

(S2) Modeling Electricity: The Electron Shuffle
Investigate

Part A: Modeling a Simple Circuit

3a.

9a. if there is a 5 volt battery (remember voltage is the energy for each coulomb of charge):

9b. if current \uparrow to 3 amps (remember current is the # coulombs that pass through the battery every second):

9c. if there is a 2 volt battery:

9d. if the current is \uparrow to 5 amps:

9e. if the 2 volt battery is replaced w/ a 4 volt battery:

9f. if the current \uparrow from 2 to 3 amps:

Part B: Modeling a Series Circuit

2a.

3a. if 4 identical light bulbs are placed in series:

3b. if the series circuit of 2 light bulbs has the battery replaced w/ a 3 volt battery:

3c. if the circuit of 2 light bulbs has a larger current:

3d. if the 1st light bulb requires more energy than the second:

4a.

one bulb		two bulbs in series		comparison
Battery voltage (volts)	current in the circuit (amps)	Battery voltage (volts)	Current in the circuit (amps)	Which circuit has the brighter bulb(s)?
1	1	1	1	
1	1	2	1	
1	1	1	2	
1	1	2	2	
2	2	4	1	
2	2	2	2	
4	1	3	3	