Tutorial for Arduino LED Blink

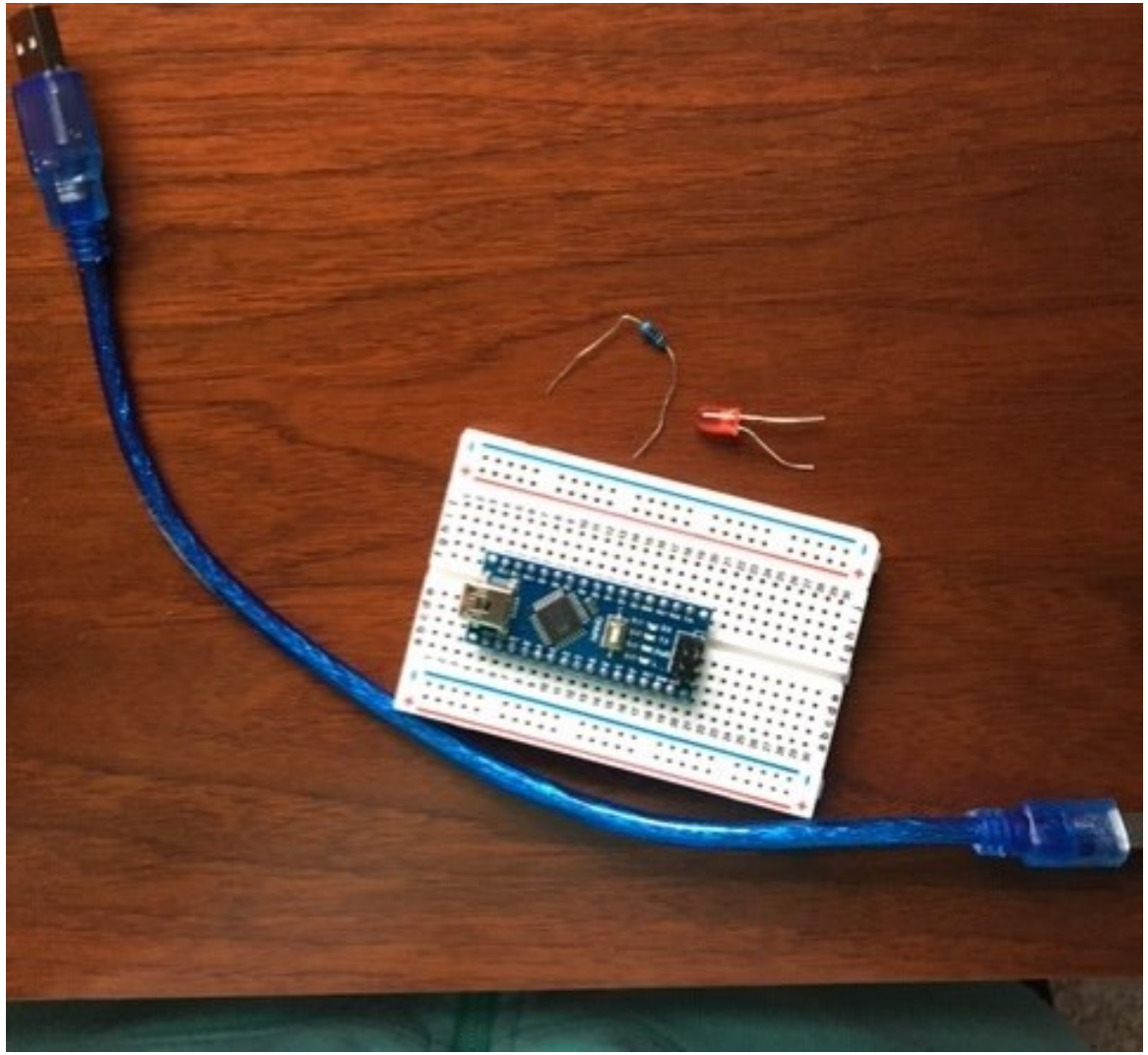
(January meeting activity)

Michelle Wang

4H Virtual STEM Club

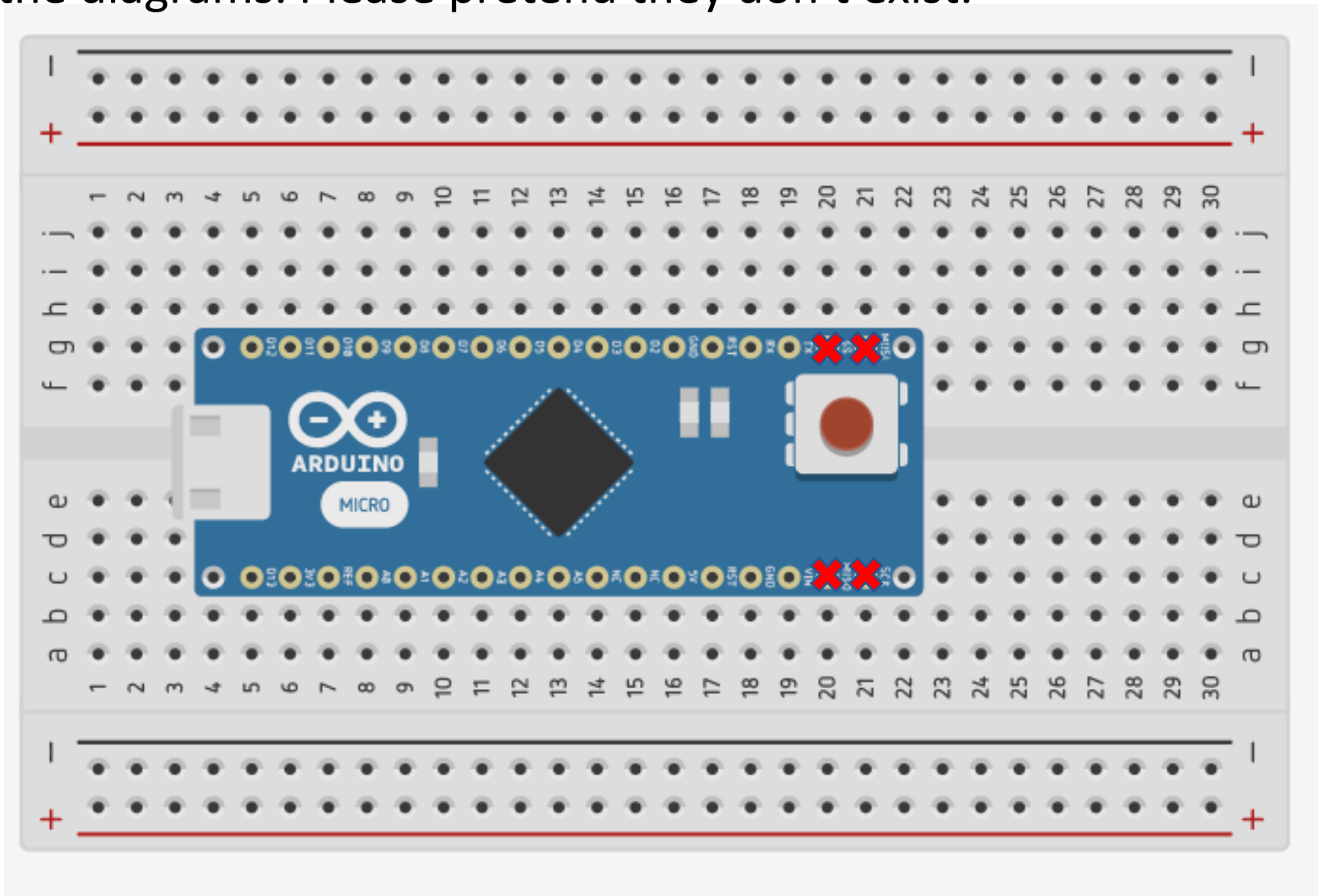
Parts you will need from the box

- USB cable
- LED
- Resistor
- Arduino board
  (foil wrapped thing)
- Breadboard
  (white thing with holes)

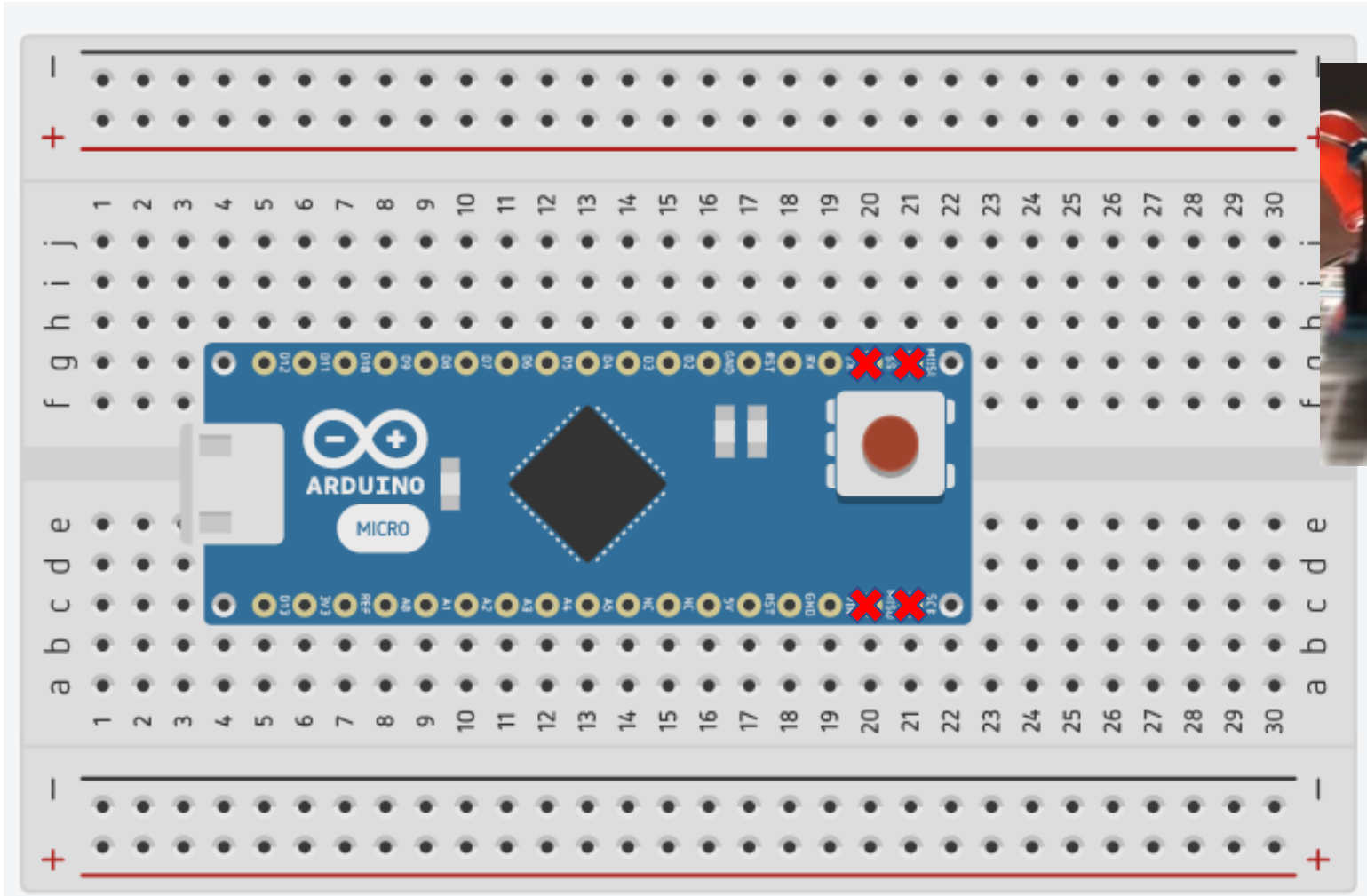


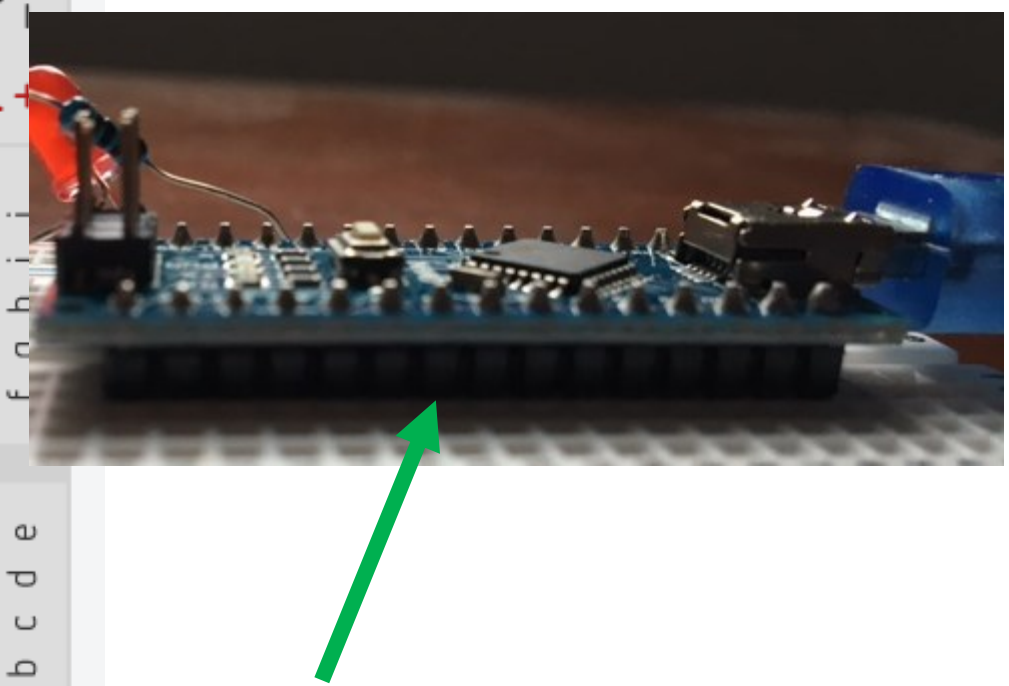
Put the Arduino board on the breadboard

Note on the diagram: There are two extra pins on the board in the diagram. The actual board you have does not have the two rightmost pins. I have marked them out in all the diagrams. Please pretend they don’t exist.



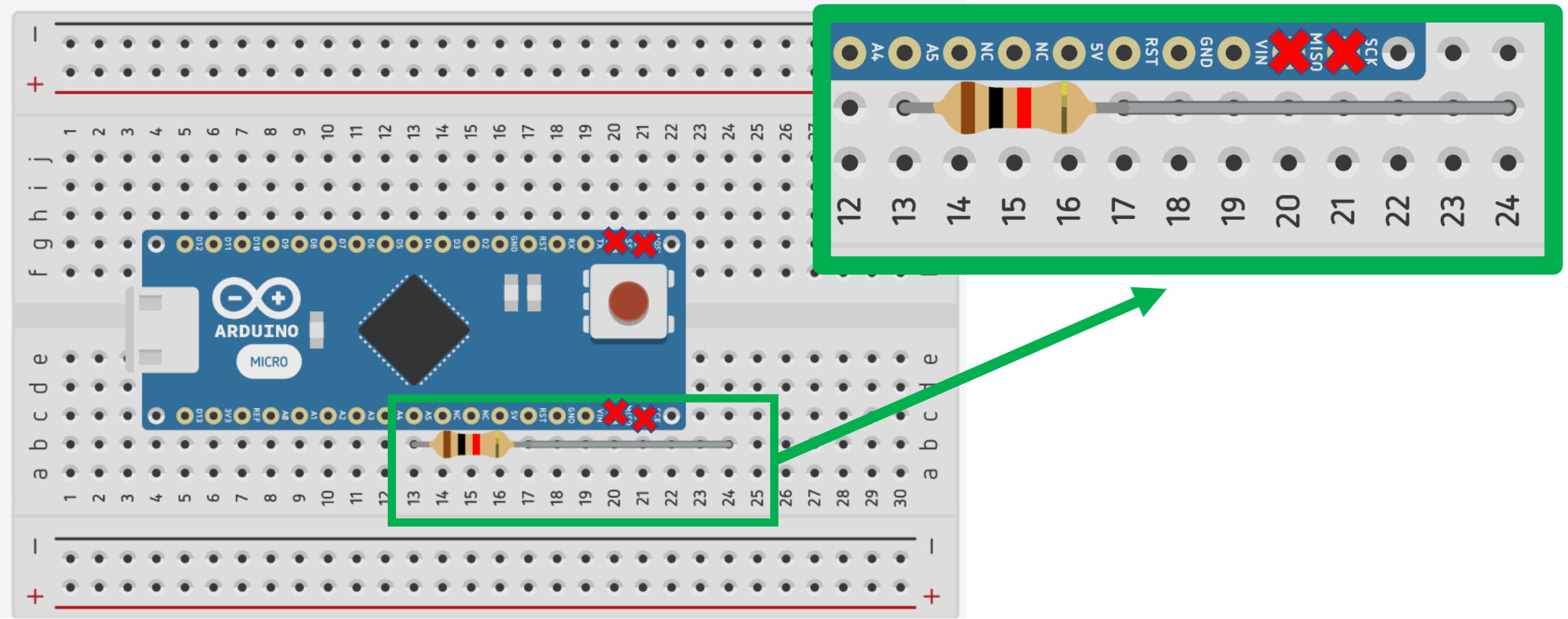
Put Arduino on breadboard. The front pins should go on c5 and g5 on the breadboard. Push it down until only the black plastic things show on the side view. Note: wiggle it around if it doesn't go in smoothly.





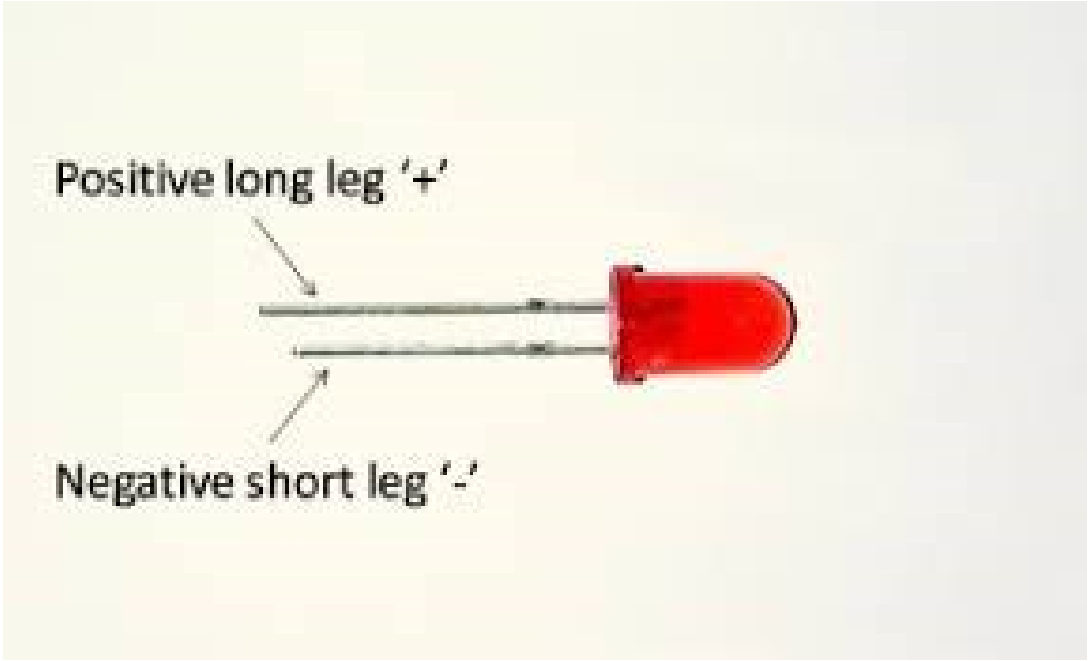
Only black plastic things showing

Take the resistor and put it in b13 on the breadboard (also pin A5 on the Arduino).
Put the other side of the resistor in b24 on the breadboard.

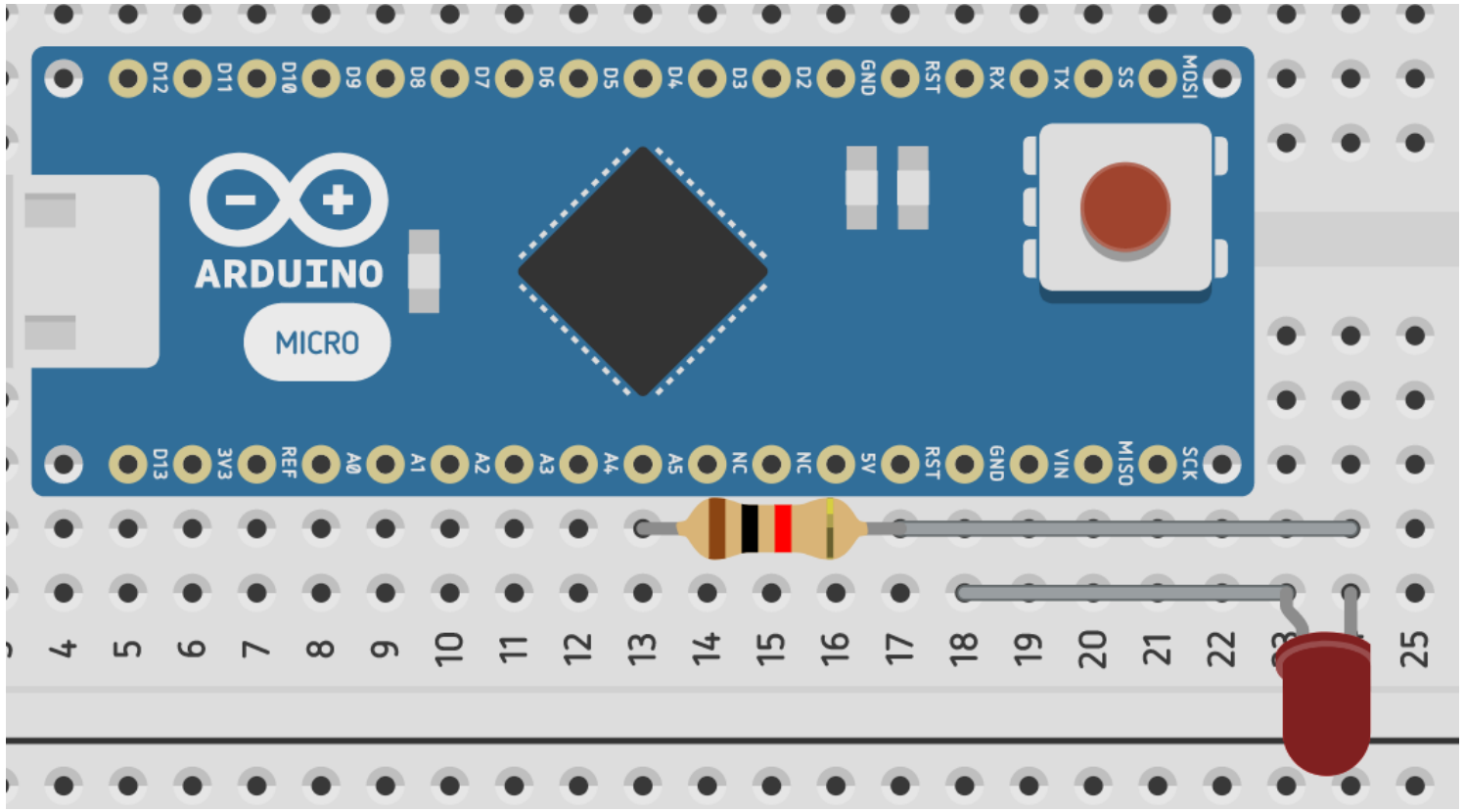


Long vs. Short ends of LED

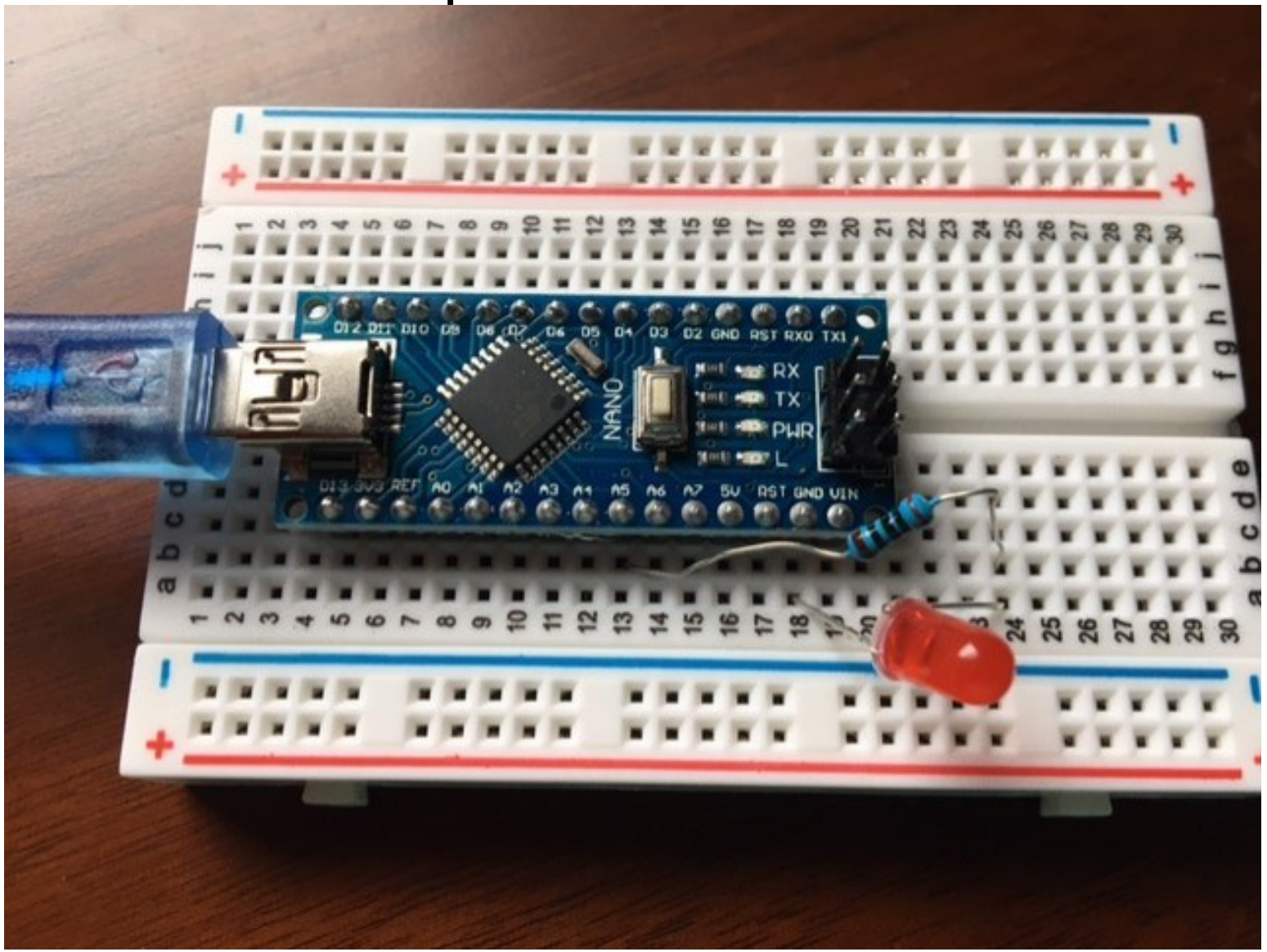
- An LED has a long end (positive) and a short end (negative).
- Make sure you do not get them mixed up!



Put the long end of the LED in a24 on the breadboard and the short end in the breadboard's a18 (also GND on Arduino).



Picture of finished product

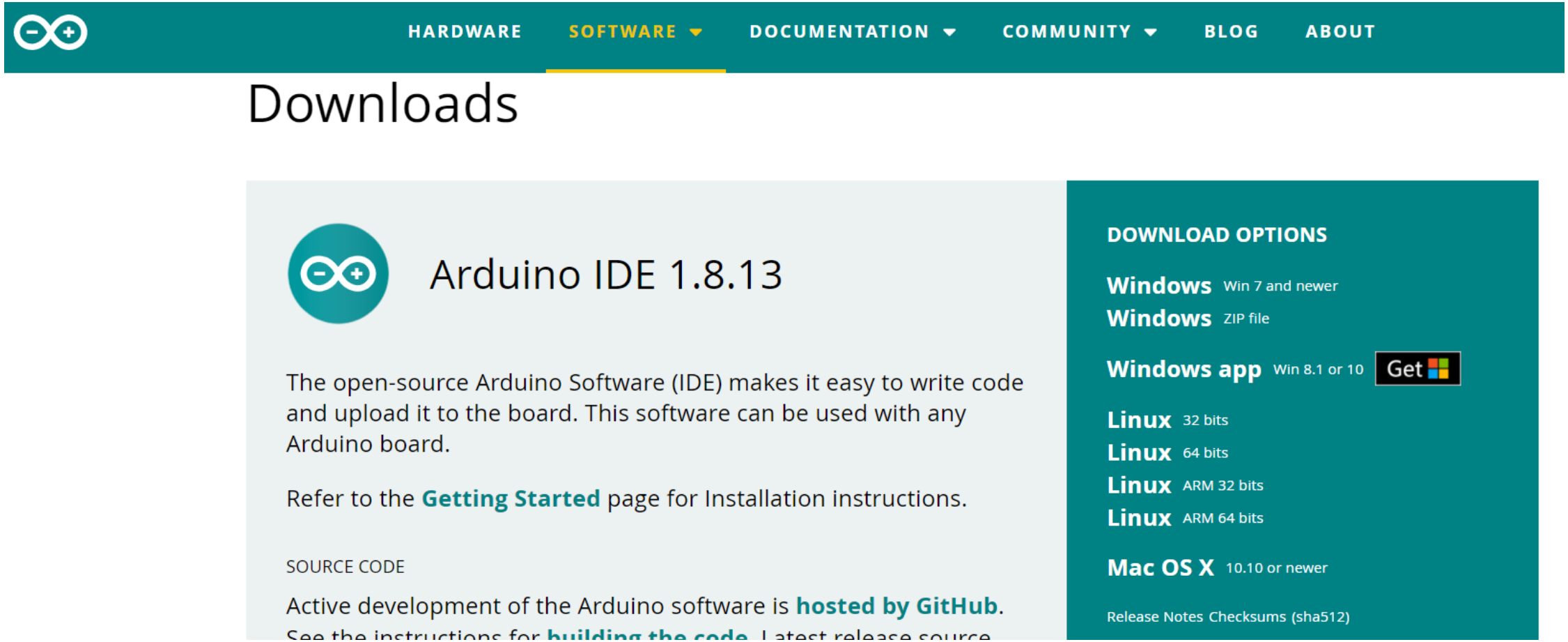


Software Stuff Walkthrough

-Video Link:
https://4hjccc.github.io/files/LED_tutorial.mp4

Download Arduino from the website

- For computers only: https://www.arduino.cc/en/software



Download CH340 Driver

- For computers: https://sparks.gogo.co.nz/ch340.html

Gogo:Tronics
Hobby Electronic Parts

Home | Electronic Components Online Shop | Tools, Docs, Downloads | Shipping & Payment Info | Contact

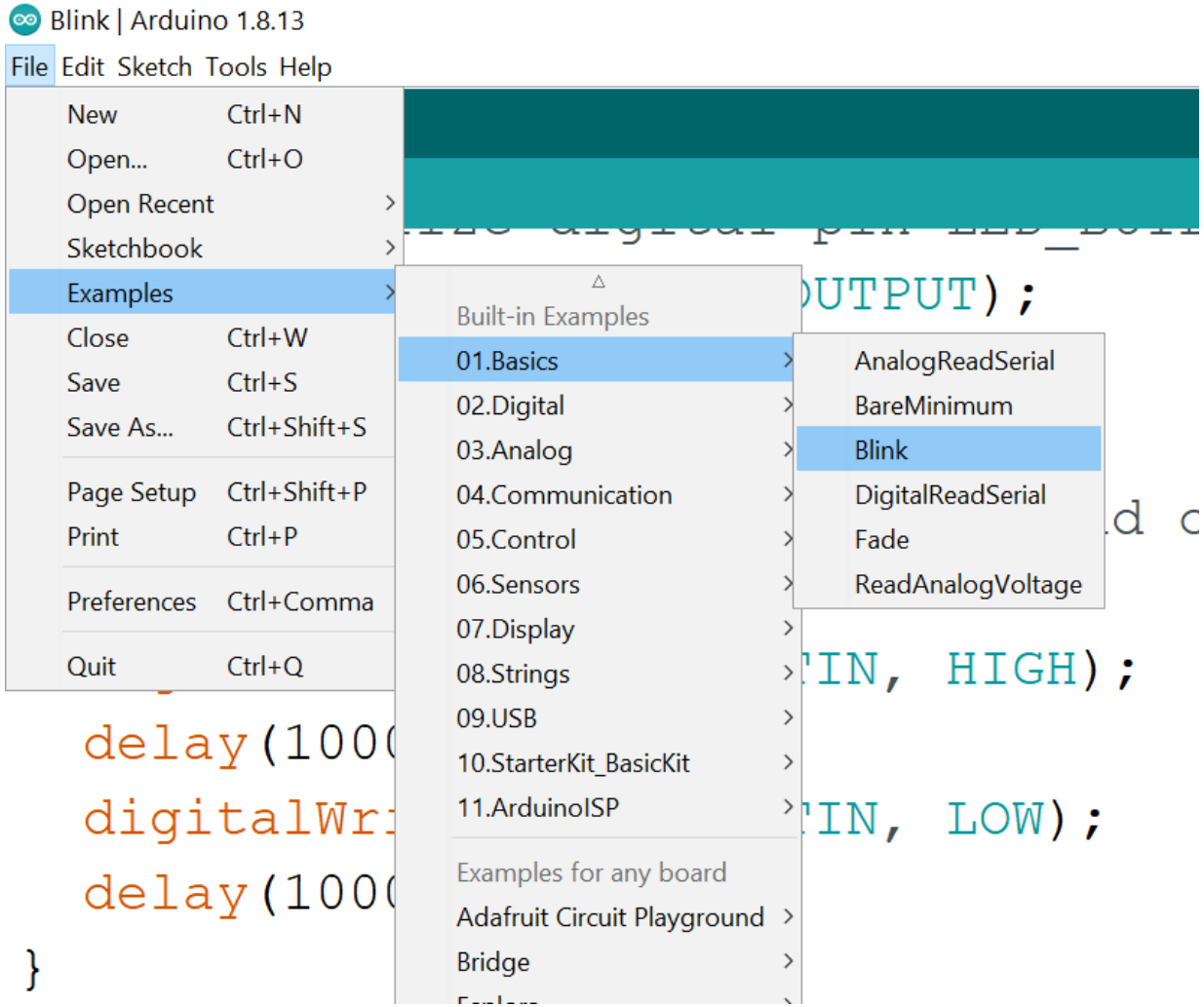
The CH340 chip is used by a number of Arduino compatible boards to provide USB connectivity, you may need to install a driver, don't panic, it's easier than falling off a log, and much less painful.

Windows

(Manufacturer's Chinese Info Link)

- Download the Windows CH340 Driver **Click this**
- Unzip the file
- Run the installer which you unzipped
- In the Arduino IDE when the CH340 is connected you will see a COM Port in the Tools > Serial Port menu, the COM number for your device may vary depending on your system.

Open Arduino application and load program



Change code slightly

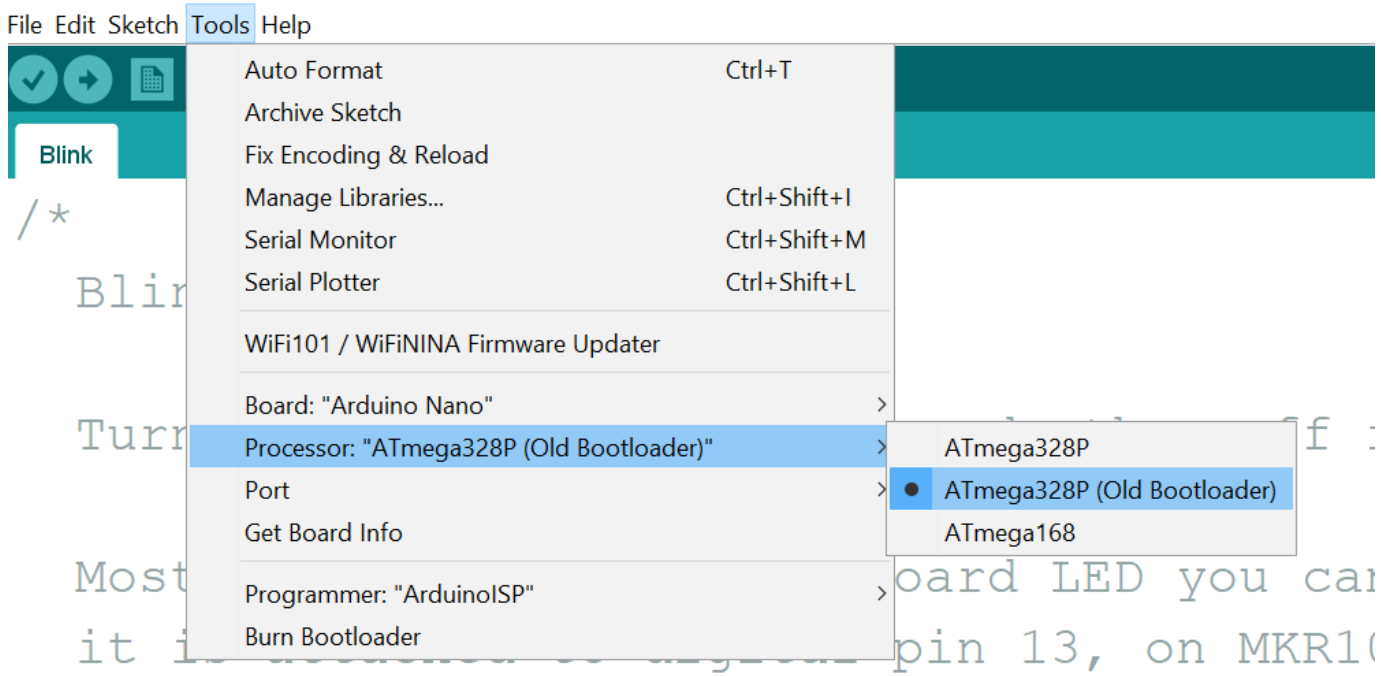
- Change all the “LED_BUILT_IN” to “A5” in the

```
  pinMode(LED_BUILTIN, OUTPUT);
}

// the loop function runs over and
void loop() {
  digitalWrite(LED_BUILTIN, HIGH);
  delay(1000);
  digitalWrite(LED_BUILTIN, LOW);
  delay(1000);
}
```

```
  // initialize digital pin LED_BUIL
  pinMode(A5, OUTPUT);
}

// the loop function runs over and
void loop() {
  digitalWrite(A5, HIGH);   // turn
  delay(1000);
  digitalWrite(A5, LOW);    // turn
  delay(1000);
}
```

Change bootloader and upload

- Change the bootloader at the top of the page



- Connect your board to computer and hit upload (the arrow) at the top of the screen.