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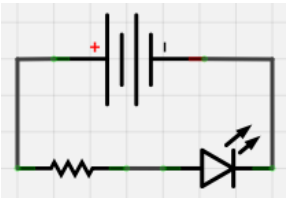
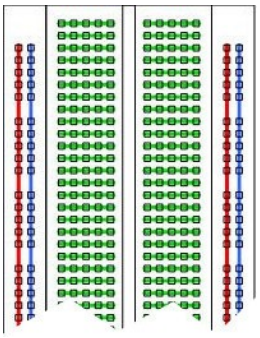
ELEC1-LED_Out
Requires: 5V power supply, breadboard, resistor, LED.
Button (optional)

Breadboard LED circuit

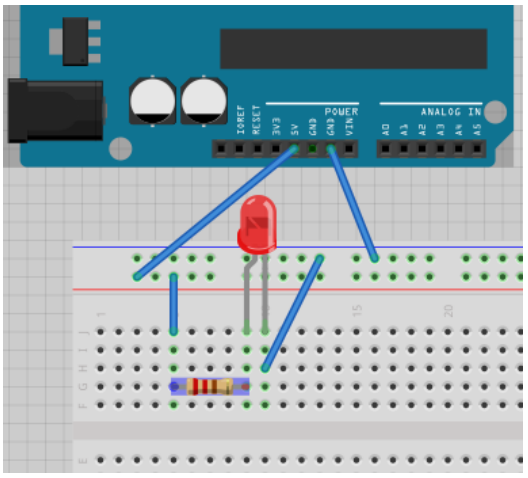


Discover
The most fundamental electronic task is to power on an LED.
Get confident with assembling this simple circuit on a breadboard.

Learn


The circuit is a sequence as follows: from +5V power source, through a resistor, then through the + side of an LED (**longer leg**), then back to the – or GND of the power supply.

A breadboard has many holes that are connected in two directions. The holes on the + column are all connected, so wires can be used between your power supply, and part of your circuit. Similarly holes on the – column are all connected and used for ground. Think of these as long wires with many places to connect to.
Perpendicular to this, short rows are connected and allow your components to connect to each-other with wires. Think of these as many short wires with 5 holes to connect to.

Apply


Follow the circuit from 5V, through the wires and components, then back to ground.
Try building the circuit using the power (5V and GND pins) from the Arduino. The LED should come on.
Verify the circuit by following the connections through the wires, and ensure the **long leg** (+) of the LED is on the +5V side of the circuit.

Button (optional)
Open the circuit between the +5V and the resistor; the LED will turn off. Think about where you can put a button in line with the circuit.
The button bridges the pin on one side with the other when pressed.
Check your circuit before reconnecting the +5V.

Teach
Attempt to verify and follow the circuit of another. If they connected a button, what orientation was it?

Discover
You can now build another circuit using a light input (ELEC1-LDR_In), or use the Arduino to turn on/off the LED (ARD2-LED_Out).