This is an RGB led controlled by three buttons which cause it to change colors, it's even able to mix colors!

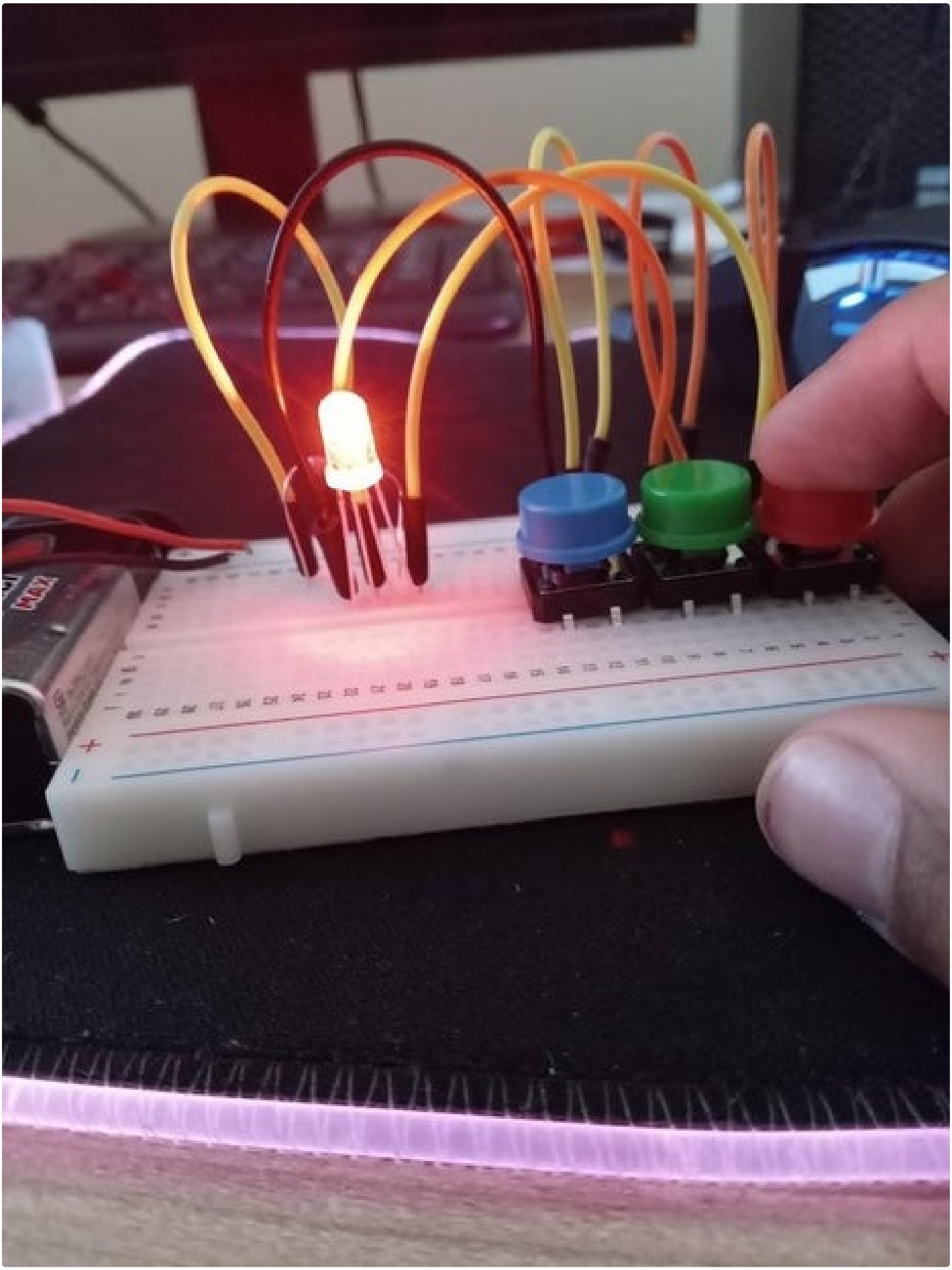
Circuit design made with TinkerCAD.

[This is also my first submission :)]

Supplies:

1. Half sized breadboard
2. Three buttons
3. Jumper wires
4. RGB led
5. 1 KΩ resistor
6. 9V battery
7. 9V battery clip

These items can also be bought together from an electronics set, just search for breadboard kit on amazon.

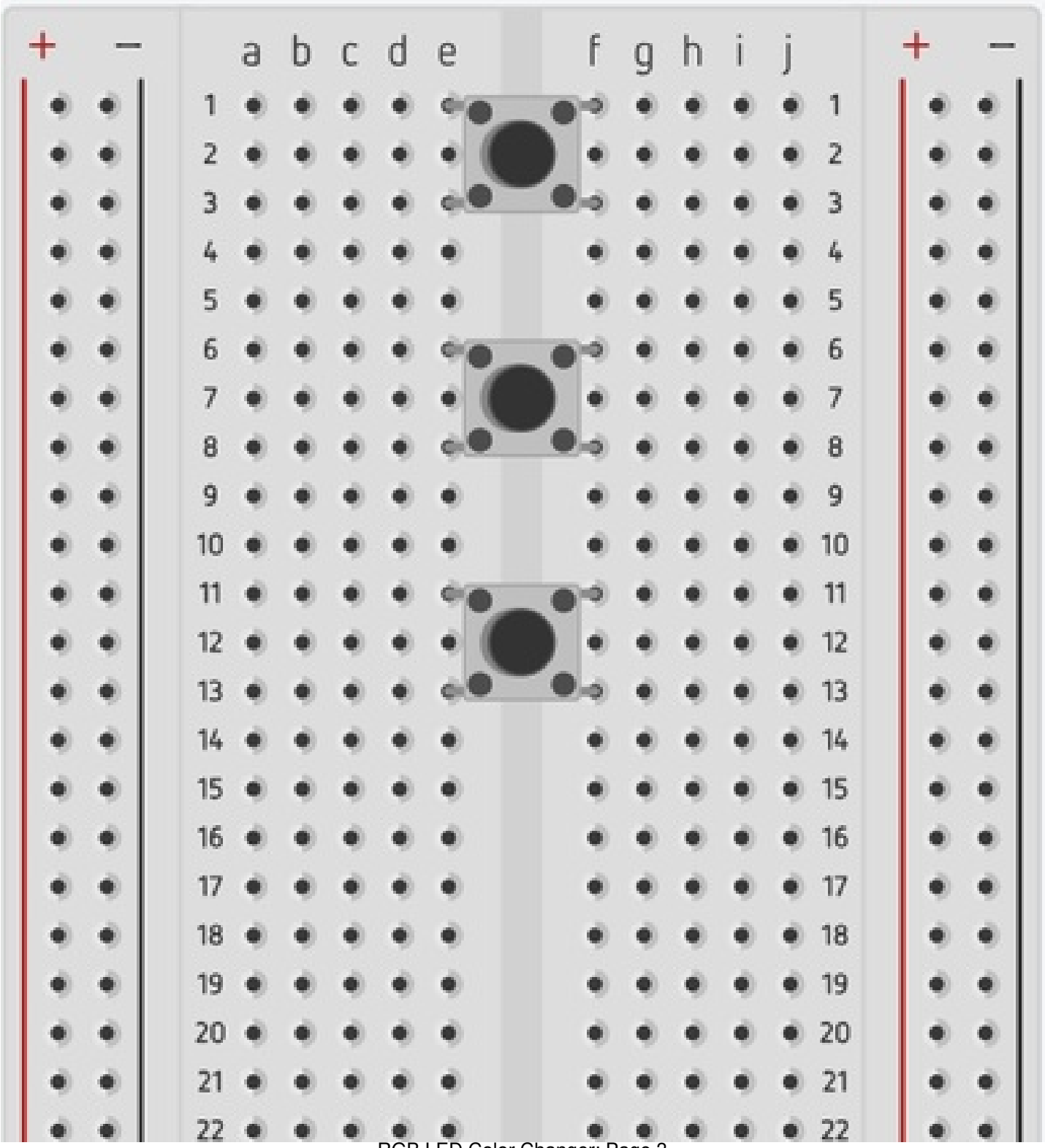


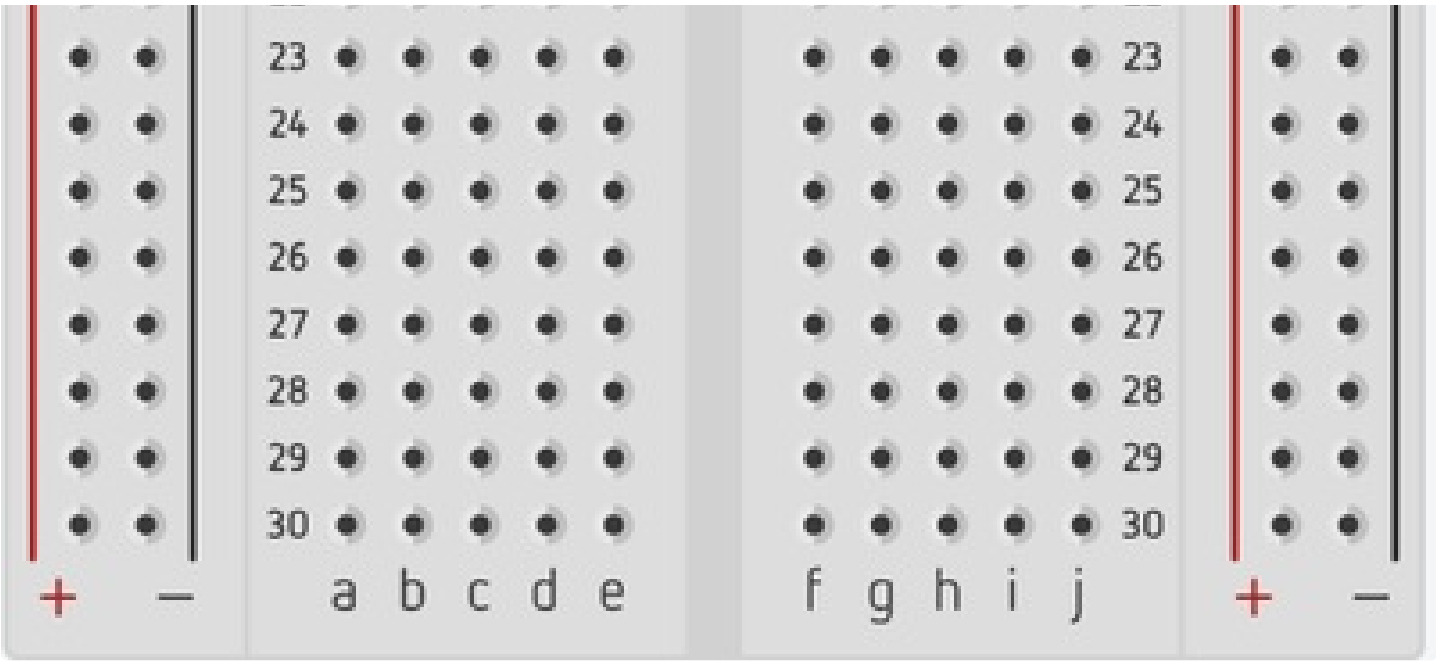
Step 1: Add Buttons to the Breadboard

First place the buttons as shown above:

1. First on e1 and e3
2. Second on e6 and e8
3. Third on e11 and e13

The top will be red, middle green and last blue. When held they will produce the desired color on the LED.



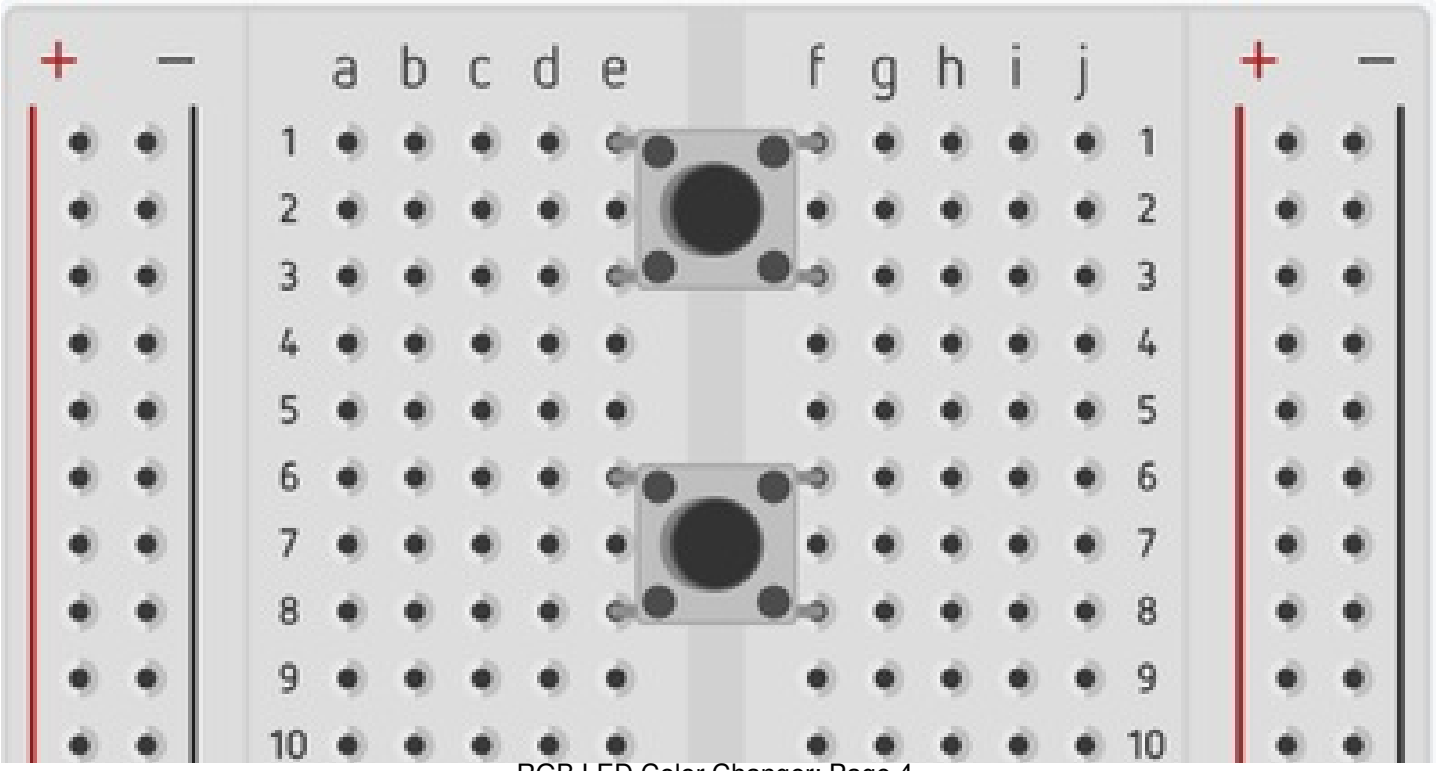


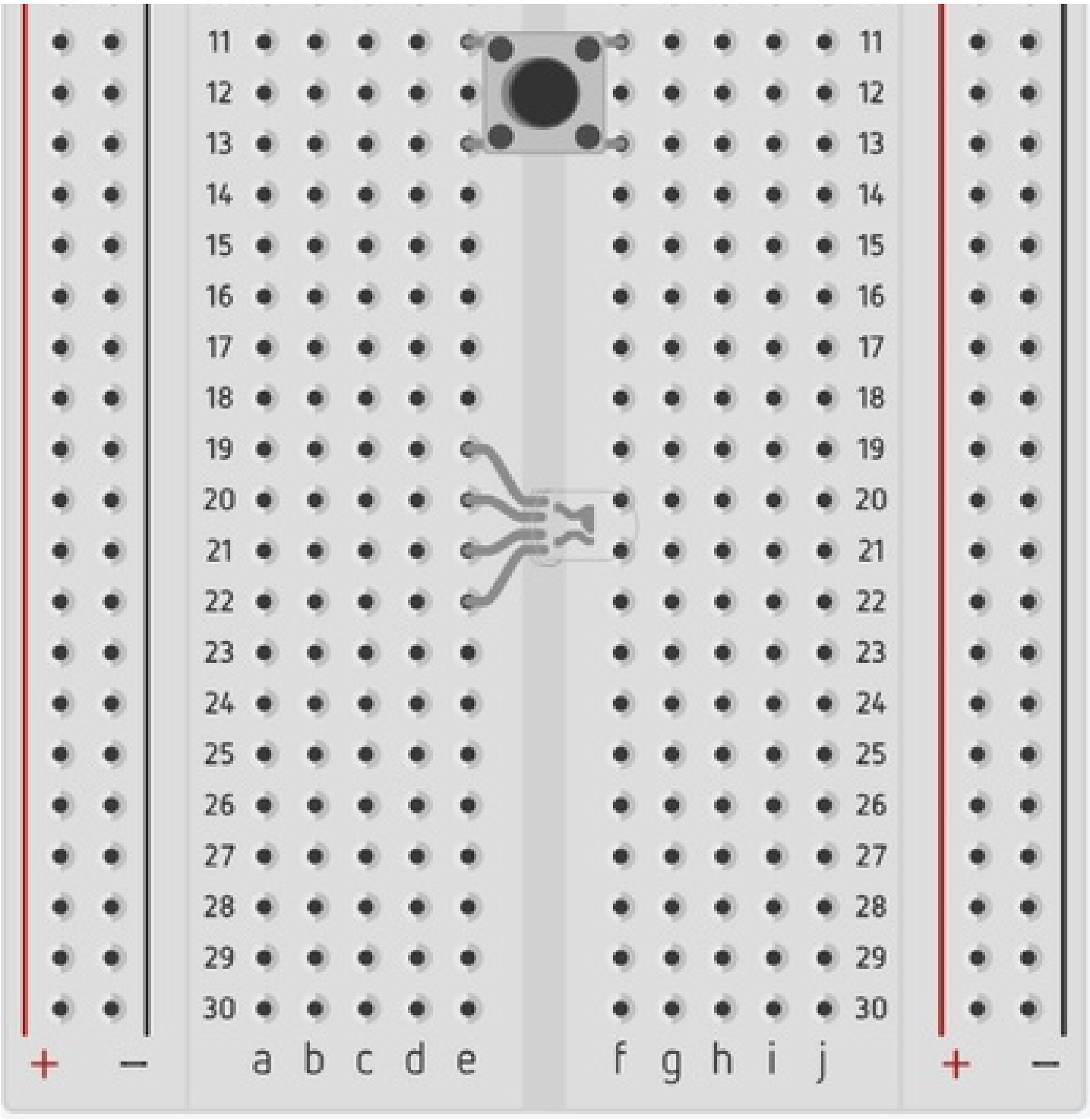
Step 2: Add RGB LED

The RGB LED will have four legs, the longest leg is the cathode. Put the cathode on e20 on the breadboard, and the rest as shown above:

1. Top on e19
2. Second/Cathode on e20
3. Third on e21
4. Fourth on e22

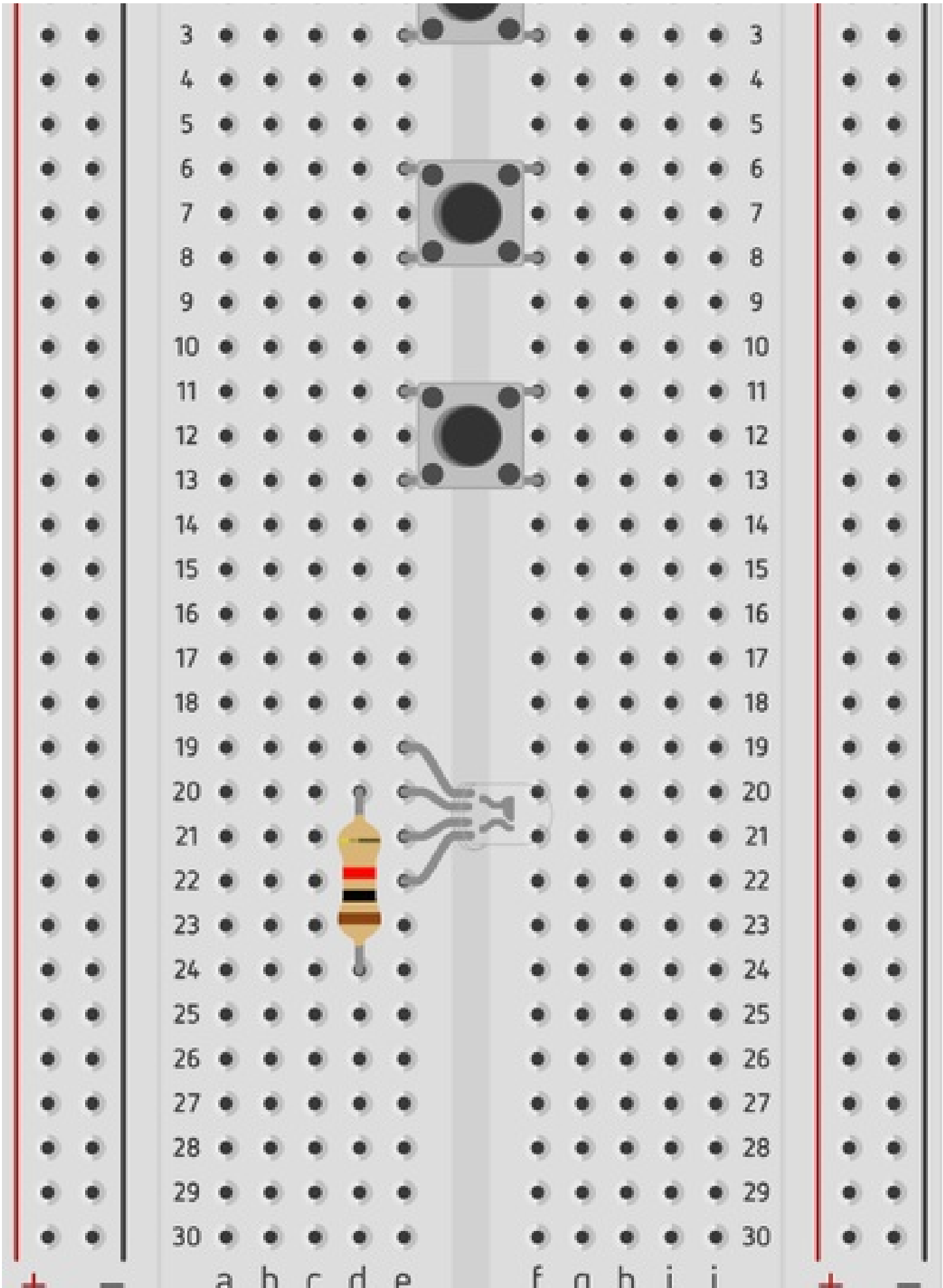
The other legs are red, green and blue respectively.





Step 3: Add Resistor

Add the resistor from the second leg (cathode) from d20 to d24.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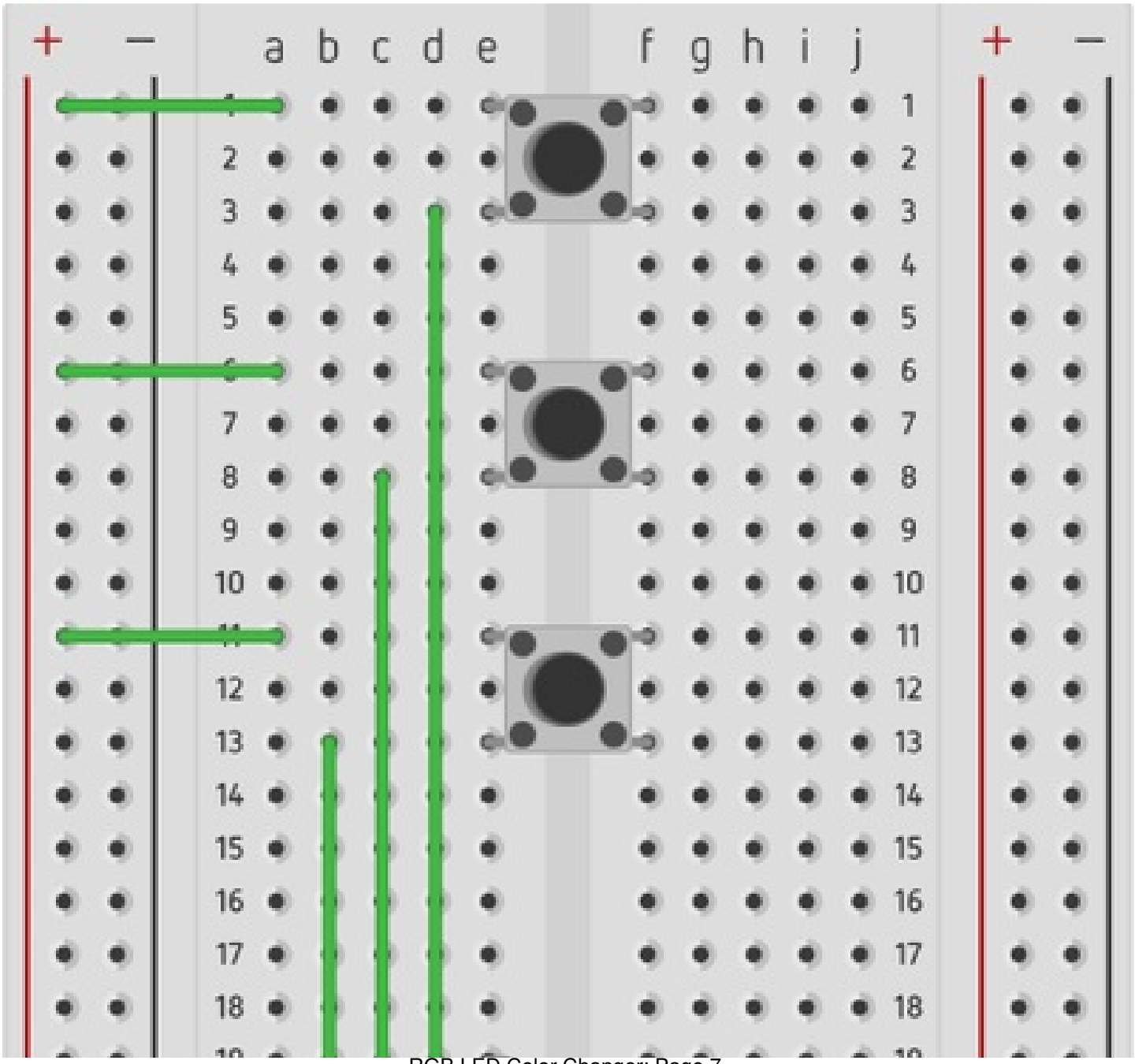
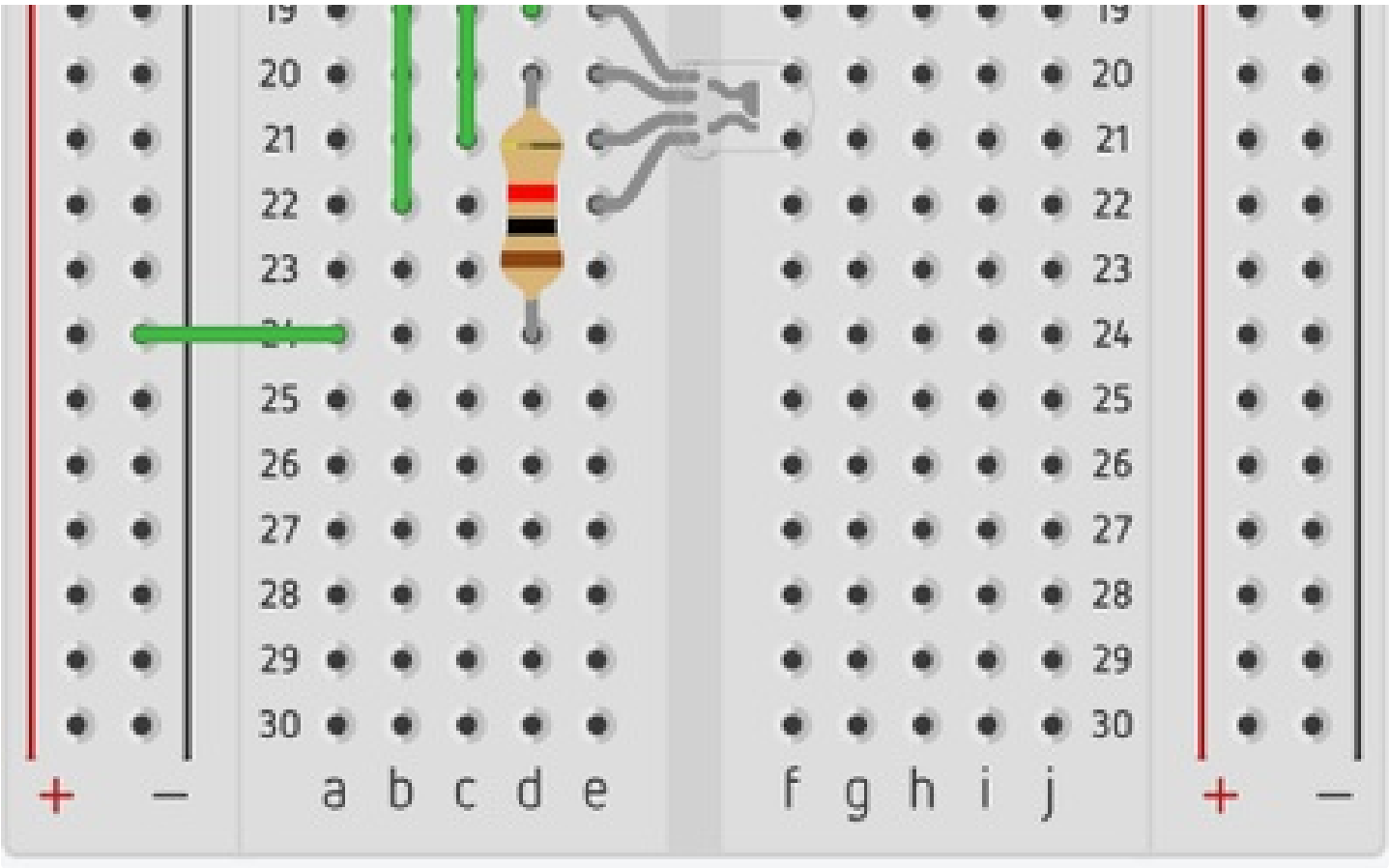
29
30
a b c d e f g h i j
+ −
+ −

Step 4: Wire Everything Up

Connect the wires as shown above, or follow these steps:

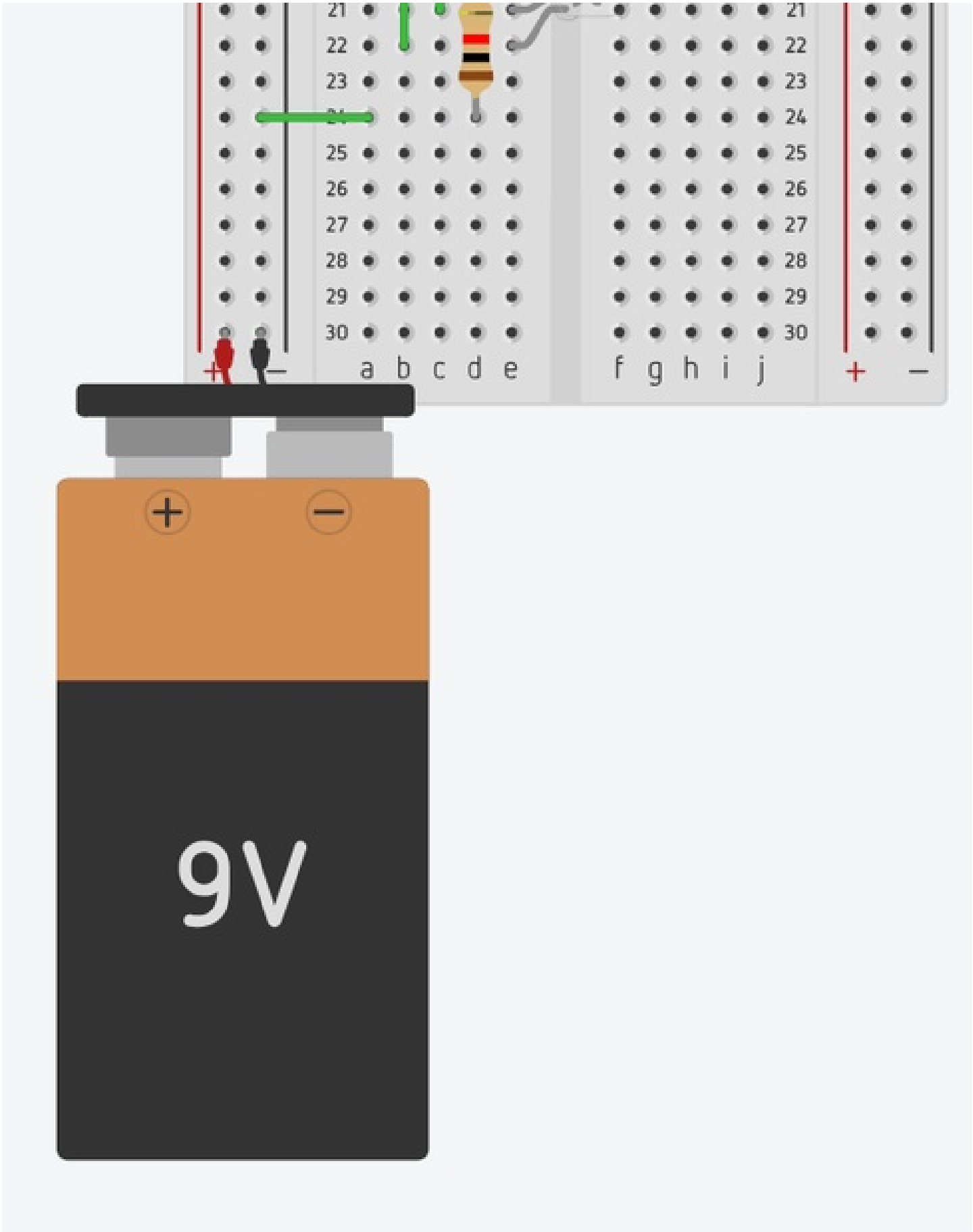
1. a1 to positive rail, usually marked with a '+' (does not matter where on the rail)
2. a6 to positive rail
3. a11 to positive rail
4. a24 to negative rail
5. d3 to d19
6. c8 to c21
7. b13 to b22





Step 5: Connect 9V Battery

Apply the battery clip and connect the positive wire, usually red, to the positive rail marked with a '+'. Then connect the negative, usually black, to the negative rail marked with a '-'. It does not matter wher on the rail you connect the wires.


21
22
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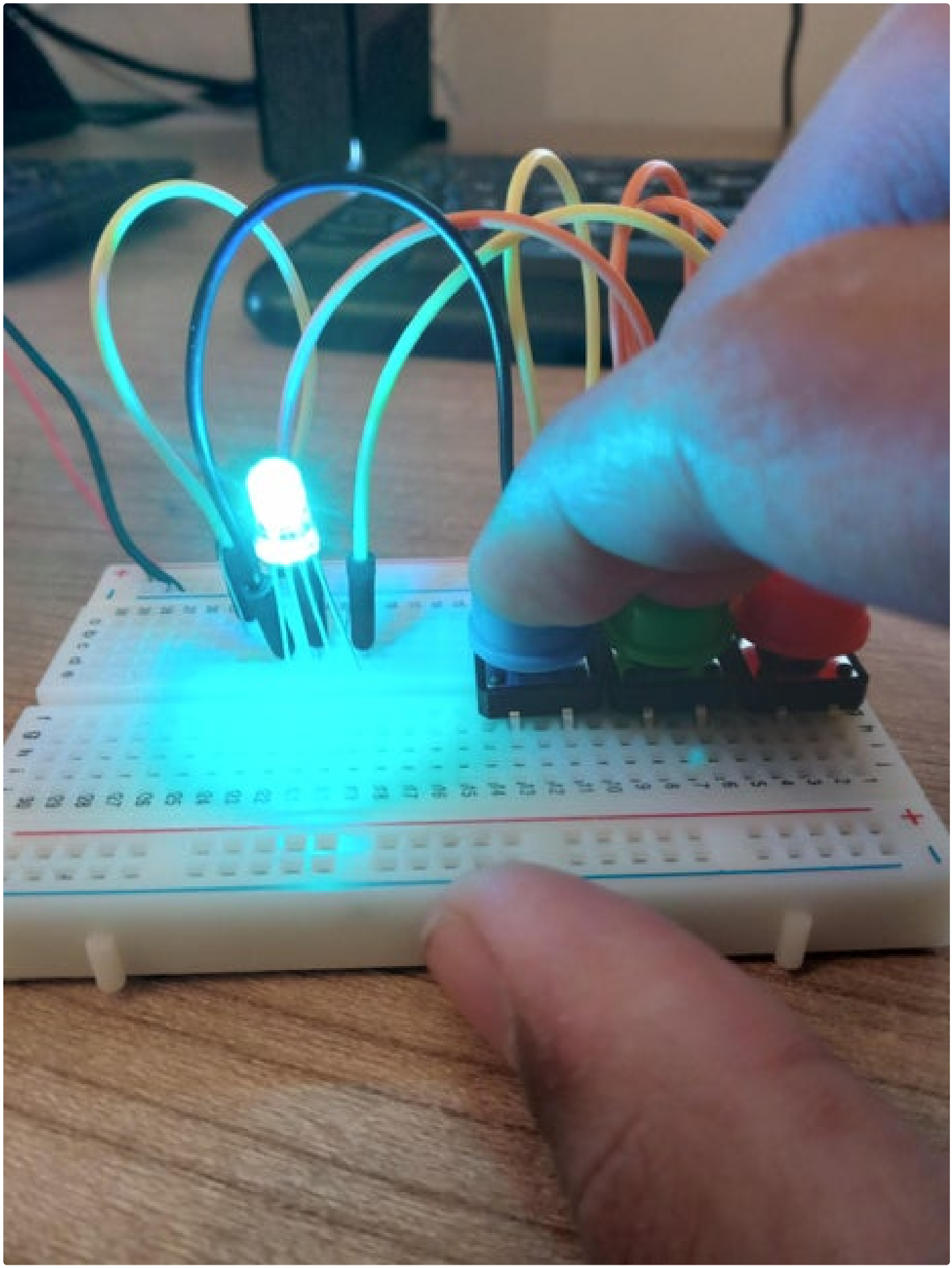
29
30
a b c d e
f g h i j
+
−
9V

Step 6: We're Done!

Experiment by pressing each button and seeing which color the LED lights up. You can even try to hold multiple down together to make different colors. A guide to this is shown below.



Step 7: Color Assistance