

Visualizing Circuits



Name(s):



Scan the QR code with your smart device or follow [this link](#) to access the simulation.

Orientation

This is how the simulation looks when you open it. What do you notice?

Click and drag to add elements to the blue workspace.

Wire

Battery

Light Bulb

Resistor

Switch

Show Current

Electrons

Conventional

Labels

Values

Voltmeter

Ammeter

Circuit Construction Kit: DC

Intro

Lab

PhET

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Using the Simulation Tools

The image shows a software interface for building circuits. It includes a toolbar with icons for a Resistor, Switch, Battery, and Ground. A red arrow points to a dropdown arrow in the toolbar with the text "Click to see more options." Below the toolbar are three instructional panels:

- Match circles to make connections.**
Blue = connection
Red = no connection
- Click a circle to remove a connection.**
- Click an element to delete it.**

1. Use one battery, one light bulb, and wire to make a simple circuit. Draw a picture of your circuit.

A large, empty rectangular box with a thin black border, intended for the student to draw their circuit.

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3. Clear the screen. Switch to diagram view and turn off the “Show Current” feature.

The screenshot shows a software interface for circuit simulation. On the left, a toolbar contains a 'Switch' icon, a battery icon, and a light bulb icon. A red box with the text 'Click to change between object and diagram views.' has a red arrow pointing to the light bulb icon. On the right, a settings panel is visible with the following options: 'Show Current' (checked), 'Electrons' (selected with a blue radio button), 'Conventional' (unselected with a white radio button), 'Labels' (checked), and 'Values' (unchecked). A red box with the text 'Click to turn on or off' has a red arrow pointing to the 'Conventional' radio button.

4. Add two batteries, two light bulbs, and as much wire as you would like. Build a circuit that you think will light both light bulbs at the same time. Draw a picture of the circuit diagram.

5. Switch back to object view. Did your circuit work like you had expected it to? Explain what happened in your circuit.

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6. Switch back to diagram view. How many different ways can you find that light up two light bulbs? Explain.

Explore the Simulation

Can you:

- Create a short circuit?
- Blow a fuse?
- Change the battery voltage?
- Change the battery polarity?
- Build a circuit without using any wires?

Note: If you want to use the voltmeter or ammeter tools, you will need to click and drag them to place them on the screen or to put them away.

Talk with your partner about your observations.

