




## HCDSB Allowed Workshops for the 2019/20 School Year

Grade	Workshop Title
K	Backyard Bugs Magnet Magic For Little Explorers Sensational Science  Simply Marvelous Machines
1	Energy Makes It Happen Microscopy: More Than Meets The Eye Structures: Under Construction
2	Get Moving With Toys Let it Flow: Air And Water Looking At Liquids  Microscopy: More Than Meets the Eye
3	Force, Of Course! Microscopy: More Than Meets the Eye Structures: Stable And Strong Soil: It's Too Important To Be Treated Like Dirt
4	Adventures in the Bone Zone Don't Take Rocks For Granite  Gearing Up: Fun With Pulleys And Gears Light Up Your Life

Grade	Workshop Title
4	Microscopy: More Than Meets the Eye Sound is Music to my Ears
5	Adventures in the Bone Zone Clued In To Forensic Science Energy: The Power To Change May The Force Be With You Microscopy: More Than Meets the Eye
6	Adventures in the Bone Zone Air And Flight Classy Critters Clued In To Forensic Science Electricity: Get Charged Microscopy: More Than Meets the Eye
7	Close Encounters Of A Chemical Kind Engineering Challenges
8	Fluid Power Systems at Work Groundwater Investigations

 = Students may consume a food or drink as part of the workshop activities.

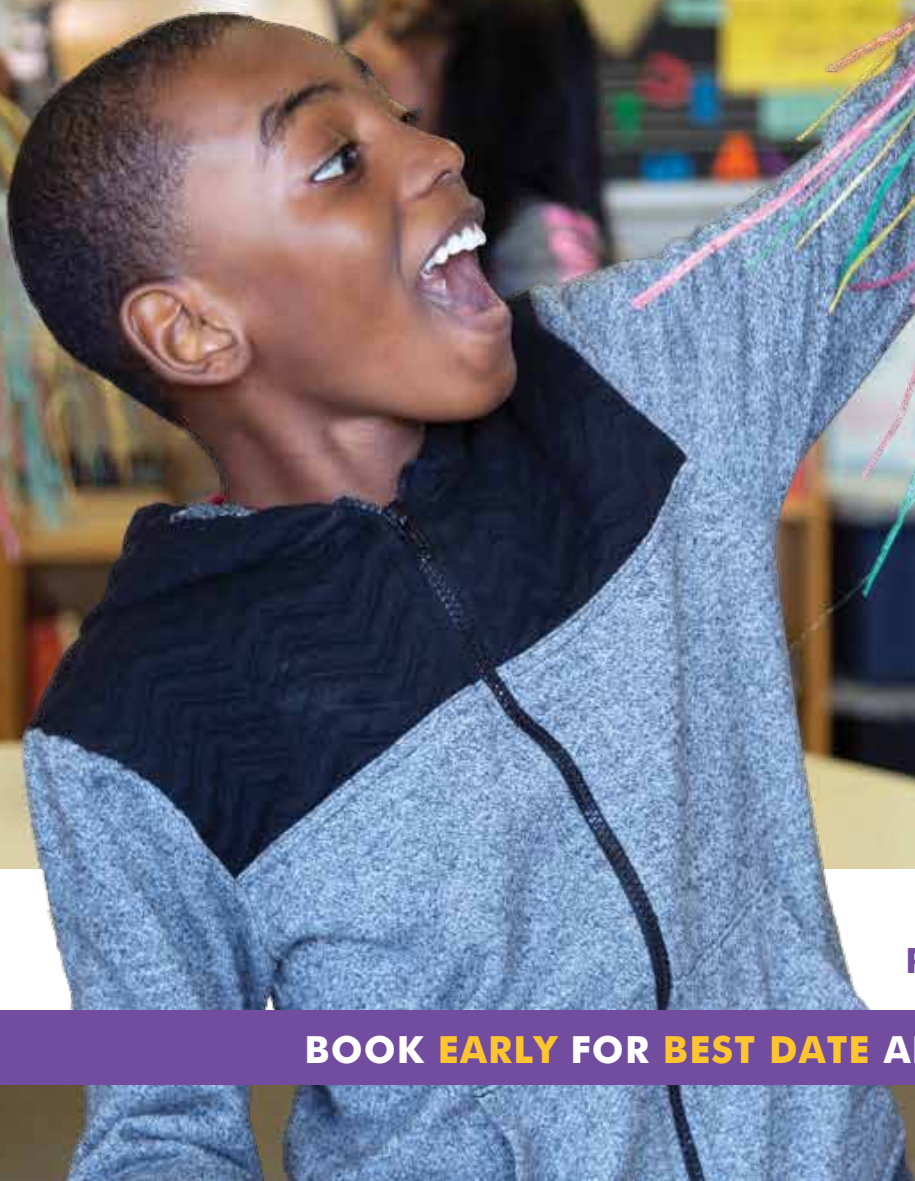
Ask the presenter at time of booking for more information.



## SCIENTISTS IN SCHOOL PROGRAM CATALOGUE

Curriculum-aligned STEM workshops for Kindergarten to Grade 8

2019  
2020



CITY OF GUELPH, WATERLOO, HALTON AND PEEL  
REGIONS, WELLINGTON AND DUFFERIN COUNTIES

**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)



**703,000**

Children and youth inspired through workshops



**25,040**

Half-day classroom workshops delivered



**62,600**

Parent volunteers joined in the classroom



**2,060,000**

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\* showed:



**97%**

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



**93%**

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 4,899 teachers across Ontario and Alberta in 2018.

## 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

"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.

### I Can Be A Scientist

Follow-up Teacher Resources | Volunteers Required

Become a working scientist as you dig for dinosaur bones and make a fossil as a paleontologist. Investigate sea life as a marine biologist and fly into outer space as an astronaut. Experiment with mixing and dissolving to create an erupting volcano as you try out the sciences of chemistry, physics and geology.

### Magnet Magic For Little Explorers

Follow-up Teacher Resources | Volunteers Required

Uncover the power of attraction by investigating magnets. Explore how magnets like to push and pull. Discover what magnets find attractive and if magnetic forces work through a variety of materials. Search for sandbox treasures, go fishing and make a magnetic wand to test at home.

"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!"

### Sensational Science

Volunteers Required

Investigate how your five senses help you understand the world. See if your eyes can fool your taste buds and nose with our taste and smell tests and discover how you can see and feel sound waves! Read with your fingers and build your touch vocabulary. See how the world looks through different eyes.

### 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!

### There's No Place Like Home!

Volunteers Required

Follow footprints and other clues to find the home of the mystery animal. Develop a lifelong respect for the environment by learning about a variety of habitats. Examine worms and unearth their importance. Discover that sea water is salty and meet an animal that carries its home.

## GRADE ONE WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Animal Coverings And Adaptations

Earth and Space 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.

### 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.

### Keep Track: Animal Autographs

Life Systems

Combined Grade Content 1-2 | Volunteers Required

Become a detective and learn how to identify clues left behind by a variety of mammals, birds and reptiles. Examine feathers, nests, skulls, quills, scat, pellets, chewed logs and antlers. Research animals and their food, habitat and strategies for survival. Identify animals by sound or by their tracks.

"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.”**



"I used real tools to explore fasteners!"

### 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.

### Microscopy: More Than Meets The Eye

Special Interest

Combined Grade Content 1-6 | Volunteers Required

Use microscopes to explore the world of the small and mighty. Activities are geared to each grade and may include the exploration of hitchhiker seeds, insect parts and plant and animal cells. Meet some of the weird and wonderful living creatures found in pond water.

### 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.

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

## GRADE TWO WORKSHOPS

Fee: \$205.00

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.

### Keep Track: Animal Autographs

Life Systems

Combined Grade Content 1-2 | Volunteers Required

Become a detective and learn how to identify clues left behind by a variety of mammals, birds and reptiles. Examine feathers, nests, skulls, quills, scat, pellets, chewed logs and antlers. Research animals and their food, habitat and strategies for survival. Identify animals by sound or by their tracks.

### 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.

"Exploring solutions is so much fun!"



**“Scientists in School is invaluable in supporting and promoting science. The workshops are fun, challenging, competitive and promote cooperation. The most reluctant student is always drawn in - who wouldn't be?”**



"Who knew water could exist in so many forms?"

### 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.

### Microscopy: More Than Meets The Eye

Special Interest

Combined Grade Content 1-6 | Volunteers Required

Use microscopes to explore the world of the small and mighty. Activities are geared to each grade and may include the exploration of hitchhiker seeds, insect parts and plant and animal cells. Meet some of the weird and wonderful living creatures found in pond water.

### 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.

### Ocean Habitats and Adaptations

Life Systems

Combined Grade Content 2 and 4 | Volunteers Required

Discover how living creatures have adapted to life in the ocean. Build a kelp forest food web and investigate the dangers of pollution to sea creatures. Explore octopuses, clams, starfish, sharks, horseshoe crabs and more.

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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, 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!

### Microscopy: More Than Meets The Eye

Special Interest

Combined Grade Content 1-6 | Volunteers Required

Use microscopes to explore the world of the small and mighty. Activities are geared to each grade and may include the exploration of hitchhiker seeds, insect parts and plant and animal cells. Meet some of the weird and wonderful living creatures found in pond water.

### Plants Do Amazing Things

Life Systems

Follow-up Teacher Resources | Volunteers Required

Join this botanical adventure and explore how a plant breathes, grows and manufactures food. Experiment with photosynthesis, use leaf characteristics to identify trees and dissect a seed. Be amazed by plant adaptations and explore some of the extraordinary products made from plants.

"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.”**



"How far will my pom-pom launch in the catapult?"

### 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 dirty with a variety of soil types. Discover that soil is composed of earth materials and decaying organisms. Test soil samples for essential nutrients and learn how soil supports plant growth. Investigate erosion and learn about decomposers by studying earthy creatures.

### 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.

## GRADE FOUR WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Adventures In The Bone Zone

Special Interest | Combined Grade Content 4-7

Follow-up Teacher Resources

Join this ecological adventure and dissect an owl pellet. Delve into the diet and digestion of an owl as you discover what and how they eat. Use magnifiers to sort and identify bones and assemble a rodent skeleton. Examine and compare a variety of mammalian skulls to identify herbivores, carnivores and omnivores.

### Battles In The Tropical Rainforest

Life Systems | Volunteers Required

Join our research team, travel around the world and explore tropical rainforest habitats. Discover the benefits of using renewable rainforest resources, and 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

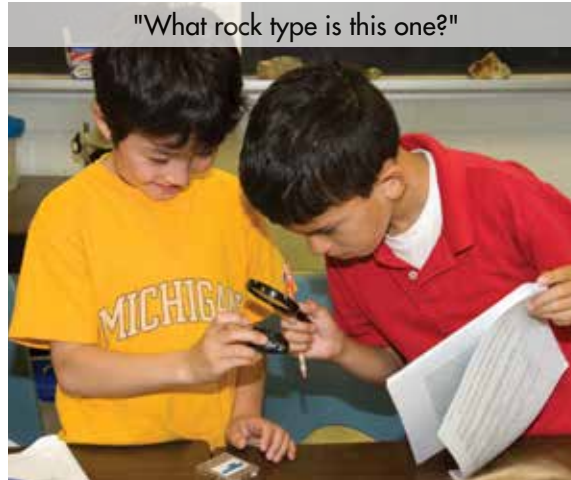
Earth and Space Systems | Volunteers Required

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!

### Fractions In Action

Mathematics | Combined Grade Content 4-5

Puzzle through fraction games, learning to read and compare fractions. Battle it out in Fractions War. Use manipulatives to explore mixed numbers and improper fractions. Apply your new skills to follow a recipe and drink the resulting concoction.



**“Scientists in School has been an integral part of my students' curriculum for many years. The workshops are engaging, motivating and spark critical thinking while integrating STEM skills.”**



### 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!

### 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.

### Microscopy: More Than Meets The Eye

Special Interest

Combined Grade Content 1-6 | Volunteers Required

Use microscopes to explore the world of the small and mighty. Activities are geared to each grade and may include the exploration of hitchhiker seeds, insect parts and plant and animal cells. Meet some of the weird and wonderful living creatures found in pond water.

### Ocean Habitats And Adaptations

Life Systems

Combined Grade Content 2 and 4 | Volunteers Required

Discover how living creatures have adapted to life in the ocean. Build a kelp forest food web and investigate the dangers of pollution to sea creatures. Explore octopuses, clams, starfish, sharks, horseshoe crabs and more.

### Sound Is Music To My Ears

Matter and Energy | Follow-up Teacher Resources

Discover the science of sound as musical maestros. Explore sound waves and learn how sound can make your desk hum. Play the bucket bass to explore factors affecting pitch. Create a laughing chicken to investigate amplification. Build your own pan flute and perform in a classroom orchestra.

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



## GRADE FIVE WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Adventures In The Bone Zone

Special Interest | Combined Grade Content 4-7

Follow-up Teacher Resources

Join this ecological adventure and dissect an owl pellet. Delve into the diet and digestion of an owl as you discover what and how they eat. Use magnifiers to sort and identify bones and assemble a rodent skeleton. Examine and compare a variety of mammalian skulls to identify herbivores, carnivores and omnivores.

### 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.

### Clued In To Forensic Science

Special Interest | Combined Grade Content 5-6

Become a forensic scientist, collecting and examining crime scene clues. Analyze a ransom note by ink chromatography and handwriting. Take finger and shoe prints, comparing them to the crime scene. Run chemical analyses on mysterious powders and discover how to analyze fibre and soil samples.

### Energy: The Power To Change

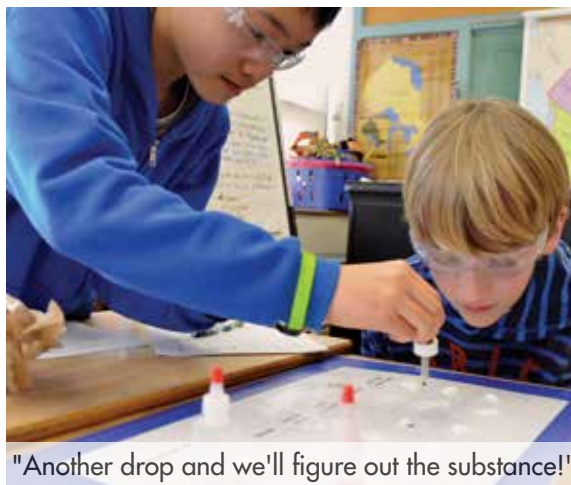
Earth and Space Systems | Follow-up Teacher Resources

Be inspired to embrace energy conservation. Discover where energy comes from, the forms of energy and how energy is transferred or transformed. Investigate how to launch a ping pong ball into space. Explore how changing your light bulbs and adding insulation can save energy. Experiment with solar panels and use one to play a tune.

"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!"**



"Another drop and we'll figure out the substance!"

### Fractions In Action

Mathematics | Combined Grade Content 4-5

Puzzle through fraction games, learning to read and compare fractions. Battle it out in Fractions War. Use manipulatives to explore mixed numbers and improper fractions. Apply your new skills to follow a recipe and drink the resulting concoction.

### Math Builders: Math From The Ground Up

Mathematics | Combined Grade Content 5-6

Create and promote your company to win a lucrative building contract. Determining precise measurements and calculations of area and perimeter, choosing building materials, and working as a team will support the winning bid. Build a model strong enough to withstand an unnatural disaster.

### 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.

### Microscopy: More Than Meets The Eye

Special Interest

Combined Grade Content 1-6 | Volunteers Required

Use microscopes to explore the world of the small and mighty. Activities are geared to each grade and may include the exploration of hitchhiker seeds, insect parts and plant and animal cells. Meet some of the weird and wonderful living creatures found in pond water.

### 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.

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## GRADE SIX WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Adventures In The Bone Zone

Special Interest | Combined Grade Content 4-7

Follow-up Teacher Resources

Join this ecological adventure and dissect an owl pellet. Delve into the diet and digestion of an owl as you discover what and how they eat. Use magnifiers to sort and identify bones and assemble a rodent skeleton. Examine and compare a variety of mammalian skulls to identify herbivores, carnivores and omnivores.

### 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.

"My first propeller design is ready to test!"



**"Giving students the opportunity to experiment, investigate, create and think critically about how things work in daily life is truly an unforgettable and authentic experience. I highly recommend this program."**



"Are your fingerprints loops too?"

### Clued In To Forensic Science

Special Interest | Combined Grade Content 5-6

Become a forensic scientist, collecting and examining crime scene clues. Analyze a ransom note by ink chromatography and handwriting. Take finger and shoe prints, comparing them to the crime scene. Run chemical analysis on mysterious powders and discover how to analyze fibre and soil samples.

### 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 electro-scope. 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.

### Math Builders: Math From The Ground Up

Mathematics | Combined Grade Content 5-6

Create and promote your company to win a lucrative building contract. Determining precise measurements and calculations of area and perimeter, choosing building materials, and working as a team will support the winning bid. Build a model strong enough to withstand an unnatural disaster.

### Microscopy: More Than Meets The Eye

Special Interest

Combined Grade Content 1-6 | Volunteers Required

Use microscopes to explore the world of the small and mighty. Activities are geared to each grade and may include the exploration of hitchhiker seeds, insect parts and plant and animal cells. Meet some of the weird and wonderful living creatures found in pond water.

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## GRADE SEVEN WORKSHOPS

Fee: \$205.00

Maximum 30 students/workshop

### Adventures In The Bone Zone

Special Interest | Combined Grade Content 4-7

Follow-up Teacher Resources

Join this ecological adventure and dissect an owl pellet. Delve into the diet and digestion of an owl as you discover what and how they eat. Use magnifiers to sort and identify bones and assemble a rodent skeleton. Examine and compare a variety of mammalian skulls to identify herbivores, carnivores and omnivores.

### Battles In The Tropical Rainforest

Life Systems

Travel around the world and explore the tropical rainforest. Experiment with adaptations of rainforest plants and discover the importance of each creature while building a rainforest food web.

### Close Encounters Of A Chemical Kind

Matter and Energy | Follow-up Teacher Resources

Turn your classroom into a chemist's laboratory to explore pure substances and mixtures. Investigate the physical properties of matter and test methods to separate a mechanical mixture. Test various forms of Vitamin C to determine the factors affecting solubility, the ingredients that cause effervescence, and the concentration needed to get the recommended daily intake.

### 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.

"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.”**



"How can we make our bridge stronger?"

### 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.

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## 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 and master how to use a compound microscope. Examine the organization and interdependence of animal and human body cells. Make wet mounts of plant cells and compare their structure. Get absorbed in the study of osmosis and explore pond water samples for living organisms.

### 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.

"Which material is more porous to groundwater?"



**“For the last 20 years,  
I have been inviting Scientists in  
School into my classroom. They  
are an invaluable, engaging, and  
hands-on resource for children  
and youth.”**



"Pulley systems are fun to build and test!"

### 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.

### Systems At Work

Structures and Mechanisms

Discover the work done by simple machines, how they create mechanical advantage, and how they can be used to overcome obstacles. Explore inclined planes, wheels, levers and pulleys. Analyze how friction affects mechanical advantage. Investigate how simple machines can be combined to create complex systems used in building communities and disaster relief.

# SCIENTISTS IN SCHOOL™

31B Queen Street, Morriston, Ontario N0B 2C0 | 519-763-3950/1-855-900-3950 | Fax: 519-763-4905 | wco@scientistsinschool.ca | 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 over 25,000 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 - Cameco Corporation - Carolyn Sifton Foundation  
Celestica - Hamilton Community Foundation - MilliporeSigma - Niagara Community Foundation - Purdue Pharma  
S.M. Blair Family Foundation - Syngenta Canada Inc. - Systematix Inc. - The McLean Foundation

## EXPLORATION

Ajax Community Fund at Durham Community Foundation - Brant Community Foundation  
City of Brantford - Elexicon Energy (Formerly Veridian Connections) - 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



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