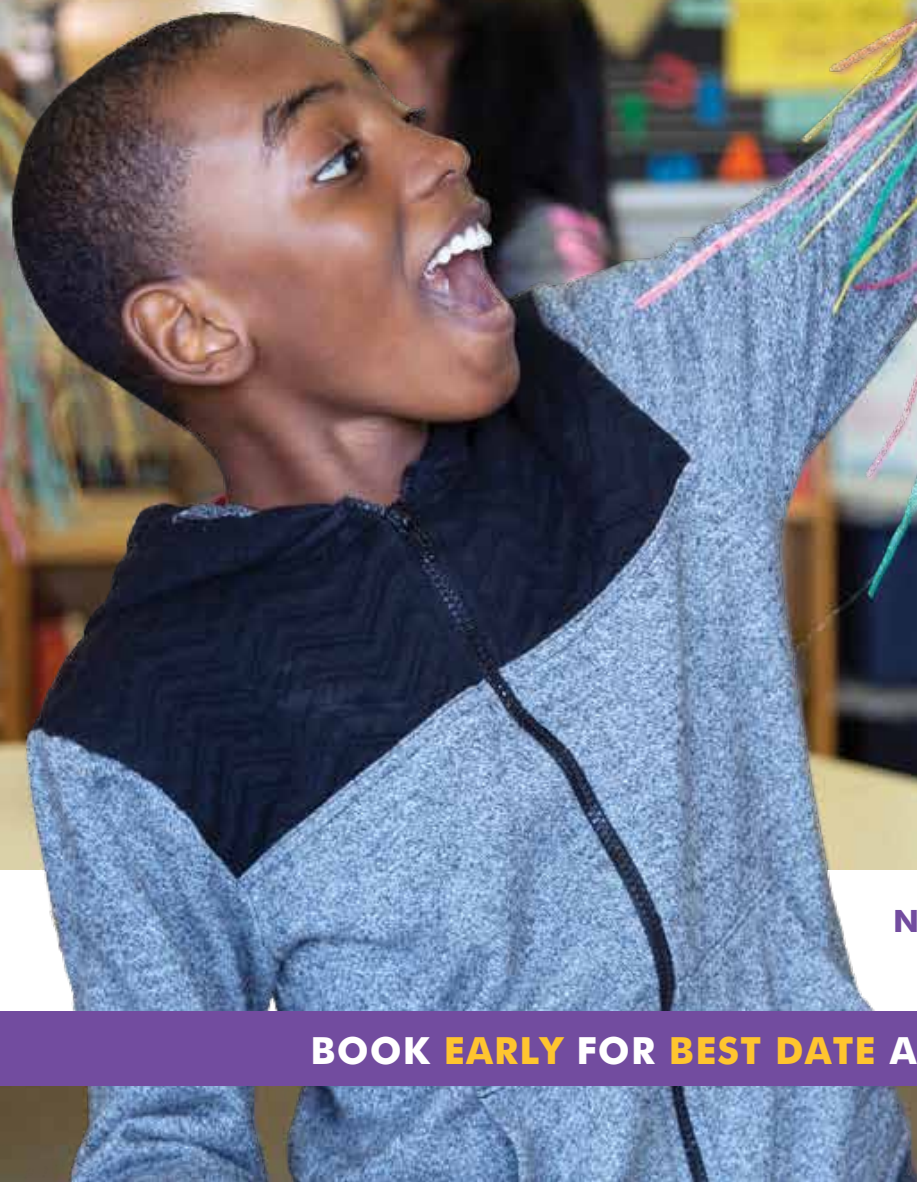




SCIENTISTS IN SCHOOL PROGRAM CATALOGUE

Curriculum-aligned STEM workshops for Kindergarten to Grade 8

2019
2020



**NIAGARA REGION, HAMILTON-WENTWORTH, BRANTFORD,
BRANT, HALDIMAND AND NORFOLK 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/

KINDERGARTEN WORKSHOPS

Fee: \$190.00

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.

Magnet Magic For Little Explorers

Follow-up Teacher Resources | Volunteers Required

Uncover the power of attraction by investigating magnets. Explore how magnets 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 catch a fish to take 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!"

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

Follow the footprints and other clues to find the home of the mystery animal. Develop a respect for the environment by learning about a variety of habitats. Become a bird and build a nest. Slither like a snake or dig like a mole through your underground tunnel. Discover what creatures may be living in a log near your home and why your home is salty if you live in the sea.

Winter Wonders

Volunteers Required

Delve into the wonderful world of winter and embrace the cold! Conduct cool experiments and learn some frosty facts about how people adapt to winter. Explore how local animals survive Canada's harsh climate. Identify winter birds, listen to their songs and construct a bird feeder. Become a meteorologist and investigate winter weather.

BOOK ONLINE AND SIGN UP TO RECEIVE STEM ACTIVITIES IN OUR E-NEWSLETTER AT WWW.SCIENTISTSINSCHOOL.CA

GRADE ONE WORKSHOPS

Fee: \$190.00

Maximum 30 students/workshop

Animal Coverings And Adaptations

Life Systems | Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

Explore some of nature's most unusual coverings in this unique, hands-on workshop that will ignite the senses and inspire conversation. Students will feel a variety of animal furs, conduct experiments with feathers, examine skin and scales up close and learn how shells and quills protect certain species. Prepare to be amazed as we investigate animals and their incredible adaptations throughout the seasons.

Energy Makes It Happen

Matter and Energy

Follow-up Teacher Resources | Volunteers Required

Investigate the power of the sun as you explore the impact energy has on our daily lives. Make a bubble grow using heat from your hands. See how a special bead can tell you if you should be wearing sunscreen. Discover what dinosaurs and a car have in common. Uncover your inner Picasso and create abstract paintings using solar power.

"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 food scientists, find out why yeast makes bread rise and investigate the chemistry behind baked goods as you blow up a balloon without using air. Challenge your senses with a mixed up solution! Stretch your understanding of solids and liquids while making Ooblek.

Never Say Ugh To A Bug

Life Systems | Combined Grade Content 1-2

Volunteers Required | Follow-up Teacher Resource

There's much more than meets the eye in the world of invertebrates! To develop a new appreciation for bugs, your young entomologists will explore life cycles and behaviour of insects like bees, beetles, and more! Examine a variety of specimens to discover the benefit and true beauty of small creatures and learn why we need to protect our pollinators!

Structures: Under Construction

Structures and Mechanisms

Follow-up Teacher Resources | Volunteers Required

As junior engineers, students will participate in activities that will help them understand how various materials and fasteners are used in the real world. Through the use of shapes and various materials, they will design and test the strength and stability of different structures. The final challenge: work as a team to build a strong and stable structure to support the three little pigs.

GRADE TWO WORKSHOPS

Fee: \$190.00

Maximum 30 students/workshop

Animal Coverings And Adaptations

Life Systems | Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

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Kitchen Chemistry For Curious Kids

Special Interest | Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

As food scientists, find out why yeast makes bread rise and investigate the chemistry behind baked goods as you blow up a balloon without using air. Challenge your senses with a mixed up solution! Stretch your understanding of solids and liquids while making Ooblek.

Let It Flow: Air And Water

Earth and Space Systems

Follow-up Teacher Resources | Volunteers Required

Discover the properties of air and water and the need to protect these valuable resources. Learn that air has weight, takes up space and can be used to save an accident victim. Watch it rain in your classroom. Uncover the hidden power in a water wheel and investigate the impact of sail size on a wind-powered vehicle.

"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?"

Looking At Liquids

Matter and Energy | Follow-up Teacher Resources
Marvel as you explore the three states of matter, change a liquid to a solid and then eat it. Discover why one ball floats while another sinks and how changing shapes can effect buoyancy. Explore how different states of matter interact while investigating solubility. Take up the challenge to produce the world's biggest bubble.

Math: It Counts

Mathematics | Combined Grade Content 2-3
Volunteers Required

Manage a bank account and earn money while learning about place value, currency and Venn diagrams. Practice telling time on digital and analogue clocks. Explore fractions in a classroom play. Try to trick your teacher as you reorganize yourselves by a mystery attribute. Become a banker, a storekeeper and a shopper as you add money, make change and calculate your spending power.

Move It!

Structures and Mechanisms

Follow-up Teacher Resources | Volunteers Required

Discover how simple machines make work easier. Motor along as you construct your own car while exploring wheels and axles. Go fishing to experiment with levers. Investigate pulleys to discover how they can lift heavy objects and change the direction of things. Make your own screw and drive a car to learn about inclined planes.

Never Say Ugh To A Bug

Life Systems | Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

There's much more than meets the eye in the world of invertebrates! To develop a new appreciation for bugs, your young entomologists will explore life cycles and behaviour of insects like bees, beetles, and more! Examine a variety of specimens to discover the benefit and true beauty of small creatures and learn why we need to protect our pollinators!

GRADE THREE WORKSHOPS

Fee: \$190.00

Maximum 30 students/workshop

Force, Of Course!

Matter and Energy

Follow-up Teacher Resources | Volunteers Required

Step into the physics lab to investigate friction, gravity, magnetic and electrostatic force. Learn how a volcano erupts and how the vortex of a tornado can uproot trees. Use a catapult to investigate how force affects a projectile, and experiment with both marbles and magnets to see if they can defy gravity. Engineer a crash to test the effectiveness of seat belts.

Math: It Counts

Mathematics | Combined Grade Content 2-3

Volunteers Required

Manage a bank account and earn money while learning about place value, currency and Venn diagrams. Practice telling time on digital and analogue clocks. Explore fractions in a classroom play. Try to trick your teacher as you reorganize yourselves by a mystery attribute. Become a banker, a storekeeper and a shopper as you add money, make change and calculate your spending power.

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

As a pedologist, get dirty with soil types. Discover that soil is composed of earth materials and decaying organisms. Race water through soil types to test water holding capacity. Explore which nutrient makes soil blush. Burrow through soil to explore texture. Investigate 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

Our world is full of structures of various strengths, designs, and functions. See how design can increase a structure's strength and stability. Become a human structure and discover what kind of base makes you stable. Experiment with weight distribution and its effect on stability. Investigate a variety of shapes and find the one that is the strongest. Use your engineering skills to build a bridge that can support 'Big Jim' the bulldozer.

GRADE FOUR WORKSHOPS

Fee: \$190.00

Maximum 30 students/workshop

Adventures In The Bone Zone

Special Interest | Combined Grade Content 4-7

Follow-up Teacher Resources

Delve into the diet and digestion of an owl as you discover what they ate for breakfast. Join this ecological adventure and dissect an owl pellet, use magnifying glasses to sort and identify bones and assemble a rodent skeleton. Examine a variety of mammalian skulls to determine species and explore similarities and differences between herbivores and carnivores.

Don't Take Rocks For Granite

Earth and Space Systems

Follow-up Teacher Resources | Volunteers Required

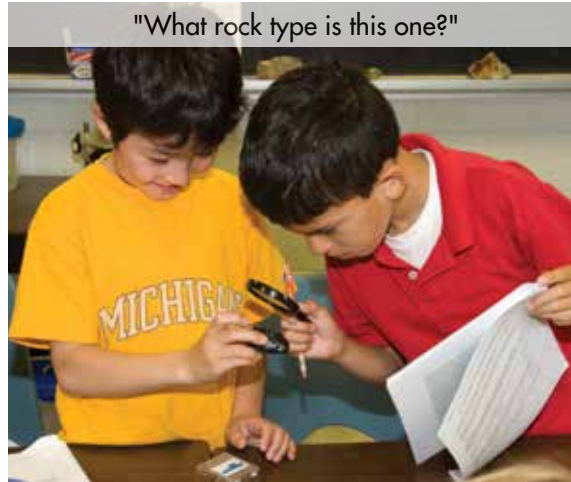
Become a junior geologist and dig into the concepts of the rock cycle and modern mining. Identify a mystery mineral and explore how we use mined materials every day. Feel rocks from inside a volcano, metamorphose a rock in your hands and make a rock from plants and seashells.

Gearing Up: Fun With Pulleys And Gears

Structures and Mechanisms

Follow-up Teacher Resources | Volunteers Helpful

Step into the physics lab and learn how pulleys and gears change force. Build pulley systems, design and construct a gear train, and explore how to change the direction of an applied force. Investigate gears that make household items move. Discover how to move something bigger than you.



“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.”



Light Up Your Life

Matter and Energy | Follow-up Teacher Resources

How can you see around corners and over walls? Join us on an optical adventure as we investigate this and many other questions about the properties of light. Light up body parts in a hunt for translucent objects. Turn your classroom into a colourful disco and learn about the visible spectrum. Bounce and bend light to investigate reflection, refraction and fibre optics. Explore further with optical illusions, binoculars, kaleidoscopes, periscopes and magnifiers.

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 makes your desk hum. Play boomwackers to explore factors affecting pitch. Create a laughing chicken to investigate amplification. Discover how the human ear detects sounds, guess the decibel level of a jet engine and learn how to protect your ears.

BOOK ONLINE AND SIGN UP TO RECEIVE STEM ACTIVITIES IN OUR E-NEWSLETTER AT WWW.SCIENTISTSINSCHOOL.CA

GRADE FIVE WORKSHOPS

Fee: \$190.00

Maximum 30 students/workshop

Adventures In The Bone Zone

Special Interest | Combined Grade Content 4-7

Follow-up Teacher Resources

Delve into the diet and digestion of an owl as you discover what they ate for breakfast. Join this ecological adventure and dissect an owl pellet, use magnifying glasses to sort and identify bones and assemble a rodent skeleton. Examine a variety of mammalian skulls to determine species and explore similarities and differences between herbivores and carnivores.

Body Works

Life Systems | Follow-up Teacher Resources

Explore the human body to learn how your organ systems work together. Learn about the skeletal system, view X-rays and identify bones in your body. Use a stethoscope to explore your cardiovascular system. Test your nervous system, build a urinary system to see how it functions, and follow the path food takes through your digestive system.

"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!"

Energy: The Power to Change

Earth and Space Systems | Follow-up Teacher Resources

Embrace energy conservation by discovering where energy comes from, its different forms and how it is transferred and transformed. Identify energy stored in household objects, investigate how to launch a table tennis ball into space and discover how the energy in your body can power wind-up toys. Investigate insulation and learn how to turn heat loss into saved money. Explore the use of solar panels and use one to shed some light on the situation.

May The Force Be With You

Structures and Mechanisms | Follow-up Teacher Resources

Join our engineering team to learn how structures resist the forces acting on them. Participate in a potato masher relay race to examine balanced forces. Explore which forces are important in designing and building a structure. Investigate centre of gravity and learn its importance in structural design. Take on the challenge of designing, building and testing a freestanding structure.

What In The World Is Matter?

Matter and Energy | Follow-up Teacher Resources

Explore solids, liquids, gases and changes in state as detectives in the mystery of matter. Find out the difference between physical and chemical changes by testing if all plastics are equal. Participate in an evaporation race and carry out some cool chemistry in a Ziploc bag. Identify a mystery compound using chemical intuition and experimentation in this chemical caper.

GRADE SIX WORKSHOPS

Fee: \$190.00

Maximum 30 students/workshop

Adventures In The Bone Zone

Special Interest | Combined Grade Content 4-7

Follow-up Teacher Resources

Delve into the diet and digestion of an owl as you discover what they ate for breakfast. Join this ecological adventure and dissect an owl pellet, use magnifying glasses to sort and identify bones and assemble a rodent skeleton. Examine a variety of mammalian skulls to determine species and explore similarities and differences between herbivores and carnivores.

Air And Flight

Structures and Mechanisms | Follow-up Teacher Resources

Soar as you explore the science behind powered and non-powered flight. Levitate a table tennis ball using the properties of air and principles of flight. Discover the best wing design for liftoff and the correct mechanics of propeller construction. Build your own plane and become an aviator to investigate factors affecting the direction and speed of flight.

"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.”



Classy Critters

Life Systems | Follow-up Teacher Resources

Discover the 'Tree of Life' while working as a taxonomist. Create order from the vast diversity of living things using the Linnaean classification system. Examine the microscopic world of protists and monerans using slide viewers and explore preserved invertebrate and vertebrate specimens. Compare important connections between species to understand why a classification system from 1735 still works today.

Electricity: Get Charged

Matter and Energy | Follow-up Teacher Resources

Step into the physics lab and build a three-cent battery. Explore the nature of electricity and investigate how static electricity makes objects move. Design and build circuits. Test conductors, insulators and electromagnets. Put it all together to learn how a simple motor works.

GRADE SEVEN WORKSHOPS

Fee: \$190.00

Maximum 30 students/workshop

Adventures In The Bone Zone

Special Interest | Combined Grade Content 4-7

Follow-up Teacher Resources

Delve into the diet and digestion of an owl as you discover what they ate for breakfast. Join this ecological adventure and dissect an owl pellet, use magnifying glasses to sort and identify bones and assemble a rodent skeleton. Examine a variety of mammalian skulls to determine species and explore similarities and differences between herbivores and carnivores.

NEW!

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!

"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.”



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 beam, truss, arch and suspension bridges. Join a class-wide challenge to build a truss bridge resistant to static and dynamic loads and internal forces using only newspaper and masking tape.

Hot Stuff!

Earth and Space Systems | Follow-up Teacher Resources

Join our Research and Development Team and challenge yourself to discover the secret workings behind a candle-powered putt-putt boat. Analyze how conduction and convection work together to propel these boats. Investigate the properties of matter, how the particle theory explains changes in state, and how energy transformations keep things moving.

Math Is My Business!

Mathematics | Combined Grade Content 7-8

Become a financial wizard. Create a bank account and earn money as you learn about probability and percentages. Build a dream team for the hockey or basketball playoffs, calculate cap space and the probability of losing players to injuries. Invest to build low, medium and high-risk equity. Will you earn your first million or break the bank?

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GRADE EIGHT WORKSHOPS

Fee: \$190.00

Maximum 30 students/workshop

Cell Explorers:

Investigating Cell Structure And Function

Life Systems | Follow-up Teacher Resources

Become a cell biologist and examine plant and animal cells using microscopes and a videoscope. Examine animal and human cells to determine their structure. Make wet mounts of plant cells and compare to animal cells. Get absorbed in osmosis.

Fluid Power

Matter and Energy | Follow-up Teacher Resources

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. Race liquids to explore viscosity. Move a load 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

Learn hands-on how to be a steward of our water systems. Explore groundwater processes and how this valuable resource moves through the environment. Test for pollutants and discover their possible sources. Evaluate well-tap studies and examine a localized watershed area to choose your next home.

"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!"

Math Is My Business!

Mathematics | Combined Grade Content 7-8

Become a financial wizard. Create a bank account and earn money as you learn about probability and percentages. Build a dream team for the hockey or basketball playoffs, calculate cap space and the probability of losing players to injuries. Invest to build low, medium and high-risk equity. Will you earn your first million or break the bank?

SCIENTISTS IN SCHOOL™

P.O. Box 660, Fonthill, Ontario L0S 1E0 | 905-892-9146 | sco@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



**SCIENTISTS
IN SCHOOL**

