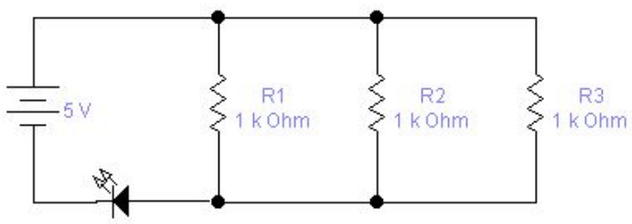
**Inventory**

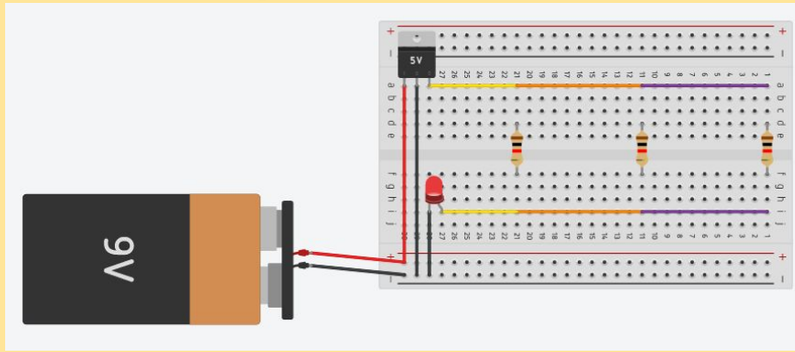
Using the inventory listed below, double check and isolate to make sure you have all the necessary parts before you go any further.

1 kΩ resistor (Brown, Black, Red, Gold)
1 kΩ resistor (Brown, Black, Red, Gold)
1 kΩ resistor (Brown, Black, Red, Gold)
Red LED
Battery
Build Circuit (Lab1)

Using the schematic diagram (below), build the lab experiment with the electronic parts listed above.




**Wire this circuit in Tinkercad and insert your screenshot below. Make sure the LED is powered ON.**




**Now remove one resistor from the circuit board. What happened to the LED?** Did it get dimmer or brighter? Why? **Recall:** The formula for calculating total resistance in a parallel circuit

$1/R_t = 1/R_1 + 1/R_2 + 1/R_3 + \ldots + 1/R_n$

The LED got dimmer as I removed a resistor from the circuit because the total resistance is greater in the second scenario then first scenario. For instance in the first scenario $R_T$=3/1000 vs second scenario $R_T$=2/1000.

Use a virtual multimeter to measure the voltage drop across each resistor separately and then the total. Write the values and the sum below.

R1 3.03V R2 3.03V R3 3.03V $R_T$ 3.03V

Use a virtual multimeter to measure the voltage drop across the LED.
State the value here: 1.97V volts

Calculate the total current flowing through the circuit using OHM's law. You may use the LED's voltage drop obtained above to help you find this value. Show your answer mathematically.

$$I = \frac{V}{R}$$

$V_T = 3.03+1.97$
$V_{T,} = 5V$
$R_T = 1000/3$
$R_T = 333.3\Omega$
$I_T = V/R$
$I_T = 5/333.3$
$I_T = 0.015A$ or 15 mA