**Light Sensing Bluetooth Lamp**

Besides the parts in the parts list, you will need:

* A soldering iron with a fine tip (you may also want a thicker tip for "tinning" the flora)
* Solder
* A third hand (optional)
* hot glue
* Electrical tape
* A wire cutter/stripper

Steps:

1. Cut three wires to 8 centimeters and strip the ends about 1/2 centimeter from the tip. TIP: use red, green and blue wire since these will connect the RGB connections.
2. Solder each wire to a positive pad on the RGB LED (represented by the "+" sign). Tip: make sure the soldering iron is hot enough to melt the solder on the pre-tinned pads, but not hot enough to damage the LED. I recommend 500F.
3. Cut three more wires to 3 centimeters, and strip the ends 1/2 centimeter. TIP: Use black wire, since these will connect to ground.
4. Solder each wire to the negative pads on the RGB LED (represented by the "-" sign).
5. Cut a 5cm length of black wire and strip the ends.
6. Hold the ends of the three black wires that are soldered to the LED together and connect them with a blob of solder.
7. Using the third hand, hold the 5cm black wire to the connected ends, and melt the solder to connect it to the ends of the three wires.
8. Use hot glue or electrical tape to secure this connection.
9. Cut four more 8cm lengths of wire.
10. Solder these to the GND, 3.3V, SDA and SCL through-holes on the color sensor. TIP: Use a different color for each wire so you can tell which is which.
11. Cut two more 8cm lengths of wire.
12. Look at the bottom of the push button and identify the positive side and the negative side.
13. Solder one wire to one of the leads on the positive side, and the other wire to one of the leads on the negative side.
14. You can snip the extra leads.
15. Cut four 8cm wires.
16. Solder wires to the GND, VIN, TX and RX of the Bluetooth EZ-LINK.
17. Now it's time to connect everything to the Flora.
18. Start by tinning the through-holes on the flora. Using a slightly larger soldering tip, apply a dab of solder to each hole, making sure it melts into the hole.
19. You can now connect wires to the flora by melting the solder on each hole and sticking the wire through the melted solder.
20. Connect the wires on the positive side of the LED to the flora. Connect red to D12, blue to D9, and green to D6.
21. Connect the ground wire on the RGB LED to "GND".

Now that the LED is connected, use the “rgbledtest” sketch to test the LED. Upload the sketch. Red, Blue and Green should turn on in sequence, followed by Orange, Purple and Yellow mixes.

1. Connect the color sensor to the flora. Connect GND to GND, SCL to SCL, SDA to SDA, and 3.3V to 3.3V.

Now you can upload and test the “colorsensortest” sketch

1. Connect the wire on the negative side of the button to the same ground as the LED.
2. Connect the wire on the positive side of the button to D10.

To test just the button, upload the “buttontest” sketch sensor. You can also use the “buttonledtest” to test the button with the LEDs.

1. Connect a 100 Ohm resistor to 3.3V
2. Connect the bluetooth to the flora. Connect GND to GND, VIN to 3.3V, TX to RX and RX to TX. TIP: Make sure *TX is connected to RX*and*RX is connected to TX*!
3. Now that everything is soldered together, connect the battery to the "BATT" female jst connector of the charger. Connect the Flora to the "LOAD" female jst connector.
4. Make sure the "on" switch on the Flora is on.

Using the App: First, press the “pair device” button to pair. Once it is paired, connect it using the “connect” button. Once it is connected it will turn green. It may give you an error when trying to connect if:

* 1. It is currently connected to something else.
  2. The signal doesn’t reach. This Bluetooth module is rated for 10m and drywall or other material shouldn’t stop the signal. If you think you might be too far away, try moving closer.
  3. The Bluetooth isn’t paired. Press the button down on the Bluetooth to put into pairing mode. You should only need to do this once.