

Phet Simple Circuit Mini Lab



1. Go to <http://phet.colorado.edu>, click play with simulations, physics tab.
2. Find “**Circuit Construction, DC Only**”, and Run Now.
3. Under “tools” click Non-Contact Ammeter.

Make a “wires only” circuit.

4. Drag some wires onto the screen. Connect them so they make a continuous loop.
5. Notice the electrons aren’t moving. Why is this?
6. Drag the ammeter over a wire. How many amps are flowing through this circuit? _____

Make A Simple Circuit: Battery, 1 bulb, and wires.

- 7 Grab one battery and one lightbulb as shown.
8. Add some wires to your circuit to make the bulb light up (make sure 1 wire goes on the side of the bulb, and one wire goes on the bottom of the bulb.)
9. Note how fast the electrons are circulating. Drag the ammeter over a wire, how many amps are flowing now? _____

Make a Circuit with a Battery: 1 bulb and 1 resistor.

10. Pick a wire intersection, right click, and select **Split Junction**.
11. Drag a resistor into that spot.
12. Do the electrons flow faster or slower than in your simple circuit? How many amps are flowing? _____

Make a Short Circuit

13. Remove both your bulb and your resistor from the circuit by right clicking on them.
14. Connect the wires so that there is only a battery and wires.
15. Do the electrons flow faster or slower now? How many amps are flowing now? _____

Let’s Get Crazy With It

16. Put a lightbulb back into the circuit to fix the short circuit. Make sure the bulb is lit before going on.
17. Make another junction, then open the Grab Bag, and see what adding these to the circuit does to the amps.

Item Added to Circuit	Amps Measured	Conductor or Insulator?
Dollar Bill		
Paper Clip		
Penny		
Eraser		
Pencil Lead (it’s really graphite)		
Hand		
Dog (seriously, this is messed up) :\		

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Make a Circuit with a battery, 1 bulb and 1 resistor.

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11. Drag a resistor into that spot.
12. Do the electrons flow faster or slower than in your simple circuit? How many amps are flowing? _____

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13. Remove both your bulb and your resistor from the circuit by right clicking on them.
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