

Makercart Learning Resources

Brilliant Labs is working on developing a series of learning resources that are specific to us in New Brunswick and Nova Scotia. While those are in development, please refer to the resources below to help you get started with your Makercart.



QR Codes: For your students who have access to a web-enabled device, feel free to use the QR codes below to quickly navigate to the associated websites. For iOS users, we recommend **QR Code Reader by Scan** and for Android users, try the same app found here: **QR Code Reader by Scan**.



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M3D Micro 3D Printer

It may be slow, but you are going to be amazed by the resolution of this 3D printer. We are proud to support this startup company as they evolve and perfect the support for this printer. Take your time and be patient with the filament loading process. **Webpage:** www.printm3d.com



Homepage



Getting Started



Software

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Hummingbird Kit

If your students are looking for an introduction to robotics, this kit is very easy to work with. Bundled with sensors, LEDs, motors and servos, your students' cardboard creations are just a couple of lines of code away. This board is also arduino compatible. Great video tutorials on their website!

Webpage: www.hummingbirdkit.com



Homepage



Getting Started



Software

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littleBits

A favourite for students and teachers alike. This rapid, snap-together prototyping platform will have your students creating complex electronic "circuits in seconds." Remember: The blue bits power, the green bits do something, the pink bits change the way the green bits function and the orange bits extend the circuit. Their website has hundreds of tutorials.

Webpage: www.littlebits.cc



Homepage



Getting Started

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Raspberry Pi Model B Canakit

It's hard to believe, but bundled in this small package is a fully functional, fully programmable computer. This "do anything" device is literally the future of computing. There is no limit to its creative potential. This will be a favourite amongst your most advanced users. **Webpage:** www.raspberrypi.org



Homepage



Getting Started



Software

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Spark Fun Inventor's Kit

Arduino, Arduino, Arduino... this word keeps coming up in the maker movement. Essentially when someone says "Arduino" think, a single-function micro-controller, capable of running a program in a loop forever. This kit is a great introduction to the world of Arduino, and has 13 bundled tutorials waiting for students to build. **Webpage:** www.sparkfun.com



Homepage



Getting Started



Software

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Spark Fun Red Bot Classic Kit

This is a very simple to use robotic exploration kit. It is compatible with Arduino based language, however comes bundled with online tutorials that are easy to follow. This kit will make an interactive line-following robot in no time! **Webpage:** www.sparkfun.com



Homepage



Getting Started



Software

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Janome Mini Sewing Machine

This compact machine includes essential features for tackling many wearable electronics projects. Has a mass of just over 2.2 kg. Sit this on top of your cart and get stitching! **Webpage:** www.janome.com



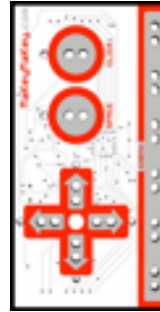
Homepage

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MakeyMakey

An invention kit for everyone! Watch in amazement as your students create novel controllers out of this simple to use, software free, external keyboard. Powered by arduino (but you don't need to know that), simply hook this up to your computer, and instantly control your arrow keys, space and click with anything conductive. Don't forget the ground!

Webpage: www.makeymakey.com



Homepage



Getting Started



Project Examples

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Conductive Thread - Large Spool and Bobbin

Your cart has all of the materials and electronics required to make a very elaborate wearable electronic garment. The wire that holds all of these would-be circuits together is Conductive Thread. This woven stainless steel product takes some time to perfect. Consult the QR Links to the right for more information. Our favourite destination for all things wearable and electronic is **Webpage:** learn.adafruit.com



Getting Started

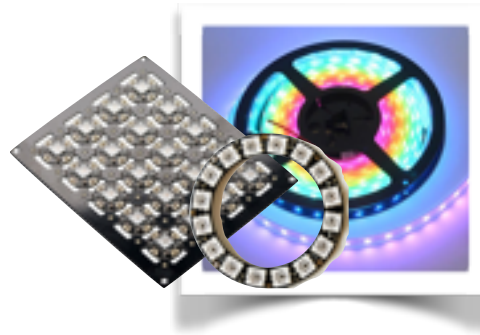


Project Examples

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Neopixel Sheet / Ring / 2m Reel

Continuing on our tour of the cart, we find the brightest, individually programmable LEDs available. Supplied by our friends at adafruit.com, these powerful lights have many different applications. They can be soldered or sewn. These will not simply work across a 3V battery, they need a simple arduino code to activate. **Webpage:** learn.adafruit.com



Getting Started



Project Examples

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Adafruit GEMMA

While this miniature micro-controller cannot receive input from sensors, it is the perfect solution to coding up your Neopixels. Also, this is the first Arduino board to be produced in North America. Will require Arduino software install.

Webpage: learn.adafruit.com



Getting Started



Project Examples

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Adafruit FLORA

This fully functioning Arduino powered micro-controller will receive input from an incredible amount of sensors. With large, conductive pads, hook this micro-controller up to an array of neopixels for an awesome project. Will require Arduino software install.

Webpage: learn.adafruit.com



Getting
Started



Arduino
Software



Project
Examples

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Adafruit Audio Sound F/X Board

Think of this little board as a portable sound file launcher. It comes loaded with its own 16MB of memory so that you can load on your favourite sound clips and launch them using a button, or a switch of any kind. Very cool device. Some assembly req'd. NO SOFTWARE REQUIRED!

Webpage: learn.adafruit.com



Getting
Started



Project
Examples

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Soldering Iron / Solder

How else would you bond metal with metal, but by using molten metal? Yes, this is a dangerous activity for students, but with the proper supervision, this will become an essential skill for your young inventors. The solder supplied with the cart is FLUX, meaning it is less-toxic than traditional solder. **Proper ventilation is strongly encouraged.**



How-to
Solder



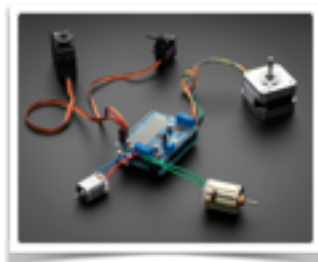
Video
Guide

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Arduino Motor Shield

This Arduino Shield will allow your projects to move, jump and quiver. It is strong enough to power DC motors, stepper motors and even servos. This is an advanced piece, but perfect for those students who have perfected the Hummingbird kit.

Webpage: learn.adafruit.com



Getting
Started



Arduino
Software



Project
Examples