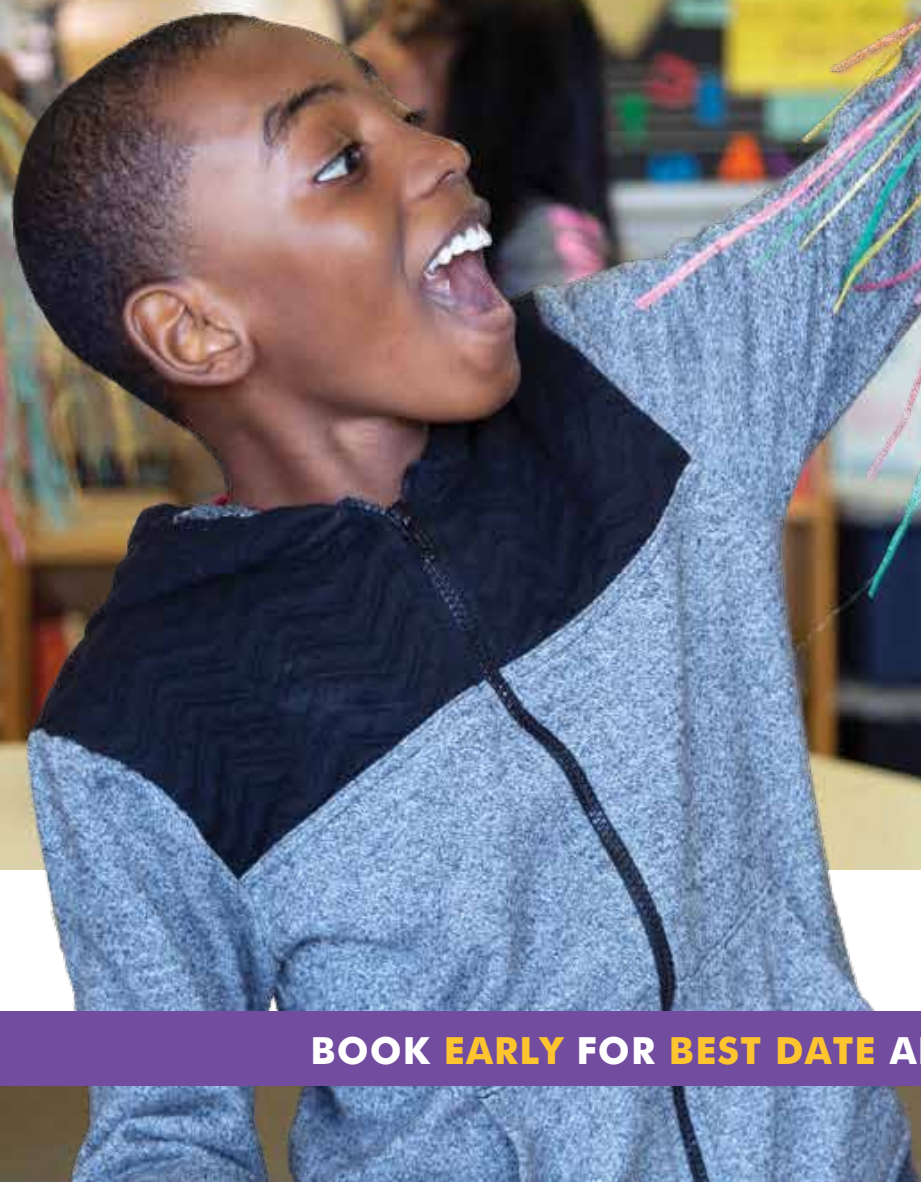




## SCIENTISTS IN SCHOOL PROGRAM CATALOGUE

Curriculum-aligned STEM workshops for Kindergarten to Grade 8

2019  
2020



**PETERBOROUGH AND THE KAWARTHAS,  
NORTHUMBERLAND, VICTORIA, CLARINGTON  
AND SIMCOE COUNTY**

**BOOK EARLY FOR BEST DATE AND TOPIC CHOICE!**

## 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, real-world experience with plentiful scientific materials and equipment
- ~ Local presenters who are scientists, engineers, technologists and more
- ~ The opportunity to highlight STEM careers, helping students see themselves as future STEM professionals
- ~ Post-workshop extension packages to support your lessons
- ~ Fun and relevant investigations that build critical thinking, collaboration, creativity, communication, and problem-solving skills

We work with teachers, school administrators 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.

## 30 YEARS STRONG

Thank you! Together, we have shaped the curious minds of more than nine million students since 1989.

We're here because of your dedication to providing your students with life-shaping opportunities. Here's to 30 more years of exploration, discovery, and meaningful collaboration. Let's continue to ensure that all children believe they can dream big and achieve the impossible.



## OUR ANNUAL IMPACT BY THE NUMBERS

(2018-2019: Organization-wide)



**700,000+**

Children and youth inspired through workshops



**24,872**

Half-day classroom workshops delivered



**62,000+**

Parent volunteers joined in the classroom



**2,000,000+**

Face time hours of investigation



**10,000,000**

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\* showed:



**97%**

of teachers said Scientists in School was very to extremely effective in encouraging students to make discoveries



**92%**

of teachers said Scientists in School was very to extremely effective in enhancing students' understanding of scientific principles



**92%**

of teachers said Scientists in School was very to extremely effective in enhancing students' interest in STEM

\* Post-workshop survey completed by over 5,000 teachers across Ontario and Alberta in 2019.

## ABOUT SCIENTISTS IN SCHOOL

**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.

For information about our booking terms, conditions, and cancellation policy, please visit [www.scientistsinschool.ca/policies/](http://www.scientistsinschool.ca/policies/)



## KINDERGARTEN WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Backyard Bugs

Follow-up Teacher Resources | Volunteers Required

Hands-on encounter with live and preserved bugs! Discover how to be an entomologist and identify an insect. Investigate how bugs behave, eat and see. Enact the life cycle of a butterfly. Create an insect to take home. Learn concepts of camouflage and symmetry with play-based activities.

### I Can Be A Scientist

Follow-up Teacher Resources | Volunteers Required

Become a working scientist. Dig for dinosaur bones and make a fossil as a paleontologist. Explore the weather as a meteorologist. Enter our tent to become an astronomer and create your own constellation. Use a lab coat and safety goggles while being a chemist. Make a fish print and examine ocean specimens as a marine biologist.

### Sensational Science

Follow-up Teacher Resources | Volunteers Required

In a play-based setting, explore interconnections between taste and smell; light and sight. Investigate objects using your sense of touch, design your own sound shakers, create 3D glasses, and learn how smell helps us evaluate items. After this, your interactions with the world will just make SENSE!

"I think it dissolved. What do you think?"



**“By engaging our students so deeply, they begin exploring the world around them and asking questions, taking them on a path of discovery that they pursue with passion. This is science at its very best!”**



"If I put it here, the gears will mesh!"

### Simply Marvellous Machines

Follow-up Teacher Resources | Volunteers Required

Have fun with physics at the playground. Figure out how gears work and have a bubble-making race. Make your own lever and solve a teeter-totter problem. Investigate wedges. Compare different shapes, weights and heights using inclined planes – then create your own experiments. Explore with our special wheel and axle machines. Measure the difference a machine makes!

### There's No Place Like Home!

Follow-up Teacher Resources | Volunteers Required

Develop a lifelong respect for the environment by discovering the plants and animals that make up a variety of habitats. Become a bird and build a nest using just your beak. Slither like a snake or dig like a mole through your underground tunnel.

### Water Fun For Kindergarten Scientists

Follow-up Teacher Resources | Volunteers Required

Investigate which materials absorb water in our 'soak it up challenge'! Explore buoyancy, experimenting with floating and sinking objects. Marvel at water's properties and elusive shape. Puzzle out uses for water. Discover how a lock system works while you row your boat up our classroom stream.

**BOOK ONLINE AND SIGN UP TO RECEIVE STEM ACTIVITIES IN OUR E-NEWSLETTER AT [WWW.SCIENTISTSINSCHOOL.CA](http://WWW.SCIENTISTSINSCHOOL.CA)**

## GRADE ONE WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Animal Coverings And Adaptations

Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

Explore bins bursting with a mix of spectacular animal coverings combined within an inquiry-based study approach! Identify key physical features of fur, skin, feathers, quills, shells and scales. Recognize how these characteristics help animals adapt and survive challenges such as weather and predators.

### Energy Makes It Happen

Matter and Energy

Follow-up Teacher Resources | Volunteers Required

Explore the impact energy has on our daily lives. Investigate how to conserve energy. Use thermometers in heat absorption experiments. Harness light energy with solar panels to create a painting. Fish for energy needed to power devices. Determine if you need sunscreen with a UV-sensitive bead.

### Never Say Ugh To A Bug

Life Systems

Follow-up Teacher Resources | Volunteers Required

Engage in a true hands-on experience with an exciting variety of bugs! Compare and contrast physical characteristics of live and preserved invertebrate specimens. Become an entomologist and learn how to identify insects. Explore the life cycle of silkworms and observe the behaviour of mealworms in different environments.

### Structures: Under Construction

Structures and Mechanisms

Follow-up Teacher Resources | Volunteers Required

Join our engineering team and build a structure capable of supporting yourself. Use real tools while learning about fasteners. Discover the purpose of building structures. Examine the properties of a variety of materials. Build a framework and test it for strength and stability.

"Look, we're painting with a solar spinner!"



**“Scientists in School is always active, always hands-on, always about inquiry and exploration and gets the students excited and fired-up about learning. Scientists in School makes learning, discovery, and inquiry fun.”**



"Exploring solutions is so much fun!"

## GRADE TWO WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Animal Coverings And Adaptations

Life Systems

Follow-up Teacher Resources | Volunteers Required

Explore bins bursting with a mix of spectacular animal coverings combined within an inquiry-based study approach! Identify key physical features of fur, skin, feathers, quills, shells and scales. Recognize how these characteristics help animals adapt and survive challenges such as weather and predators.

### 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

Run your own chemistry experiments and explore what happens when solids and liquids get together. Use a real thermometer to investigate the conditions necessary to change a solid to a liquid. Create a way to change a liquid into a solid. Take up the challenge to produce the world's biggest bubble. Explore buoyancy to rise to the top of the class!

### Move It!

Structures and Mechanisms

Follow-up Teacher Resources | Volunteers Required

Discover how simple machines make work easier. Explore wheels and axles by constructing your own car. Experiment with different levers. Raise a flag using a pulley. Uncover what inclined planes and wedges have in common. Make your own screw and crush a can to see a screw in action.

### Never Say Ugh To A Bug

Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

Engage in a true hands-on experience with an exciting variety of bugs! Compare and contrast physical characteristics of live and preserved invertebrate specimens. Become an entomologist and learn how to identify insects. Explore the life cycle of silkworms and observe the behaviour of mealworms in different environments.

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## GRADE THREE WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Force, Of Course!

Matter and Energy | Follow-up Teacher Resources

Step into the physics lab to investigate friction, gravity, magnetic and electrostatic force. Use a catapult to measure the impact of force on a projectile, and experiment with marbles and magnets to see if they can defy gravity. Engineer a crash to test the effectiveness of seat belts.

### Plants Do Amazing Things

Life Systems

Follow-up Teacher Resources | Volunteers Required

Join this botanical adventure and explore how a plant breathes, grows and stores its food. Examine leaf characteristics, explore plant adaptations and make your own recycled paper. Use a CO<sub>2</sub> indicator to investigate what leaves need for photosynthesis!

### Soil: It's Too Important To Be Treated Like Dirt!

Earth and Space Systems

Follow-up Teacher Resources | Volunteers Required

Become a pedologist and get down and dirty with soil. Learn what soil is made of, race water through different soil types and investigate why plants need soil. Explore erosion, build a soil profile and learn about decomposers by making friends with some earthy creatures.

### Structures: Stable And Strong

Structures and Mechanisms | Follow-up Teacher Resources

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.

"I wonder how much water these soil types will hold?"



**“I cannot emphasize enough what a fantastic program Scientists in School is. I have participated in this program in several different grades and different strands of science and each and every time the program is fantastic.”**



"What rock type is this one?"

## GRADE FOUR WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Don't Take Rocks For Granite

Earth and Space Systems

Follow-up Teacher Resources | Volunteers Required

Become a geologist and dig into the concepts of mineral formation, the rock cycle and fossilization. Examine igneous, sedimentary and metamorphic rocks. Learn about mining in Ontario and mine some edible ore. Experience the life of a paleontologist as you cast your own fossil to take home.

### Gearing Up: Fun With Pulleys And Gears

Structures and Mechanisms

Follow-up Teacher Resources | Volunteers Required

Discover how gears and pulleys make tasks easier by changing the direction, speed, and/or magnitude of an applied force. Investigate how we choose gear systems to ride a bike efficiently. Solve the challenge of how to move something much bigger than yourself.

### Habitats And Communities

Life Systems | Follow-up Teacher Resources

Explore the interdependence of plants and animals within ecosystems as an ecologist. Closely examine habitat specimens and identify the adaptations that aid in their survival. Study the impact of natural and manmade alterations on an ecosystem as you witness it collapse.

### Light Up Your Life

Matter and Energy | Follow-up Teacher Resources

Join us on this optical adventure and discover natural and artificial sources of light. Turn your classroom into a colourful disco while learning about the visible spectrum. Bounce and bend light to investigate reflection, refraction, and fibre optics. Demonstrate how light travels and explore optical devices.

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## GRADE FIVE WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Body Works

Life Systems | Follow-up Teacher Resources

Test your reaction rate and measure your lung vital capacity. Use stethoscopes to measure heart rate. Build a filtering urinary system and working lungs. Identify bones using X-rays and locate and manipulate joints on a skeleton. Explore how healthy blood connects all your organ systems together.

### Energy: The Power To Change

Earth and Space Systems | Follow-up Teacher Resources

Discover how energy can be transferred or transformed. Investigate how to launch a ping pong ball into space and use the energy in your body to power wind-up toys. Explore how changing light bulbs and adding insulation can save energy. Play a tune using solar panels.

### May The Force Be With You

Structures and Mechanisms | Follow-up Teacher Resources

Join our engineering team to learn how structures resist the external and internal forces acting upon them. Use everyday objects to learn about design features, investigate centre of gravity and learn its importance in stability. Take on the challenge of designing, building and testing a freestanding structure.

### Watt's Up? Energy And Electricity

Combined Grade Content 5-6

Discover the different forms of energy and how they can be transferred or transformed. Explore electrical energy and see how static electricity makes objects move. Design and build circuits to learn how a house is wired. Use these circuits to test conductors, insulators and switches.

### What In The World Is Matter?

Matter and Energy | Follow-up Teacher Resources

Discover what hair gel, diapers and Chia seeds have in common by exploring physical properties and changes. Run an amazing evaporation race. Create a cool chemical reaction and design a series of experiments to investigate what caused the chemical change. Become a forensic scientist and solve a mystery by using your lab skills to analyze physical and chemical properties.

"Exploring how to close a circuit is fun!"



**“This workshop touches on so many curriculum expectations. I didn’t think it was possible to cover so much in such a short time. With the hands-on activity centres, I know that their learning will stick. I couldn’t be more pleased!”**



"My first propeller design is ready to test!"

## GRADE SIX WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Air And Flight

Structures and Mechanisms | Follow-up Teacher Resources

Discover the properties of air which can be manipulated to achieve flight. Investigate dense air, sticky air and Newtonian laws. Design flight control surfaces to accomplish lift and thrust. Build propellers and paper planes to test your avionics expertise.

### Classy Critters

Life Systems | Follow-up Teacher Resources

Work as a taxonomist to create order from the vast diversity of living things. Investigate preserved specimens and identify important connections between species. Examine the microscopic world of protists and monerans, and see how small life on earth can be, all while studying the similarities and differences between them.

### Electricity: Get Charged

Matter and Energy | Follow-up Teacher Resources

Explore the nature of electricity, its generation and use. See how static electricity makes objects move. 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.

### Watt's Up? Energy And Electricity

Combined Grade Content 5-6

Discover the different forms of energy and how they can be transferred or transformed. Explore electrical energy and see how static electricity makes objects move. Design and build circuits to learn how a house is wired. Use these circuits to test conductors, insulators and switches.

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## GRADE SEVEN WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Close Encounters Of A Chemical Kind

Matter and Energy | [Follow-up Teacher Resources](#)

Become a chemist and discover the differences between pure substances and mixtures. Create solubility fireworks to observe particles in motion. Use cool chemistry to analyze vitamins. Explore concentration to determine how to get your daily dose of vitamins. Run a titration experiment to check what's in your juice box!

### 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](#)

Join our Research and Development team at the 'Scientists in School Toy Company'. Challenge yourself to discover the secret workings behind a candle-powered putt putt boat. Analyze how conduction, convection and radiation work together to propel these boats. Explore how the particle theory of matter links energy and temperature. Discover how energy transformations keep things moving.

"I designed this experiment and I know what's reacting!"



**“What an amazing workshop. I have never seen more students engaged and motivated to learn science! I could hear gasps of excitement as a new discovery was made or when a student had an 'aha' moment.”**



"Which material is more porous to groundwater?"

## GRADE EIGHT WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Cell Explorers:

#### Investigating Cell Structure And Function

Life Systems | [Follow-up Teacher Resources](#)

Become a cell biologist learning slide preparation and compound microscope use. Compare and contrast plant and animal cells along with cheek cells and other human body cells to determine their structure. Get absorbed in the study of osmosis. Explore pond water samples to identify living organisms.

### Fluid Power

Matter and Energy | [Follow-up Teacher Resources](#)

Explore fluids and their application in mechanical systems. Use hydrometers to determine relative density, race liquids to investigate viscosity, and find a boat while exploring buoyancy. Move a load with dump trucks to compare hydraulic and pneumatic systems and analyze the compressibility of fluids.

### Groundwater Investigations

Earth and Space Systems | [Follow-up Teacher Resources](#)

Travel through a variety of activities to explore groundwater, and its importance as a source of fresh water. Test a water sample to investigate salinity, chlorine content, and examine simulated impurities in water. Build a water filtration system to clean a soiled water sample.

## SCIENTISTS IN SCHOOL™

975 Dillingham Road, Unit 2, Pickering, Ontario L1W1Z7 | 905-837-9626/1-866-678-3434 | F: 905-837-8495 | [eco@scientistsinschool.ca](mailto:eco@scientistsinschool.ca) | [www.scientistsinschool.ca](http://www.scientistsinschool.ca)

### PARTNERS IN STEM

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 our 24,872 annual classroom workshops by approximately 15%, and provide over 2,000 complimentary workshops to schools serving low-income communities.

#### CATALYST

Natural Sciences and Engineering Research Council of Canada - 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

#### IMAGINATION

ArcelorMittal Dofasco - General Motors Canada - McMillan LLP - Superior Glove Works Ltd. - TELUS

#### DISCOVERY

Alectra Utilities - Aviva Community Fund - Cadillac Fairview - CAE - Canadian Nuclear Safety Commission  
Cameco Corporation - Carolyn Sifton Foundation - Celestica - Hamilton Community Foundation - MilliporeSigma  
Modern Niagara - Niagara Community Foundation - Pendle Fund at the Community Foundation of Mississauga  
Purdue Pharma - Society of Petroleum Engineers Canadian Educational Foundation - S.M. Blair Family Foundation  
Syngenta Canada Inc. - Systematix Inc. - The McLean Foundation

#### EXPLORATION

Ajax Community Fund at Durham Community Foundation - Brant Community Foundation - Cajole Inn Foundation  
City of Brantford - Community Foundation Grey Bruce - Dwight and Karen Brown Family Fund - Ottawa  
Community Foundation - Elexicon Energy (Formerly Veridian Connections) - LabX Media Group Charity Fund  
at the Huronia Community Foundation - Siemens Millitronics Process Instruments - The Community Foundation  
of Orillia and Area - The County of Wellington - The Source - The Township of Tiny  
Whitby Mayor's Community Development Fund



**SCIENTISTS**  
IN SCHOOL

