

Today, they're Scientists in School ...

For Best
Possible Dates

BOOK EARLY

www.scientistsinschool.ca



**SCIENTISTS
IN SCHOOL**

2018-2019 SCIENTISTS IN SCHOOL PROGRAM CATALOGUE

Inquiry-based STEM workshops for Kindergarten to Grade 8

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

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: \$205.00

Maximum 30 students/workshop

Backyard Bugs

Follow-up Teacher Resources | Volunteers Required

Experience a 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

Investigate your senses! Explore interconnections between taste and smell; light and sight. Investigate objects using your sense of touch, discover how you see and feel sound waves, and learn how smell helps us evaluate items. After this, your interactions with the world will just make SENSE!

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

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.



Grade One Workshops

Fee: \$205.00

Maximum 30 students/workshop

1

Animal Coverings And Adaptations

Combined Grade Content 1-2 | Follow-up Teacher Resources
Volunteers Required

Transform the classroom into discovery stations bursting with unique animal-covering specimens including shells, scales, feathers, furs, quills and skin. Investigate, feel, microscopically examine and experiment with coverings to discover how their characteristics help animals adapt and survive environmental challenges.

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.

BOOK ONLINE - IT'S EASY!

Visit www.scientistsinschool.ca to book your workshop, and find our cancellation and booking policies.

DOWNLOAD RESOURCES!

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2

Grade Two Workshops

Fee: \$205.00

Maximum 30 students/workshop

Animal Coverings And Adaptations

Life Systems | Follow-up Teacher Resources

Volunteers Required

Transform the classroom into discovery stations bursting with unique animal-covering specimens including shells, scales, feathers, furs, quills and skin. Investigate, feel, microscopically examine and experiment with coverings to discover how their characteristics help animals adapt and survive environmental challenges.

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.



Grade Three Workshops

Fee: \$205.00

Maximum 30 students/workshop

3

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 to explore the secret life of plants. Develop investigative skills to identify leaves and their parent trees and plant parts used to make everyday products. Recycle old paper to make new paper and be amazed by the adaptations plants make to survive.

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.

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4

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

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

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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.

6

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.

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

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Grade Seven Workshops

Fee: \$205.00

Maximum 30 students/workshop

7

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.

Math Is My Business!

Mathematics | Combined Grade Content 7-8

Money is the name of this game. Create your own bank account and earn cash as you play games to build fraction, decimal, percent and more math skills. Based on theoretical probability data, select a team for the playoffs then watch it perform on game day. Invest your hard-earned money on the stock market and calculate your portfolio performance.

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8

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

Become a hydrogeologist and explore the properties of aquifers as viable water sources. Perform a variety of experiments to investigate salinity, chlorine content, and examine contaminants in different water samples. Build your own water filtration system and examine its effectiveness in producing potable water.

Math Is My Business!

Mathematics | Combined Grade Content 7-8

Money is the name of this game. Create your own bank account and earn cash as you play games to build fraction, decimal, percent and more math skills. Based on theoretical probability data, select a team for the playoffs then watch it perform on game day. Invest your hard-earned money on the stock market and calculate your portfolio performance.

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

SCIENTISTS IN SCHOOL



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