

Ohm's Law Lab: To measure current, connect an ammeter between your resistor(s) and your battery.

1. Determine how much current runs through a circuit with a 6V battery and one light bulb, **then read #3!!!**
2. Predict what will happen to current in the **next** scenario; record in data table:
3. Sketch a diagram of each arrangement in your lab journal. Use proper symbols for the battery, ammeter, & resistors(lights)
4. Use your ammeter ("10A DC" function on your digital multimeter) to check your answers
5. Explain how your current relates to other scenarios (right column)
6. ☹ Compare the 2 bulbs in parallel to the single bulb. How much faster will the battery become discharged?

Voltage	# light bulbs	arrangement	current (predicted)	Current (actual)	Compare/Contrast:
A 6V	1	series	-----		How does A relate to B & C?
B 6V	2	parallel			
C 6V	2	series			
D 6V	3	series			-----
E 6V	4	series			How do these relate?
F 6V	4	parallel			
G 12V (share)	4	series			Current <u>should</u> be same as: _____.

Post – Lab: (majority of points!)

Represent **some** of your data in a graph! You pick what's significant!

1. How does a series circuit's current compare to a parallel circuit's current? (assume the same # of resistors)
2. How does increasing the voltage affect current in a circuit?
- 3a. How does increasing the number of bulbs in series affect current?
- 3b. Why?** (explain how/why the resistance was changed) (example: the wire was heated, lengthened, widened, etc)
- 4a. How does increasing the number of bulbs in parallel affect current? **4b. Why?**
5. Of the 7 scenarios you tested, which one would make the battery discharge the fastest? How do you know?
6. Use Ohm's Law to determine the approximate resistance of one light bulb (scenario A)
7. Switch your multimeter's red cable to the main and find a spot on the dial to measure the resistance of a light bulb when off. Explain the difference between this value and your response to #6.

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