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Schematic Diagram: /3

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**OHM’S LAW**

For typical resistors there is typically a simple linear relationship between voltage (V) and current (I). If so, that resistor is said to obey Ohm’s Law:



The resistance of an object depends on both the shape of the object and the material from which it is made. For a long object, such as a wire, the resistance is proportional to its length. Objects which do not obey Ohm’s Law are referred to as non-Ohmic. However, their current-voltage characteristics are still measureable.

*You will need to determine the following in order to complete this lab*;

1. How to find the resistance of a resistor from its colour code.
2. How to set up a simple series circuit and how to represent this diagram with a schematic diagram using correct symbols for batteries, resistors, voltmeters, and ammeters.
3. Where to set up voltmeters and ammeters within a circuit in order to record accurate voltage and current measurements.

Please include the following: *Purpose, Procedure, Data Tables, 2x V vs I Graphs, Analysis, and Conclusion*

**THE EXPERIMENT**

1. Choose two different resistors and include the colour code for each. From the colour code determine the resistance of each resistor.
2. Determine if the resistors obey Ohm’s Law by plotting V vs. I. Plot V vs. I for each resister on the ***SAME*** graph.

**ANALYSIS**

1. Draw the schematic diagram of the simple circuit. Include the ammeter and voltmeter in the appropriate orientation. (note: you can save time by referring to this diagram in your procedure!)
2. Compare your value of R with the nominal value found using the resistors color codes. Find your percent error.
3. Using a circuit diagram, explain the difference between Conventional Current and Electron Flow.