

Procedure: How do voltage and current get dispersed in a circuit?

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Period 1

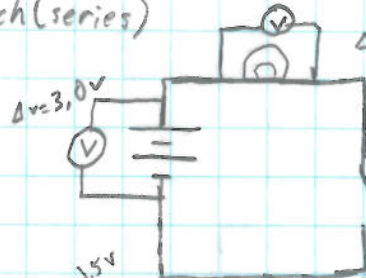
- when is there one component
- when there are 2 components in series
- when there are 2 components in parallel

ML #1: Circuit w/ one cell, one bulb, and a switch (series)



I have noticed that the voltage at the power cell and the bulb were both equal to each other.

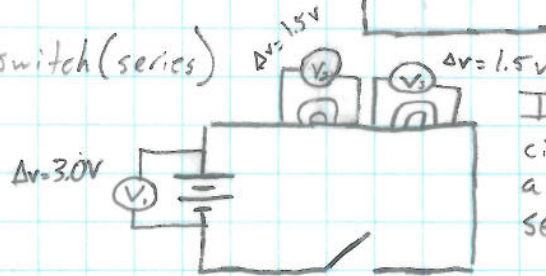
ML #2: Circuit w/ two cells, one bulb, and a switch (series)



$\Delta v = 3.0v$

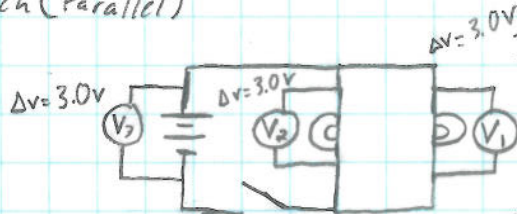
This was very similar to ML #1. The only difference is that instead of both being 1.5v, they are now 3.0v. Also, the bulb has gotten brighter with more voltage.

ML #3: Circuit w/ two cells, two bulbs, and a switch (series)



If you unscrew a bulb, the circuit will go out. Also, in a series w/ 2 bulbs, you will see that $V_1 = V_2 + V_3$.

ML #4: Circuit w/ two cells, 2 bulbs in parallel, and a switch (Parallel)



$\Delta v = 3.0v$

If you unscrew a bulb, the other one will remain lit. When in a parallel circuit, $V_1 = V_2 = V_3$.

Conclusion:

When there is one component in a circuit, the voltage of the cell and the voltage of the bulb are one and the same. Two components in a series is a similar but different story though. With two components in a series, the voltage is split between the bulbs, thus making $V_1(\text{cell}) = V_2 + V_3(\text{bulbs})$. In a parallel circuit with two components is a completely different situation. In parallel, each component and the cell(s) have the same exact voltage. Meaning that $V_1(\text{cell}) = V_2(\text{bulb 1}) = V_3(\text{bulb 2})$. Also, if you are to take a bulb out of this circuit, the other bulb will remain lit because of the fact it is a parallel circuit.