

Discover Electronics Kit - 2.0

PRODUCT ID: 487

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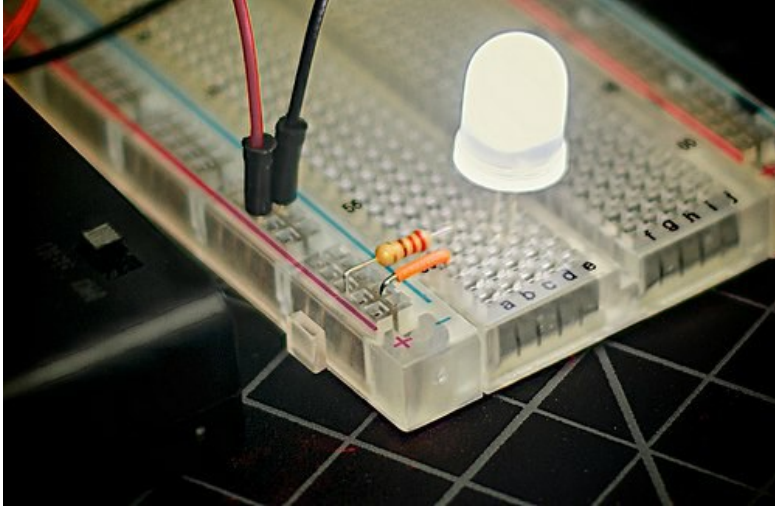
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[DESCRIPTION](#)[TECHNICAL DETAILS](#)

DESCRIPTION

Discover Electronics Kit contains everything you need to learn the basics of electronics and make your own projects. It contains the most common electronics components as well as a prototyping breadboard for you to get started right away. Easy full color diagrams teach you how to bring your own ideas to life. The Discover electronics kit uses standard components. All of these parts can be used by the beginner or the advanced user. As you grow and learn all of the parts in the kit are still useful in more advanced projects and can be expanded on by using additional parts.

Requires 4 AA batteries. NOT INCLUDED



The kit comes with clear, solderless breadboard and a simple battery pack. Clearly labeled parts and simple directions means you can have your first circuit up and running in minutes.

Create a circuit

A power source provides a difference in electrical charge which causes electrons to travel through the circuit. A circuit must have a place for the electrons to come from (negative) and a place for the electrons to move to (positive). The current is said to flow from positive to negative, attracting the electrons. Positive and negative are sometimes referred to as power and ground.

This diagram shows a light emitting diode (LED) driver circuit. A battery has a difference in electrical charge. The LED converts some of the electrical energy into light. There is also a resistor which slows the flow of electricity, protecting the LED from burning out.

We can learn a lot from this basic circuit. Build the circuit on your breadboard. Begin by analyzing an LED. LEDs are polarized meaning that current can flow through them in only one direction. Look at the wires coming from your LED. We call these wires leads (pronounced leeds). The longer lead must be connected to positive and is called the anode. Connect the shorter lead to the negative line on your breadboard and the longer lead to one of the numbered columns.

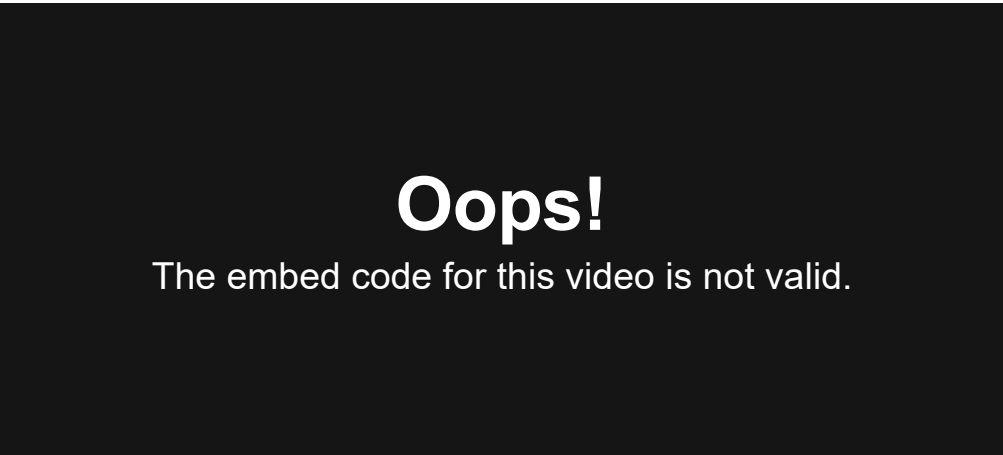
Next we need a resistor. Resistors limit the amount of current that can flow through the circuit. Colored stripes on the resistor tell us how much resistance it has. Find a resistor that has red, red, green and then a metallic stripe.

The resistor is not polarized so it allows current to flow in either direction. Insert one lead of the resistor in the same column as the LED and the other into the positive line. This creates a complete circuit through which the current will flow. Try to envision the current flowing through the circuit. Trace the current's motion from the positive lead of the power supply, through the breadboard, into the resistor, then the LED, through the breadboard again and finally into the negative lead of the battery pack.

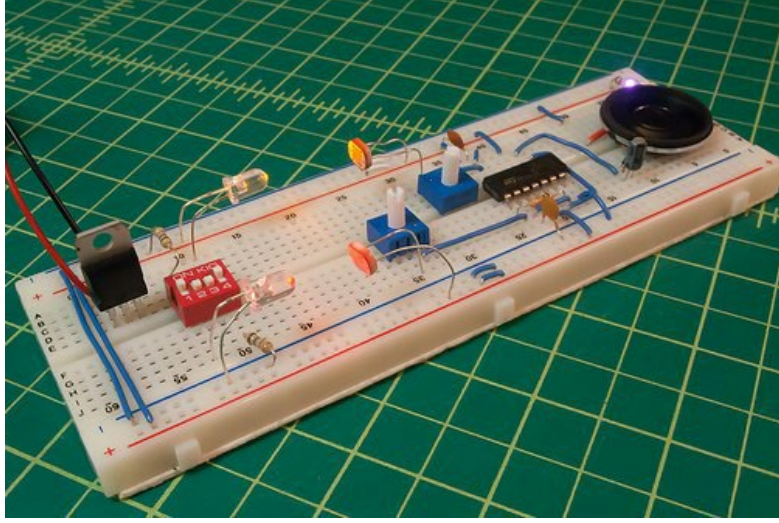
Flip the switch on your battery pack and electricity flows through the circuit. Electrons lose energy as they move through the LED which is released as light.

HERE IS A SCHEMATIC VERSION OF THE SAME CIRCUIT. CAN YOU TELL WHICH PART IS WHICH?

The manual explains what's going on inside. Illustrations aid in understanding.



Not just an electronics kit; online resources turn the kit into a video course pack.



You can double check your work against the photographs.

Sparkle Labs is made up of designers and teachers. The Discover Electronics Kit is designed to make learning electronics easy and fun. It is a curated selection of the basic parts to get started and learning right away. They are standard components and are still useful when you are ready to build your own projects. More than just a kit, it is an online, video course which you can access here: [Discover Electronics Course](#).

More [photos here](#).

TECHNICAL DETAILS

Note: As of Friday, November 27th 2015, we are now carrying the upgraded version of this kit. Includes higher quality parts and battery case. Also Includes more projects in an improved 36 page instruction manual with user feedback from several universities.

Includes:

- Transparent Solderless Breadboard
- AA Battery Holder
- 2 Alligator clips
- 2 NPN Transistors
- 2 Diodes
- 2 5V Voltage Regulators
- 2 Photoresistors
- 10 LEDs (Various Cool Colors)
- Speaker
- DIP Switch
- 1k, 10k, and 100k Potentiometer
- 556 Timer IC
- 2 Buttons
- Jumper Wires
- Multiple Value Resistors
- Multiple Value Ceramic and Electrolytic Capacitors
- 36 page Instruction Manual

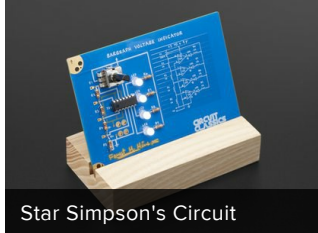
This kit is RoHS compliant - Parts **do not** contain lead, cadmium or other harmful elements.



MAY WE ALSO SUGGEST...



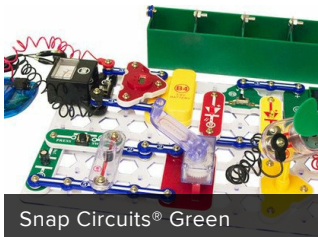
Snap Circuits® Jr. 100



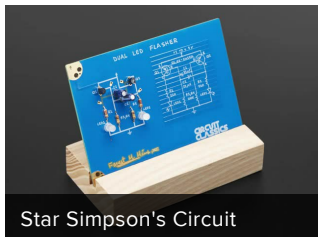
Star Simpson's Circuit



Thames & Kosmos Wind



Snap Circuits® Green



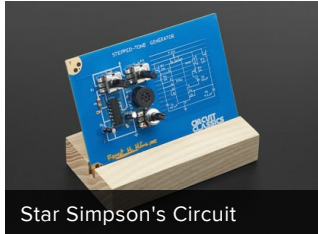
Star Simpson's Circuit



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"Do not train a child to learn by force or harshness; but direct them to it by what amuses their minds, so that you may be better able to discover with accuracy the peculiar bent of the genius of each" - Plato

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