

## 2023-2024 WISE KID-NETIC ENERGY FUNDERS



### DID YOU KNOW?

#### WISE Kid-Netic Energy also offers:

**GIRLS\* CLUB:** For youth who love science, this club is the place to be! Each week, members will explore a new area of science or engineering through hands-on activities, visits with scientists, or field trips to places where science and engineering can be experienced in action in the real world. Girls\* Club welcomes all youth who identify as girls, trans, non-binary and/or otherwise genderwise!  
**Go to [www.wisekidneticenergy.ca](http://www.wisekidneticenergy.ca) to learn about dates and more!**

**GIRLS\* ROBOT CLUB:** Youth in grades 7-12 come to the University of Manitoba for weekly sessions led by undergraduate student instructors to learn how to code and program LEGO® Mindstorms. The program will end with members showcasing their learning through a variety of challenges and events. Membership in this club includes instruction, the weekly sessions and the use of WISE Kid-Netic Energy's LEGO® Mindstorms Robot Inventors. **Go to [www.wisekidneticenergy.ca](http://www.wisekidneticenergy.ca) for more info!**

**SUMMER DAY CAMPS:** During the spring and summer we offer science and engineering week-long day camps to students in grades 4-6 throughout the province of Manitoba. In Winnipeg, we partner with several organizations to offer programming in various locations. Outside of Winnipeg we work with local school boards and community centres. We regularly go to Flin Flon, Morden, Norway House, Thompson, Sakeeng, Sapotaweyak, Skowman, Steinbach and Wanipigow. **Go to [www.wisekidneticenergy.ca](http://www.wisekidneticenergy.ca) for more details!**

**FREE EVENTS:** Throughout the year we host a number of free science and engineering events for youth who identify as girls, trans or non-binary. This year's events will include Go Eng Girl in October, Go Code Girl in February, and Make Your Move in March. **Check out our website, [www.wisekidneticenergy.ca](http://www.wisekidneticenergy.ca), for more details!**

**FREE ACTIVITY BOOKLETS:** We are offering FREE Manitoba science curriculum-based STEM Activity Booklets for Kindergarten to Grade 8. Each booklet contains puzzles, design challenges, experiments, colouring, and more! All activities in the booklet are connected to specific learning outcomes for that grade level.  
**Go to [www.wisekidneticenergy.ca/activity-booklets](http://www.wisekidneticenergy.ca/activity-booklets) for more info.**

A network member of **actua**

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.

With funding from

**Canada**

Each year, these members engage over 350,000 youth in 500 communities nationwide. Please visit Actua at [www.actua.ca](http://www.actua.ca).

### FOR MORE INFORMATION



**[wisekidneticenergy.ca](http://wisekidneticenergy.ca)**  
 Complete workshop requests online!

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# 2023-2024 Workshop Catalogue

For a list of **exciting STEM workshops** →

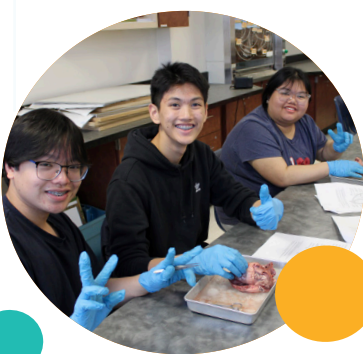
WISE Kid-Netic Energy is a community outreach program offered by the Price Faculty of Engineering. One service WISE Kid-Netic Energy provides is delivering workshops to Manitoba classrooms. These workshops are hands-on, curriculum-based and delivered by undergraduate students in Engineering and Science-related fields. Workshops are offered for a nominal fee, with invoices sent following the workshops. Cheques should be made payable to University of Manitoba. There are NO additional travel fees for schools outside of Winnipeg.





\* Each workshop is designed for one regular-sized class or up to a max of 30 students.  
A minimum of **TWO** workshops must be booked per visit. Workshops booked on a first-come first-serve basis dependent upon instructor availability.  
GST will be charged on all Gr. 9-12 workshops.

Workshop	Curriculum Relativity	Cost	Description	Notes
<b>Leaf it to Us!</b> 45 Min	Gr K K-1-01, K-1-03 K-3-01, K-3-03, K-3-04, K-3-06	\$50	Learn about the parts of trees, where paper comes from, and about different types of paper through song and games. Also make your own wooden bookmark!	<b>Make &amp; Take Project*</b> Wooden bookmark.
<b>Jumpin' Germs!</b> 1 Hr	Gr 1-2 1-0-1, 1-0-3 → 1-0-4 1-0-7 → 1-0-9 2-0-1, 2-0-4 2-0-7, 2-0-9	\$50	In Manitoba, flu season is always a concern with germs jumping from one person to the next. Students will learn proper hand washing technique with a glowing germ cream. They will also design their own germ based on common germ properties.	Requires access to a plug/outlet. <b>Make &amp; Take Project*</b> Design-a-Virus.
<b>Codemakers Jr.</b> 1 Hr	Gr. 1-3	\$50	Introduces students to the basics of coding through unplugged kinesthetic activities and a programmable mouse game. Great workshop for students with developing literacy skills.	
<b>Rosie Revere Balloon Cars</b> 1 Hr	Gr. 2 2-3-11, 2-3-12, 2-3-13, 2-3-14	\$50	Read "Rosie Revere, Engineer", and learn about the engineering design process by making balloon powered cars.	<b>Make &amp; Take Project*</b> Balloon car.
<b>Manitoba Safari</b> 1 Hr	Gr 3-6 3-1-02, 3-1-13, 3-1-16 4-1-07, 4-1-09, 4-1-17 6-1-01, 6-1-04, 6-1-08	\$50	Ever wonder what's in an owl's breakfast? Find out by doing an owl pellet dissection. Then choose to either focus on learning more about Manitoba's flora through a leaf identification activity, and/or an Indigenous medicinal plants activity, or learn more about Manitoba's fauna through the analysis of footprints.	Select one of the following:  o Plant-focused o Animal-focused  Both include a dissection.
<b>Indigenous Structures</b> 1 Hr	Gr 3-7 Gr 3-7 3-2-01 → 3-2-13 3-3-01 → 3-3-03 4-0-3a → 4-0-3f 4-0-4a → 4-0-4h 5-3-01 → 5-3-02 6-0-1c, 6-0-4b → 6-0-4d 6-0-5a, 6-0-7f 7-3-01 → 7-3-09 7-3-11 → 7-3-12	\$50	After learning about different types of traditional Indigenous Structures, as well as about forces, stability and strength, students will become civil engineers, and design their own Indigenous-inspired structures.	
<b>Structures: Greenhouse</b> 1 Hr	Gr 3-7 3-2-01 → 3-2-13 3-3-01 → 3-3-03 4-0-3a → 4-0-3f 4-0-4a → 4-0-4h 5-3-01 → 5-3-02 6-0-1c, 6-0-4b → 6-0-4d 6-0-5a, 6-0-7f 7-3-01 → 7-3-09 7-3-11 → 7-3-12	\$50	Your challenge: build an environment where a plant can grow! After learning about the elements required to build a successful greenhouse, students will use steps from the design process to create and build their own prototype of a greenhouse.  <b>Classrooms must supply their own (per student):</b> Scissors and cardboard (i.e. cereal/tissue box-size)	<b>Make &amp; Take Project*</b> Mini greenhouse and bean seeds.  Requires access to a computer, digital projector and a wall or screen to project onto.
<b>The Science of Sound</b> 1 Hr	Gr 4 4-3-01 → 4-3-05 4-3-07 → 4-3-09 4-3-13, 4-3-17	\$50	Discover how sound travels and how we hear it through activities such as building a gramophone using littleBits, simulating sound in a bodily-kinesthetic way, and creating a kazoo.	
<b>Simple Machines</b> 1 Hr	Gr 4-6 5-3-01 → 5-3-04, 5-3-06, 5-3-10 → 5-3-13	\$50	Learn about the six simple machines, and explore the link between a helicopter and screw. The students will have a chance to build catapults in teams and then test them out.	



**All workshops requests are to be completed online!** To learn more about how to request our STEM School Workshops please head to: [www.wisekidneticenergy.ca/workshops](http://www.wisekidneticenergy.ca/workshops).

\* **Make & Take Project:** students have the opportunity to create a project, and take it home to share with friends and family.

Workshop	Curriculum Relativity	Cost	Description	Notes
<b>Rocks and Minerals</b> 1 Hr	Gr 4-7 4-4-01 → 4-4-08 5-0-4a, 6-0-4a 7-4-01 → 7-4-03	\$50	Students will become geologists in action as they learn about the layers of earth and compare rocks and minerals! Together in groups they will work to identify rocks and/or minerals through comparisons of colour, texture, structure and streak, luster and hardness testing.	Ideally access to Internet, a computer and projector.
<b>Codemakers</b> 1 Hr	Gr 4-8	\$50	Learn the basics of coding while playing with Dash robots controlled by tablets. This workshop introduces students to logic, and drag and drop programming.	Requires floor space for the robots to move around.
<b>Tinfoil Canoes</b> 1 Hr	Gr 4-8 5-2-10-11, 5-2-14, 5-3-01-03, 6-2-01-03, 6-2-09, 7-3-01-9	\$50	Students view "The Birch Bark Canoe: Navigating a New World" then put their knowledge to the test by designing and testing their own watercraft to see how many marbles can be carried. Workshop highlights Indigenous contributions to science.	Requires access to a computer, internet, digital projector, and a wall or screen to project onto.
<b>Optics</b> 1 Hr	Gr 4 & 8 4-2-01 → 4-2-04 4-2-06 → 4-2-09, 4-2-13 4-2-15 → 4-2-16 8-2-01 → 8-2-03 8-2-07 → 8-2-12	\$50	Students will learn about the parts of an eye while dissecting an animal's eye. They will also learn about optical sensors while programming an Ozobot to solve a problem.	Requires a table. Includes a dissection.
<b>Science on the Run</b> 1 Hr	Gr 4-10 5-2-02 → 5-2-03 5-2-09 → 5-2-11 7-2-11, 7-2-13 7-2-17 S1-2-11 → S1-2-13 S2-2-07	\$50	Students will use polymer chemistry to create their own bouncy balls and/or mix creepy cool alien eggs. A series of exciting experiments show off different chemical changes such as heat and color change.	<b>Make &amp; Take Project*</b> Bouncy balls and/or alien eggs.
<b>Open Heart Surgery</b> 1 Hr	Gr 5-11 5-1-10 8-1-10 → 8-1-12 B11-3-06, B11-3-12 B11-3-14 B11-3-16 → B11-3-17	\$50	Students will explore the circulatory system and heart anatomy in a tangible way by dissecting a pig's heart (increasing detail for higher grade levels).	Requires a table. Includes a dissection.
<b>Electricity #1: Snap to It</b> 1 Hr	Gr 6 & 9 6-3-01, 6-3-05, 6-3-08 → 6-3-10, 6-3-12, 6-3-13, S1-3-08 → S1-3-10, S1-3-13, S1-3-15, S1-3-20	\$50	Students will build and compare series and parallel circuits using Snap Circuits. Other activities can include building a simple motor.	
<b>Water Quality</b> 1 Hr	Gr 8-10 8-4-14, 8-4-15, 8-4-17 → 8-4-19 KC-002, KP-041 S-100, VP-009 S2-208	\$50	Learn about different water sources and issues affecting water quality. Then work together in teams to become water treatment specialists by purifying and testing water samples using real-life techniques, like filtration, pH testing and UV disinfection.	
<b>DNA Detection</b> 1 Hr	Gr 8-12 8-1-01 → 8-1-05 S1-1-13, S1-1-17 B12-2-01 → B12-2-03 B12-2-09	\$50	Students will learn about what determines the identity of each cell: DNA. They will even have the opportunity to extract real DNA and take it home. Increasing focus on genetics and biotechnology with older students.	<b>Make &amp; Take Project*</b> DNA sample.
<b>Electricity #2: Solder Shop</b> 1.5 Hr	Gr 9 S1-3-13	\$50	Learn about resistors, capacitors, transistors, and other electronic components while soldering a printed circuit board.	<b>Make &amp; Take Project*</b> Circuit board.



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