



pHet simulation -- Circuit Construction Kit – DC only

This is a very easy lab. Although we will learn about conductors and insulators, it is also about reading and following instructions and learning how to use this pHet simulation. Please check off the skills as you master them. Do them in order.

✓ Skill	Instructions
<u>I can launch the pHet simulation</u>	
<input type="checkbox"/> I can find the pHet website.	Google 'pHet'. Chose the first 'hit' that comes up. Choose the main page.
<input type="checkbox"/> I can find the simulations.	Choose 'play with sims' on the home page.
<input type="checkbox"/> I can find Electricity sims	Under 'simulations' on left, click on 'physics'. Then click on 'Electricity...'
<input type="checkbox"/> Launch the right sim	Choose 'Circuit Construction Kit (DC only)'. Choose 'run now'
<u>I can properly use the simulation</u>	
<input type="checkbox"/> Lengthen/shorten wires	Click and drag a wire onto the 'table'. Click on a circle at the end and lengthen and shorten the wire. This helps when trying to connect them!
<input type="checkbox"/> Connect wires	Drag on another wire and overlap the ends. They should connect
<input type="checkbox"/> Disconnect wires	Click on the circle between 2 wires. Right click and 'split junction'
<input type="checkbox"/> Remove wire	Right click on a wire and choose 'remove wire'.
<input type="checkbox"/> Build a circuit (rectangular in shape)	Join 8 wires together and shape them into a rectangle. No wierd shapes!
<input type="checkbox"/> Add a switch	Drag in a switch and add to your circuit.
<input type="checkbox"/> Rotate a switch	Click on switch end and move to rotate the switch and change orientation.
<input type="checkbox"/> Turn switch on & off	Click on the moveable part of switch and learn to close it (turn on) and close it (turn off)
<input type="checkbox"/> Add a light bulb	Add a bulb to the circuit.
<input type="checkbox"/> Add a battery	Add a battery to the circuit. You should still have a large rectangle.

- Hopefully by now you have a rectangular circuit which includes a battery, a switch and a lightbulb. Close the circuit and turn it on. You should see the blue balls move.
 Is the light bulb on or off when the blue balls move? _____
 What are these blue balls? _____
 What happens to the lightbulb when you open the switch (turn it off)? _____
- Now open the circuit and create a gap. Open the Grab Bag (in upper right corner and hypothesize which of these items are conductors that will allow electrons to keep flowing. Now test!

I think these will conduct	Actual conductors

Did any of your results surprise you? Explain.