

How to make a Mood Avatar (with LEDs)

Hello, everyone! The instructions below show how to wire 2 LEDs and how you can use them to represent how you are feeling. This design is very simple, but feel free to add anything from your kit or around the house to change this up! Or make a completely different design. These instructions don't show you how to utilize your Legos, so use them to decorate afterwards. **All creativity is encouraged!**

Idea Prompt:

Imagine your Mood Avatar as something to place on your desk that represents how your day is going:

- Think of weather to represent your state of being: sunny, cloudy, rainy, snowy
- Think about how you will represent to others whether you are available or occupied

Directions:

- 1. Separate and prepare materials.** To make your Mood Avatar, you will need these materials from the kit:
 - 2 resistors
 - 2 MF wires (or 2 input-output wires)
 - 2 FF wires (or 2 input-input wires)
 - 2 LEDs (each a different color)
 - Battery box
 - LEGOs (optional)
- 2. Strip some of the wires (optional/if needed).** I stripped the wires attached to the battery box since the metal part wasn't long enough to attach to various parts of the circuit. But be careful! You don't need a wire stripper to strip these wires, but you may break a nail (sorry!). And when these wires get stripped, they may fray, so make sure to twist them to keep them all together. Stay safe on this step!
- 3. Connect a resistor to power (red wire coming out of the battery box).** Twist the wire onto one end of the resistor. You can use your hands to do this. **Make sure the battery box is off while building all parts of this circuit.**

4. **Connect a FF wire to ground.** Attach the wire to the metal end of the black wire coming out of the battery box.

5. **Connect the other resistor to the cathode of one LED.** We'll call this LED1. Wrap the resistor around the shorter leg of LED1 and attach a FF wire to the anode (the longer leg) of this same LED. Attach the other end of the resistor connected to LED1 to the free end of the FF wire attached to ground.

6. **Take your remaining two wires and connect them to the remaining LED.** We'll call this LED2. Attach a MF wire to each the anode and cathode of LED2.

7. **Ground LED2.** Take the MF wire connected to the cathode (shorter leg) of LED2 and connect it in the connection between the resistor attached to LED1 and the FF wire connected to ground.

8. **Coil the resistor connected to power.** Make sure one end is sticking straight up and the coil is tight enough to grip the end of a MF wire, but not too tight that you can't pull it out easily.

And you're done! When you turn on power, you'll notice that nothing turns on. This is normal. To make something light up, choose either LED2 or LED1. Pick up the wire with a free end and attach it to the resistor connected to power. That LED that you picked should light up. And there you go! You've made a Mood Avatar with a simple switch! Now you can let people know how you're feeling with the connection of a single wire. Feel free to use the Legos provided to you or anything around your house/area to decorate or change up this design and **don't forget to share your creations with us!** We're excited to see what you all come up with!