
7:93 Rheostat Lab

A rheostat is the type of switch that you may have in your dining room. They are usually called dimmer switches. A rheostat enables you to choose how much current flows through the switch by changing the resistance.

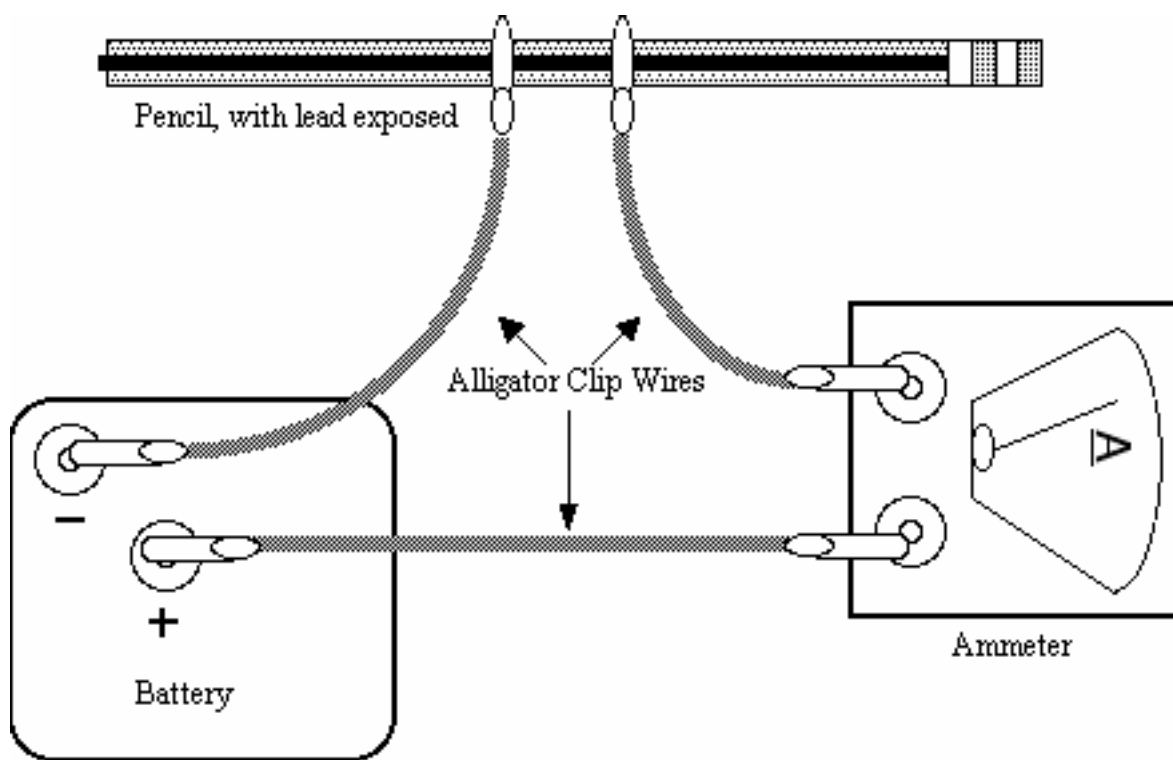
Purpose: The purpose of this lab is to determine the effects of resistance on current in an electrical circuit.

Hypothesis: If we increase the distance that the current needs to pass through the pencil lead, then _____

Research: Read the textbook pages _____ - _____. Use the information in the text to prepare a paragraph about Ohm's Law.

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Procedure: For this lab you will need to gather an ammeter, a ruler, a battery, a pencil that has had half the wood removed, and three wires with alligator clips. Begin by building a circuit that starts with the battery, run a wire from the negative terminal of the battery to the pencil. Let the alligator clip bite into the pencil lead firmly. Run the next wire from the pencil to the ammeter. The third wire completes the circuit going from the ammeter to the positive terminal of the battery. The two wires that are biting into the pencil should be two centimeters apart for the first trial. Each trial the gap should be made wider than the previous by two more centimeters. Record the current from the ammeter for each trial. If the ammeter's needle doesn't move, check all of the connections. The voltage from each trial should not change, it is printed on the side of the battery. Use Ohm's equation $R=V/I$ to find resistance. Graph your results.



When completed, the circuit for the rheostat lab should look like this diagram.

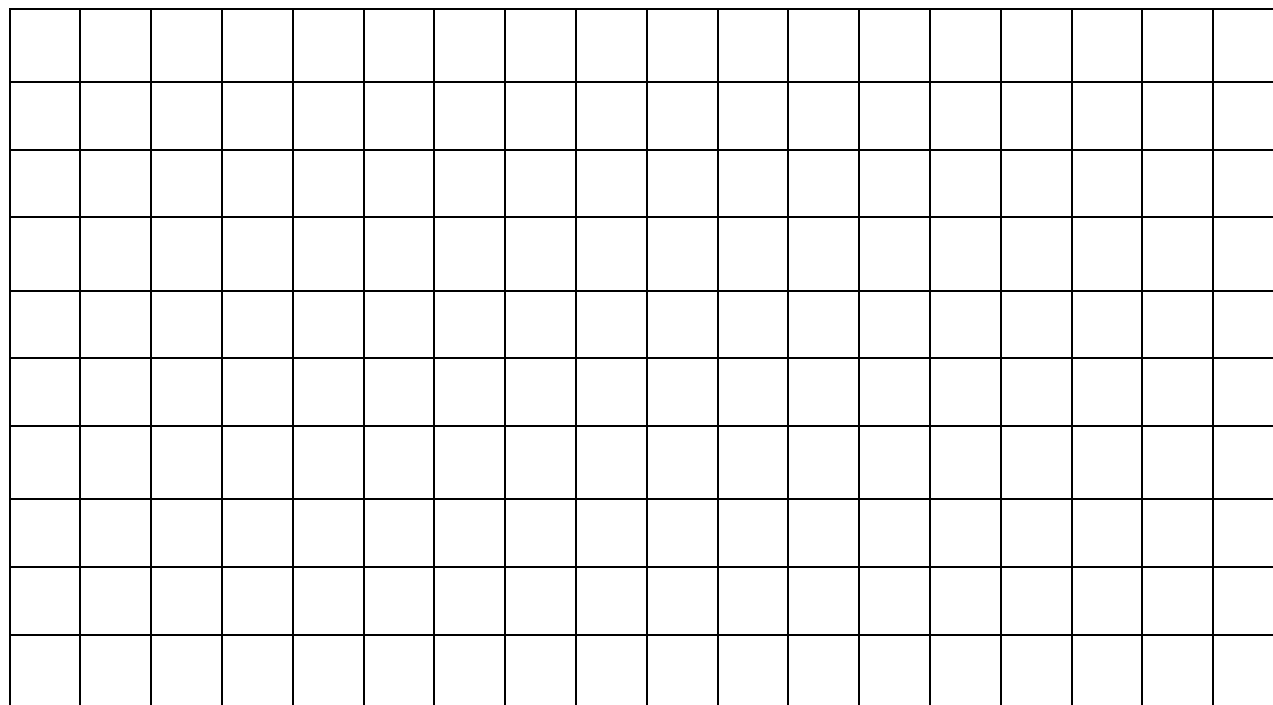
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Data:

Trial	Distance (cm)	Current (a)	Voltage (V)	Resistance
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____

Results: Create two line graphs in the space provided. One should show current on the y axis and distance on the x. The other should show resistance on the y axis and distance on the x. Be sure to label the axes with quantities and units and give each graph a title.

Graph 1: Current and Distance:.



Print Name _____ Date _____ Period _____

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Graph 2: Resistance and Distance:

Conclusion: _____

