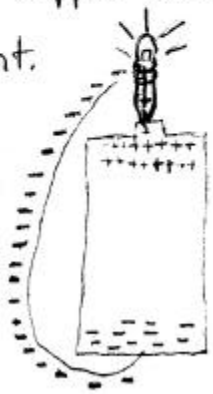
Student Example
Simple Circuits: What Works?

Double Linear Model

This student uses a Double Linear Model with attraction aspects where electrons travel up one side through the wire and protons travel through the positive contact, and explains they attract in the bulb to make it light.

When we use the positive and negative contacts was the only time that the bulb lit. I believe that the reason for this is the positives and negatives attract. At the negative contact, I think there are electrons. At the positive contact, I believe there are protons. These two things attract through the copper wire. The attraction of these two turns on the light.



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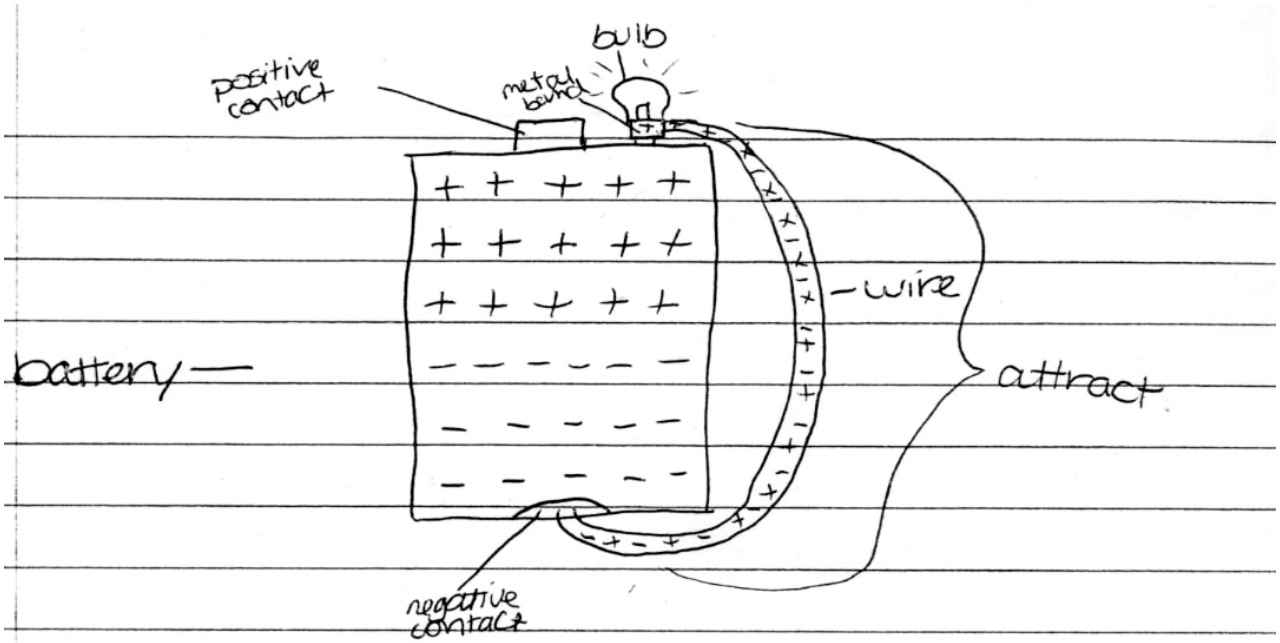
Double Linear Model

This student also uses a Double Linear Model with attraction aspects; however, s/he believes that the electrons and protons attract in the copper wire to make the bulb light.



I think that at the positive side of a battery there are protrons, and at the negative side of a batter there are electrons. The wire is neutral, but when it touches the negative contact - electrons travel thraigh the wire. At the same time, protrons travel thraigh the metal tip and base of the bulb and reaches the wire. In the wire, the protrons and electrons attract causing the bulb to light. (?)

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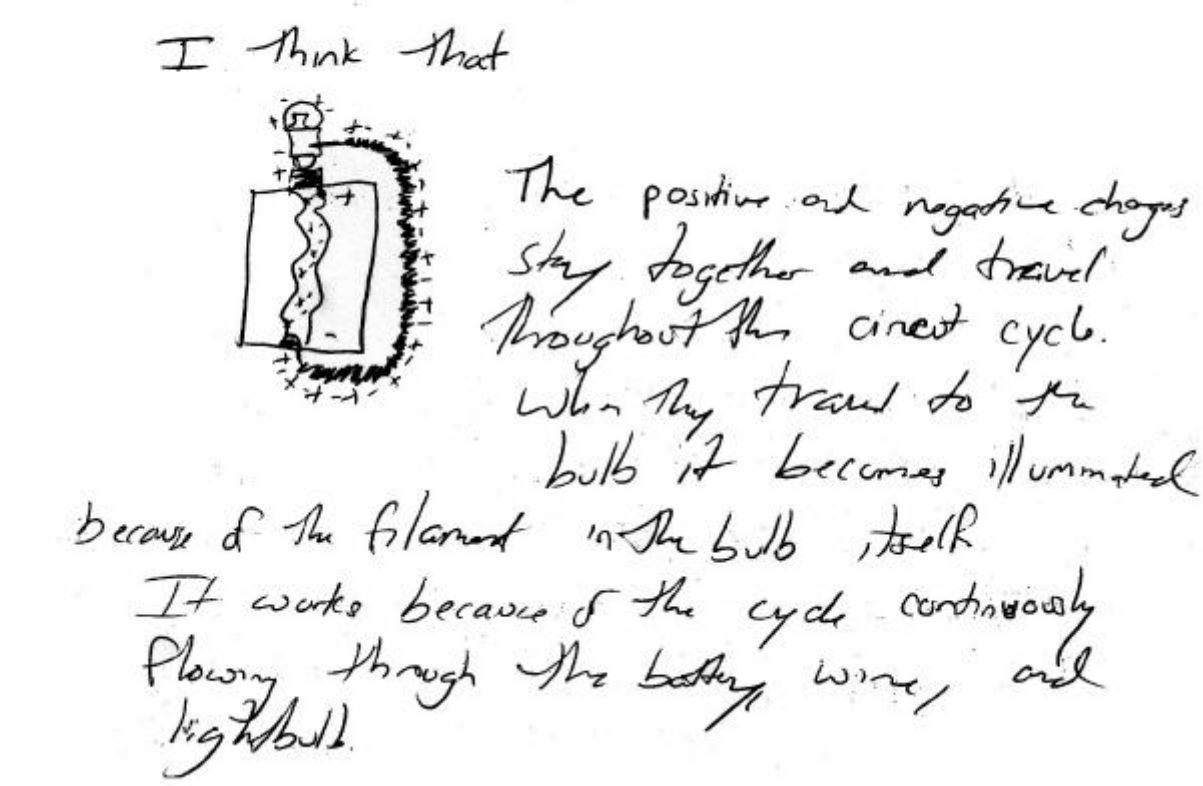
Cyclic Sequential Model

This student uses a Cyclic Sequential Model where the bulb lights as the electrons and protons reach the filament. The student believes that protons also travel. The student's language in the last sentence is consistent with a Cyclic Simultaneous Model and may suggest that the student is beginning to understand some aspects of that model.



Student Example
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Simple Linear Model

This student uses a Simple Linear Model. Even though s/he illustrates the circuit with a cyclic configuration, s/he explains it as a simple linear, consumer-source model where electricity travels from the battery to the bulb to make it light.

Most of the things that worked were very simalior just tiny differences. Like I took the batterie and stood it up and touched the medal point of the wire to one side and the light bulb on the other then I touched the side of the bulb and it lit, then I did it on the opposite side and that worked too. I think its traveling through the wire up to the bulb and lighting the bulb. We learned that electricity travels better through medal than plastic so when I tough the battery to the plastic part of the it doesn't work because it can't travel through and opposites atract and the pimple side is possitive and the dimple is neggitive these are opposites they atract, well not exactly atract they light the light bulb. When I found out one or two ways that don't work I got idea how I could do something different that would work. I think that there is electricity in the battery and that goes into the wire and travels through up to the the bulb to light it.