obstacle courses to sumo-wrestling competitions, this workshop offers a fun way to learn about the fascinating world of engineering design and robotics!

Grades 6-10

Visual Programming with Scratch:

This workshop will introduce computer programming concepts with no coding involved! Using Scratch, a visual programming software, students will create games and animations that enhance science and technology knowledge.

Grades 1-10

3D Illustration & Design:

Students will be introduced to the world of 3D graphics! Using Tinkercad, a 3D design tool, they will create objects to form structures, habitats, systems, etc. This workshop is a fun and interactive way to illustrate and strengthen science concepts learned in class.

Grades 3-8

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**Codemakers - Level up with Computer Science:**

Computers are everywhere, but did you know they power your car, your toaster, and even the games we play? In this Codemakers workshop students will recognize just how important computers are and are sure to become producers, not just users of technology! No computers required!

**Codemakers - From Binary to Beyond:**

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! No computers required!

**Arduino:**

Microcontroller chips are present inside a countless number of commercial products these days, including cars, remote controls, cellphones, cameras, etc. With this workshop, students will learn about what microcontrollers are and how they work by programming an Arduino board.

grades 1-8

grades 3-6

grades 3-6

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Life Systems

CSI:

Students will 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.

Grades 1-8

The 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.

Grades 5-8

The Respiratory System:

This workshop teaches how the respiratory system works in the human body by creating a model lung to investigate how air enters into our bodies and travels to our lungs.

Grades 5-8
Geodesic Domes:

Students will 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.

Grades 1-7

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!

Grades 3-8