RGB LED

★ Overview

In this lesson, you will learn how to use a RGB (Red Green Blue) LED with an Arduino. You will use the analogWrite function of Arduino to control the color of the LED.

★ Specification

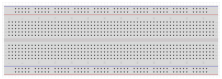
RGB led:
Emitting Light Color: Blue, Red, Green
Size(Approx): 5 x 35mm/ 0.2" x 1.37" (D * L)
Forward Voltage: 3.0-3.4V
Luminous Intensity: 12000-14000mcd

★ Pin definition

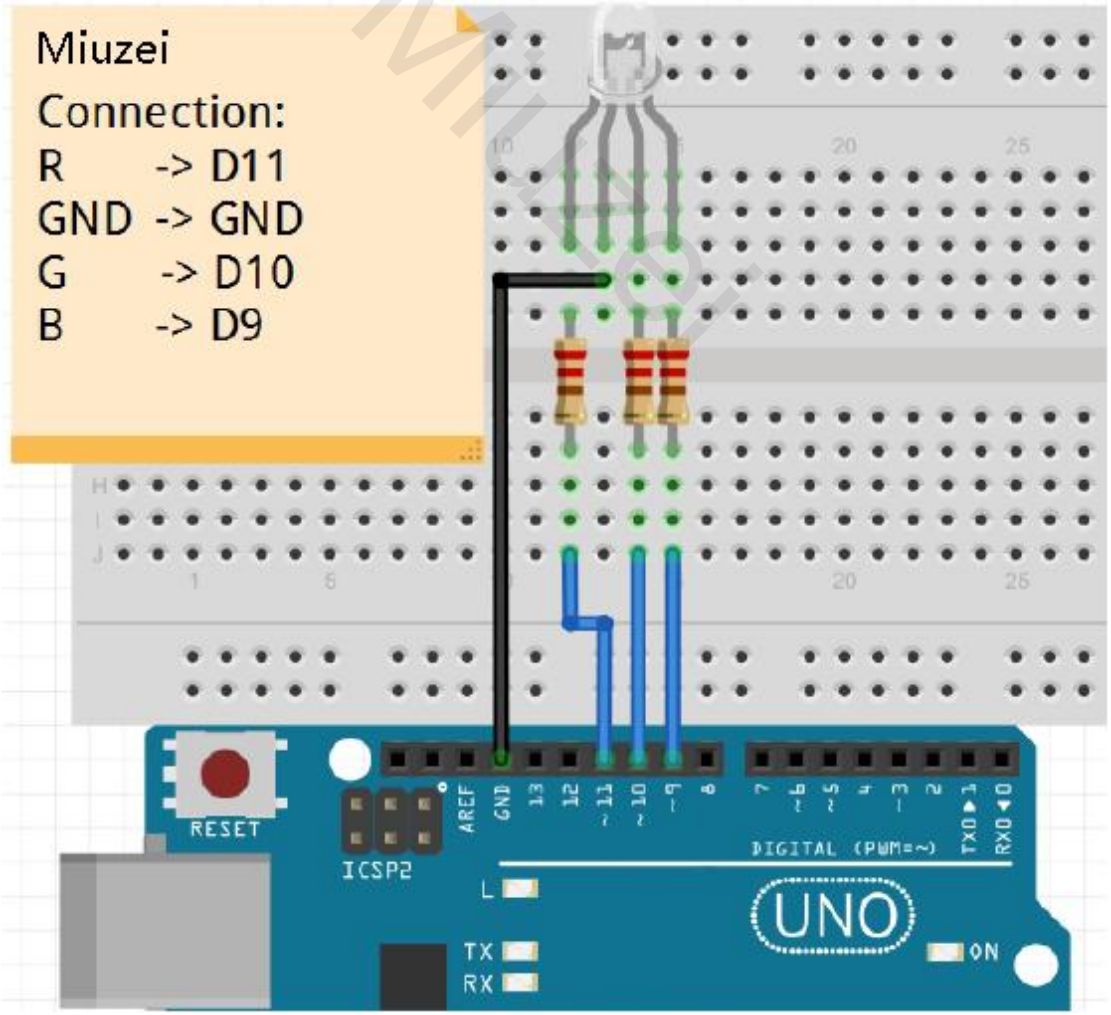
It is the definition of RGB LED pin :

RGB LED	Arduino
R	->D11
GND	->GND
G	->D10
B	->D9

★ Hardware required

Material diagram	Material name	Number
	RGB LED	1
	220Ω/330Ω resistor	3
	USB Cable	1
	UNO R3	1
	Breadboard	1
	Jumper wires	Several

★ Connection diagram



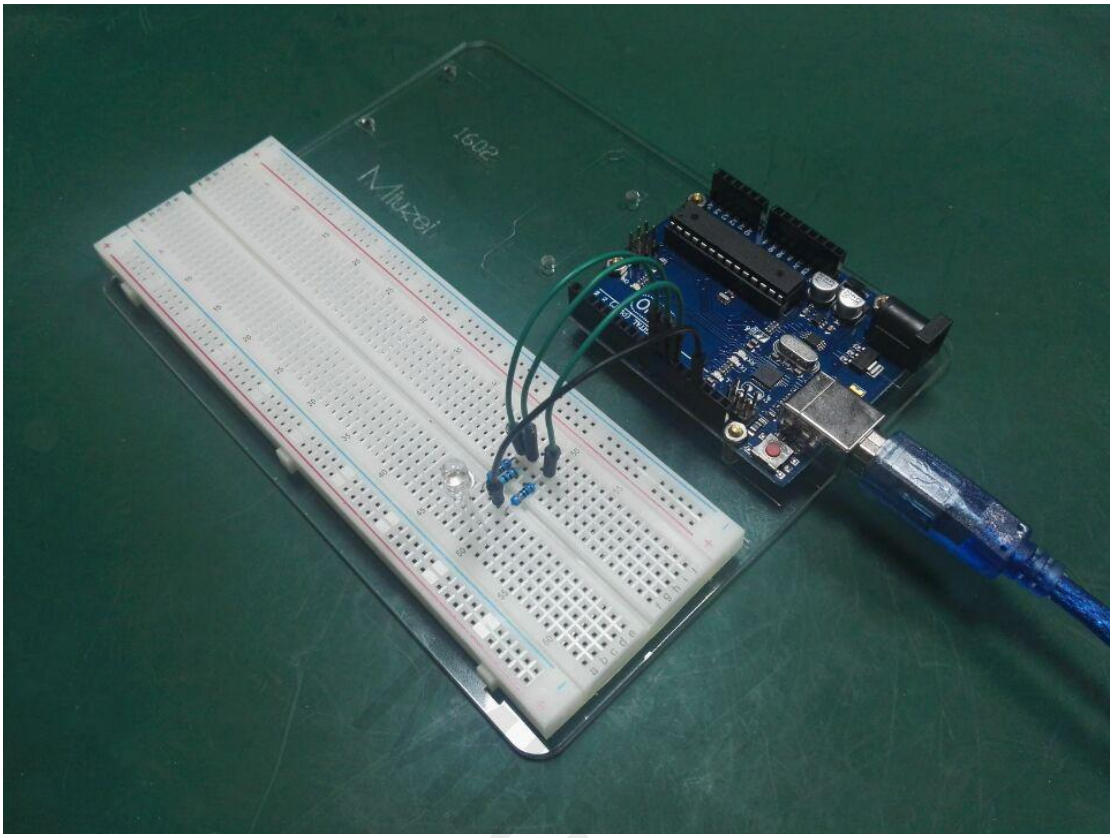
Note: The longest pin of the RGB LED is connected to the GND.

★ Sample code

Note: sample code under the **Sample code** folder

```
int redPin = 11;
int greenPin = 10;
int bluePin = 9;

//uncomment this line if using a Common Anode LED
//#define COMMON_ANODE


void setup()
{
	pinMode(redPin, OUTPUT);
	pinMode(greenPin, OUTPUT);
	pinMode(bluePin, OUTPUT);
}

void loop()
{
	setColor(255, 0, 0); // red
	delay(1000);
	setColor(0, 255, 0); // green
	delay(1000);
	setColor(0, 0, 255); // blue
	delay(1000);
	setColor(255, 255, 0); // yellow
	delay(1000);
	setColor(80, 0, 80); // purple
	delay(1000);
	setColor(0, 255, 255); // aqua
	delay(1000);
}


void setColor(int red, int green, int blue) // This is the function that we build.
{
	#ifdef COMMON_ANODE
	red = 255 - red;
	green = 255 - green;
	blue = 255 - blue;
	#endif
	analogWrite(redPin, red);
	analogWrite(greenPin, green);
	analogWrite(bluePin, blue);
}
```

★ Example picture



★ Language reference

Tips：click on the following name to jump to the web page.
If you fail to open, use the Adobe reader to open this document.
analogWrite()
#define

★ Application effect

When the program is uploaded, you will see the LED loop emit 7 different colors of light.

About Miuzei:

Miuzei found in 2011，which is a professional manufacturer and exporter that concerned with open-source hardware research & product development, We have more than hundred engineers devote to developing open source hardware like Arduino, Raspberry pi ,3d printers，robots.

Miuzei committed to make more creative open source products and provide richer knowledge for enthusiasts worldwide.　No matter what your ideas are, we provide various mechanical parts and electronic modules to turn your ideas into success.

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