

Today, they're Scientists in School ...

For Best  
Possible Dates

**BOOK EARLY**

[www.scientistsinschool.ca](http://www.scientistsinschool.ca)



**SCIENTISTS  
IN SCHOOL**

**2018-2019 SCIENTISTS IN SCHOOL PROGRAM CATALOGUE**

Inquiry-based STEM workshops for Kindergarten to Grade 8

**Avon Maitland DSB, Huron-Perth Catholic DSB, Bluewater DSB, and Bruce-Grey Catholic DSB**

## SCIENTISTS IN SCHOOL

A non-profit offering experiential science, technology, engineering, math (STEM), and environmental workshops.

Your inquisitive students, under the guidance of experts, will become scientists, engineers and environmental stewards while developing the global competency skills they need for tomorrow's workforce.

### Our workshops offer:

- ➔ An inquiry-based, curriculum-enriching experience with plentiful scientific materials
- ➔ Local presenters who are scientists, engineers, technologists and more
- ➔ The opportunity to highlight STEM careers
- ➔ Post-workshop extension packages to support your lessons
- ➔ Fun and relevant content that builds critical thinking, collaboration, creativity, communication, and problem-solving skills

We work with teachers, educators and school boards to ensure that our program aligns with curriculum, student and educator needs.

Like you, our goal is to inspire all children to realize their dreams, regardless of their future aspirations.

Our Mission is to ignite scientific curiosity in children so that they question intelligently; learn through discovery; connect scientific knowledge to their world; are excited about science, technology, engineering and math; and have their interest in careers in those fields piqued. Our Vision is for all young Canadians to be actively engaged in the seeing, doing and understanding of science.

## OUR IMPACT BY THE NUMBERS

(2017-2018: Ontario)



**634,000**

Children and youth inspired through workshops



**23,478**

Half-day classroom workshops delivered



**58,700**

Parent volunteers joined in the classroom



**1,585,000**

Face time hours of investigation



**9,000,000**

Young scientists across Ontario and Alberta since 1989!

## COLLABORATORS IN EDUCATION:

We use an evidence-based approach to provide high-impact workshops that enhance curriculum and provide real-world experiences for your students. A recent post-workshop survey\* of first-time users (teachers) of our workshops showed:

**94%**

discovered new ideas to use in their science program

**86%**

felt our workshops heightened student interest in STEM

**85%**

felt our workshops helped their students better understand the STEM done in class

**83%**

felt Scientists in School encouraged their students to use critical-thinking skills, evidence-based reasoning and argumentation

\* Survey conducted in 140 schools by Western University researchers

**K**

## Kindergarten Workshops

Fee: \$220.00

Maximum 30 students/workshop

### Backyard Bugs

Follow-up Teacher Resources | Volunteers Required

“Bee” an entomologist. Meet the insect family and their relatives. Develop a new appreciation for bugs by investigating how they behave, eat, see and hear. Camouflage as a butterfly and see the world through the eyes of a dragonfly. Identify interesting backyard bugs and make an insect to take home.

### Simply Marvellous Machines

Follow-up Teacher Resources | Volunteers Required

Discover how simple machines help you every day. Find simple machines at an imaginary playground as you experiment with inclined planes, dig with wedges and make a lever to test at home. Investigate how pulleys make work easier and explore how to make bubbles using gears. Measure the difference a machine makes!

*“I organize a workshop for the little scientists in my class each year. The students are so engaged with the hands-on activities. They ask questions, make predictions, test their hypotheses, and create meaning and understanding from their explorations. The materials brought into the classroom are amazing, and truly spark a love for science and technology. I will definitely keep Scientists in School on our ‘Must Do List’ for next year!”*

## BOOK TODAY - IT'S EASY!

Contact us at [wco@scientistsinschool.ca](mailto:wco@scientistsinschool.ca) or 519-763-3950 to get your preferred topic and date.

## DOWNLOAD RESOURCES!

Visit [www.scientistsinschool.ca](http://www.scientistsinschool.ca) and discover our Teacher Resources and STEM-based activities.



## Grade One Workshops

Fee: \$220.00

Maximum 30 students/workshop

**1**

### Animal Coverings And Adaptations

Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

How does beaver fur feel compared to raccoon fur? What does a butterfly wing really look like? Explore some of nature's most unusual coverings including quills, shells, scales, feathers and fur. Investigate the insulating properties of animal coverings and discover some of the amazing adaptations animals use to survive their environment and seasonal changes.

### Energy Makes It Happen

Matter and Energy | Follow-up Teacher Resources

Volunteers Required

Investigate the sun's power by exploring the impact energy has on our lives. Make a bubble grow using heat from thermal energy. Discover the energy needed to power different devices and learn about energy conservation. Build a sun chain to learn that the sun is the Earth's primary energy source. Create paintings using solar power.

### Kitchen Chemistry For Curious Kids

Special Interest | Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

As a food scientist, investigate what yeast needs to grow and how to blow up a balloon by mixing a solid with a liquid. Challenge your powers of observation while making a surprise drink and make a mystery substance that could be both a liquid and a solid.

### Never Say Ugh To A Bug

Life Systems | Combined Grade Content 1-2

Volunteers Required

Develop a new appreciation for bugs as an entomologist. Examine a variety of living and preserved specimens on a scavenger hunt in the classroom. Explore insect life cycles. Discover the benefit and beauty of pollinators and how critical their role is to life on earth.

### Structures: Under Construction

Structures and Mechanisms | Follow-up Teacher Resources

Volunteers Required

Join our engineering team and build a structure capable of supporting your students. Discover the concepts you need to make this happen. Explore the role of fasteners and the properties of materials using real tools. Test 3-D shapes for structural strength. Build a framework and test for strength and stability.

# 2

## Grade Two Workshops

Fee: \$220.00

Maximum 30 students/workshop

### Animal Coverings And Adaptations

Life Systems | Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

How does beaver fur feel compared to raccoon fur? What does a butterfly wing really look like? Explore some of nature's most unusual coverings including quills, shells, scales, feathers and fur. Investigate the insulating properties of animal coverings and discover some of the amazing adaptations animals use to survive their environment and seasonal changes.

### Get Moving With Toys

Structures and Mechanisms | Volunteers Required

Discover how simple machines make work easier for us. Learn about movement on inclined planes. Send a secret message using a pulley system. Discover the importance of wheels and axles as you build your own car. Investigate the power of levers and make a screw to take home.

### Kitchen Chemistry For Curious Kids

Special Interest | Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

As a food scientist, investigate what yeast needs to grow and how to blow up a balloon by mixing a solid with a liquid. Challenge your powers of observation while making a surprise drink and make a mystery substance that could be both a liquid and a solid.

### Let It Flow: Air And Water

Earth and Space Systems | Follow-up Teacher Resources

Volunteers Required

Discover the properties of air and water. Learn that air has weight, takes up space and can be used to save an accident victim. Explore the water cycle, uncover the hidden power of a water wheel and race your own yacht to experiment with sail size.

### Looking At Liquids

Matter and Energy | Follow-up Teacher Resources

Volunteers Required

Marvel as you explore the three states of matter and change a liquid to a solid. Compare the flow rate of different liquids and test their ability to absorb into a solid. Investigate buoyancy through manipulation of materials. Discover how liquids and solids interact. Accept the challenge to produce the world's biggest bubble.



## Never Say Ugh To A Bug

Life Systems | Combined Grade Content 1-2

Volunteers Required

Develop a new appreciation for bugs as an entomologist. Examine a variety of living and preserved specimens on a scavenger hunt in the classroom. Explore insect life cycles. Discover the benefit and beauty of pollinators and how critical their role is to life on earth.

## Grade Three Workshops

Fee: \$220.00

Maximum 30 students/workshop

# 3

### Force, Of Course!

Matter and Energy | Follow-up Teacher Resources

Step into the physics lab to investigate friction, elastic, magnetic and gravitational forces. Use a catapult to measure the impact of force on a projectile. Discover the science behind removing a tablecloth from underneath dishes without any breaking. Learn how to defy gravity!

### Structures: Stable And Strong

Structures and Mechanisms | Follow-up Teacher Resources  
Volunteers Required

Build your knowledge of structural strength and stability as a junior engineer. Investigate how the strength of a material can be altered by its shape. Create structures and learn the impact of forces acting upon them. Take up the challenge to design, build and test a bridge.

*“Scientists in School brings materials and teaching into the classroom that could really only be assembled by a dedicated organization. Concepts within the structures unit were being applied immediately by children moving from centre to centre. It’s dynamic learning at its best.”*

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# 4

## Grade Four Workshops

Fee: \$220.00

Maximum 30 students/workshop

### Battles In The Tropical Rainforest

Life Systems | Volunteers Required

Join our research team, travel around the world and explore tropical rainforest habitats. Make a rubber ball and discover the benefits of using renewable rainforest resources. Learn about special adaptations of rainforest plants by constructing a tree from the roots up. Build a rainforest food web and learn the impact of species extinction.

### Don't Take Rocks For Granite

Earth and Space Systems | Volunteers Required

Become a junior geologist and dig into the rock cycle. Test the hardness of minerals and examine igneous, sedimentary and metamorphic rocks. Identify mystery minerals all around us and mine some edible ore. Experience the life of a paleontologist in the field and unearth real fossils!

### Gearing Up: Fun With Pulleys And Gears

Structures and Mechanisms | Follow-up Teacher Resources

Become a physicist and discover how pulleys and gears can make work easier. Construct gear trains and identify gears used in our daily lives. Build and design pulley systems to change an applied force. Be part of a human pulley and devise how to move something bigger than you!

*“Scientists in School has ALWAYS provided engaging workshops that my students talk about for days!”*

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## Grade Five Workshops

Fee: \$220.00

Maximum 30 students/workshop

# 5

### Body Works

Life Systems | Follow-up Teacher Resources

Join us on a journey around the human body to explore its many complexities. Assemble a urinary system to filter simulated plasma. Build a model of the respiratory system. Test your reflexes and measure your vital capacity. Follow a cell as it travels through a large-scale model of the heart.

### May The Force Be With You

Structures and Mechanisms | Follow-up Teacher Resources

Join our engineering team to discover how structures resist the internal and external forces acting upon them. Use an earthquake generator to determine the factors that affect structure stability. Investigate centre of gravity and its effect on structural stability. Design, build and test a freestanding structure.

### What In The World Is Matter?

Matter and Energy | Follow-up Teacher Resources

Explore solids, liquids and gases as detectives seeking clues to the mysteries of matter. Compare physical and chemical changes by carrying out some cool chemistry. Discover the work of some fascinating insect chemists. Determine the identity of a mystery compound using your chemical intuition and some crafty experimentation.

*“I overheard a Grade Five student proclaiming to his friends, ‘I didn’t know science could be this fun!’”*

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# 6

## Grade Six Workshops

Fee: \$220.00

Maximum 30 students/workshop

### Air And Flight

Structures and Mechanisms | Follow-up Teacher Resources

Discover the properties of air and the principles of flight by levitating a ping pong ball. Find the best wing design and angle of attack for liftoff. Discover the correct mechanics of propeller construction. Build your own plane and investigate factors affecting the direction and speed of flight.

### Celestial Sleuths

Earth and Space Systems | Follow-up Teacher Resources

Explore the solar system and the bodies within it to finally understand the real definition of "space". Orbit through the phases of the moon and reflect on the changes we see from Earth. Discover the challenges astronauts face in space and build your own working model of the Canadarm End Effector.

### Classy Critters

Life Systems | Follow-up Teacher Resources

Become a taxonomist, classify and create order from the vast diversity of living things. Examine real preserved specimens for adaptations that help them survive and discover wildlife on a smaller scale. Explore important connections between humans, invasive species and other impacts on biodiversity.

### Electricity: Get Charged

Matter and Energy | Follow-up Teacher Resources

Explore the nature of electricity, its generation and use. Investigate static electricity through the use of an electroscope. Design and build circuits to learn how a house is wired. Test conductors, insulators and switches. Explore electromagnets, simple motors and use your own energy to power a generator.



## Grade Seven Workshops

Fee: \$220.00

Maximum 30 students/workshop

# 7

### Battles In The Tropical Rainforest

Life Systems

Travel around the world and explore the tropical rainforest. Make a rubber ball, experiment with adaptations of rainforest plants and discover the importance of each creature while building a rainforest food web.

### Engineering Challenges

Structures and Mechanisms | Follow-up Teacher Resources

Discover the secrets of structural strength and stability. Design and build a functioning cantilever able to withstand a substantial load. Investigate how to fortify bridges. Join a class-wide challenge to build a newspaper and tape truss bridge resistant to static and dynamic loads and internal forces.

### Hot Stuff!

Earth and Space Systems | Follow-up Teacher Resources

Discover the secret workings behind a candle-powered putt putt boat. Investigate if heat is generated by moving molecules and how heat moves through space, solids and liquids. Use this information to analyze how conduction, convection and radiation work together to propel the putt putt boats.

*"I truly believe in all the hard work that Scientists in School does for our students. Without them, our students would not have the opportunities to work with their hands while using concrete materials."*

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# 8

## Grade Eight Workshops

Fee: \$220.00

Maximum 30 students/workshop

### Fluid Power

#### Matter and Energy

Explore fluids and their application in mechanical systems. Study density to determine the composition of mystery cubes. Investigate the relative density of a variety of liquids. Move loads with dump trucks to compare hydraulic and pneumatic systems. Build and operate models of hydraulic equipment including a robotic arm.

### Groundwater Investigations

#### Earth and Space Systems | Follow-up Teacher Resources

Discover nature's filtration system while exploring groundwater processes. Test for pollutants such as salt, petroleum and fertilizers and discover their possible sources. Examine local watersheds to choose the best site for your next home. Learn hands-on how to become stewards of our water systems and the importance of maintaining our water supply.

*“In my almost 20 years of teaching, the only program I continue to schedule year after year is with Scientists in School. The programs are hands-on, student-focused and completely engaging. The kids LOVE it! As educators, we benefit from being exposed to the innovative approaches undertaken by the scientists.”*

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## PARTNERS IN STEM

A joint commitment to deliver impactful  
STEM education

Across our organization we are dedicated to engaging children, teachers and families through high-quality STEM enrichment. As a charity, donors help us to subsidize the cost of every single one of our 25,040 annual classroom workshops by approximately 15%, and provide almost 2,000 complimentary workshops to schools serving low-income communities.

### Catalyst

Natural Sciences and Engineering Research Council  
TD Friends of the Environment Foundation  
Toronto Pearson International Airport

### Innovation

Amgen Canada | John and Deborah Harris Family Foundation  
Nuclear Waste Management Organization  
Ontario Power Generation | RBC

### Imagination

General Motors Canada  
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### Discovery

Ajax Community Fund at Durham Community Foundation  
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Waste Management

### Exploration

Brampton and Caledon Community Foundation  
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Guelph Community Foundation  
Huron Community Foundation | Jackman Foundation  
Lee Valley Tools | Niagara Community Foundation  
Ontario Teachers Insurance Plan  
Rotary Club of Lethbridge Sunrise  
Siemens Milltronics Process Instruments  
The Source | Veridian Connections  
Whitby Mayor's Community Development Fund  
Youngs Insurance Brokers Inc.

... Tomorrow, they're our leaders and innovators.

## SCIENTISTS IN SCHOOL



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