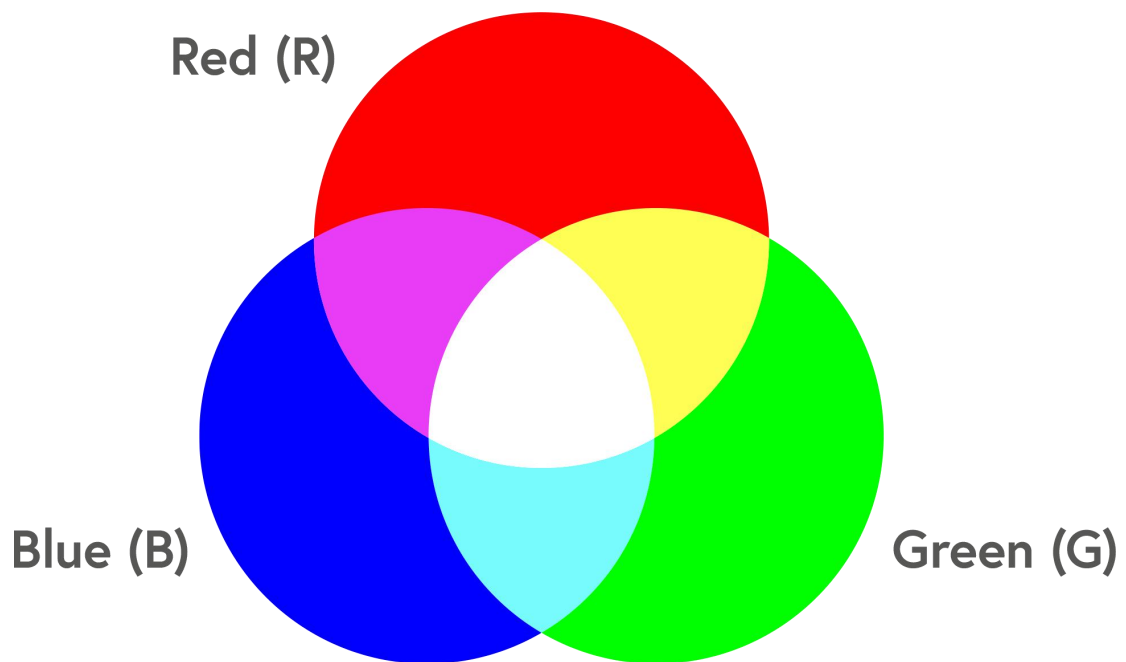


Project 5: RGB LED



1. Project Introduction



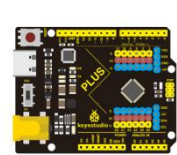

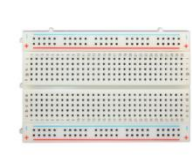





The RGB led, consisting of three colors (red, green and blue),

can emit different colors by mixing this 3 basic colors.

In this project, we will introduce you RGB LED and show you how to use the Plus development board.

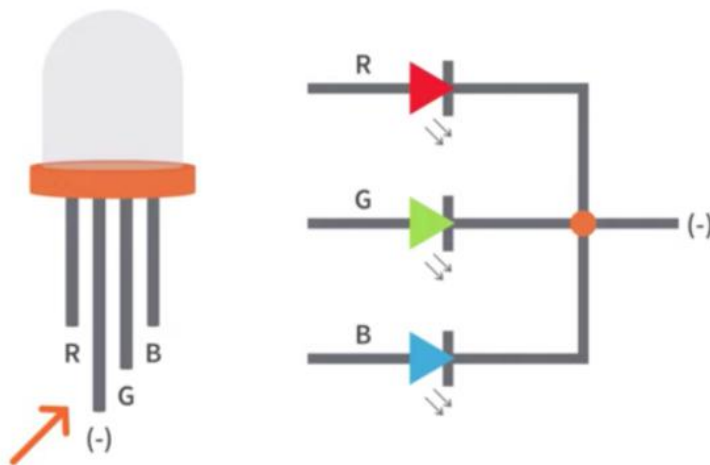
We also provide a RGB color card for you to understand it easier. Even though the RGB LED are extremely basic, it's a great way to introduce yourself or others to the basics of electronics and coding.

2.Project Hardware

			
Plus Development Board*1	Plus Board Holder	400-Hole Breadboard	USB Cable*1
			
RGB LED * 1	220 Ω Resistor*3	Preformed Jumper Wire*2	RGB color Card*1
		Flexible jumper Wire*4	

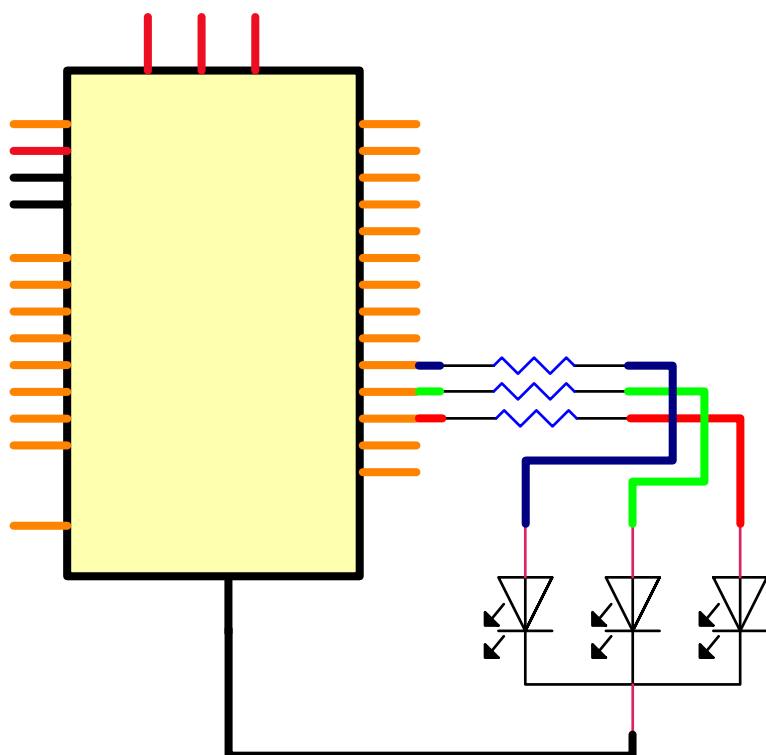
3. Little Knowledge

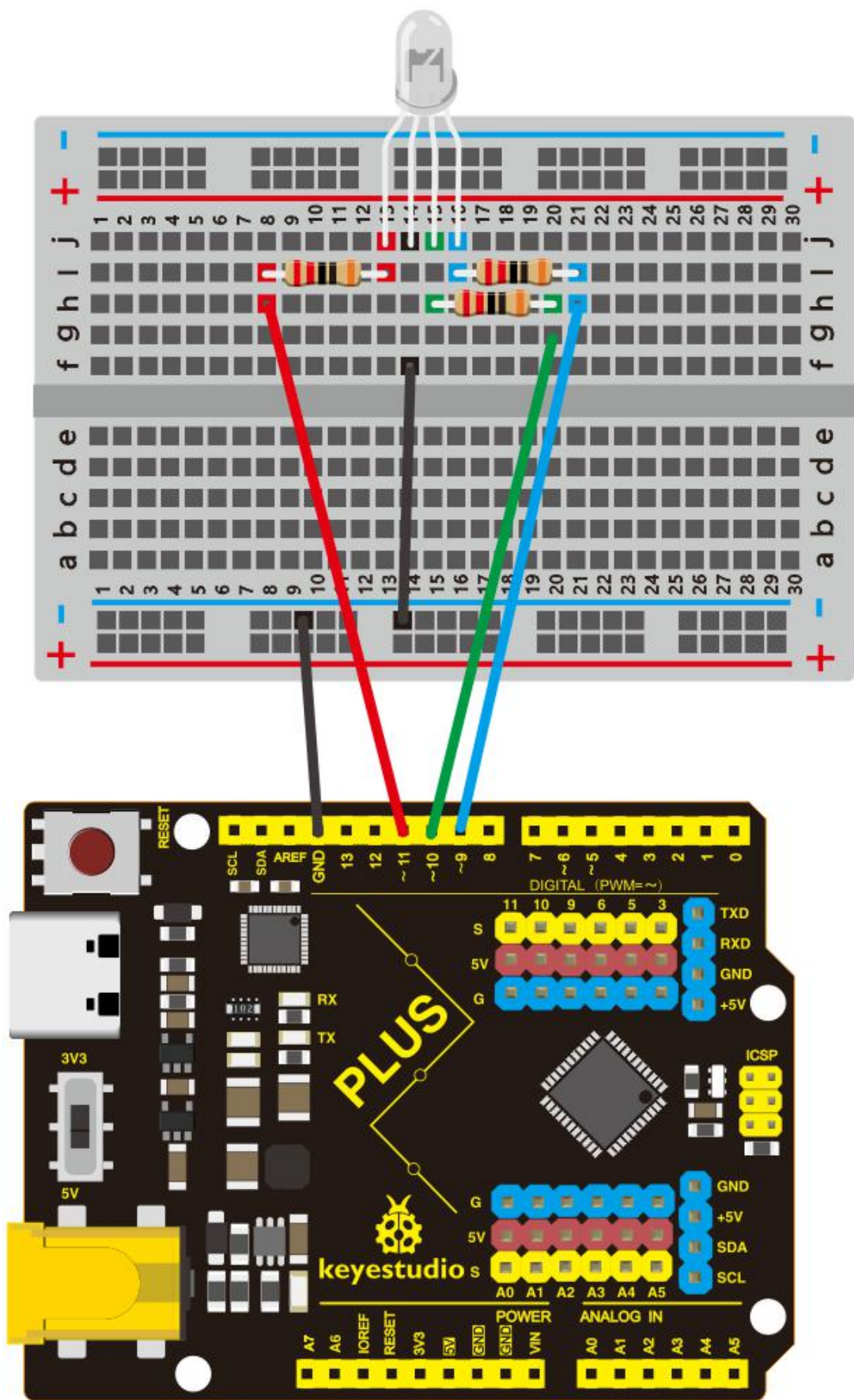
The monitors mostly comply with the RGB color standard, and all the colors on the computer screen are composed of the three colors of red, green and blue mixed in different proportions.



This RGB LED has 4 pins, one for each color (Red, Green, Blue) and a common cathode. To change brightness of RGB led, we can use the PWM pins of Arduino. The PWM pins will give signal with different duty cycles to the RGB led to obtain different colors.

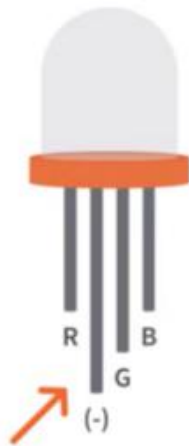
4.Circuit Connection



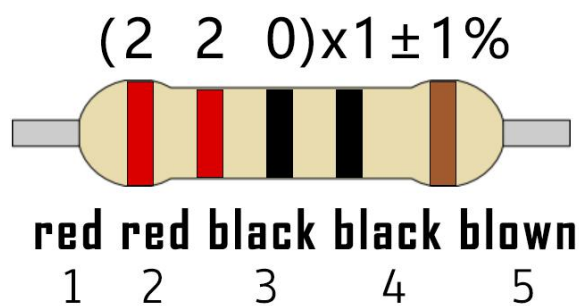


NOTE:

The longest pin (common cathode) of RGB LED is connected to GND.



How to identify 5 band 220Ω Resistor



5.Project Code

/*

keystudio STEM Starter Kit

Project 5

Color Secret

<http://www.keyestudio.com>

```
*/
```

```
int redpin = 11; //select the pin for the red LED
```

```
int bluepin =9; // select the pin for the blue LED
```

```
int greenpin =10;// select the pin for the green LED
```

```
int val;
```

```
void setup() {
```

```
    pinMode(redpin, OUTPUT);
```

```
    pinMode(bluepin, OUTPUT);
```

```
    pinMode(greenpin, OUTPUT);
```

```
    Serial.begin(9600);
```

```
}
```

```
void loop()
```

```
{
```

```
for(val=255; val>0; val--)
```

```
{
```

```
    analogWrite(11, val);
```

```
    analogWrite(10, 255-val);
```

```
    analogWrite(9, 128-val);
```

```
    delay(1);
```

```
}
```

```
for(val=0; val<255; val++)  
{  
  analogWrite(11, val);  
  analogWrite(10, 255-val);  
  analogWrite(9, 128-val);  
  delay(1);  
}  
Serial.println(val, DEC);  
}  
////////////////////////////////////
```

1.Open up the Arduino IDE and copy the above code into a new sketch.

2.Select the correct Board type and COM port for the Arduino IDE.

3.Click Upload button to upload the code.

6.Project Result

Done uploading! Wait for a few seconds, you can see a colorful LED. You can also put the RGB card we provide on top

of it.

