Science, Technology, Engineering, and Mathematics

Paper **Circuits**

What You Need

- LED light
- 3V coin cell battery
- Copper Tape (conductive foil)
- Paper, Scissors
- Clear Tape
- Markers (or any coloring tool)

What To Do

1. Put the copper tape on a piece of paper in the Basic Layout provided on back. **Note:** to make the turns, tape until you reach the corner and then fold the tape to turn the corner, do not cut the tape.

2. Attach the LED by spreading the legs so that they are sticking out to each side. Place the LED on top of the copper tape, so the legs touch the tape on either side of the gap. The short leg must touch the (-) side of the tape and the long leg must touch the (+) side of the tape. Secure the legs in place with clear tape.

3. Place the battery negative (-) side down, where the (-) sign is on the Basic Layout, touching the copper tape. Fold over the corner of the paper on that the tape end (where the (+) sign is on the Basic Layout) touches the battery. Your light should turn on. **Note:** If the light does not turn on, check that the copper tape is running to both sides of the battery and the LED with no breaks, that the two tape lines don't touch each other, and that the LED legs are on the correct side.

What To Do cont.

4. Complete the circuit by using a binder clip or other tool to hold the circuit in place.

5. Make a drawing that you would like to light up. Poke a hole in the drawing where you would like the light and push the top of the LED through the hole.

The Science

Through this activity, the student has built a circuit on paper using conductive tape, an LED, and a coin cell battery. The student has also designed a light-up project and learned about basic electrical circuits.

Basic Layout for Copper Tape

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Gap for LED

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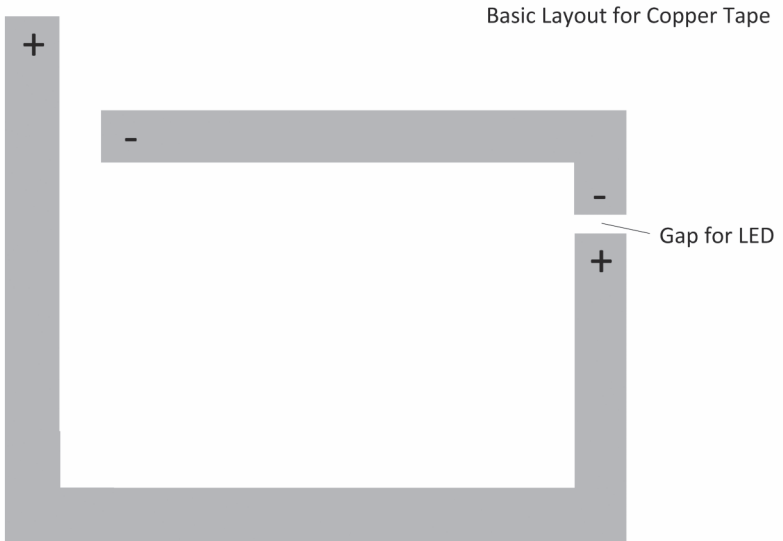
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