Multimeter Quick Guide

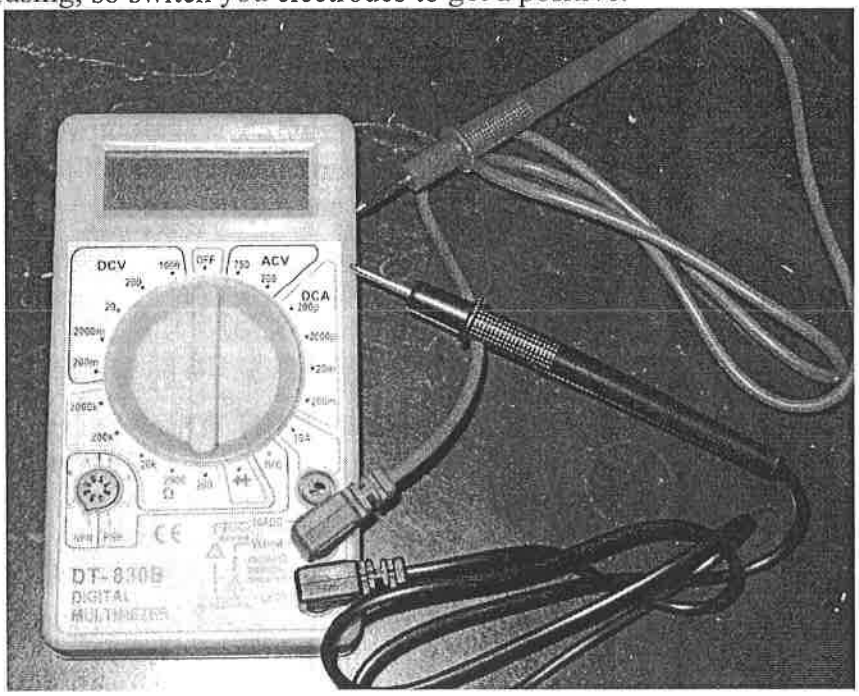
NOTES FROM MEGAN

You will be using the multimeter to observe some properties of electrical circuits in the DC Circuits: Batteries, Bulbs, and Beyond activity. Just in case you have never used one before, or it has been a long time, here is a little refresher straight from the mistakes I was making!

Basic usage

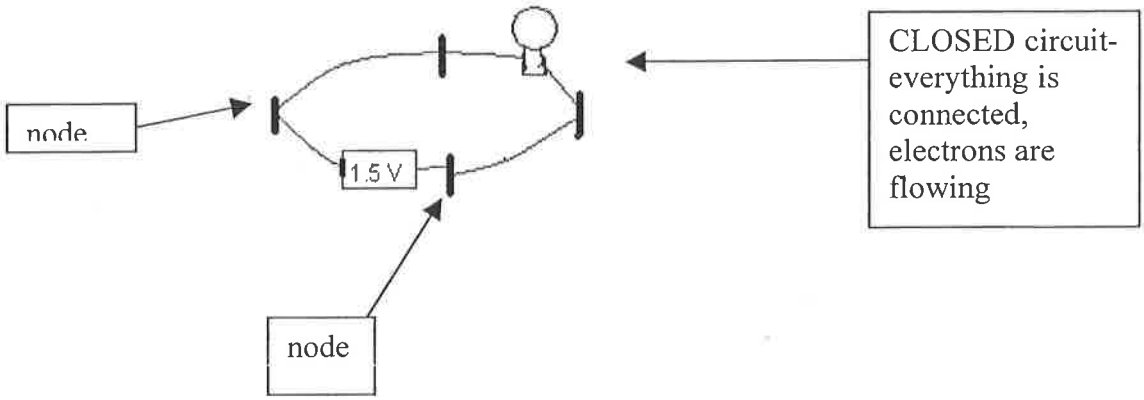
- You will have two electrodes and they need to be plugged into the bottom two holes of the multimeter (unless otherwise noted).
- To turn on, turn the dial to desired setting. These are the important settings for us:
  - DCV = DC Voltage (V)
  - DCA = DC Amps (I)
  - Ω = Ohms, Resistance (R)
- When measuring a device for any of the parameters, you will get a positive or a negative number depending on which sides your electrodes are on. They should be the same number either way.

  NOTE: Generally we want to always have a positive number, just because it is less confusing, so switch you electrodes to get a positive.



Voltage

- DCV section
- Setting: "20"
  - Value measured in Volts.
- You can only measure the voltage of a circuit if that circuit is CLOSED.
- Measure your voltages at the nodes of your circuit (on either side of a device).
  - If you are using a bread board, measure between two bolts.



Current

- DCA section
- Setting: "10A"
  - To use this setting, you need to remove the electrode from the middle hole and put it in the top one. This setting will measure your current in Amps.
  - The other settings use numbers and then either an "m" or an "μ". The "m" settings are measured in milliamps, the "μ" is in microamps.
- You can only measure current if the circuit is CLOSED.
- Measure your voltages at the nodes of your circuit (on either side of a device).
  - If you are using a bread board, measure between two bolts.

Resistance

- Ω section
- Setting: "200"
  - Measures in Ohms.
- You can only measure resistance if the circuit is OPEN. (Disconnect a wire or make sure your switch is off.) Otherwise, you get a really weird number that does not make sense.
- Measure your voltages at the nodes of your circuit (on either side of a device).
  - If you are using a bread board, measure between two bolts.