

Name: _____
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Lab Title: Voltage, Current, Resistance

Problem What is the relationship between voltage and current for resistors?

Materials: 2 resistors (different values), 4 cells in holders, switch, connecting wires, ammeter, voltmeter

Review: Define the following words.

Resistor:

Ohm:

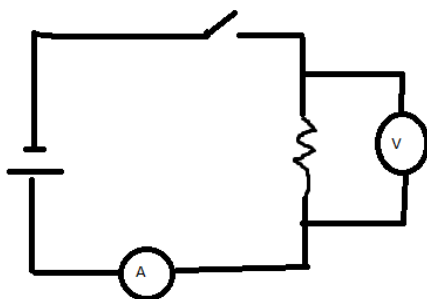
Ohm's Law:

Voltage:

Current:

Procedure:

1. Choose two resistors, write the value of the resistor on each table.
2. The cells should have all of the same voltage. Use the voltmeter to check the voltage of the cells.
 - a. Remember you are checking the electric potential difference so you must connect the voltmeter on either side of the cell.
3. Use one of the resistors to construct a circuit like the circuit shown below. Record the voltage and current in your table. Ensure that current is in A not mA.



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4. Modify your circuit to include, 2, 3 & 4 cells in series. Record the voltage and current for each.
5. Complete steps 2-4 for the second resistor. Record results in Table 2.

Results:

Value of Resistance on Resistor 1: _____

Number of Cells	Voltage	Current (mA)	Current (A)	Voltage/Current=
1				
2				
3				
4				

Value of Resistance on Resistor 2: _____

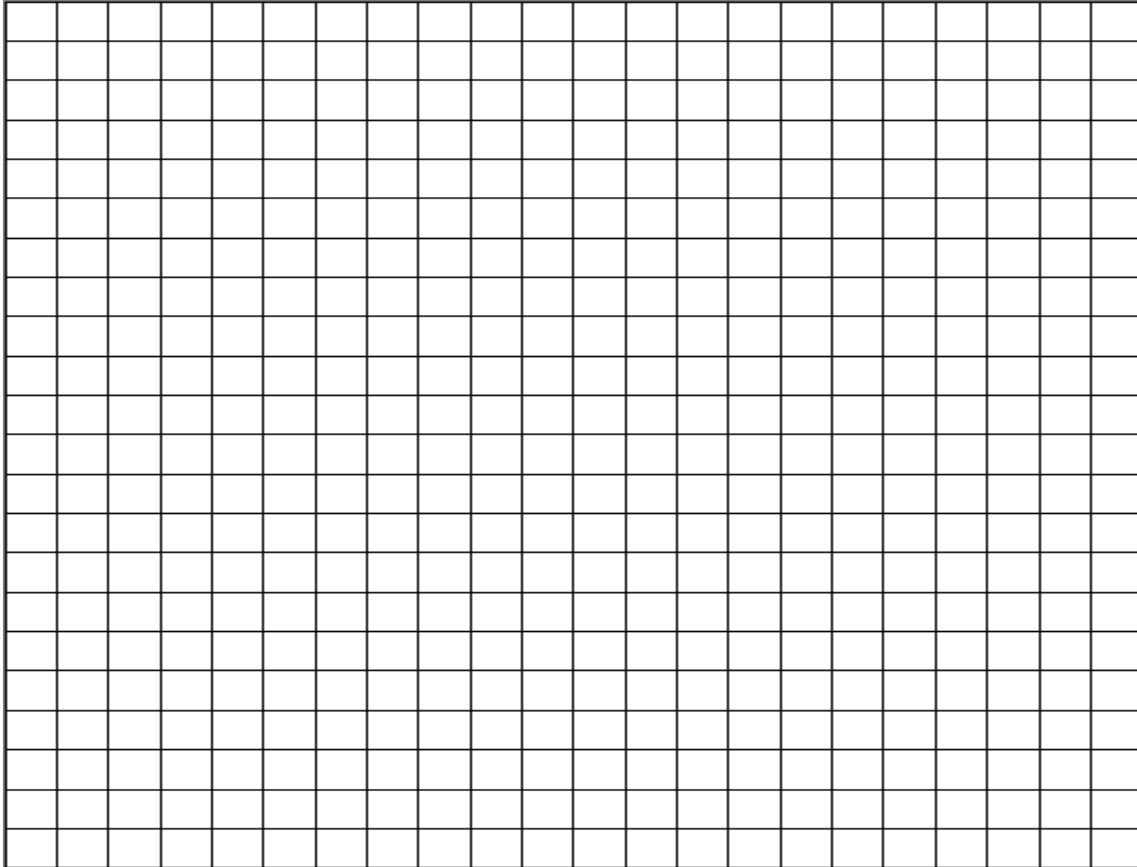
Number of Cells	Voltage	Current (mA)	Current (A)	Voltage/Current=
1				
2				
3				
4				

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1. Plot voltage versus current for each resistor. Draw a line of best fit for each set of data. Use two different colours to represent each resistor.

Title of Graph _____



Make sure you label your x and y axis on the graph and your lines (resistor 1 or 2)

2. In the last column of your table, calculate and record the value of the voltage divided by the current (in amperes). What did you notice about the results and the value of the resistors?
3. How does the value in the last column compare with the value of the resistor