Salt Circuit

You'll learn about how electricity moves from a power source and through a conductive material to turn on a light. You can also use creativity to make a cool piece of art.

Ages 5-9

Materials in Kit:

- 5 LED lights
- Electrical Tape
- 3 Jars
- Glue
- Battery box
- 2 AA batteries
- 2 Paperclips
- Food coloring

You'll need to supply:

- Construction Paper / Cardstock
- Salt (up to 1 cup)
- Scissors/ Wire Cutters

SAFETY

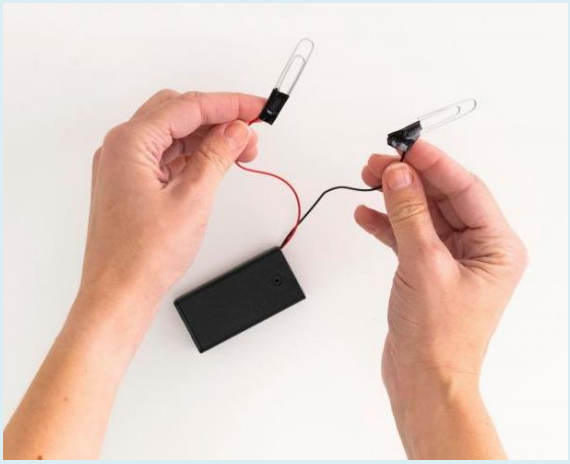
The LED light "legs" are a bit sharp at the end. Take care when working with them.

This project has very low current, but this is a good time to discuss the dangers of playing with electricity with young children. It is recommended to supervise young children when batteries are being used.

STEP 1

With the battery box switched to the off position, insert the batteries in the battery box.

Attach the wires on the battery box to the paper clips with a small piece of electrical tape, making sure that the wire from the battery box is touching the paper clip before you tape. Do not connect the wire on the "clip" part of the paper clip. (You may need to strip the wire cover back a bit and wrap the wire around the paper clip for a secure connection.)



STEP 2

Put 4-5 spoonfuls of salt in each jar.

Add 2-3 drops of one color of food coloring in each jar.

Close the lid and shake or use one of your spoons to mix in the food coloring.

STEP 3

Cut your paper in half.

Make a line on each piece of paper with the glue, starting at the bottom. The line does not have to be straight - you can be creative here. However, it is important that the glue line is somewhat thick, touches the bottom of each piece of paper where the battery box wires can reach both lines, and touches a side that can be put next to the other piece of paper.

For your first try, you might want to keep the line on the shorter side.

STEP 4

Use your spoons to put your colored salt over the glue line in whatever order you like. Shake off the excess in a bowl or in the trash.

Attach the paper clips/battery box to the bottom of the paper where the glue line starts.

Insert the LED light to connect the other ends of the glue/salt lines. IMPORTANT NOTE: The long "leg" on the LED light needs to be on the same side as the red wire of the battery box.

Turn the switch on the battery box to ON. Your light should be on.

STEP 5

Let your CREATIVITY SHINE!

Try different line and color designs.
Try adding more than one light.
Find other materials that you can use to conduct electricity and turn on the LED lights.

HOW DOES IT WORK?

Electricity is the flow of energy that can be used to power things (like a light). The energy flows from the power source to the item that needs power. Electricity can travel through many materials. In this activity, we learn that electricity can travel through salt.

ANSWER THIS…

What was the power source we used in this activity?

What are other materials that conduct electricity?

What are some things at your house that are powered by electricity?

Why did you have to color the salt before putting it on the glue?

An insulating material will not conduct electricity. What are some examples of insulating material?

TROUBLESHOOTING

- Make sure the wire from the battery box is making constant contact with the paper clip.
- Check for the LED function by connecting the LED light directly to the paper clips. (Making sure the long leg of the LED light is on the paper clip connected to the red wire.)
- Try adding salt.
- Long, complex lines look very cool, but may make it more difficult for the LED to light.

Adapted from https://www.elmers.com/blog/rainbow-salt-circuit