

York University Science Engagement

IN-SCHOOL WORKSHOPS

*Making
Science
Fun!*



science



For Grades 3 to 8 | May + June 2015

Bring STEM Alive in Your Classroom!

At Science Explorations, our objectives align directly with yours! Our In-School Workshops are designed to excite youth about STEM and ignite a genuine passion for learning. Our hands-on workshops complement your regular classroom instruction and directly support the learning expectations of the Ontario Elementary Curriculum.

Our Hands-On Approach

Our high-energy and interactive workshops use a hands-on, discovery-based approach to learning. Students work in teams through guided projects and experiments to gain an understanding of abstract STEM concepts. Our instructors also share related scientific research taking place at York University and discuss real-world applications of topics, making the learning relevant to the students' day-to-day lives.

Our Instructors

Our team consists of enthusiastic undergraduate science and engineering student instructors. They have an infectious passion for STEM, magnetic personalities, and a genuine desire to inspire youth. In addition to STEM subject matter expertise, our instructors have extensive training in pedagogy, best practices in teaching and instruction, effective classroom management and conflict resolution. They also have training in community building, diversity, and inclusion. Our team reflects the diversity of today's GTA classrooms – meaning they make for great role models for your students!

A PROUD MEMBER OF ACTUA

Actua is a national organization of 33 university-based STEM outreach programs. Our pedagogical approach is shared by Actua members across Canada, and has been rigorously tested and evaluated. This approach is based on the supposition that the skills, knowledge, and attitudes of scientifically literate people are the same skills, knowledge, and attitudes of 21st century thinkers and leaders. This means that regardless of whether or not a child pursues a STEM field, developing these STEM skills will help better prepare them for the future.

ABOUT THE FACULTY OF SCIENCE

York University is proud to have one of the leading Faculties of Science in Canada. The Faculty is an emerging research powerhouse and is home to 140 professors, many of whom are recognized internationally as leaders in their fields. The Faculty has particular research strengths in the areas of genetics, neuroscience, regenerative medicine, astrophysics, pharmaceutical chemistry, epidemiology and mathematical disease modeling, computational biology, high-energy and particle physics, ecology and evolutionary biology, atmospheric chemistry, and actuarial science.

For more visit: science.yorku.ca

What GTA Teachers Say About Our Workshops:

“The students enjoyed themselves today! They had fun building and test flying their planes too! Overall, it was well presented and organized.”

MS RIELLY
GRADE 6 TEACHER - FERNFOREST PS

“The workshops were very engaging and educational for the students. Instructors were good at probing students to answer questions and take part in the lesson.”

MRS GURRERI
GRADE 7 TEACHER - OUR LADY OF THE ROSARY

“The instructors worked well together to transfer their love of science to the students. Well done to the York Faculty of Science for such a quality program!”

MS LUCIANI
GRADE 5 TEACHER - OUR LADY OF PEACE

“Highly engaging, hands-on—Fun!”

MR LEMOINE
GRADE 8 TEACHER - ADRIENNE CLARKSON PS

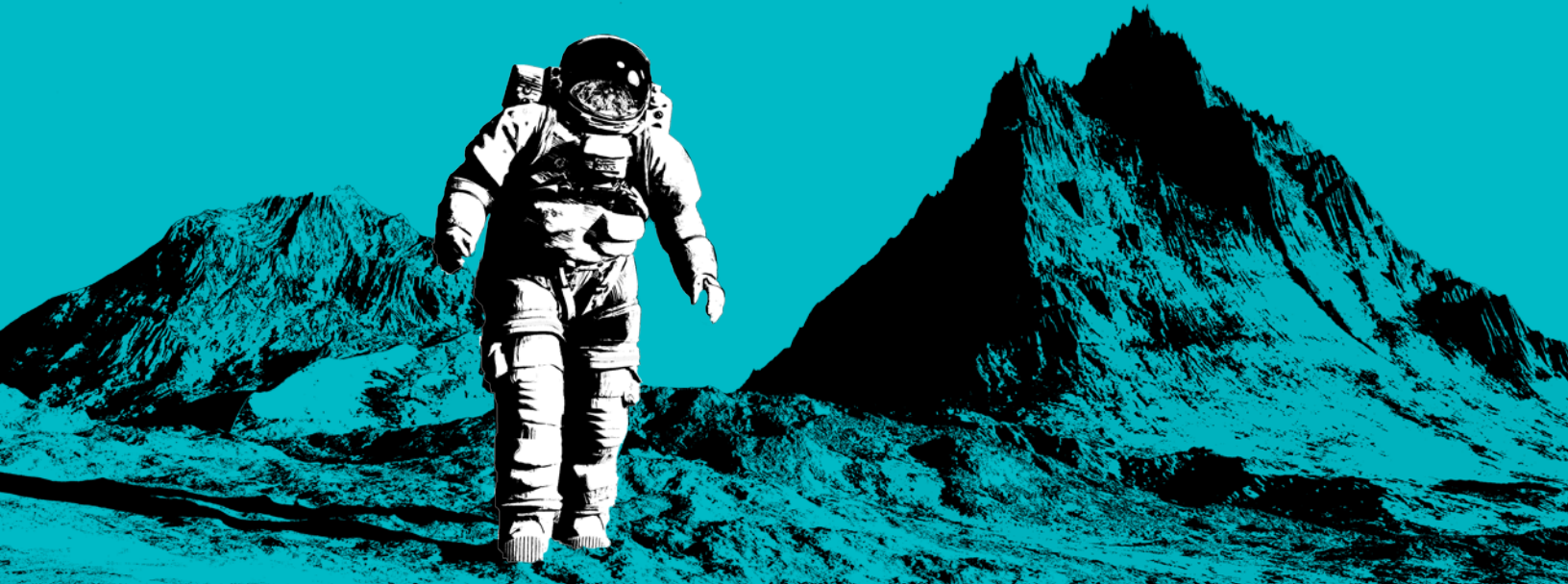
“The workshop was very informative and easy to understand. Hands-on! Kids love that!”

MRS GILL
GRADE 7 TEACHER - GREAT LAKES PS

*Workshops
make a great
in-class field
trip!*

SPACE + EARTH SYSTEMS

IN-SCHOOL
WORKSHOPS



GRADE **3** ⌚ 1–1.5 Hours

Terrarium

Students will design and build a terrarium to explore concepts of the water cycle, plant growth and ecosystems.

ONTARIO CURRICULUM CONNECTION
Soils in the Environment

GRADE **4** ⌚ 1–1.5 Hours

Eroding the Earth

Students will investigate the effects of physical and chemical erosion.

ONTARIO CURRICULUM CONNECTION
Rocks and Minerals

GRADE **5** ⌚ 1.5–2 Hours

Photovoltaic Solar Cells

Students will design and construct solar powered cars.

ONTARIO CURRICULUM CONNECTION
Conservation of Energy and Resources

GRADE **6** ⌚ 1–1.5 Hours

Astronomy + Astrophysics

Students will construct a model of our solar system.

ONTARIO CURRICULUM CONNECTION
Space

GRADE **7** ⌚ 1–1.5 Hours

Thermos

Students will investigate the properties of different materials and their ability to retain, transfer, repel and absorb heat.

ONTARIO CURRICULUM CONNECTION
Heat in the Environment

GRADE **8** ⌚ 1.5–2 Hours

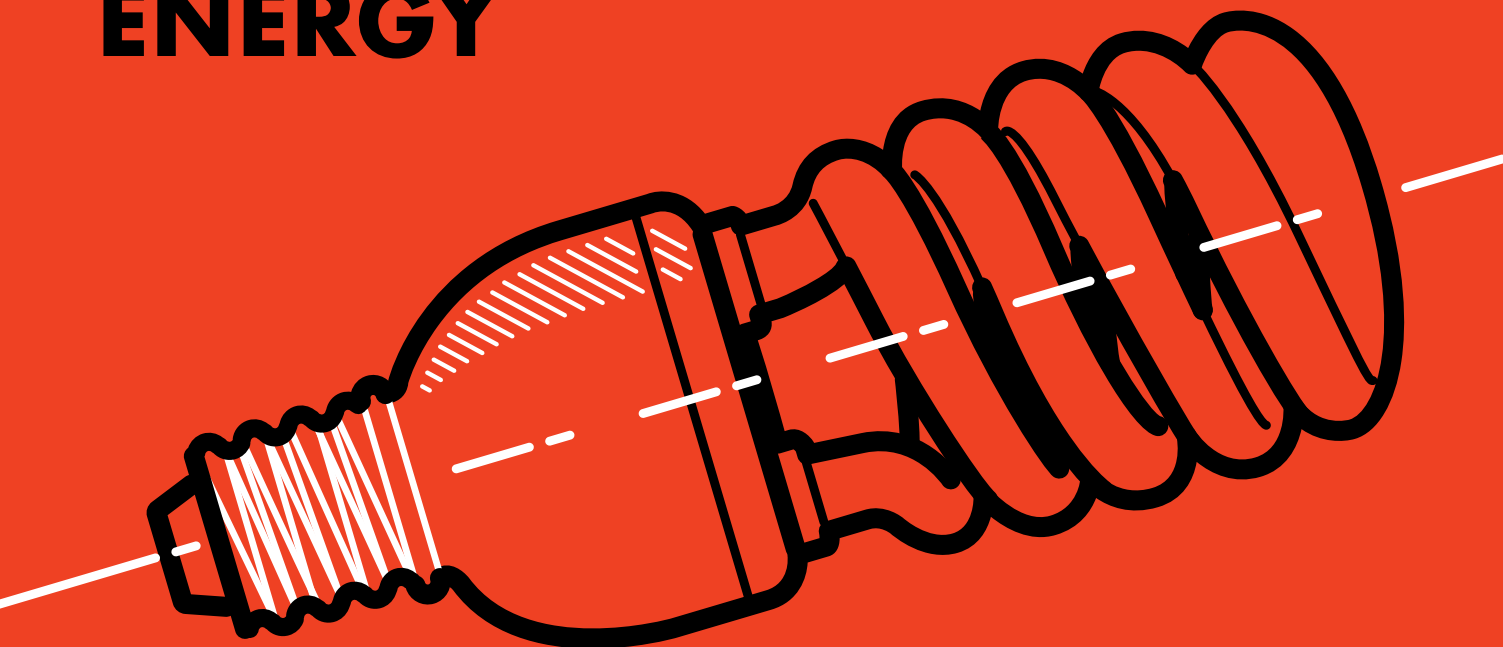
Water Filtration

Students will construct water filtration devices and investigate how improper disposal of harmful contaminants has serious impact on animal and human health.

ONTARIO CURRICULUM CONNECTION
Water Systems

MATTER + ENERGY

IN-SCHOOL WORKSHOPS



GRADE 3 ⌚ 1–1.5 Hours

Fun Friction

Students will design, build and test cars to investigate the laws of physics.

ONTARIO CURRICULUM CONNECTION
Forces Causing Movement

GRADE 4 ⌚ 1–1.5 Hours

EYE-R

Students will learn about different forms of electromagnetic radiation and its harmful effects on the human eye.

ONTARIO CURRICULUM CONNECTION
Light and Sound

GRADE 5 ⌚ 1–1.5 Hours

Awesome Ooze

Students will use their knowledge of chemistry to synthesize various polymers.

ONTARIO CURRICULUM CONNECTION
Properties of and Changes in Matter

GRADE 6 ⌚ 1.5–2 Hours

Circuit City

Students will use knowledge of electricity to design, build, and test circuits.

ONTARIO CURRICULUM CONNECTION
Electricity and Electrical Devices

GRADE 7 ⌚ 1–1.5 Hours

CSI: Classroom Scene Investigation

Students will investigate principles of chemical reactions in a mock crime scene.

ONTARIO CURRICULUM CONNECTION
Pure Substances and Mixtures

GRADE 8 ⌚ 1.5–2 Hours

Hydraulic Cranes

Students will integrate their knowledge of fluids and systems in action to create a hydraulic crane.

ONTARIO CURRICULUM CONNECTION
Fluids

STRUCTURES + MECHANISMS

IN-SCHOOL WORKSHOPS

GRADE 3 ⌚ 1.5–2 Hours

Pasta Bridges

Students will design and test the load-bearing function of pasta bridges.

ONTARIO CURRICULUM CONNECTION
Strength and Stable Structures

GRADE 4 ⌚ 1.5–2 Hours

Super Simple Machines

Students will learn to combine and construct super simple machines.

ONTARIO CURRICULUM CONNECTION
Pulleys and Gears

GRADE 5 ⌚ 1–1.5 Hours

Tables + Towers

Students will design, build, and test towers to withstand various environmental factors.

ONTARIO CURRICULUM CONNECTION
Forces Acting on Structures and Mechanisms

GRADE 6 ⌚ 1–1.5 Hours

Fantastic Flight

Students will investigate principles of flight in flying animals and apply these concepts to design and build their own gliders.

ONTARIO CURRICULUM CONNECTION
Flight

GRADE 7 ⌚ 1.5–2 Hours

Functional Forms

Students will design and construct working models of shoes to investigate concepts and principles of human factors and industrial engineering.

ONTARIO CURRICULUM CONNECTION
Form and Function

GRADE 8 ⌚ 1.5–2 Hours

Rockin' Rollercoasters

Students will design and construct models of rollercoasters to investigate the laws and principles of physics.

ONTARIO CURRICULUM CONNECTION
Systems in Action

LIFE SYSTEMS

IN-SCHOOL
WORKSHOPS



GRADE
3

🕒 1–1.5 Hours

Colorful Carnations

Students will learn about uptake and water retention within different types of plants.

ONTARIO CURRICULUM CONNECTION
Growth and Changes in Plants

GRADE
4

🕒 1.5–2 Hours

Animal Adaptations

Students will investigate the principles of evolution and build models of animals adapted to various environments.

ONTARIO CURRICULUM CONNECTION
Habitats and Communities

GRADE
5

🕒 1–1.5 Hours

Living Lungs

Students will design and build a working model of the respiratory system.

ONTARIO CURRICULUM CONNECTION
Human Organ Systems

GRADE
6

🕒 1.5–2 Hours

Feathered Foragers

Students will apply their knowledge of taxonomy to identify and classify animals within appropriate food webs and ecosystems.

ONTARIO CURRICULUM CONNECTION
Biodiversity

GRADE
7

🕒 1–1.5 Hours

Energy + the Environment

Students will learn to construct animal food webs while investigating the effects of pollution through biomagnification.

ONTARIO CURRICULUM CONNECTION
Interactions in the Environment

GRADE
8

🕒 1–1.5 Hours

Bacteria Biology

Students will construct models of bacteria and compare them to cells within the human body.

ONTARIO CURRICULUM CONNECTION
Cells

How to Book



- 1.** Choose from any of our curriculum related workshops. We offer workshops for Grades 3–8 spanning across all strands in the Ontario Elementary Curriculum.
- 2.** Each workshop is 1–2 hours in length, depending on the duration of your class. We offer special block pricing for multiple bookings per school. Each workshop typically accommodates up to 30 students. All materials are included in the price.
- 3.** Complete the online booking form at workshops.science.yorku.ca. Workshops are scheduled on a first-come first-registered basis. Your booking is not complete until you receive a confirmation email and electronic invoice.
- 4.** Workshops cannot be modified three (3) business days before the scheduled date.

Pricing

Schools can book in blocks of 6 or 12 workshops. Blocks can be split among different grade levels and classrooms. Alternative blocks can be arranged. Individual workshops are also available, however priority booking is given to block bookings.

12 Workshop School Package

(Full-Day): \$1,475

6 Workshop School Package

(Full-Day): \$785

Questions?



Call us at:
416-736-2100 Ext. 44552

Email us at explore@yorku.ca

CONTACT INFORMATION

Faculty of Science
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Lumbers Building
Room 355
Toronto, Ontario
M3J 1P3

workshops.science.yorku.ca

science



K to 12 STEM Outreach

The Faculty of Science at York University has a long history of supporting K-12 STEM outreach in the GTA. In 2014 we reached more than 7,000 youth through our programming. In addition to In-School Workshops, we offer programs throughout the year to engage youth about STEM:

SciX: Science Explorations Summer Camp
Grades 3-8 — Summer

York Science Saturdays
Grades 3-8 — Fall/Winter

March Break Science Camp
Grades 3-8 — March Break

Helix: Summer Science Institute
Grades 9-12 — Summer

Science Explorations is a proud member of Actua

A member organization of www.actua.ca

actua™

Learning for Change.
Découvrir pour demain.

Actua provides training, resources and support to its national network of members located at universities and colleges across Canada in the delivery of science, technology, engineering and mathematics (STEM) education outreach programming. Each year these members engage over 225,000 youth in 500 communities nationwide. Please visit Actua at www.actua.ca

2014 ACTUA ONTARIO FUNDERS

Ontario Trillium Foundation

2014 ACTUA NATIONAL FUNDERS

Suncor Energy Foundation

GE Canada

Natural Sciences and Engineering Research Council of Canada

Shell Canada

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York University

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