

# AZIA Robotics

## Lesson 5

website: [aziarobotics.github.io](https://aziarobotics.github.io)

[tinkercad.com](https://tinkercad.com) class code: ALD 5WB V3J

### Activity 1 - RGB LED

This is a RGB LED. It has 3 LEDs inside with colors red, green, and blue and you can combine them to make many more colors.

The longest pin should be connected to the GND (negative). If you use a resistor to connect the GND pin, you don't need separate resistors for the red, green, and blue pins anymore. YAY!

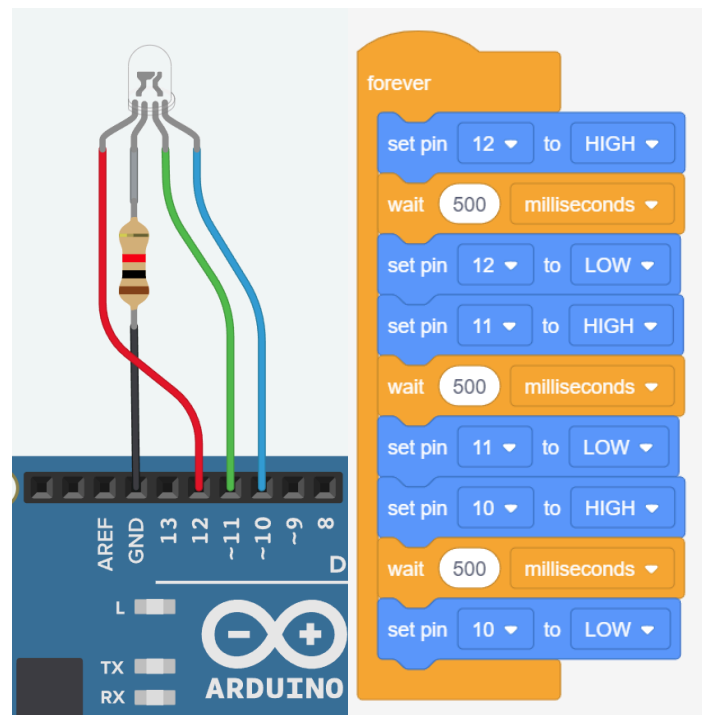
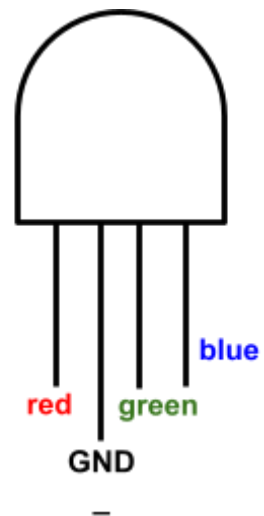
For this activity, connect your RGB LED and make it show 3 or 4 different colors.

Build the circuit with the RGB LED on your breadboard. Then write your code and then upload it to your arduino board.

Remember that you can also turn more than one of the pins together.

Can you make these colors?

- red + blue = pink
- red + green = yellow
- blue + green = cyan
- red + green + blue = ?



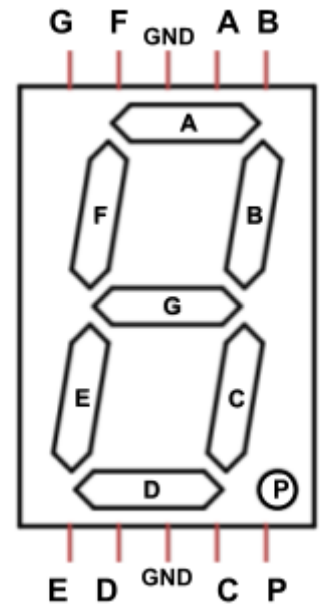
## Activity 2 - Seven-Segment Display

This is called a 7-segment display.  
You can use it to show numbers from 0 to 9.



*Fun fact: It actually has 8 LEDs if you count the tiny dot!*

Each of the 8 LEDs in the display is connected to one of the pins. To turn each LED ON, you set its pin to HIGH just like you would with a regular LED. You also need to connect one of the middle pins on the top or the bottom to GND (negative). If you use a resistor with GND, you don't need to use a separate resistor for the other pins anymore. YAY!

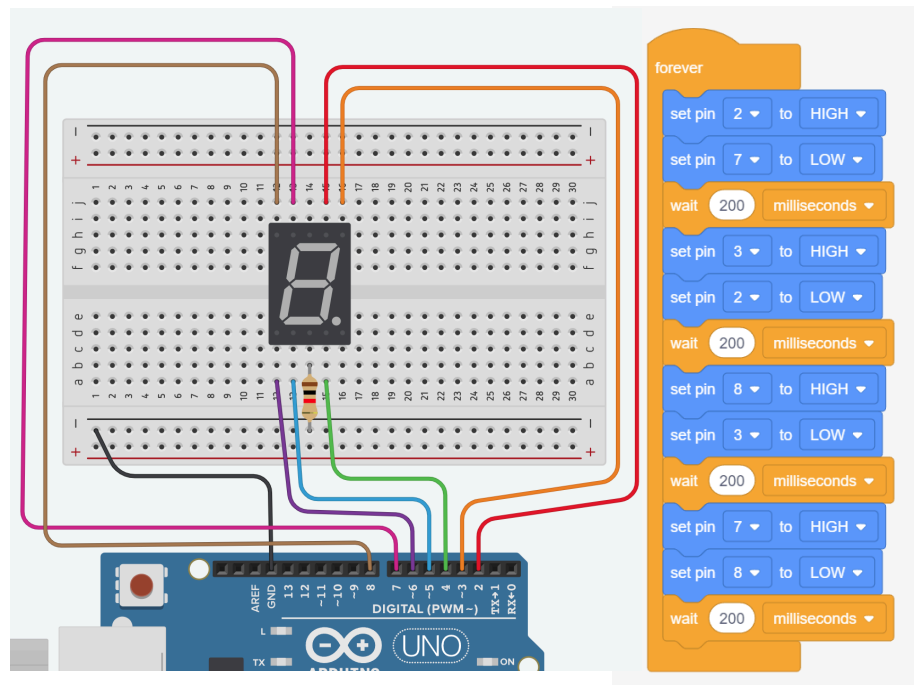


For this activity, create the circuit using the 7-segment display. You can connect the display pins to any Arduino pins from 2 to 13.

Make your display light different LEDs.

Be creative !!!

For example, you can make it count 1, 2, and 3. Or you can make a simple rotating animation by showing the LEDs A, B, G and F one at a time.



*Fun fact: You can also use the 7-segment display to show most letters!*

