

Experiment 7: 7 Segment Display

Goal

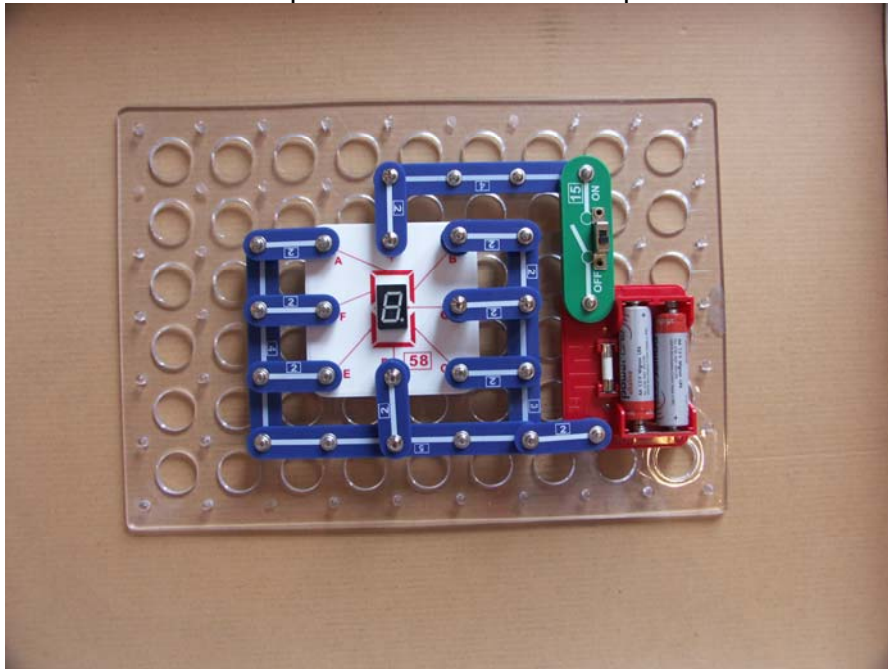
In this experiment you will build a circuit that will allow you to display numbers 0 to 9 using Light Emitting Diodes, LEDs. Basically, LEDs are just tiny light bulbs that fit easily into an electrical circuit.

Components

1. 7 Segment LED display.
2. Battery pack, switch, and connectors.

Build it!

Place the components as shown in the picture below



In Action

When you close the slide switch, electric current flows from the battery, through the circuit. When all LEDs on the display are connected to the power as shown in the diagram above, the number 8 is displayed.

Using different combinations of LED connections, all numbers from 0 to 9 can be displayed. Can you configure the circuit to display each of these numbers?



Real World

Light emitting diodes, commonly called LEDs, are real unsung heroes in the electronics world. They do dozens of different jobs and are found in all kinds of devices. Among other things, they form the numbers on calculators, transmit information from remote controls, light up watches and tell you when your appliances are turned on. Collected together, they can form images on a jumbo television screen or illuminate a traffic light.

Unlike ordinary incandescent bulbs, they don't have a filament that will burn out, and they don't get especially hot. They also use much less energy which means they are more environmentally friendly. Do you know, if even half of all traditional Christmas bulbs were replaced with LED bulbs, it could yield a savings of billions of dollars a year in energy bills?

WARNING: Do not attempt to power this circuit or any of the Electronic BrainBox circuits using the mains! The mains voltage is much more powerful than the battery voltage, and would be deadly.