CIRCUIT CARD

Creating a light-up paper circuit card is the perfect way to explore engineering projects with kids.

Materials

Cardstock
Art supplies
1/4 inch width Copper tape (preferably with conductive adhesive)
LEDs (small, 3mm or 5mm)
Coin cell batteries (CR2032)
Clear tape or scotch tape
Scissors
Hole punch

INSTRUCTIONS:

STEP 1: Design Your Card: Draw or print a design on your cardstock or use our printable template if desired. Ideas include light bulbs, hearts, stars, or anything that could incorporate a light.

STEP 2: Mark the LED Placement: Use a hole punch or scissors to make a small hole where the LED light shines through.

STEP 3: Prepare the LED: Identify the positive, longer lead and negative, shorter lead of the LED. Insert the LED through the hole, ensuring the leads are accessible on the back.

STEP 4: Lay Out the Circuit: Use pieces of copper tape to create a path for electricity. Smooth lines and continuous pieces of tape ensure strong connections. One path will connect to the positive lead of the LED and another to the negative lead. These paths should lead to where the battery will be placed.

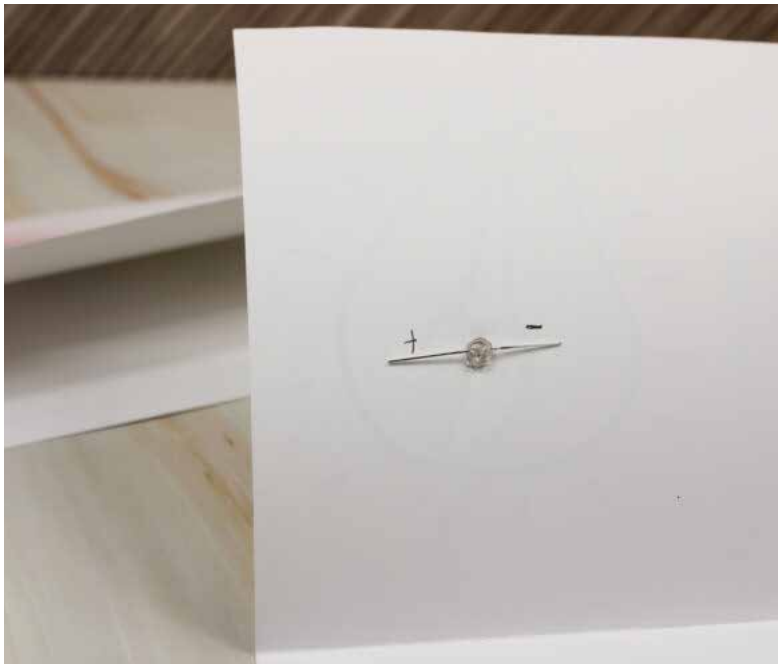
STEP 5: Attach the Battery: Place the coin cell battery with the positive side of the battery facing up. Secure it with tape or a binder clip, but make sure the copper tape contacts the battery.

STEP 6: Complete the Circuit: Fold or press the card so the copper tape connects to both sides of the battery. The LED should light up when the circuit is complete!

WHAT ARE PAPER CIRCUITS?

Paper circuits combine the basics of electronics with creative hands-on crafting for a fantastic STEAM project. This project teaches kids about simple circuits, conductive materials like copper tape, and the flow of electricity, while adding a touch of art. Paper circuits are a low-voltage, beginner-friendly engineering project, making them an excellent introduction to electronics and STEM education.


YOU LIGHT UP
my LIFE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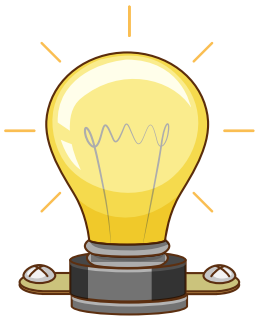
YOU LIGH
my LIFE


YOU LIGHT UP
my HEART

Circuit Card Observations



Use this worksheet to process and evaluate your work.

Did your circuit card work?

Were you able to position the hole accurately for the LED? Any challenges?

How can you tell the positive and negative leads of the LED apart?

Did the copper tape paths successfully connect the LED leads to the battery?

How bright is the LED? Does the brightness change if you adjust the pressure on the copper tape?
