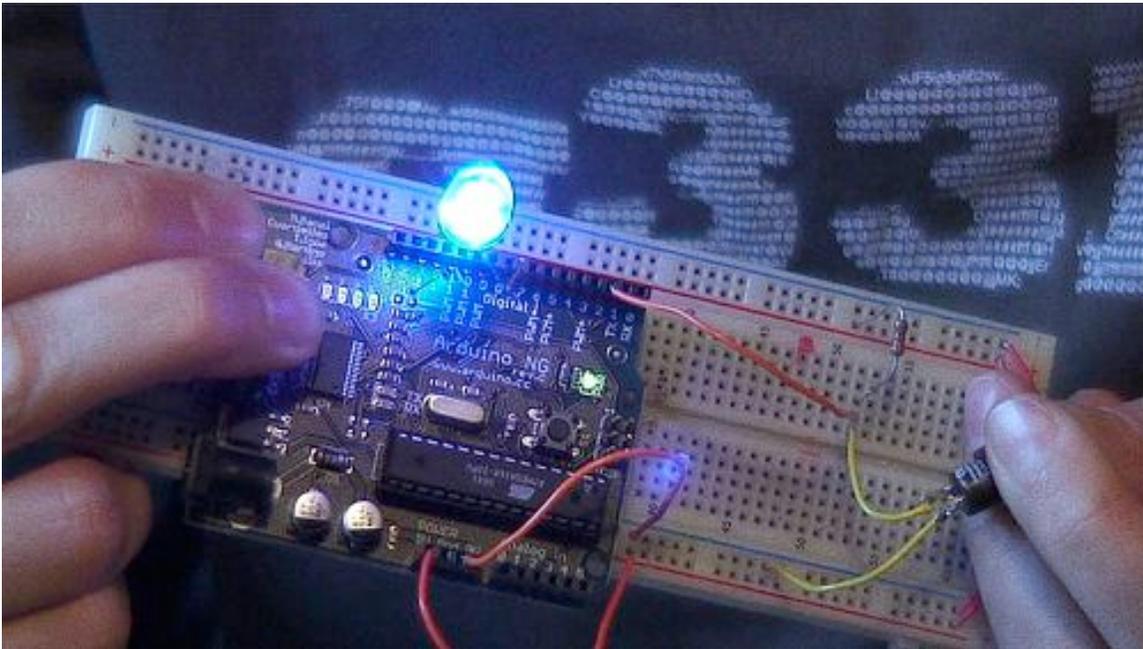




Awesome Electronics Workshop – Arduino

This week, Joe Grand and Bre Pettis bring you another Awesome Electronics Workshop! This time you'll learn about the open-source microcontroller board, the Arduino, ahem, the ARRR-duino.

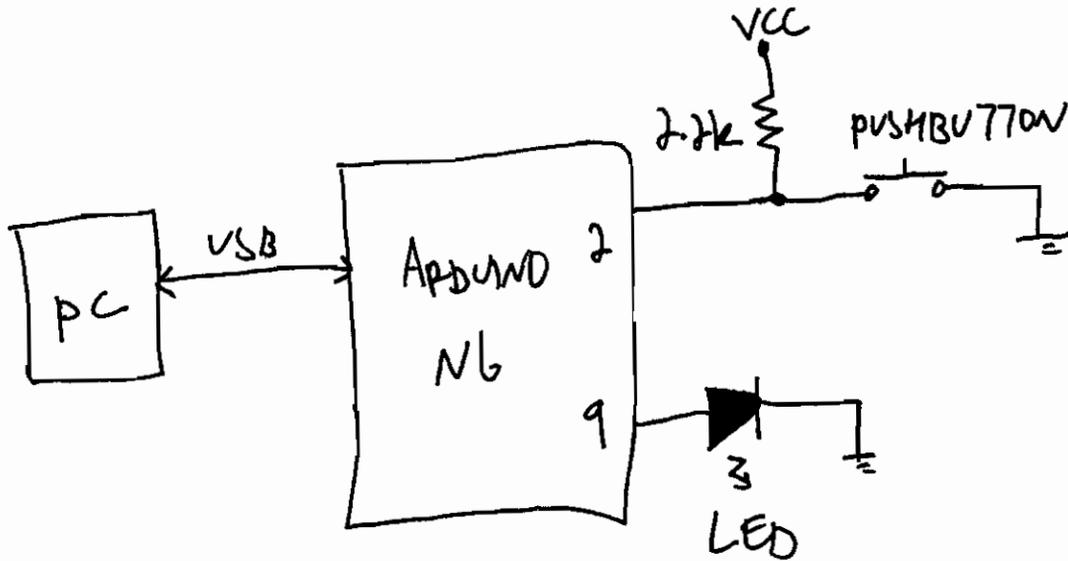


You can get an Arduino board in the Makezine store at <http://store.makezine.com> or you can find plans to make your own from off the shelf parts at <http://arduino.cc/en/Main/Hardware>. Then get some components and start playing around! You'll want to go wander around the Arduino website at <http://arduino.cc> and the Arduino playground where users can share ideas and benefit from their collective research at <http://arduino.cc/cgi-bin/yabb2/YaBB.pl>. Once you've checked that all out, go get your software at <http://arduino.cc/en/Main/Software>. Whatever projects you make, take pictures of them and upload them to the Make: Flickr pool at <http://flickr.com/groups/make/pool> or you'll have to walk the plank!

AWESOME ELECTRONICS WORKSHOP

7/23/07

INTRODUCTION TO THE ARRR-DUINO!



(you could use an optional current-limiting resistor in series w/ LED)

THAT'S IT!

Here's the code to make the LED throb, it's super simple! You can also download this from <http://imakethings.com/ziporama/arduino.zip>.

```
//
// MAKE Magazine Video Podcast: Weekend Projects Special Edition
// Awesome Electronics Workshop w/ Joe Grand & Bre Pettis
//
// Introduction to the Arduino
//
// When the momentary pushbutton is pressed, the brightness of
// the LED will throb smoothly between bright and off. When the
// button is released, the LED will remain off.
//
// See associated schematic for wiring diagram!
//
// Based on "Blink" and "Fading" examples included in the Arduino
// distribution package
//

int cnt = 0;    // counter for our loop
int val = 0;    // variable for reading the pin status

int ledPin = 9; // LED connected to PWM digital pin 9
int inputPin = 2; // Pushbutton connected to digital pin 2

void setup()
{
  pinMode(ledPin, OUTPUT); // declare LED as output
  pinMode(inputPin, INPUT); // declare pushbutton as input
}

void loop()
{
  for(cnt = 0 ; cnt <= 255; cnt+=5) // fade in (from min to max)
  {
    if (digitalRead(inputPin) == LOW)
    {
      analogWrite(ledPin, cnt); // sets the value (range from 0 to 255)
      delay(30); // waits for 30 milli seconds to see the dimming
effect
    }
    else
      analogWrite(ledPin, 0); // turn LED off
  }

  for(cnt = 255; cnt >=0; cnt-=5) // fade out (from max to min)
```

```
{
  if (digitalRead(inputPin) == LOW)
  {
    analogWrite(ledPin, cnt);
    delay(30);
  }
  else
    analogWrite(ledPin, 0);    // turn LED off
}
}
```



Sidenote: folks have been asking about how we made the eyepatches and they are made out of tape! Our teeth blacked out is also tape, but that only lasted for about a minute at a time!