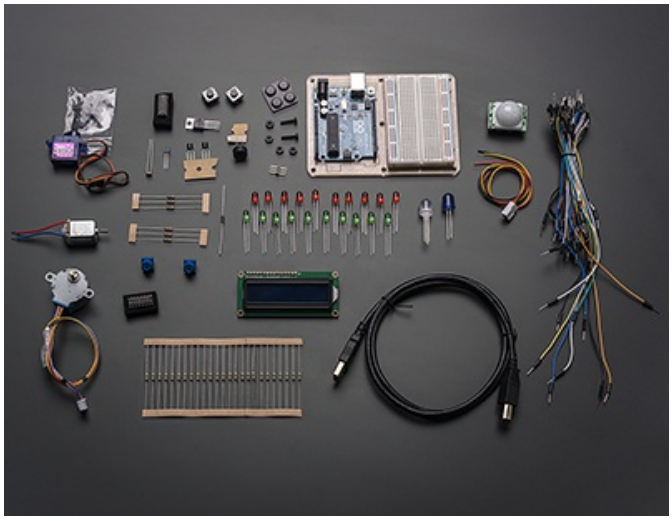
adafruit learning system

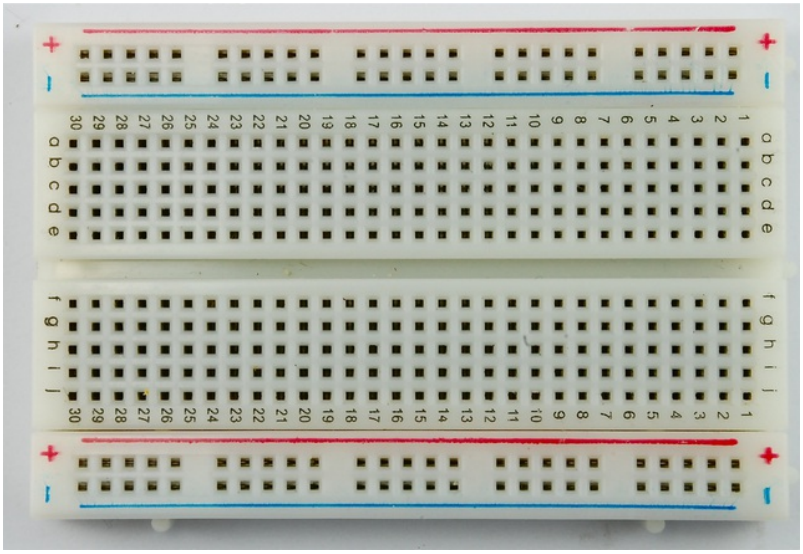
Lesson 0. Getting Started

Created by Simon Monk



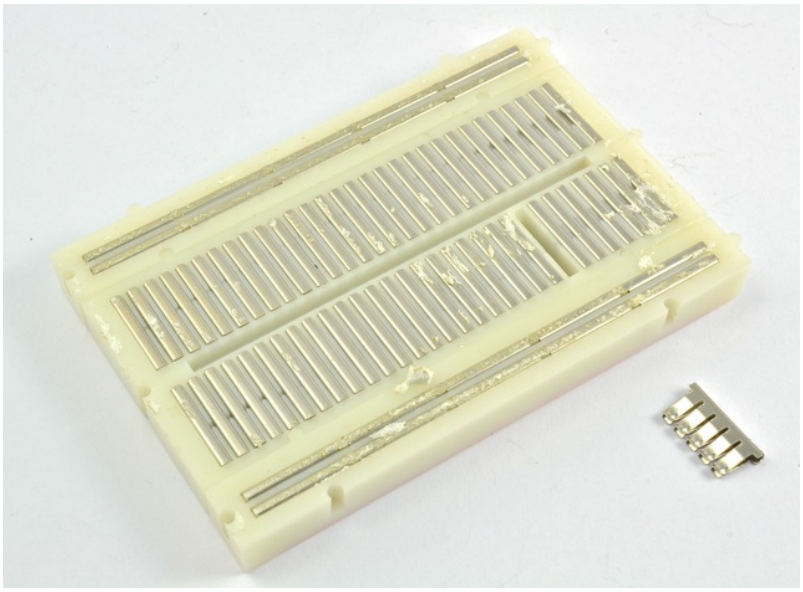
Breadboard

The projects in this series of lessons all use something called Breadboard, or more accurately, Solderless Breadboard.



Breadboard is a way of constructing electronics without having to use a soldering iron. Components are pushed into the sockets on the breadboard and then extra 'jumper' wires are used to make connections.

If you were to pull the self adhesive backing off the back of your breadboard, it would look something like this.

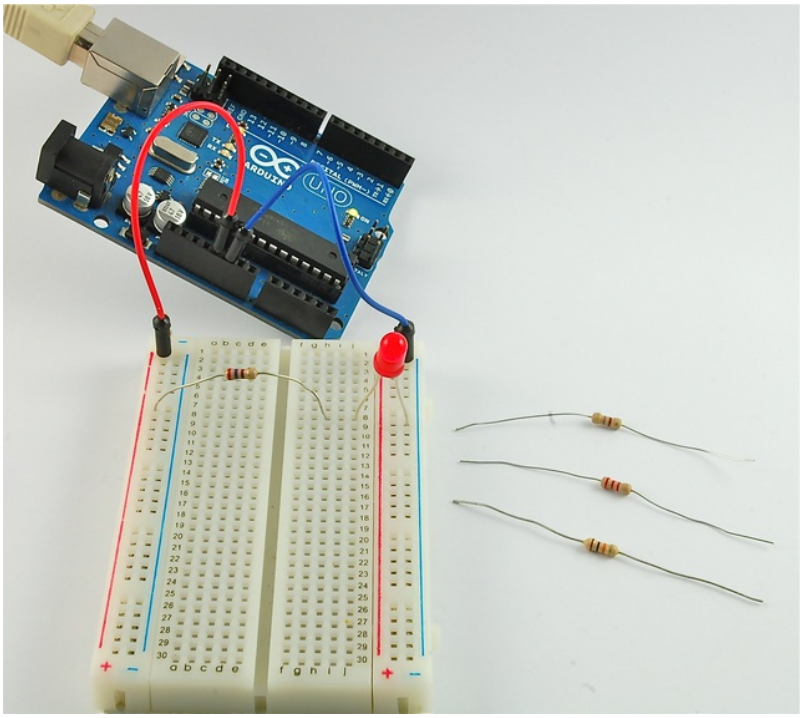


The middle section of the board has two columns, each with 30 strips of connector, like the one

pulled out and to the side of the breadboard. These connect together anything that is pushed through from the front into one of those five holes.

On either edge of the board are much longer sections of clip that join together the columns of holes marked by the blue and red lines on the front of the breadboard. These are generally used for GND (blue) and 5V (red).

This is the breadboard layout used in lesson 2.

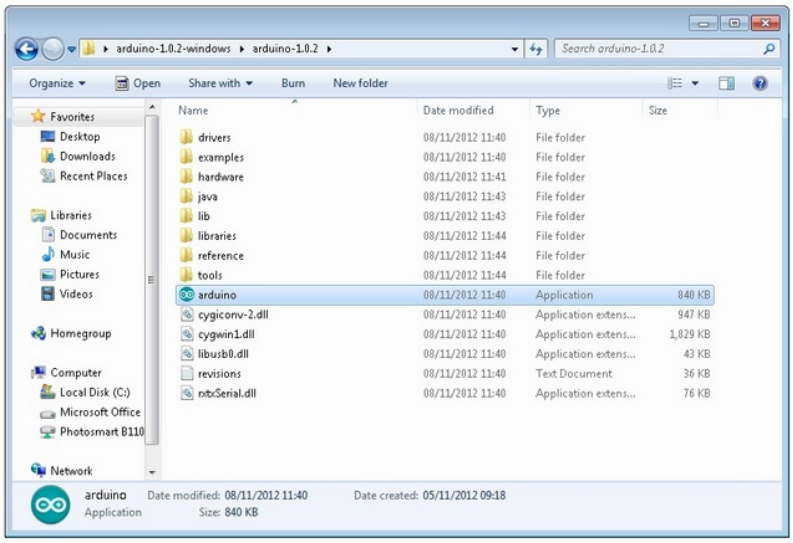


There is a red jumper wire going from the 5V socket on the Arduino to one of the long power connectors on the breadboard. The resistor has one lead pushed into one of the holes on that 5V red column. The resistor's other lead goes to one of the rows on the right hand side of the board in the center of the board.

The LED spans another connector on the same row as the resistor lead (connecting them together) and the blue (GND) long connector on the right of the breadboard. This long blue GND strip is connected near its top to the GND connection of the Arduino.

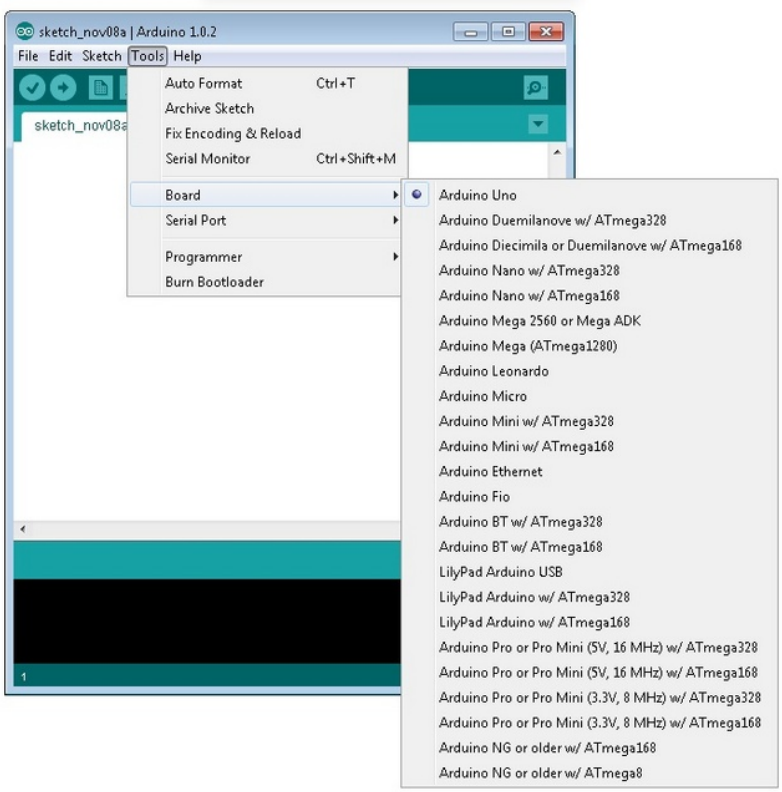
Boards and Ports

You are now ready to start the Arduino Software, so whatever platform you are using, open the Arduino folder and open the Arduino application contained within it.

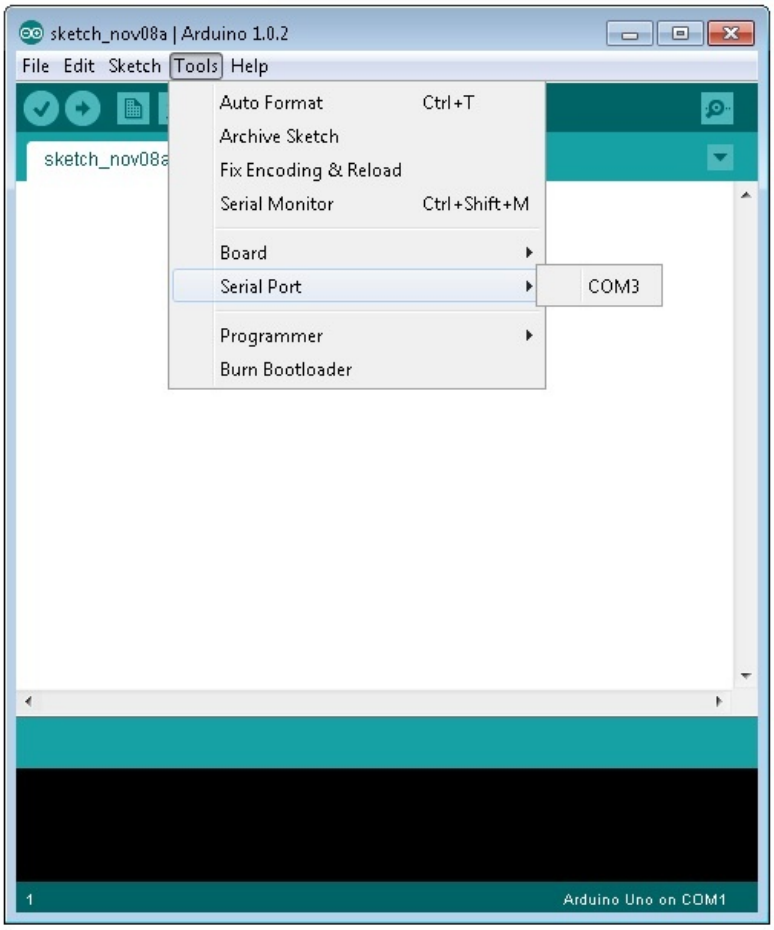


This will start the Arduino IDE, but before you can get programming, you have to tell the Arduino software which type of Arduino board you are using and also select the port it is connecting to.

To tell the Arduino IDE which type of board you are using. From the 'Tools' menu, select Board and then 'Arduino Uno' or 'Leonardo' as appropriate.

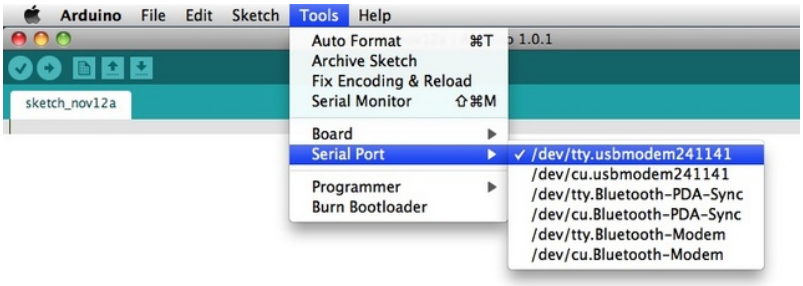


Also on the 'Tools' menu, you will find the 'Serial Port' option. Select this option.



If you are using Windows, there will probably only be one option here and it will either say COM3 or COM4. Even though there is only one option, you will still need to select it.

If you are using a Mac or Linux, there will be more options there, but it will usually be the top option in the list, as this will be the device most recently plugged in. This is useful, as the name of the port may not look like it has anything to do with Arduino. It will probably be called something like **/dev/tty.usbmodemXXXX** or **/dev/ttyUSBn**



In the next lesson, you will start by programming your Arduino board to make its built-in LED blink.