

YORK UNIVERSITY

SCIENCE ENGAGEMENT PROGRAMS



science



SPECIALTY DAY PROGRAMS

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

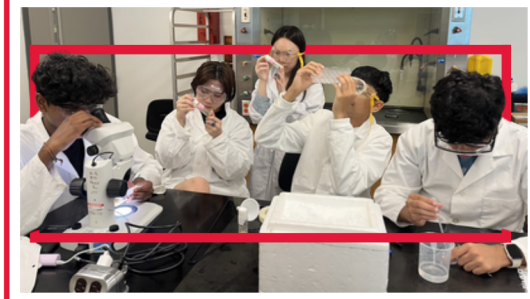
Actua is a national organization of 40 university-based STEM outreach programs. Our pedagogical approach is shared by Actua members across Canada, and has been rigorously tested and evaluated. This approach is based on the supposition that the skills, knowledge, and attitudes of scientifically literate 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: yorku.ca/science/youth-programs

Program Information



Specialty Day Programs can be conducted at your location or on campus, subject to room availability. They make great P.A. Day programs or a community Science Day!

Total Time:
5.5 hours

Cost:
Booking fee + per student fee:
• \$30 for 15-20 students or
• \$25 for 21-30 students

Students:
Minimum 15;
Maximum 30 per class

For larger groups, please contact us directly.

science



MAD CHEMICAL SCIENTISTS



Grade Range: 3-5

Cost: \$300 Booking Fee + Student Fee (see page 2)

Students: Minimum 15; Maximum 30

Total Time: 5.5 hours

Step into the captivating world of the MAD SCIENTIST workshop, where creativity knows no bounds! Unleash your inner genius as you embark on hands-on experiments, mind-bending demonstrations, and exhilarating scientific adventures. Join us for an unforgettable journey of discovery, innovation, and madcap fun, where curiosity reigns supreme, and every participant becomes a scientist extraordinaire!

BOO BUBBLES

Join our captivating workshop where students engineer their own filtering flasks to encase a mesmerizing dry ice concoction, crafting enchanting "smoke"-filled bubbles that defy gravity, bounce, and spark their scientific curiosity.

Workshop Length: 1 hour

Take Home Piece: Yes. Vial of concocted bubble solution per student



MAGNETIC PUTTY

We'll explore the profound significance of magnetism to our planet, unveiling its role in Earth's magnetic field and how it safeguards life on our blue planet. Get ready to stretch your understanding of magnetism and its vital connection to our world!

Workshop Length: 1 hour

Take Home Piece: Yes. Piece of magnetic putty per student

POLYMER WORMS

Uncover the secrets behind chemical compounds, explore phase changes, and transform ordinary liquids into gelatinous worms through the magic of polymerization.

Workshop Length: 1 hour

Take Home Piece: No



LAVA LAMP

Join our mesmerizing workshop where you'll unlock the secrets of science and art as you craft your very own Lava Lamp using everyday household items.

Workshop Length: 1 hour

Take Home Piece: Yes. Lava lamp per student



WHAT'S THAT POWDER?

Become a lab expert, in a quest to uncover the truth behind mysterious powdery substances. Explore the fascinating realm of material analysis as you conduct scientific tests on everyday powders, unlocking the secrets hidden within.

Workshop Length: 1 hour

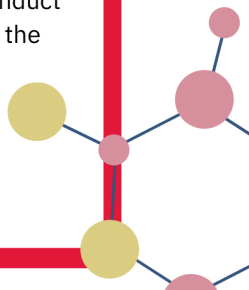
Take Home Piece: No

MAGIC MILK

In this captivating workshop, students will mesmerize milk into a milk plastic, unraveling the fascinating science behind surface tension.

Workshop Length: 0.5 hour

Take Home Piece: No



CRIME SCENE INVESTIGATION

Grade Range: 3-6

Total Time: 5.5 hours

Cost: \$300 Booking Fee + Student Fee (see page 2)

Students: Minimum 15; Maximum 30

Step into the thrilling world of Crime Scene Investigation! Uncover clues, analyze fingerprints, and sharpen your detective skills in this immersive experience. Use your CSI Detective Kit and Journal to document your findings!



FINGERPRINT ANALYSIS

Discover the fundamentals of fingerprint identification. This intriguing workshop allows the students to master the art of distinguishing individual identities through comparing fingerprint patterns.

Workshop Length: 1 hour

Take Home Piece: Yes. One fingerprint chart per student



BLOOD SPATTER ANALYSIS

Unravel the mysteries of bloodstains, discovering how they reveal crucial clues in diverse scenarios, while gaining insights into their height and direction variations.

Workshop Length: 1 hour

Take Home Piece: No

CHROMATOGRAPHY

Join us as students explore ink chromatography techniques to unveil the identity of the mysterious message's author by comparing Rf values of different markers.

Workshop Length: 1 hour

Take Home Piece: Yes. Completed chromatography sheet

FOOTSTEP ANALYSIS

Uncover the fascinating connection between an individual's height and their stride length, empowering students with the skills to draw insightful inferences from these crucial footprints of human movement.

Workshop Length: 1 hour

Take Home Piece: No

HAIR ANALYSIS

In this workshop students will learn about the fascinating world of hair types and structures, all while familiarizing themselves with the basic components of a microscope and how to use one properly.

Workshop Length: 1 hour

Take Home Piece: No

BITEMARK EVIDENCE

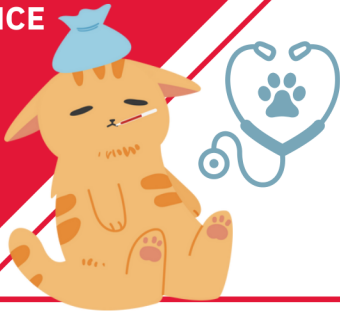
Know the secrets hidden within bite marks, as you unravel the unique stories they tell about suspects and victims, exploring differences between genders and age groups.

Workshop Length: 0.5 hour

Take Home Piece: No



VETERINARY SCIENCE



Grade Range: 5-8

Cost: \$300 Booking Fee + Student Fee (see page 2)

Students: Minimum 15; Maximum 30

Total Time: 5.5 hours

Explore the fascinating world of Veterinary Science in our immersive workshops, where participants will delve into the art and science of caring for our beloved animal companions.



DISSECTING OWL PELLETS

Embark on a fascinating journey into the secret world of owls as you unravel the mysteries of their diet and lifestyle. Students become detectives of the natural world, sifting through these regurgitated treasures to unveil the untold stories hidden within each pellet while gaining a deeper appreciation for these enigmatic nocturnal hunters.

Workshop Length: 1 hour

Take Home Piece: No

VETERINARY CLINIC: CASE STUDIES

Students will delve into real-life cases, uncovering the mysterious symptoms caused by various organisms and insects, all while gaining hands-on experience in diagnosis and learn about the treatments available, giving them a thrilling taste of life as a veterinary health professional for a day.

Workshop Length: 1 hour

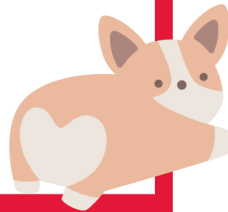
Take Home Piece: Yes. Patient notes

SWAB SKELETONS

Get ready to embark on a bone-chilling journey that will leave you with a deeper understanding of the intricate mechanics that keep creatures moving while discovering how animals navigate life with and without this essential framework.

Workshop Length: 1 hour

Take Home Piece: Yes. Crafted skeleton



X-RAY BINGO

Step into the fascinating world of veterinary diagnostics with 'X-ray Bingo,' where students embark on a thrilling journey through radiographs of animals, sharpening their skills to spot hidden objects and uncover the mysteries of the animal kingdom.

Workshop Length: 1 hour

Take Home Piece: Yes. Bingo card



FIRST AID: CAST MODELLING*

Discover the art of animal healing through casting. Dive into the world of casts and molds as you master the intricate skill of constructing casts on injured animal limbs, gaining insights into the remarkable role they play in the recovery process.

Workshop Length: 1.5 hours

Take Home Piece: Yes. Cast piece

*Included with off-campus visits

WORM DISSECTIONS**

Step into the fascinating world of biology at our workshop on worm dissections! Students will delve into the mysteries of the phylum Annelida as they get hands-on experience dissecting a worm.

Workshop Length: 1.5 hours

Take Home Piece: No

*Included with on-campus visits



SPACE SCIENCE



Grade Range: 5-8

Cost: \$350 Booking Fee + Student Fee (see page 2)

Students: Minimum 15; Maximum 30

Total Time: 5.5 hours

Explore the wonders of the universe and ignite your curiosity with our Space Science workshops, where participants embark on an interstellar journey of discovery. Students will be divided into space crews of three to work through the challenges of life in space.



HYDRAULIC ARM

Explore the mysteries of space-age engineering this amazing workshop, where students become budding aerospace engineers. Guided by instructors, space crews will craft a hydraulic arm to do work in the space shuttle while delving deep into the fascinating world of space shuttle technology, gaining hands-on experience that's out of this world.

Workshop Length: 1.5 hour

Take Home Piece: Yes. One hydraulic project per group

TELESCOPES

Embark on a celestial journey to unravel the wonders of optics and how we harness their power to see into the stars with refracting telescopes.

Workshop Length: 1 hour

Take Home Piece: Yes. One telescope per group

SUNDIAL

Step into the fascinating world of ancient timekeeping at our sundial workshop, where students craft their very own sun-powered timepieces while uncovering the captivating history and science behind these celestial instruments.

Workshop Length: 1 hour

Take Home Piece: Yes. One sundial per student

BOTTLE ROCKETS*

Join our thrilling Bottle Rockets Workshop where students will uncover the secrets of rocketry, while solving the physics involved in space flights. Get ready for an explosive journey as we explore the fascinating world of rocket fuel and launch our imaginations to new heights!

Workshop Length: 1 hour

Take Home Piece: No

*Outdoor launches will be conducted, weather permitting



CONSTELLATION CARD CIRCUITRY

Unravel the puzzling patterns in the night sky in our captivating workshop on constellations. Students will fuse their understanding of electricity with celestial wonder as they craft constellations that come to life, illuminating the cosmos with shimmering LEDs in a dazzling series of interconnected lights.

Workshop Length: 1 hour

Take Home Piece: Yes. One card per group



MINI-MED SCHOOL



Grade Range: 6-8

Cost: \$300 Booking Fee + Student Fee (see page 2)

Students: Minimum 15; Maximum 30

Total Time: 5.5 hours

Become a doctor for a day! Learn all about medical science while learning how to help your patients. etc.

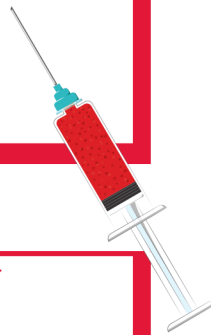


BLOOD TYPING

Uncover the mystery of your blood type and explore the vital science behind it at our Blood Typing Workshop. Analyze different blood types and which types are compatible.

Workshop Length: 1.5 hour

Take Home Piece: No



FIRST AID: SPLINTING

Become a hero who knows how to immobilize injuries effectively. Learn techniques that can make a real difference in emergencies- because sometime, a well applied sling or splint is all it takes to save the day!

Workshop Length: 1.5 hours

Take Home Piece: No



DOCTOR'S ORDERS

Are you ready to Unravel the Mysteries of patient health? Step into the shoes of a doctor in our amazing workshop. You will decipher clues from history, symptoms, and physical appearance of patients to diagnose a variety of intriguing medical cases.

Workshop Length: 1 hour

Take Home Piece: Yes. Patient notes

DNA EXTRACTION

Unlock the secrets of life itself at our DNA Extraction Workshop and uncover the science that shapes all living things! Delve deep into the world of genetics as you learn to extract DNA, unravel its intricate structure and function, and explore how environmental factors can impact this genetic blueprint. Take a piece of genetic material home in your very own DNA Necklace!

Workshop Length: 1 hour

Take Home Piece: Yes. One DNA necklace per student

SUTURING*

Discover the art of precision and handiness at our Suturing Workshop, where you will master the delicate skill of stitching with expert guidance. Unleash your inner surgeon and learn to close wounds like a PRO!

Workshop Length: 1 hour

Take Home Piece: No

*Included with off-campus visits

HOMEOSTASIS**

Uncover the secrets of your internal harmony! Learn about the dynamic balance of body that sustains life. Explore how the body regulates and maintains equilibrium, with hands-on experiments and real time monitoring where you will work with beef liver.

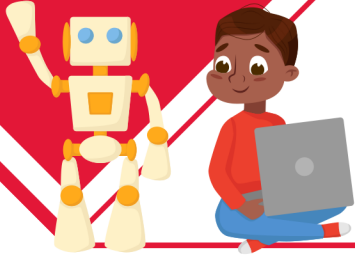
Workshop Length: 1 hour

Take Home Piece: No

**Included with on-campus visits



MINI-ENGINEERING ACADEMY



Grade Range: 6-9

Cost: \$350 Booking Fee + Student Fee (see page 2)

Students: Minimum 15; Maximum 30

Total Time: 5.5 hours

Experience the world of engineering in miniature at Mini Engineering Day – where big ideas come to life on a small scale! Students will work together as a building crew of three to discover the thrill of designing, building, and problem-solving as they unlock the secrets of engineering in a fun and interactive environment.



BUZZ WIRE GAME

In this workshop, students will embark on an electrifying adventure, unraveling the mysteries of electrical circuits. Armed with newfound knowledge, they'll craft their very own wired circuits and indulge in fun games.

Workshop Length: 1 hour

Take Home Piece: Yes. One buzz wire per group

FANTABULOUS FLASHLIGHTS

In our flashlight workshop, students will dive into the fascinating world of electrical circuits, sparking their creativity as they build their very own beaming companions.

Workshop Length: 1 hour

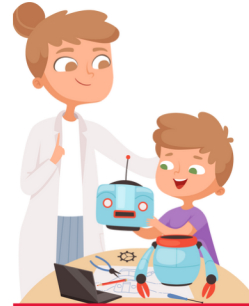
Take Home Piece: Yes. One flashlight per group

OPERATION GAME

Watch sparks fly as students use their knowledge of circuits and the engineering design process to design, build, and test an Operation game.

Workshop Length: 1 hour

Take Home Piece: Yes. One game per group



BRIDGES

Discover the secrets of various bridge designs, then roll up your sleeves to construct your very own bridge masterpiece before putting it to the ultimate test of strength.

Workshop Length: 1 hour

Take Home Piece: Yes. One bridge per group

BUILD A PULLEY CRANE

Unveil the secrets of crane evolution from ancient times to modern construction, then channel your inner inventor as you design and construct an operational crane, mastering the art of simple machines along the way.

Workshop Length: 1.5 hours

Take Home Piece: No



YORK UNIVERSITY'S SCIENCE ENGAGEMENT PROGRAMS

OUR STEM OUTREACH

The Faculty of Science at York University has a long history of supporting grade 3–12 STEM outreach in the GTA. In 2023 we reached more than 8,000 youth through our programming. In addition to Specialty Day Programs, we offer Community Workshops in schools and libraries, organize custom Campus Visits for schools and organizations, and host on-campus programs throughout the year to engage youth with STEM.

Elementary Programs

- Science Explorations Summer Camp
Grades 3–8 | Summer
- March Break Science Camp
Grades 3–8 | March Break

High School Program

- Spark Lab Program
Grades 9–12 | Summer

Cancellation Policy

Booking fee is non-refundable, as it reserves the event date, materials purchases, and staff. Cancellations made in writing within 48 business hours will receive a refund of all student costs. Changes to student count will be accepted until 48 business hours before the event.



CONTACT US

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