



UNIVERSITY
OF MANITOBA

A network
member of
actua.ca

actua™

Youth · STEM · Innovation



WISE Kid-Netic Energy
ENGINEERING FUN SCIENCE



2018-2019 Workshop Catalogue

Now accepting bookings for **exciting STEM workshops** →

WISE Kid-Netic Energy is a community outreach program offered by the 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 University of Manitoba 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.

Please NOTE: A minimum of **TWO** workshops must be booked per visit. Workshops booked on a first-come first-serve basis dependent upon instructor availability.

Workshop	Curriculum Relativity	Cost	Description	Notes
Roadshow 1 Hr	Gr K-8	\$50	A science variety show combining demos and interactive examples of chemical reactions, physics experiments and more (balloons, flames, and colour changes!)	
Living Tree ½ Hr	Gr K K-1-01 → K-1-08 K-3-03	\$30	Learn about trees, their inhabitants and the changes of the seasons. Tree cross sections and various items acquired from trees are discussed and presented.	
Sharpen your Senses 1 Hr	Gr 1 1-2-01 → 1-2-03 1-2-05, 1-2-07 1-2-12 → 1-2-14	\$50	Students play games in which they must use their senses to identify mystery stimuli.	Requires access to a power outlet
Jumpin' Germs! 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. Make & Take Project* Design-a-Virus
Food Facts 1 Hr	Gr 1-2 1-1-01, 1-1-07, 1-1-10 2-1-01, 2-1-04, 2-1-07	\$50	Students will get to extract iron from cereal, simulate the body's digestion process and learn about healthy foods in a game of Bingo.	Requires access to a power outlet.
Codemakers Jr. 1 Hr	Gr. 1-3	FREE!	Introduces students to the basics of coding through unplugged kinesthetic activities and a programmable mouse game. Great workshop for students with developing literacy skills	Free thanks to Gov't of Canada CanCode funding.
Rosie Revere Car Balloons 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.	Make & Take Project* Balloon Car
Manitoba Safari 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	Students will expand on their knowledge of Manitoba's flora and fauna. Students will dissect owl pellets and examine animal footprints. Students will also learn about Indigenous medicines found in plants native to Manitoba.	
Structures 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 various forces, stability and strength, students will become civil engineers designing and building their very own straw bridges, towers, or Indigenous-inspired structures.	<input type="checkbox"/> Bridges <input type="checkbox"/> Towers <input type="checkbox"/> Indigenous Structures
The Science of Sound 1 Hr	Gr 4 4-3-01 → 4-3-05 4-3-07 → 4-3-09 4-3-13, 4-3-17	FREE!	Discover how sound travels and how we hear it through activities such as building a gramophone using LittleBits and simulating sound with dominoes.	Free thanks to Gov't of Canada CanCode funding.
Codemakers 1.5 Hr	Gr 4-8	FREE!	Learn the basics of coding while playing with Dash robots controlled by tablets. This workshop introduces students to logic, and drag and drop programming.	Free thanks to Gov't of Canada CanCode funding.
Rocks and Minerals 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 work in groups to identify rocks and minerals using several criteria including hardness and streak testing.	
Simple Machines 1 Hr	Gr 4-8 5-3-01 → 5-3-04, 5-3-06, 5-3-10 → 5-3-13 8-3-11 → 8-3-12, 8-3-14	\$50	Create a giant lever, explore the link between a helicopter and a screw, and much more! Grade 4,5 and 6 students will build a catapult, and grade 7 and 8 students will build a hydraulic machine.	



New Workshop

New and Improved Indigenous Structures!



Please NOTE: GST will be charged on all Gr. 9-12 workshops

Workshop	Curriculum Relativity	Cost	Description	Notes
Tinfoil Canoes 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 digital projector, and a wall or screen to project onto.
Science on the Run 1 Hr	Gr 4-10	\$50	This workshop has the Wow Factor of Roadshow but brings students' participation to a new level. Students will use polymer chemistry to create their own bouncy balls and mix creepy cool alien eggs. A series of exciting experiments show off different chemical changes such as heat, color change and surface tension.	Make & Take Project* Bouncy balls and/or alien eggs.
Optics 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	FREE!	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.	Free thanks to Gov't of Canada CanCode funding.
Under the Sea 1 Hr	Gr 4-12 4-1-01 → 4-1-04 4-1-09, 4-1-14 6-1-01, 6-1-09 → 6-1-10 7-1-01 → 7-1-02 7-1-05, 7-1-07 B12-0-U2	\$50	Students will dive into the most diverse biome on Earth: the ocean. They will learn about life in an aquatic environment by dissecting a sea cucumber and examining its anatomy. (In increasing detail for higher grade levels).	Requires a table. Includes a dissection.
Open Heart Surgery 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.
Electricity #1: Snap to It 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	FREE!	Students will build and compare series and parallel circuits using Snap Circuits. Students will also learn about the connections between circuits and coding. In Grade 6 students will also build a simple motor. In Grade 9 students will observe a Tesla Coil demo, and play a game to test their knowledge.	Free thanks to Gov't of Canada CanCode funding.
Electricity #2: Solder Shop 1.5 Hr	Gr 9 S1-3-13	FREE!	Learn about resistors, capacitors, transistors, and other electronic components while soldering a printed circuit board. Students will also learn about the connections between circuits and coding.	Free thanks to Gov't of Canada CanCode funding. Make & Take Project* Circuit board.
DNA Detection 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.	Make & Take Project* DNA sample.
Megawatts & Marbles 1.5 Hr	Gr. 7 & 9 7-4-06, 7-4-11, S1-3-23, S1-3-24	\$75	Play a game to learn about renewable energies and how they integrate to traditional power grids. Can you keep power to your town?	Requires access to a digital projector, and a wall or screen to project onto.
University Talk: ENGAP 40 Min		FREE!	Students learn of the many useful and effective support systems provided by the Engineering Access Program for First Nations, Metis and Inuit people.	Rule of two workshop booking does not apply. Workshop is designed for Indigenous youth (First Nations, Inuit, and Metis).

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

2018 WISE KID-NETIC ENERGY FUNDERS



DID YOU KNOW?

WISE Kid-Netic Energy also offers:

WISE KID-NETIC ENERGY GIRLS CLUB: Calling all girls! For girls 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. After a series of weekly meetings and activities, Girls' Club culminates in a final science fair for all the members to participate in! **New for 2018-2019, Girls' Club is offering two separate sessions for different age groups: grades 6-8 in the fall, and grades 3-5 in the winter.**

WISE KID-NETIC ENERGY ALL GIRLS ROBOT FIGHT CLUB: We train girls in grades 7-12 to compete in the Manitoba Robot Games. Membership in this club includes seven - 4 hour sessions with University of Manitoba undergraduate student instructors, the registration fee for the Manitoba Robot Games, and the use of WISE KE's EV3 Lego Mindstorms for training and competing.

WISE KID-NETIC ENERGY SUMMER CAMP: 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 Churchill, Flin Flon, Morden, Norway House, Thompson, Sapotaweyak, Skownan, Steinbach and Wanipigow.

WISE KID-NETIC ENERGY ALL-GIRLS CODEMAKERS CAMP: Thanks to CanCode funding via Actua we are taking this show on the road for FREE! Learn the basics of coding and expand your computational thinking and digital literacy skills while playing with gadgets like Snap Circuits, littleBits, Cue robots, Cozmo robots, and Lego Mindstorms.



With funding from



FOR MORE INFORMATION



wisekidneticenergy.ca
(on-line workshop request available)

EMAIL: wise@umanitoba.ca
TEL: 204.474.9340 (Local)
1.800.432.1960 Ext. 9340 (Toll Free)
FAX: 204.474.7644

E1-263 EITC - University of Manitoba
Winnipeg, Manitoba, Canada, R3T 5V6

