



# Elementary Workshop Package

Virtual Ventures offers a wide range of workshops in Science, Technology, and Engineering. Many teachers use our workshops as a review of a topic, to supplement current class work, or as a cost-effective alternative to a field trip (with much less paperwork!).

## WORKSHOP INFORMATION

- All workshops are in-person and can be booked Monday-Friday between 9:00am-4:00pm (contact us for after school program availability).
- Workshops are led by our facilitators and are intended for a class of 20-30 students.
- Workshops are between 1-3 hours in length (specified in package).
- All supplies necessary for the workshop will be brought to your classroom by Virtual Ventures including laptops upon request.
- All workshops are offered for **free**.

We have suggested grade levels and subjects applicable for each workshop, however, please feel free to email us to discuss if a different workshop may be suitable for your class.



[vv@carleton.ca](mailto:vv@carleton.ca)



[www.carleton.ca/vv](http://www.carleton.ca/vv)



(613) 520-2600 x5007

## Curriculum Connections

Workshops meet the following Science and Technology curriculum themes:

### **STEM Investigation and Communication Skills**

- A1.3 - use an engineering design process and associated skills to design, build, and test devices, models, structures, and/or systems

### **Coding and Emerging Technologies**

- A2.1 write and execute code in investigations and when modelling concepts, with a focus on creating clear and precise instructions for simple algorithms
- A2.2 identify and describe impacts of coding and of emerging technologies on everyday life

### **Applications, Connections and Contributions**

- A3.1 - describe practical applications of science and technology concepts in their home and community, and how these applications address real-world problems
- A3.2 - investigate how science and technology can be used with other subject areas to address real-world problems
- A3.3 - analyse contributions to science and technology from various communities

Other grade specific curriculum connections are outlined in the package.



## DIGITAL LITERACY

WORKSHOP	DESCRIPTION	GRADES	TECHNOLOGY	ONTARIO CURRICULUM CONNECTION	LENGTH (HOURS)
Coding Safari	Join us in a creative coding adventure where young minds design and build their own mini games, while discovering the magic of coding concepts	JK-1	Scratch JR, iPads	Number Sense, Patterns and Relationships	1.5 hours
Brick Battle	Empower students to unleash their creativity and technical skills as they construct LEGO robots, integrate sensors, and delve into coding, fostering a strong understanding of robotics through this hands-on team project	6-8	LEGO Spike Core	Systems in Action	3 hours



## MATTER AND ENERGY

WORKSHOP	DESCRIPTION	GRADES	TECHNOLOGY	ONTARIO CURRICULUM CONNECTION	LENGTH (HOURS)
Magical Matters	Unlock the secrets of matter where budding coders craft online games to explore the unique behaviors of liquids, gases, and solids, all while diving into the captivating world of science	1-3	Scratch	Coding Skills, Patterns and Relationships, Properties of Liquids and Solids	1.5 hours
Sunlight to Nightlight	Discover how to measure sunlight using Micro:bits. Explore how LEDs can detect light, using coding to measure the brightness of the sun and gain insight into weather and climate.	3-5	Micro:bits	Light and Sound	1.5-2 hours



## EARTH AND SPACE SYSTEMS

WORKSHOP	DESCRIPTION	GRADES	TECHNOLOGY	ONTARIO CURRICULUM CONNECTION	LENGTH (HOURS)
Mineral Marvels	Dive into the world of geology and uncover the processes behind mineral formation while mastering 3D modeling techniques. Students will create detailed models of various minerals, exploring the effects of heat and pressure on their formation.	3-5	TinkerCAD Codeblocks	Rocks, Minerals, Geological Processes	2 hours
Eclipse Expedition	Simulate a solar eclipse and explore design code to randomly space stars and space debris in the vast, empty space between Earth and the Sun.	4-6	TinkerCAD	Space, Heat in the Environment	1.5-2 hours
Nature's Blueprint	Recreate some of nature's most incredible patterns. Explore the connections between repetition, mathematics, and natural systems to build your own fantastical patterns.	6-8	TinkerCAD Codeblocks	Biodiversity, Interactions in the Environment, Cells	1.5-2 hours



# STRUCTURES AND MECHANISMS

WORKSHOP	DESCRIPTION	GRADES	TECHNOLOGY	ONTARIO CURRICULUM CONNECTION	LENGTH (HOURS)
Brick Breeze	Embark on a hands-on journey into renewable energy, constructing wind turbines to demonstrate newfound knowledge of energy conversion and the role of renewable resources in a sustainable future	3-5	LEGO Spike Core	Machines and Their Mechanisms, Conservation of Energy and Resources	1.5 hours
Brick-Quake	Unleash your inner engineer by designing and constructing earthquake-resistant structures, gaining foundational insights into engineering principles	3-5	LEGO Spike Core	Forces and Motion, Strong and Stable Structures, Forces Acting on Structures	1.5 hours
Launch Craft	Discover the principles of kinematics as you design and build 3D structures. Then, bring them to life in dynamic simulations, launching projectiles to observe exciting real-time effects on your creations.	5-8	TinkerCAD SimLab	Forces Acting on Structures, Flight, Form, Function and Design of Structures	1.5 hours



## LIFE SYSTEMS

WORKSHOP	DESCRIPTION	GRADES	TECHNOLOGY	ONTARIO CURRICULUM CONNECTION	LENGTH (HOURS)
Ozobees	Step into the captivating world of plant growth and pollination and learn about the intricate processes of nature with coding	JK-2	Ozobots	Needs and Characteristics of Living Things, Growth and Changes in Animals	1.5-2 hours
Habitats in 3D	Delve into the essentials of natural habitats, food chains, and ecosystem balance by creating vibrant habitats and communities online	3-5	TinkerCAD	Growth and Changes in Plants, Habitats and Communities	1.5-2 hours
Species Invaders	Design a captivating video game that illustrates the complex relationship between invasive species and their impact on the environment	3-6	Scratch	Habitats and Communities, Biodiversity	1.5-2 hours





## FREQUENTLY ASKED QUESTIONS

- **What if we have a group larger than 30 students?**
  - For groups larger than 40 please contact us by email to accommodate.
- **Do I need to supply Chromebooks or laptops for the workshop?**
  - We will supply laptops if indicated in booking request. For any workshops using LEGO Spike Core laptops will automatically be supplied.
- **I want to book workshops for our whole school, how can I do that?**
  - To book for more than 5 classes or to coordinate a large number of workshops for one day please contact us directly by email.
- **I filled out a booking form but have not heard back, did you receive my request?**
  - Due to a high volume of requests and limited availability we work through requests as quickly as we can. You will hear back from us within 2 weeks of submitting your request. If you do not hear after that point please follow up with our team by email.
- **I want to book more than one workshop for my class how do I do that?**
  - Due to a high volume of requests we are limiting classes to one workshop per term. Terms are September-December, January to April and May to June. Booking requests will open at the beginning of each term.
- **I need to cancel or reschedule my workshop.**
  - Please contact us by email at [vv@carleton.ca](mailto:vv@carleton.ca) to reschedule or cancel your workshop booking.



## THANK YOU TO OUR SUPPORTERS



**Carleton  
University**

Faculty of  
Engineering  
and Design

A network  
member of **actüa**

**Actua is a leading Canadian science, technology, engineering and mathematics (STEM) youth outreach organization. Each year, the Actua network engages over 375,000 youth in 600 communities across Canada in transformative STEM learning experiences that build critical skills and confidence.**

**Please visit [www.actua.ca](http://www.actua.ca).**

## CONTACT US



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