

For Best
Possible Dates

BOOK EARLY

www.scientistsinschool.ca

Today, they're Scientists in School ...



**SCIENTISTS
IN SCHOOL**

2018-2019 SCIENTISTS IN SCHOOL PROGRAM CATALOGUE

Inquiry-based STEM workshops for Kindergarten to Grade 8

WORKSHOP SELECTION FOR HALTON DISTRICT SCHOOL BOARD

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

“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.

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.

Sensational Science

Requires Explicit Principal Approval | Volunteers Required

Investigate how your senses help you understand the world. See if your eyes can fool your taste buds with our taste test 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 | Requires Explicit Principal Approval | 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!

Requires Explicit Principal Approval | 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.



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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Grade One Workshops

Fee: \$205.00

Maximum 30 students/workshop

1

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

Requires Explicit Principal Approval | Volunteers Required

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

Kitchen Chemistry For Curious Kids

Special Interest | Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

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

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.

Structures: Under Construction

Structures and Mechanisms | Follow-up Teacher Resources

Requires Explicit Principal Approval | Volunteers Required

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

2

Grade Two Workshops

Fee: \$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 | Requires Explicit Principal Approval | Volunteers Required

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

Kitchen Chemistry For Curious Kids

Special Interest | Combined Grade Content 1-2

Follow-up Teacher Resources | Volunteers Required

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

Let It Flow: Air And Water

Earth and Space Systems | Follow-up Teacher Resources

Requires Explicit Principal Approval | 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.

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 Three Workshops

Fee: \$205.00

Maximum 30 students/workshop

3

Force, Of Course!

Matter and Energy | Follow-up Teacher Resources
Requires Explicit Principal Approval

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.

Structures: Stable And Strong

Structures and Mechanisms | Follow-up Teacher Resources
Requires Explicit Principal Approval | 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.

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

4

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.

Gearing Up: Fun With Pulleys And Gears

Structures and Mechanisms | Follow-up Teacher Resources
Requires Explicit Principal Approval

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.

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.



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Grade Five Workshops

Fee: \$205.00

Maximum 30 students/workshop

5

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.

Energy: The Power To Change

Earth and Space Systems | Follow-up Teacher Resources
Requires Explicit Principal Approval

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.

May The Force Be With You

Structures and Mechanisms | Follow-up Teacher Resources
Requires Explicit Principal Approval

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 an amazing, hands-on and engaging workshop. One of my students said, “I want to be a scientist, this is so much fun!”

6

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

Requires Explicit Principal Approval

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

Requires Explicit Principal Approval

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.

Electricity: Get Charged

Matter and Energy | Follow-up Teacher Resources

Requires Explicit Principal Approval

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

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

7

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.

Engineering Challenges

Structures and Mechanisms | Follow-up Teacher Resources

Requires Explicit Principal Approval

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.

Grade Eight Workshops

Fee: \$205.00

Maximum 30 students/workshop

8

Fluid Power

Matter and Energy | Requires Explicit Principal Approval

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.

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.

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

SCIENTISTS IN SCHOOL



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