**VIRTUAL LAB: Measuring Current**

**Hypothesis:** a.) How will the current change if it is measured before and after the load**. If** the current in a circuit is measured before and after a load (light bulb), **then** .

b.) How will the current is a circuit change if the voltage is changed**. If** the voltage in a circuit is gradually increased, **then** .

Circuit diagram of measuring current flow **after** light bulb:

Circuit diagram of measuring current flow **before** light bulb:

[LINK TO PhET ELECTRIC CIRCUIT SIMULATOR](https://phet.colorado.edu/sims/html/circuit-construction-kit-dc/latest/circuit-construction-kit-dc_en.html) (hold ctrl and click)

**Procedure:**

1. Build a simple circuit using the PhET Simulator. Be sure to include an ammeter to make measurements of current flow before and after a light bulb. Draw both circuits (using symbols!) before attempting the experiment. Indicate the direction of flow of electrons on your diagram. (out of negative, into positive)
2. Complete a table of electric current and bulb brightness at 5 different voltages (click the battery and adjust the voltage of the battery).
3. Open the circuit and record your observations.

**Observations:** Table **-** Properties of a Simple Circuit

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **VOLTAGE (V)** | **CURRENT (A)**  BEFORE AFTER | | **BULB BRIGHTNESS** | **Observation when circuit is open** |
| **3** |  |  |  |  |
| **6** |  |  |  |
| **9** |  |  |  |
| **12** |  |  |  |
| **15** |  |  |  |

**Discussion:**

1. Compare your measurements for current before and after the light bulb.

2. When you increase the voltage (potential difference), what happens to the current?

3. What happens to the current and brightness of the load, when you open the circuit?

4. Describe the trends you observed and write a sentence that explains these trends.

**Conclusion:** Relate to hypothesis #1 & 2. Were your hypotheses correct? Summarize your results.

**Complete this lab and share your completed work with me through Google.**