

Circuit Builder

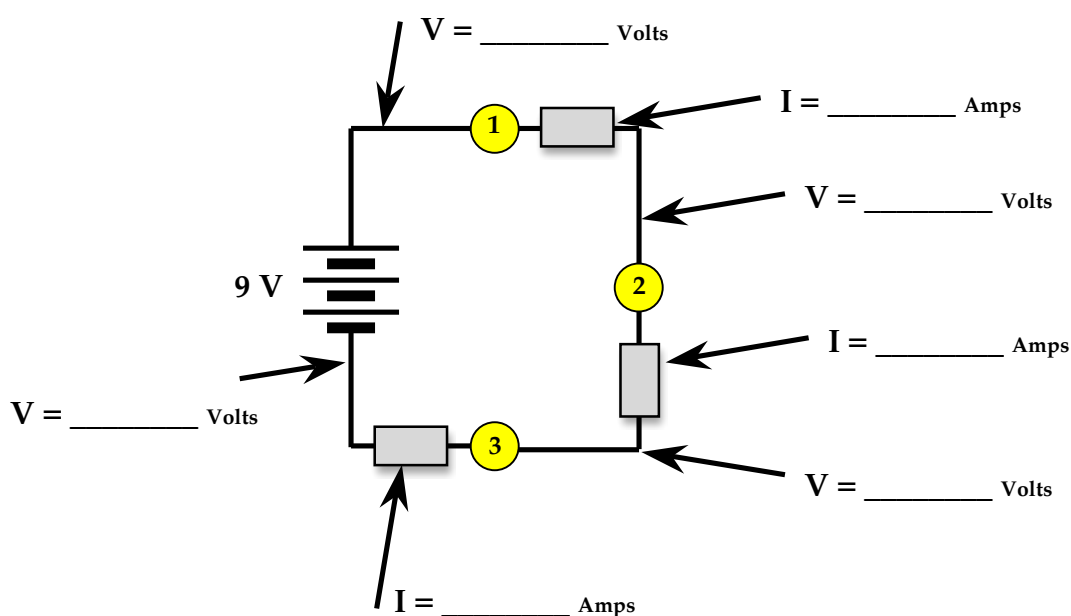
Goal: To analyze parallel and series circuits.

Getting Ready: Using your computer, tablet or phone and navigate to:

<http://goo.gl/M4Ewmh>

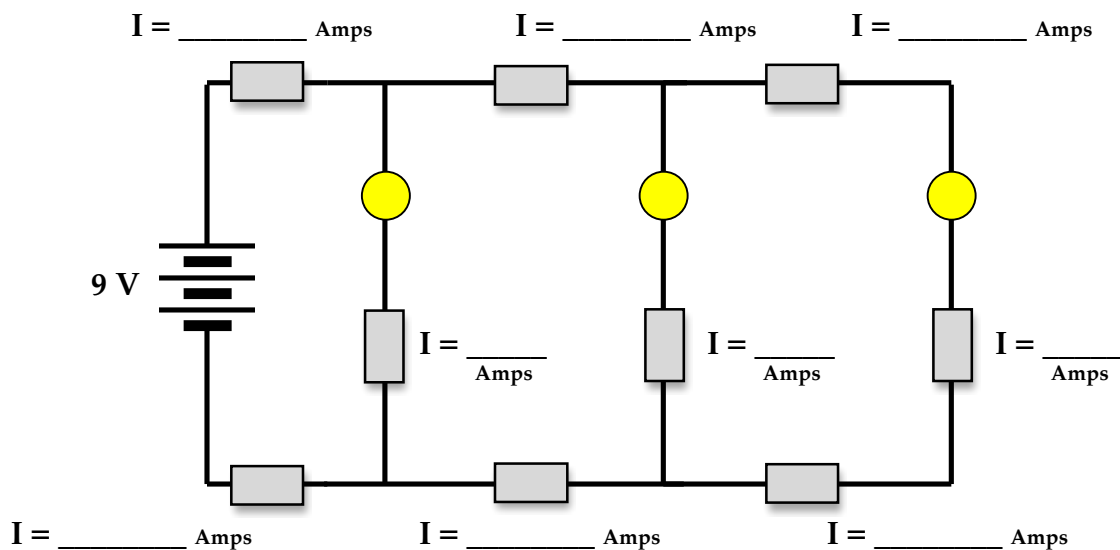
Use the provided link to open the Circuit Builder simulator. Once opened, select the pencil icon and use the tools (at the bottom of the screen) to build a circuit. Simply select a bulb, resistor, wire or ammeter (the rectangular box) and tap or click in the workspace where you wish it to be located. You'll get the hang of it quite quickly. Electric potential values are listed in the workspace at the corner of every *square* on the grid. Current values are listed on the ammeters.

Build, Measure, Analyze:



- Use colored markers (ROYGB) to color code the wires on the diagram above. Use Red for the highest potential and Blue for the lowest potential.
- How does the current in each individual light bulb compare to each other?
- Calculate the difference in electric pressure (ΔV) across each light bulb.
 Bulb 1: $\Delta V = \underline{\hspace{2cm}}$ Volts Bulb 2: $\Delta V = \underline{\hspace{2cm}}$ Volts Bulb 3: $\Delta V = \underline{\hspace{2cm}}$ Volts
- How do the ΔV values across each individual light bulb compare to each other?
- How do the ΔV values across each individual bulb compare to the voltage of the battery? Write an equation for this.

Build, Measure, Analyze:



6. Observe all the current values in the circuit. Describe a rule that could be used to relate the current values at a “junction” (location where a path divides into two paths or a location where two paths come together to form one path).
7. Use colored markers (ROYGB) to color code the wires in the circuit above.
8. Use the program to compare voltage values at the various locations in the circuit. How many different values are there? What are these values?