Procedure: Open *Circuit Construction Kit* from the PhET website.

1. Put five resistors on the work area. Right click on each to change the resistances to the values in the table. Use a battery voltage of 12 volts.

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| --- |
| **Calculations** |
| Resistor | Individual resistance(ohms) | Current(amps) | Voltage (Volts) |
| 1 | 5 |  |  |
| 2 | 10 |  |  |
| 3 | 5 |  |  |
| 4 | 10 |  |  |
| 5 | 5 |  |  |
|  | TotalResistance (calculated) | Battery Current | Battery Voltage12 |



2. Use the procedures learned in this topic to calculate: the total resistance of the circuit, the current delivered by the battery, and the current and voltage for each resistor. Show your work below and record your results in the table above in the shaded cells.

3. Build the circuit given using the *Circuit Construction Kit*. Complete the table below by measuring the voltages and currents using the voltmeter and ammeter. Find the total resistance of your circuit using Ohm’s Law. Show your work. (Values should be very close to calculations)

|  |
| --- |
| **Measurements** |
| Resistor | Individual resistance(Ω) | Current(A) | Voltage (V) |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| Battery |  |  |  |



4. Provide evidence that your table information is reasonable. Before you take apart your experiment, take a screenshot of your circuit and insert it into this document. Use Kirchoff’s Loop Rule and Kirchoff’s Junction Rule to justify your results.