



Superior Science Workshops Spring 2022

Superior Science is a not-for-profit organization that seeks to promote and foster interest in STEM (Science, Technology, Engineering and Mathematics) among youth in Northwestern Ontario. Our programming is run by a dedicated team of Lakehead University undergraduate STEM students, and includes five weeks of fun summer camps, a Girls Club and a Code Club throughout the school year, and local and regional outreach to schools and community groups. Since its inception in 1999, Superior Science has reached over 50,000 Northwestern Ontario youth, delivering accessible and engaging science activities, demonstrations and more.

As part of our outreach efforts, Superior Science is offering the following free-of-cost STEM workshops to local classes for the remainder of the school year.

For workshops which require the use of computers, Superior Science is able to bring a class set of Chromebooks (25) or teachers may choose to use school laptops or Chromebooks instead. Students need not download any apps ahead of time. Laptops must be USB-compatible.

Please contact supersci@lakeheadu.ca with any questions or concerns you may have with workshops for your class(es). Click [HERE](#) to fill out more information and sign up for a workshop from Superior Science.

We look forward to working with you to foster a generation of youth in and around Thunder Bay that will be prepared to design, create, and innovate in STEM.

Katie Filipovic and Alexandra Grillo
Superior Science Directors 2022

3D Printing



Can be offered completely virtually



Recommended for Grades 5 and up

Students will be introduced to the science behind 3D printing and explore practical applications of this emerging technology. After discussing how engineers and architects use computer-assisted designs, students will draft their own 3D designs using the TinkerCAD website. Superior Science instructors will print students' designs and return them to the classroom teacher. In-person workshops will allow students to watch Superior Science's own 3D printers in action and will include a 3D printing pen activity if time permits.





SUPERIOR SCIENCE



Programming with Scratch

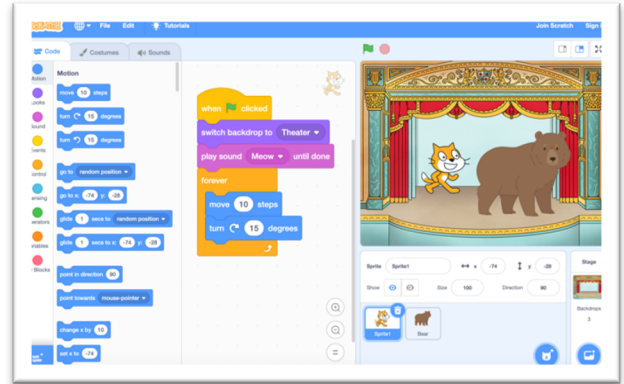


Can be offered completely virtually



Recommended for Grade 3 and up

In this workshop, students will receive an introduction to coding. Scratch is a block-based visual programming language aimed at children, used as a stepping stone to more advanced coding techniques. Using this drag and drop format, students will put their creativity to the test and code short action scenes complete with fun characters, backgrounds and more! The lesson will include coding basics, a discussion of the applications of the technology, and future careers in the field.



Circuitry with littleBits



In-person only



Recommended for Grades 3 and up

littleBits are easy-to-use electronic building blocks that snap together with magnets to make learning about circuitry and electronics exciting and engaging. Students will connect them together to create their own inventions with complex circuits. The workshop will introduce the innovation cycle, which emphasizes creative problem-solving.

Extension: Coding with littleBits

Instructors will guide students through programming their littleBits inventions and exploring additional capabilities by connecting their littleBit with a computer. Students can code using drag-and-drop block coding or Java-Script.





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Makey Makeys



In-person only



Recommended for Grades 3 and up

Turn a banana into your spacebar! MakeyMakeys are 'invention kits' designed to connect everyday objects to computer keys. Students will use alligator clips, a circuit board, and a USB cord (connected to a computer) to play games using fun objects instead of their keyboard. Students can make a piano, doodle on the screen, make a stopwatch or even play other computer driving games. During the lesson, students will learn circuitry basics and will learn about the conductivity of different materials.



Extension: MakeyMakeys and Scratch

Scratch offers a Makey Makey extension that allows students to code specific functions for different keys. Students can use their imagination to record their own sounds, which can be played when the connected object is touched. Prior experience with Scratch is not necessary.

Colour Coding with Ozobots



In-person only



Recommended for Grade 1 and up
Extension for Grade 3 and up

Ozobots are little robots designed to introduce coding. Rather than use complex coding language, Ozobots are coded with colours! Students will use a marker on white paper to guide their Ozobot on a path they draw. Using various colour combinations, students can have their Ozobot perform 'tricks'; speed up or slow down, zig-zag, reverse or go TURBO! The lesson will include coding basics and the components of a robot that work together to perform an action.



Extension: Ozobots and Blockly

Ozobots can be programmed using a computer app which allows students to code a specific sequence of actions without the use of paper and markers. For example, students could map out a maze on a desk surface and program the Ozobot to advance a certain number of steps, change directions, and change colours at any given point.



SUPERIOR SCIENCE



Nintendo LABO



In-person
only



Recommended for
Grade 1 and up

Nintendo LABO is a line of DIY kits for the Nintendo Switch Console. Using cardboard pieces, students will build a remote-control car that is paired with a Nintendo Switch. Students will work in small groups to control the 'car' and can collaborate with other groups and race their cars. Students may also wish to have their car self-drive by using reflective tape which interact with the Switch sensors to guide the car along a path. The lesson will explore how this technology is the basis of self-driving cars we may see on our roads one day!



Note: Workshop available while materials last
