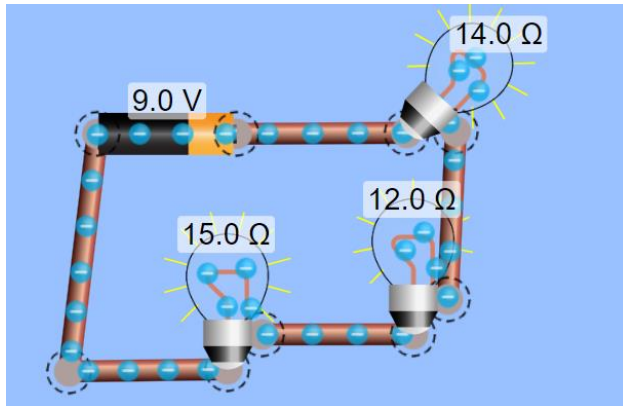


Table 1: Series

Bulb	Resistance (Ω)	Current (A)	Voltage Calculated (V)	Voltage Measured (V)	Power (W)
1	14.0	0.22	3.1	3.07	0.7
2	15.0	0.22	3.3	3.29	0.7
3	12.0	0.22	2.6	2.63	0.6

**Voltage Calculated ($V = IR$):****Bulb 1 -**

$$14.0 \, \Omega * 0.22 \, A = \mathbf{3.1 \, V}$$

Bulb 2 -

$$15.0 \, \Omega * 0.22 \, A = \mathbf{3.3 \, V}$$

Bulb 3 -

$$12.0 \, \Omega * 0.22 \, A = \mathbf{2.6 \, V}$$

Power ($P = VI$):**Bulb 1 -**

$$3.1 \, V * 0.22 \, A = 0.68$$

0.7 W**Bulb 2 -**

$$3.3 \, V * 0.22 \, A = 0.73$$

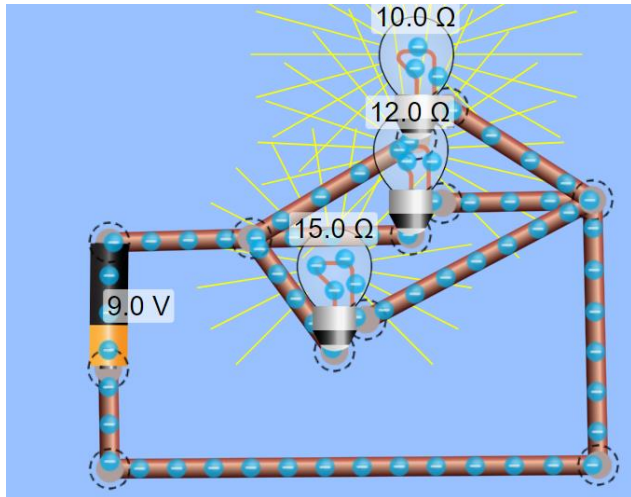
0.7 W**Bulb 3 -**

$$2.6 \, V * 0.22 \, A = 0.57$$

0.6 W

Table 2: Parallel

Bulb	Resistance (Ω)	Current (A)	Voltage Calculated (V)	Voltage Measured (V)	Power (W)
1	10.0	0.90	9.0	9.00	8.1
2	12.0	0.75	9.0	9.00	6.8
3	15.0	0.60	9.0	9.00	5.4



Voltage Calculated ($V = IR$):

Bulb 1 -

$$10.0 \, \Omega * 0.90 \, \text{A} = 9.0 \, \text{V}$$

Bulb 2 -

$$12.0 \, \Omega * 0.75 \, \text{A} = 9.0 \, \text{V}$$

Bulb 3 -

$$15.0 \, \Omega * 0.60 \, \text{A} = 9.0 \, \text{V}$$

Power ($P = VI$):

Bulb 1 -

$$9.0 \, \text{V} * 0.90 \, \text{A} = 8.1 \, \text{W}$$

Bulb 2 -

$$9.0 \, \text{V} * 0.75 \, \text{A} = 6.8 \, \text{W}$$

Bulb 3 -

$$9.0 \, \text{V} * 0.60 \, \text{A} = 5.4 \, \text{W}$$

Conclusion

Using complete sentences, write a conclusion that addresses the following:

- The purpose of the activity, what you explored, what you learned after analyzing the data and calculations
- An explanation about the effect of the observed variables on the flow of energy in series and parallel circuits

Response:

The purpose of this activity was to help provide a hands-on approach in understanding the designs of a circuit, and how they are made up. I explored the different components, and how they can be arranged to make both series and parallel circuits. Through this, I learned about the different types of circuits and how electrons flow within them.

Within series circuits, electrons flow along a single path; and if that path is ever broken, the current will no longer flow. For parallel circuits, there are more than one path that the electrons can flow through. With that, if there are both complete and broken paths, the electrons will continue to flow through the complete path. Each circuit contains some sort of voltage source, such as a battery or anything related. Less voltage results in less power. As well, current depends on the resistance present within a circuit.