



# SCHOOL PROGRAMS 2018-2019

PRESCHOOL TO SECONDARY SCHOOL



CANADA SCIENCE AND  
TECHNOLOGY MUSEUM

# Curriculum Connections

School programs at the Canada Science and Technology Museum meet many learning objectives for students from preschool through Grade 10 (ON) / Secondary Cycle 2 (QC). Our programs are designed to stimulate wonder through hands-on experiences and open-ended questions. Profiling how science and technology affect society and the environment, these programs offer students rich opportunities to explore, discover, and appreciate scientific achievement from a Canadian perspective. Educational Activity Kits that complement these programs are available online at [IngeniumCanada.org](http://IngeniumCanada.org) or by calling **613-991-3053**.

## Ontario

Belonging and Contributing, Self-Regulation and Well-Being, Demonstrating Literacy and Mathematics Behaviours, Problem Solving and Innovating

Kindergarten

A Trip Around the Sun



## Science and Technology

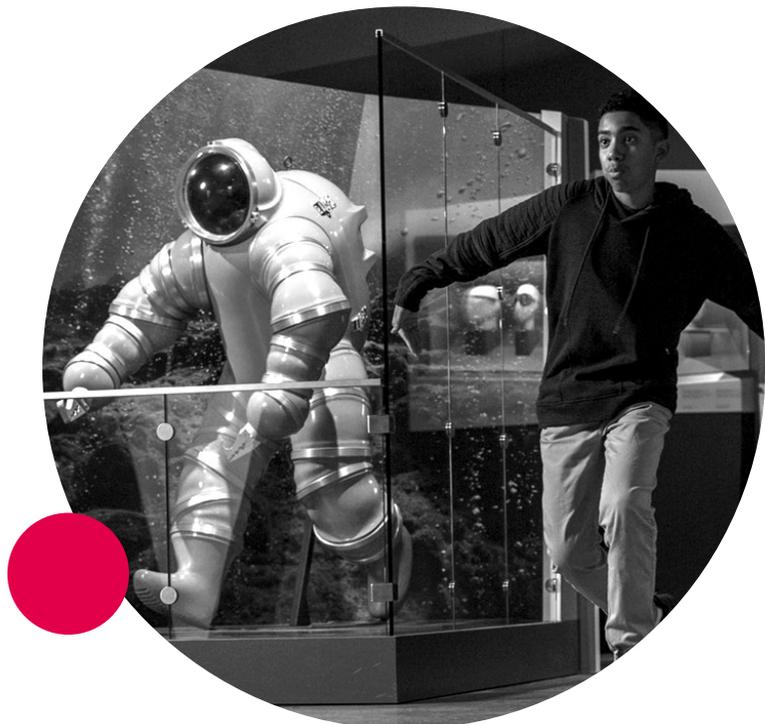
	Understanding Living Systems	Understanding Matter and Energy	Understanding Structures and Mechanisms	Understanding Earth and Space Systems
Grade 1		Everyday Energy		A Trip Around the Sun
2			Simple Machines	
3		Forces in Action		
4			Pulleys and Gears	
5			Bridge Builders	
6	Ocean Explorers	Electri-city		
7	Ocean Explorers		Bridge Builders	

## Science

### Physics

9 Electri-city

10 Light Paths



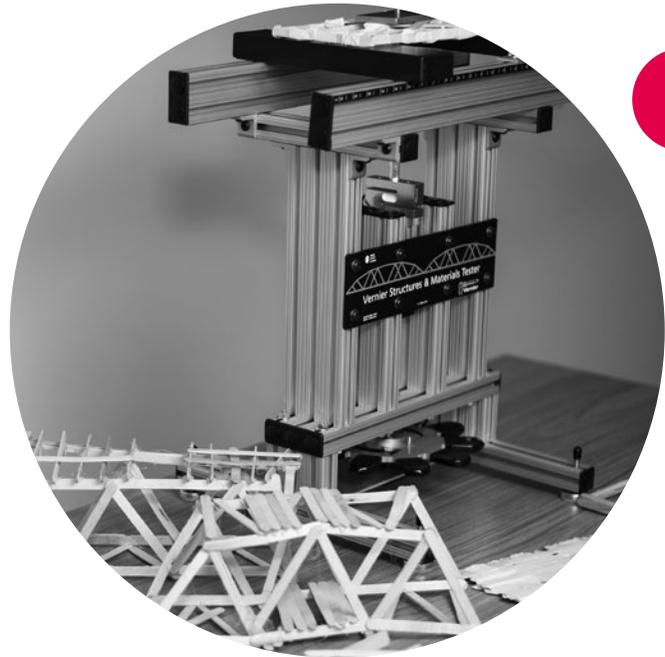
# Quebec

## Preschool

Competency 5 – To construct his/her understanding of the world

Preschool

A Trip Around the Sun



## Elementary Cycles 1 to 3

### Mathematics, Science and Technology

	Material World	Earth and Space	Living Things
Cycle 1		A Trip Around the Sun	
Cycle 2	Everyday Energy Forces in Action Pulleys and Gears Simple Machines	Everyday Energy	
Cycle 3	Bridge Builders Electri-city		Ocean Explorers



## Secondary Cycles 1 and 2

<b>Mathematics, Science and Technology</b>			
	<b>Material World</b>	<b>Earth and Space</b>	<b>Living Things</b>
Cycle 1	Bridge Builders		Ocean Explorers
Cycle 2	Electri-city Light Paths		

# Kindergarten to Grade 6 (ON) / Preschool and Elementary Cycles 1 to 3 (QC)

Programs offered from September to May

## A Trip Around the Sun

Kindergarten to Grade 1 / Preschool and Elementary Cycle 1

\$9 per student

Duration: 60 minutes

What is our primary source of heat and light? How do Earth's daily and seasonal cycles affect everyday life? Through the museum's exhibits, students discover the technologies that allow Canadians to enjoy our seasons. They are also introduced to the concepts of heat, light, day, and night as they explore the changing seasons in the museum's inflatable planetarium.

## Everyday Energy\*

Grades 1 to 3 / Elementary Cycle 1 and 2

\$9 per student

Duration: 60 minutes

This program allows students to observe how their own energy can be converted into movement. They also investigate how various forms of energy can be used to make everyday devices function. As a hands-on case study, students explore what effect the height of a dam has, and observe how energy from falling water can be converted to light up an LED bulb.

## Simple Machines\*

Grades 1 to 3 / Elementary Cycle 1 and 2

\$9 per student

Duration: 60 minutes

We can use all kinds of simple machines to help us move heavy loads. Students are challenged to move a heavy object using wheels and axles, ramps and pulleys. They also need to determine how to place a fulcrum in a see-saw to perfectly balance two loads. Finally, students experiment with creative solutions to move their heavy load, using as many different simple machines as possible.

## Forces in Action\*

Grades 2 and 3 / Elementary Cycle 2

\$9 per student

Duration: 60 minutes

What makes things move? What makes them stop moving? Students investigate a variety of forces — and put them to work — to find the best way to make cars race down a track. They also use digital graphing tools, to measure the amount of force required to overcome the force of friction on different surfaces.

\*New program available starting in November



## Pulleys and Gears

Grades 4 to 6 / Elementary Cycle 2

\$9 per student

Duration: 75 minutes

Explore the uses of two types of simple machines from the lever family. Students experiment with pulley systems to discover how they facilitate accomplishing tasks, such as lifting heavy objects. Students then investigate how gears can work together to increase the speed or torque of a system, or to change the direction of movement.



## Bridge Builders

Grades 5 and 6 / Elementary Cycle 3

\$9 per student

Duration: 75 minutes

In this hands-on workshop, students experience the life of an engineer as they design a bridge that can withstand the forces acting upon it. Students discover the properties of materials, as well as how they respond to forces when they are arranged in various configurations. Working with their peers, they then transfer this knowledge as they design and build a bridge prototype – just as an engineer would. Finally, the bridges are tested in our bridge crusher to evaluate their efficiency when comparing strength and weight.



## Electri-city

Grades 5 and 6 / Elementary Cycle 3

\$9 per student

Duration: 75 minutes

Through various hands-on electricity experiments, students explore electrically-conductive and insulating materials and identify the parts of an electrical circuit. In addition, students discover the differences between series and parallel circuits. As they wire our miniature houses, students observe various electrical devices (i.e. light bulb, fan, doorbell) which transform electrical energy into another form of energy.

## Ocean Explorers\*

Grade 6 / Elementary Cycle 3

\$9 per student

Duration: 90 minutes

This program looks into the different technologies used to study and explore our oceans. Moving between three stations, students discover the depths and dive with whales using virtual reality. They also have the chance to learn about ocean sounds and North Atlantic right whales using an iPad, control a robot to explore the ocean floor, and learn to classify marine animals.

\***New program** available starting in November

# Grades 7 to 12 (ON) / Secondary Cycles 1 and 2 (QC)

Programs offered from September to May

## Bridge Builders

Grade 7 / Secondary Cycle 1

\$9 per student

Duration: 75 minutes

In this hands-on workshop, students experience the life of an engineer as they design a bridge that can withstand the forces acting upon it. Students discover the properties of materials, as well as how they respond to forces when they are arranged in various configurations. Working with their peers, they then transfer this knowledge as they design and build a bridge prototype – just as an engineer would. Finally, the bridges are tested in our bridge crusher to evaluate their efficiency when comparing strength and weight.



## Electri-city

Grade 9 / Secondary Cycle 2

\$9 per student

Duration: 75 minutes

Through various hands-on electricity experiments, students explore electrically-conductive and insulating materials and identify the parts of an electrical circuit. In addition, students discover the differences between series and parallel circuits. As they wire our miniature houses, students observe various electrical devices (i.e. light bulb, fan, doorbell) which transform electrical energy into another form of energy.

## Ocean Explorers\*

Grade 7 / Secondary Cycle 1

\$9 per student

Duration: 90 minutes

This program looks into the different technologies used to study and explore our oceans. Moving between three stations, students discover the depths and dive with whales using virtual reality. They also have the chance to learn about ocean sounds and North Atlantic right whales using an iPad, control a robot to explore the ocean floor, and learn to classify marine animals.

## Light Paths\*

Grade 10 / Secondary Cycle 2

\$9 per student

Duration: 90 minutes

Explore the phenomena of light and geometric optics: reflection, refraction, diffusion, focus, convergence and divergence of light, transmission of light, and shadows. In groups, students experiment with different tools and materials to create a complex path for a beam of light. They also collaborate with other groups to build an optical chain reaction that passes beams of light from one group's apparatus to another.

\*New program available starting in November

# Summer Fun Days

June 3 to 21, 2019



Kindergarten to Grade 8 /  
Preschool to Secondary Cycle 1  
\$9 per student  
Duration: Two 45-minute workshops

End your school year at the museum – where students participate in a range of activities and dynamic presentations. Details and registration for Summer Fun Days opens in January 2019.

# Self-guided visits

Year round

All grade levels  
\$9 per student

Explore the museum's superb collection at your own pace; self-guided tours are the perfect way to chart your own course through the exhibitions. Discover Canada's contributions to science and technology, along with our exciting stage demos and our Exploratek studio! Engage your students with curriculum-linked challenges in the exhibits by downloading our Museum Mission activity booklets.



# General Information

Programs are available weekdays from September 18, 2018 to June 21, 2019, and are scheduled between 9:30 a.m. and 5 p.m. The museum is closed Mondays from September to April. All of the museum's educators are experts in adjusting the content to the needs of your class.

## Reserving your visit

Consult the list of programs and make your selection. Reserve as early as possible to avoid disappointment — we recommend a minimum of **one month in advance**.

School booking requests can be made through our [online form](#). You can also connect directly to our Customer Relations team:

**By telephone** 613-991-3053 or 1-866-442-4416

**By email** [contact@IngeniumCanada.org](mailto:contact@IngeniumCanada.org)

Confirmation of your scheduled program will be sent to you via e-mail. With the exception of self-guided visits, a representative from the education team will contact you prior to your visit to help you prepare for your visit and to discuss the needs of your students.

## Free visit preview

Teachers are welcome to visit the museum free of charge by presenting proof of their teaching status.



## Planning your visit

We strongly recommend the following minimum ratios for student supervision (by adults) when visiting the museum:

Level	Student-Adult Ratio
K to Grade 8 Preschool to Secondary Cycle 1	10 : 1
Grades 9 and up Secondary Cycle 2 and up	15 : 1

During programs, museum educators encourage teachers and accompanying adults to participate and assist. Proper supervision during free time is also essential to creating a safe and fun atmosphere at the museum. Teachers and supervisors are expected to remain with their students at all times.

Adult chaperones are included in the group price, at a maximum ratio of one per four students for elementary groups, or one per six students for secondary groups. If you wish to have additional adults accompany your visit, they will be charged the group rate.

**Parking fees:** \$3 per hour, \$8 daily maximum (free for buses)

## Accessibility

The museum is committed to providing an [accessible environment](#). Please let us know if your group has any special needs upon booking, and we'll be happy to discuss specific accommodations.

## How to find the museum

The Canada Science and Technology Museum is located at 1867 St Laurent Boulevard in Ottawa.