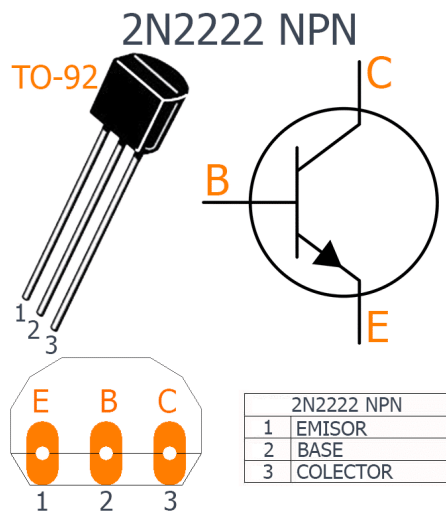


# Light CCT Setup

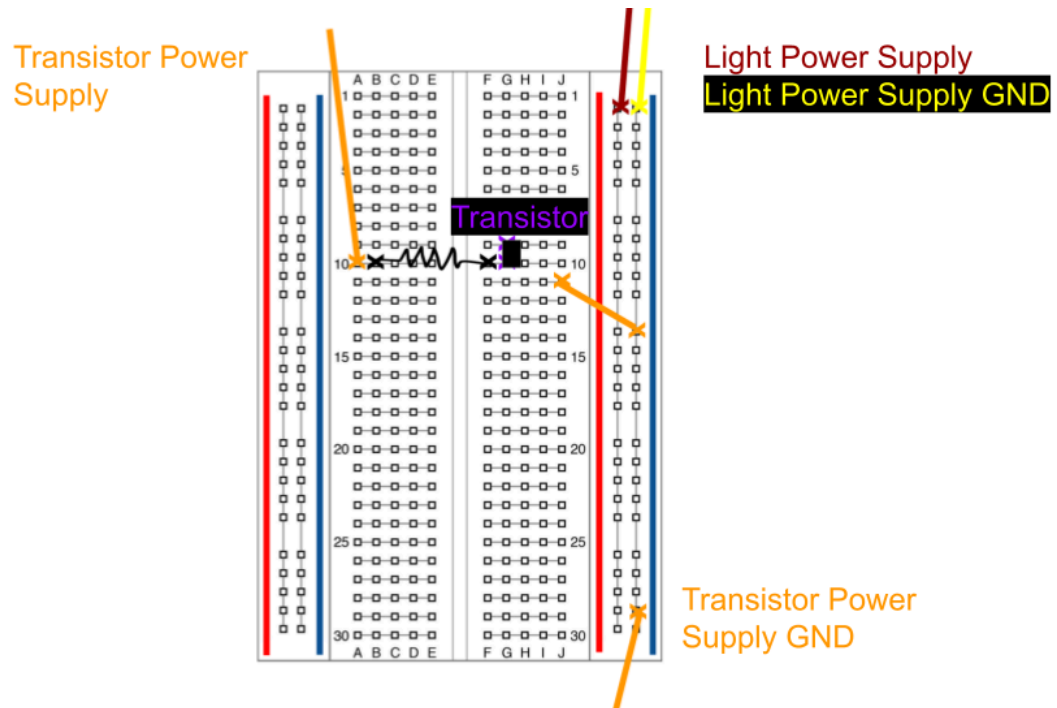
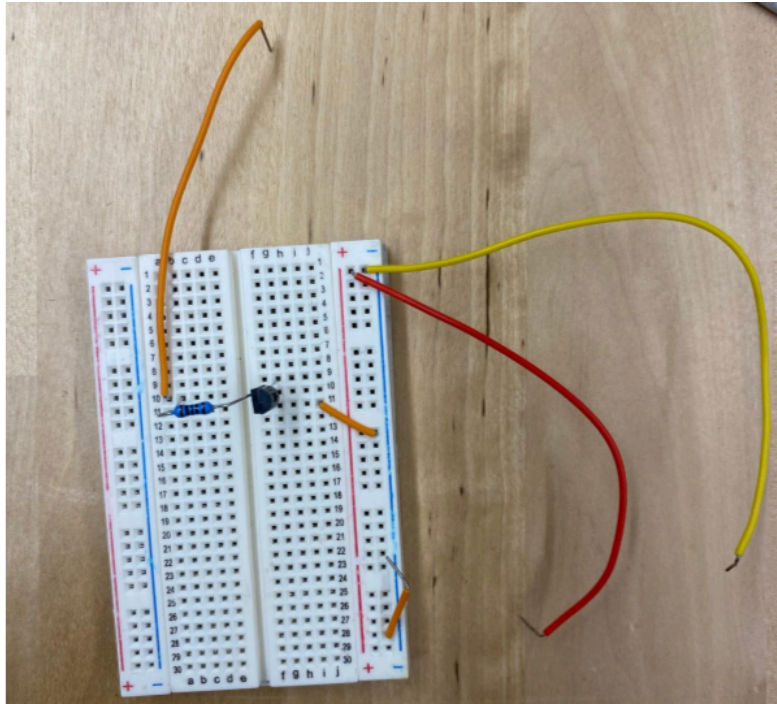


The light circuit is generally quite simple, consisting of a transistor circuit with a single 100 ohm resistor. The transistor that we are using is a 2N2222 NPN transistor, which is a fairly common transistor. The 100 ohm resistor is connected directly to the B-leg of the transistor. The E leg of the transistor is connected to the ground, or negative rail. The resistor should be connected to a voltage source with a lower value than the voltage source connected to the positive rail of the breadboard.

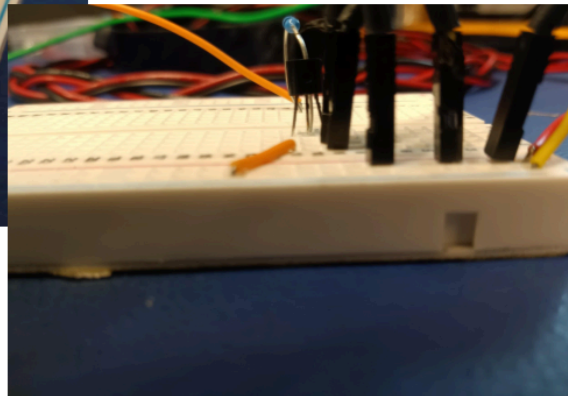
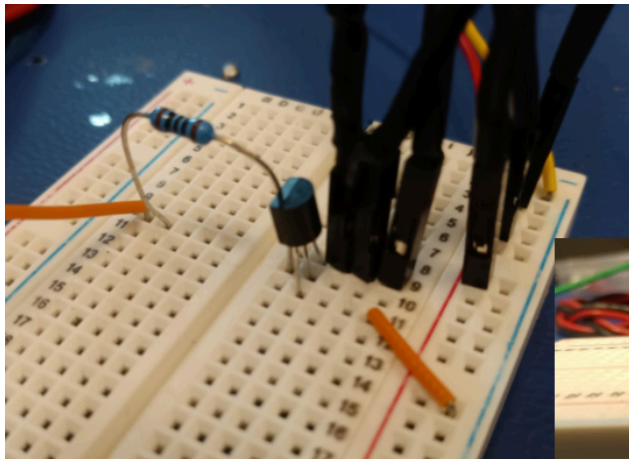
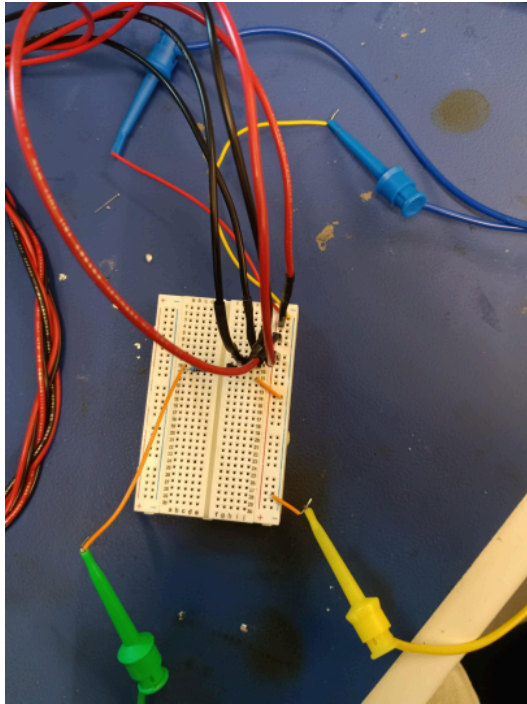
The negative ends of the light wires should be connected to the C leg of the transistor, and the positive ends should be connected to the positive rail (which is attached to the voltage source).

The voltage source connected to the B leg of the transistor *must* be connected to a common ground as the rest of the circuit, otherwise the lights will not turn on.

A common way to check if the lights are working is by looking for a small red light that shines alongside the IR light.



Transistor for light modulation set up. Red wire = + power supply, yellow wire = - power supply/ground. Input from the orange through the resistor allows **more current** to flow into the lights, making them brighter. Lights would be connected at line 9 and + power supply rail.



- The light CCT requires 2 power sources, one for the transistor and one for the actual lights
  - In the pictures, the yellow power supply channel powers the transistor and the blue channel powers the lights
- The red wires of the lights are connected to the (+) breadboard supply rail and the black wires are connected along line 9/in line with the leg of the transistor