

Phys 115: Inquiry Into Physics	HW 6: Due Monday, October 15, 2007
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Here, I would be using the word circuit to mean any particular connection of wire, bulb and battery, irrespective of whether there would be a flow/flows, irrespective of whether the bulb will light, etc.

Question 1.

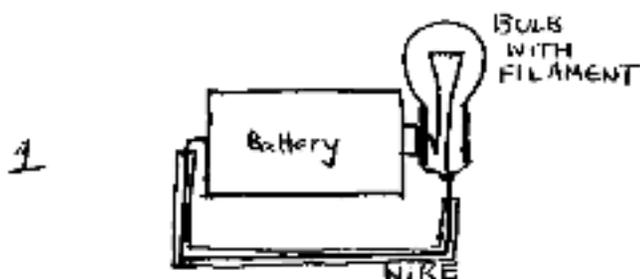


Figure 1 The side of bulb touches one end of battery, and a wire connects the tip of bulb to the other end of battery.

A. In class on Wednesday, we did group presentations on the 'inside story' of the circuit. In this question, I want you to describe what you think is going on inside this circuit. Describe everything in full details. Let me know what you are visualizing/thinking of when you say particles, or energy, charge or anything else. If you are thinking of movement, draw me a picture of what you are thinking. (drawing a picture always helps, anyways). What happens at the bulb? What happens at the battery? At times, it might help to think of an analogical example to present a clearer idea of what you are thinking.

B. Now think about some holes in your description - is there something missing in your explanation or something that could do with a more detailed explanation. Maybe it is something that you think is not very specific or does not explain "how". Maybe it is some portion of your explanation that worries you because of its implications. Let me know why that portion needs more filling-up, what is missing or what concerns you about this explanation?

Question 2

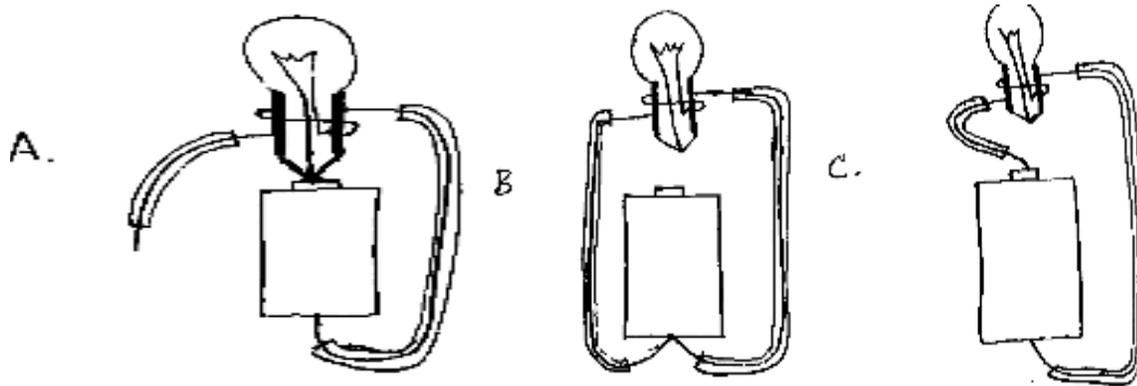


Figure 2 (A) We take a wire that has part of the plastic covering removed in the middle and the metal of the wire is exposed. One end of the wire is connected to one end of the battery. The uncovered metal part of wire in the center is wrapped around the metal side of bulb while the tip of bulb touches the other end of battery. The other end of wire is hanging loose. (2B) the center exposed metal part of wire is wrapped around the metal side of bulb and the two end of the wire touch the same side of the battery. The tip of bulb is not touching the battery. (2C) the center exposed metal part of wire is wrapped around the metal side of bulb and the two end of the wire touch opposite sides of the battery. The tip of bulb is not touching battery.

A. Use your explanation from question 1 to analyze what might be going on in these three circuits. Again, draw me a pictures to let me know what you are thinking.