

Software

Step 1 - Installing the Arduino Programmer

<https://www.arduino.cc/en/main/software>

Follow the link above to download the official Arduino IDE (Integrated Development Environment).

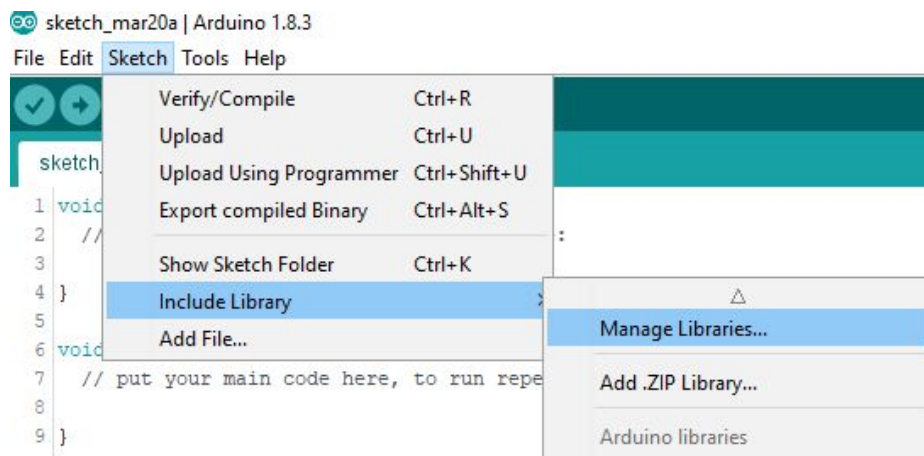
An IDE is like a text editor, except with several built in functions to make the lives of programmers easier. For example, the Arduino IDE includes a way to check if the code you've written is correct, and also a way to compile and send the code up to whatever compatible device you have connected.

Here you will be able to download and install the application for Linux, Mac OS, or Windows. Follow the installation instructions.

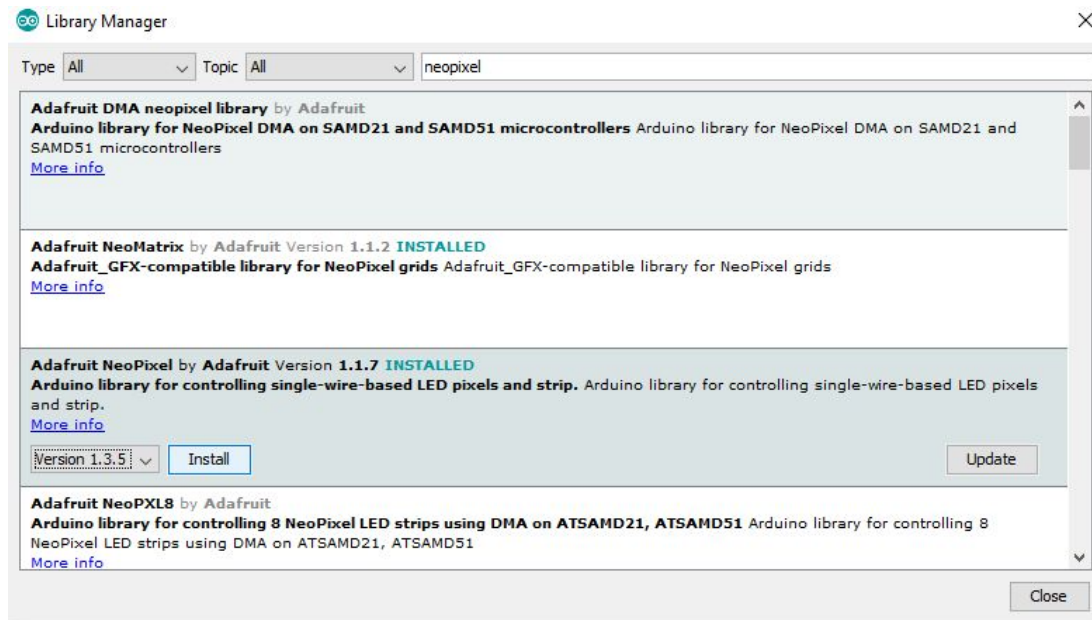
Step 2 - Installing the Adafruit NeoPixel Library

Our Dragon Egg is lit up using a WS2812b RGB (red, green, blue) LED. For the Microcontroller to properly communicate with this LED, we need to give it the vocabulary for our instructions. Luckily, there's a free and widely used Library that is available for us to download and install.

Open Arduino IDE and click Sketch -> Include Library -> Manage Libraries...

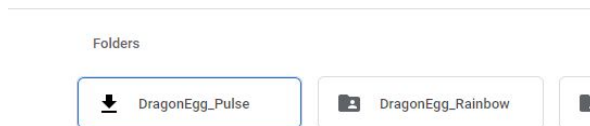


Type NeoPixel in the search bar, select the Adafruit NeoPixel from the results and click Install.



We've written some different behaviours for you to download and install on your Dragon Egg Lamp. Find them [HERE](#).

Dragon Egg Lamp Code



Click the arrow to download the code, then open the .INO file with the Arduino IDE you installed in Step 1.

Some of these are further customisable, such as the Solid Colour and Pulsing Colour files. Once you've downloaded one (or all!) of these files, you can open them up with the Arduino IDE you just installed.

Look for this section of code:

```
//Set the pixel colour  
int r = 0, g = 255, b = 255;
```

Change the number values in this line:

```
int r = 0, g = 255, b = 255;
```

To change the colour.

Note: Any line of code starting with a // is called a Comment. This is solely included for documentation and for users to read and understand how some of the code works, and will be ignored by the Microcontroller.

Values may go from 0 (meaning no light) to 255 (for full brightness of each respective color)
For example:

```
int r = 255, g = 0, b = 0;
```

Means Red will be at maximum brightness, while Green and Blue are completely dark.

The result is a bright red light.

```
int r = 0, g = 0, b = 255;
```

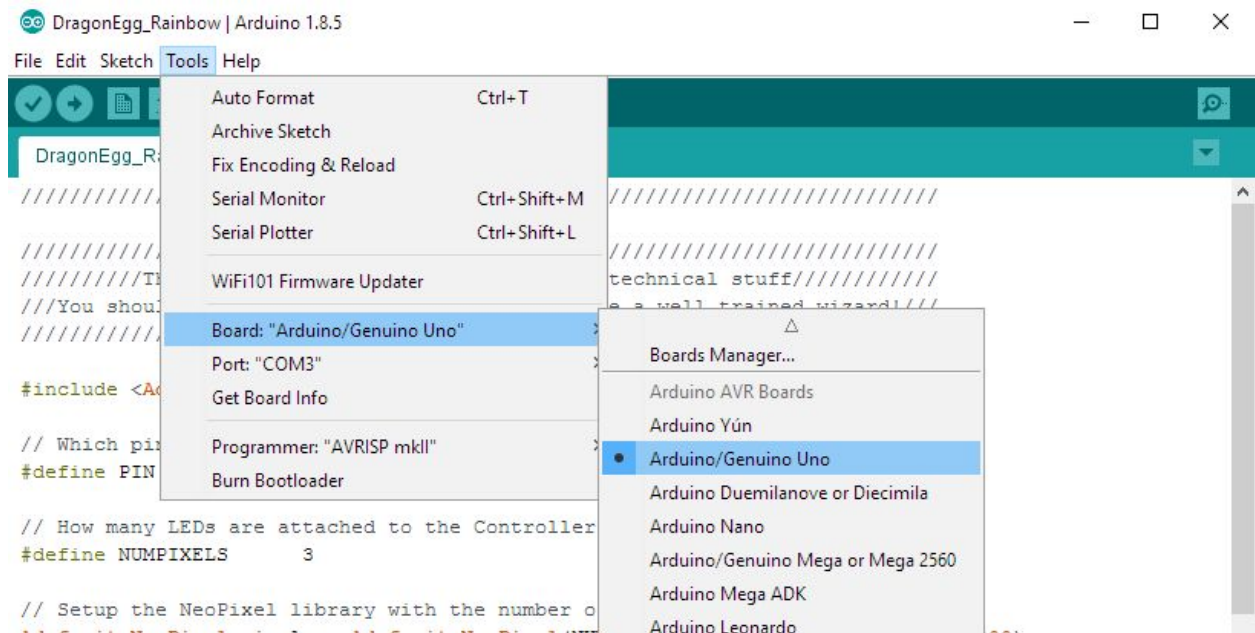
Results in a bright blue, as the other two colors are off.

We've included some values below for a few different colors you might like, but feel free to mix and match to find your own combinations.

Color	R Value	G Value	B Value
White	255	255	255
Red	255	0	0
Blue	0	0	255
Green	0	255	0
Cyan	0	255	100
Purple	120	10	180
Pink	255	42	90
Gold	255	95	5

You can also visit websites such as [THIS ONE](#), where you can select a colour, and see the RGB values for it. Note that the numbers you get may require further tweaking, as they are calibrated to a different colour space.

Step 3 - Uploading the code to the board



Click on Tools and from the drop down menu select:

- Board: "Arduino UNO"
- The "Port" will be selected automatically, but if doesn't work, try changing it to another available port.

After selecting the Board and Port, click on the arrow in the top left corner to upload the code.

You might need the CH340 USB drivers in order to upload to the board. You can download them from here:

- [CH340 Windows](#)
- [CH340 Linux](#)
- [CH340 MacOS](#)