Circuits and Resistors

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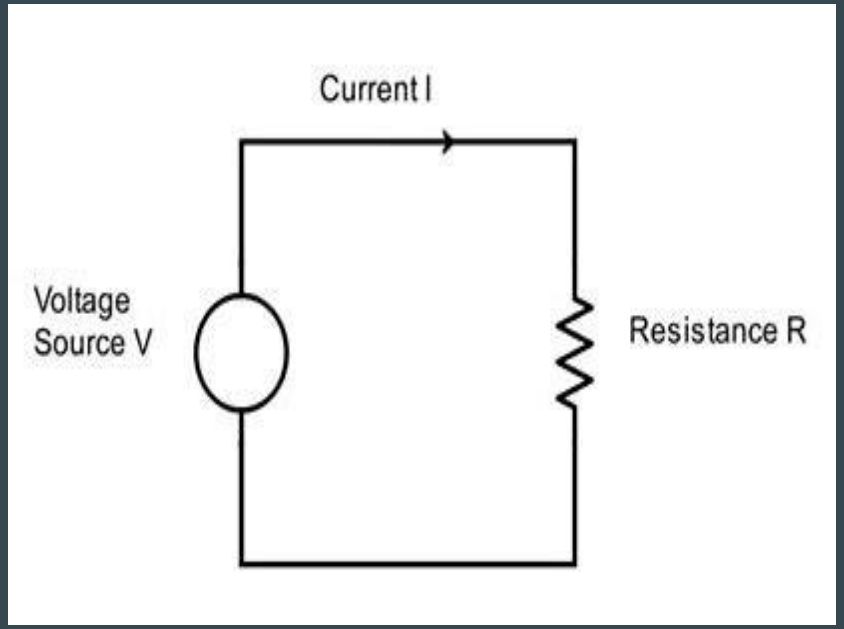
Introduction

- A circuit is a closed path in which electricity flows from one point to another
- A resistor creates an electrical resistance within the flow of current, therefore can reduce the flow of current
- Resistance is the ratio of potential difference across the component to the current flowing through the component

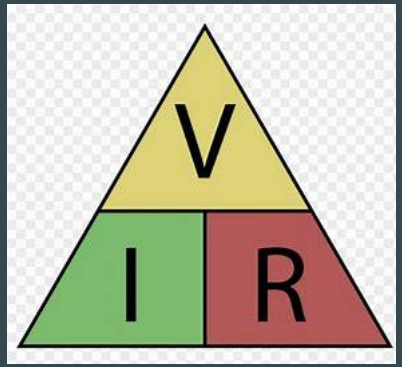


Experiment

- Essentially I built a simple parallel circuit
- When the switch is flipped up, there is a resistor
- When the switch is flipped down, there is no resistance
- The voltage source is 12.10 V battery
- I then used the data collected from the side with resistance and the side without to test Ohm's Law
- Ohm's law states that electrical current is proportional to voltage and inversely proportional to resistance

Ohm's Law

- Ohm's Law is I=V/R
- Where I is the current through the conductor in units of amps
- V is the voltage measured across the conductor
- R is the resistance of the conductor



	Voltage (Volts)	Resistance (Ohms)	Current (A)
No Resistor	12.10 V	0 ohms	0
Resistor	3.39 V	3.66 ohms	0.926

Conclusion

- Essentially, the data collected from the bulb being powered with and without a resistor proves Ohm's Law that when a resistor is present less volts will reach the intended path as some of the current is being restricted
- This is why the light shined brighter without the resistor blocking any of the current than when turned on using the path with a resistor