

RGB LED

How to add a library
to program your RGB LED



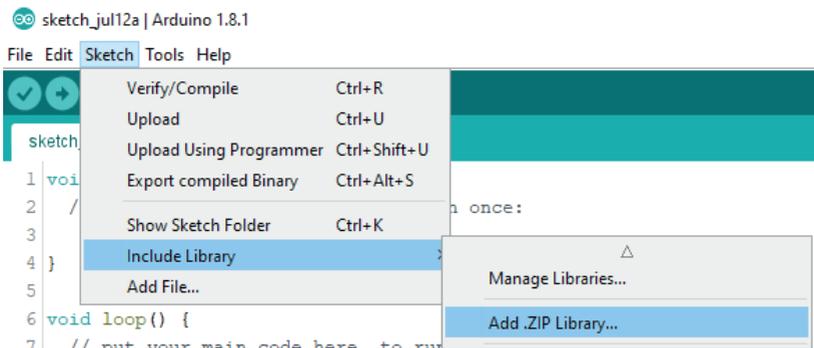
INTRODUCTION

There are certain electronic components which require specific libraries that are not installed by default in Arduino IDE or the visual programming software by blocks compatible. This is the case of the RGB LEDs.

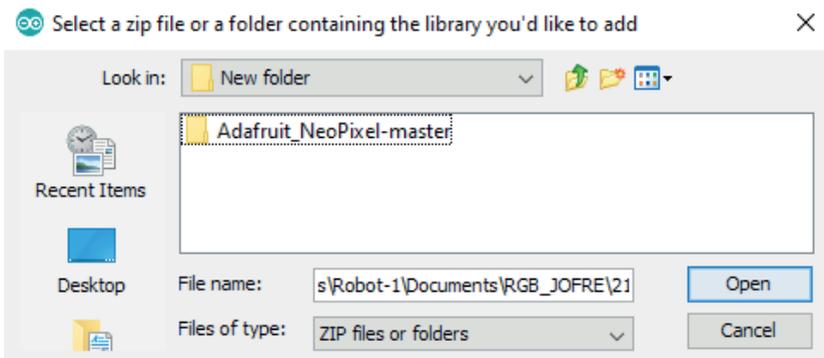
Here we explain how to add a library to program your RGB LED with Arduino IDE and the visual programming software by blocks compatible, step by step. It's very simple!

Arduino IDE:

1. Access the following link to download the library: [Arduino- Adafruit NeoPixel Library](#).
2. Open Arduino IDE.
3. Go to Sketch. Then select Include Library and click on Add .ZIP Library.



4. Look for the library on the location you saved it, in.ZIP format. Select it and click Open.

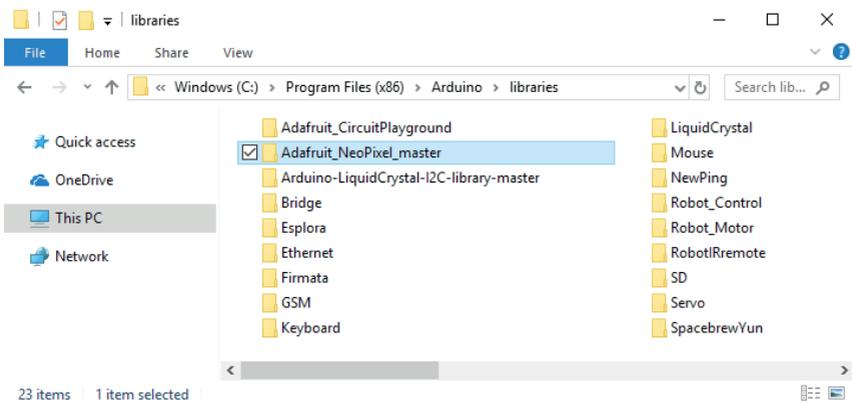


5. If the library is correctly installed, Arduino IDE will show the message Library added to your libraries. Check “Include library” menu.



6. If the library hasn't been installed correctly, unzip the file Adafruit_NeoPixel-master.zip in the following file path:

C:\Program Files (x86)\Arduino\libraries

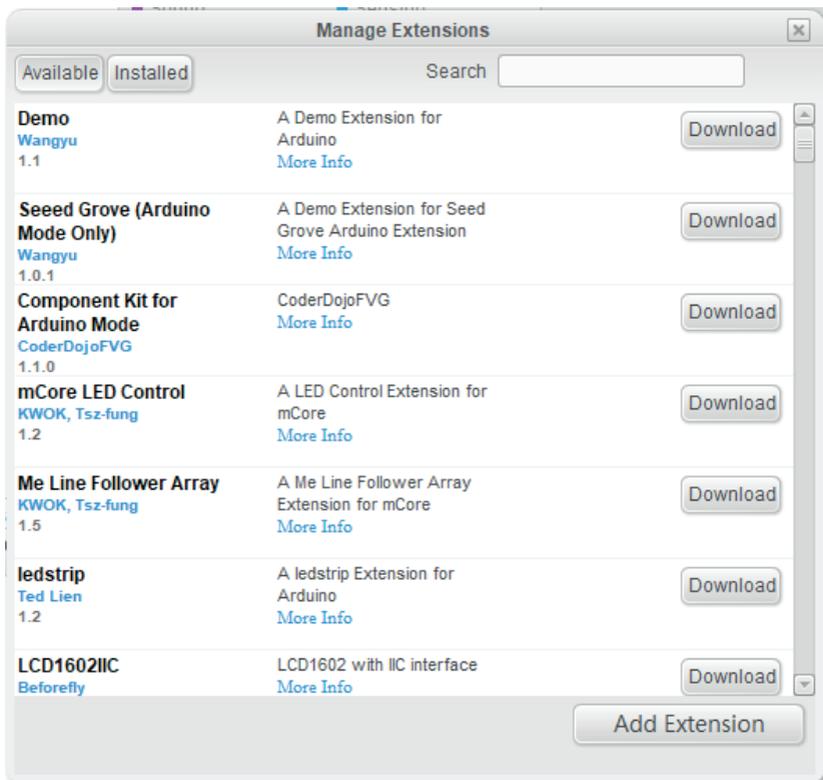
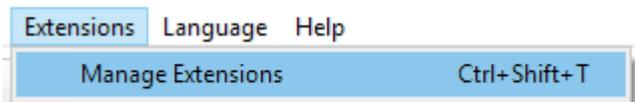


Now you can program the RGB LED!

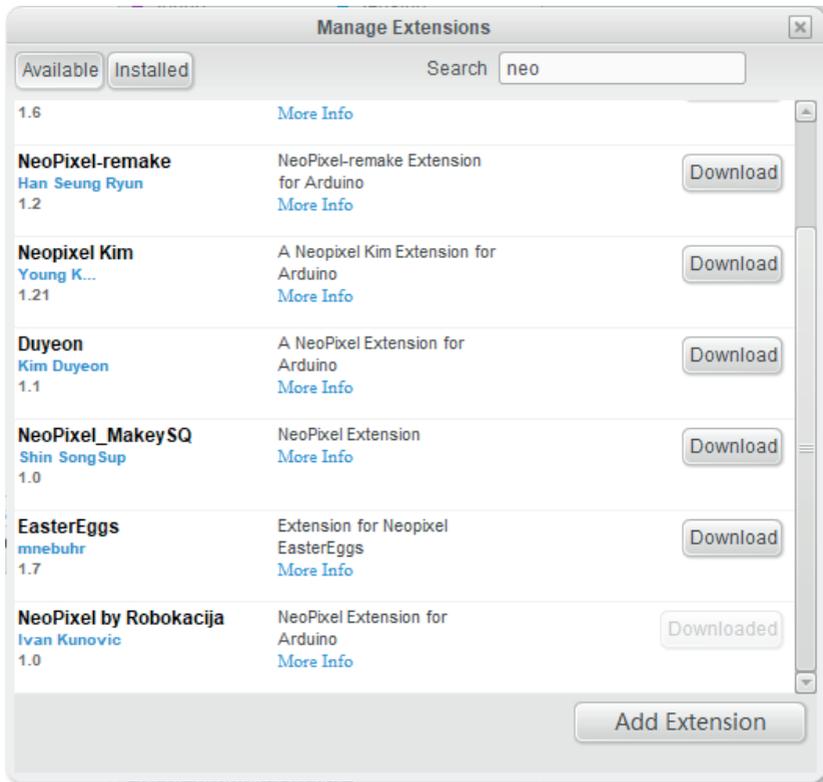
Visual programming software by blocks compatible:

1. Open the visual programming software by blocks compatible and go to Extensions. Then, select Manage Extensions.

From the MIT Media Lab(v3.4.11) - Disconnected - Not saved

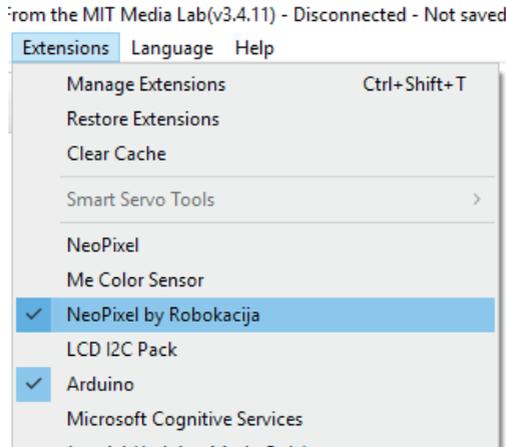


2. Go to Search and write pixel or neo. You will get the following result:

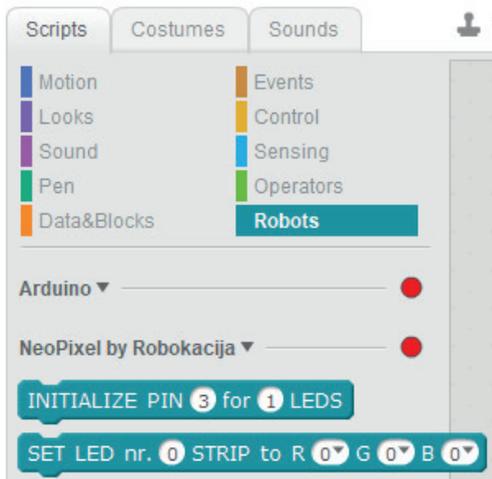


3. Search for the extension called NeoPixel by Robokacija from Ivan Kunovi. Click download to install the extension in the software.

4. Go to Extensions and search for NeoPixel by Robokacija. Click the name of the extension and a blue check mark will appear. This means that the extension is activated.



5. Now, go to Robots and you will see that the extension blocks already appear. This means that the extension has been added to the program successfully.



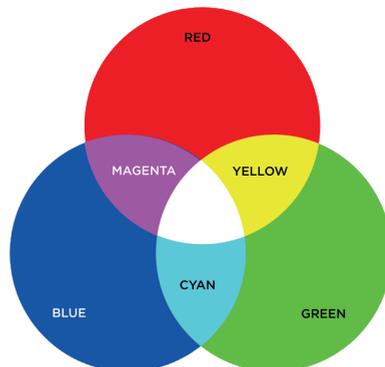
6. The programming blocks of the NeoPixel by Robokacija extension work like this:



- a) Introduce the number of the digital port of the Build&Code 4in1 board to which the LED RGB is connected. In the Mini Lab, is connected to the digital port 6.
- b) Introduce the number of RGB LEDs that are connected to the same digital port. In the Mini Lab there is only one LED, so will have to introduce the number 1. If you connect a LED strip, you will have to introduce the number of LEDs included in it.
- c) Introduce the number of the LED you want to control. As the Mini Lab only has 1 LED, you will have to introduce the number 0. If you connect a LED strip and want to control the LED located on the third position, you will have to introduce the number 2, since the first LED would be number 0. The formula is: position number of the LED you want to control -1.
- d) The letters R, G and B are the initials of red, green and blue. For each letter you will have to introduce a number from 0 to 255, being 0 the absence of color and 255 the maximum intensity of color.

To create the colors, you will have to use the combination of primary colors as a guide. Below you will find an example of the colors combination.

	R	G	B
Red	255	0	0
Green	0	255	0
Blue	0	0	255
Yellow	255	255	0
Cyan	255	0	255
Magenta	0	255	255



Now you can program the RGB LED!



RGB LED

Electronic and programming kit