RESISTANCE LAB

**Purpose**: Determine the resistance of an unknown resistor.

**Materials**: Virtual Circuit Construction Kit

**Procedure**:

* Use the circuit construction simulation below to build a circuit with one battery, one resistor, one ammeter, and wires to connect them. Place a voltmeter with leads on each side of the resistor. You will need to select the voltmeter and ammeter boxes in the Tools area in the right hand column to obtain an ammeter and voltmeter.
* Record the voltage across the resistor and current through the circuit. Add another battery to the circuit to increase the voltage and read the new voltage and current. Keep adding batteries until you have six data points.
* Create a data table with voltage and current (don't forget to include the units in the column headings of the data table).
* Graph voltage vs. current and draw a best fit line through the data. The slope of this line is the unknown resistance.
* Report your findings in a lab report posted to your digital lab journal.

**Data:**

|  |  |  |
| --- | --- | --- |
| # of Batteries | Voltage (V) | Current (I) |
| 1 | 9.00V | .900I |
| 2 | 18.00V | 1.80I |
| 3 | 27.00V | 2.70I |
| 4 | 35.99V | 3.60I |
| 5 | 44.99V | 4.50I |
| 6 | 53.99V | 5.40I |

