

SAINT JOSEPH'S PREPARATORY SCHOOL
PHYSICS LAB – OHM'S LAW
April 2011

NAME: _____ DATE: _____ PERIODS: _____

COLLABORATORS: _____

DATE REPORT IS DUE: _____

In this experiment, you will study the relationships among voltage, current and resistance. Be sure to make careful diagrams of the circuits to include in your lab report.

Part One:

1. Connect the voltmeter to the power supply as instructed and determine the range of voltages available from the power supply

Part Two:

1. Obtain a set of six different resistors. Read the color codes and measure the resistances with the electronic meter.
See: http://www.elexp.com/t_resist.htm and/or
<http://www.electronics2000.co.uk/calc/calcrs.htm>
2. Set up the circuit as shown in the diagram and set the voltage to 5.0 v. Record the current in the circuit.
3. Replace the resistor with another, set the voltage to 5.0 v again and record the current. Repeat this step for each resistor.

Part Three:

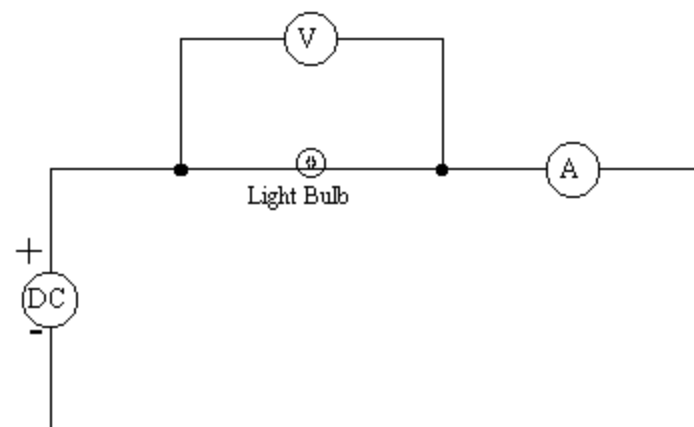
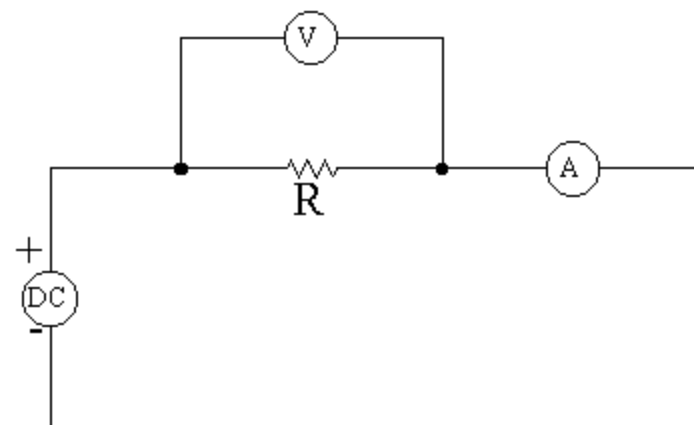
1. Set the circuit up as in part one but this time use only one resistor and measure the current through the resistor for each of several voltages. (e.g.: 0 through 10 volts in 2 volt increments.)

Part Four:

1. Replace the resistor with a light bulb and repeat part three.

Analysis:

- For part two, graph the current vs the resistance and the current vs $1/R$ and interpret the results.
- For part three, graph the current vs the voltage and interpret the results.
- For part four, graph the current vs the voltage and interpret the results.
Make a statement about the meaning of the resistance values for the light bulb.



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Part One			
Lowest available voltage:		Highest available voltage:	

Part Two					
	Step 1.			Steps 2 & 3.	
	Color Code	Resistance		Voltage	Current
		Code	Meter	5.0 v	
1					
2					
3					
4					
5					
6					
7					

Part Three					
	Color Code	Resistance		Voltage	Current
		Code	Meter		
1					
2					
3					
4					
5					
6					
7					

Part Four			
	Resistance	Voltage	Current
	Calculated	Measured	Measured
1			
2			
3			
4			
5			
6			
7			

ADDENDUM

