

Christmas Circuit Card

In this project , we're going to make light-up Christmas cards using copper tape, LEDs and a coin cell battery.

Materials Needed

- LED – 5mm (Any Color)
- Conductive Copper Tape
- CR2032 Coin Cell Batteries
- Project template

These instructions would apply to both the Santa and the snowman templates.

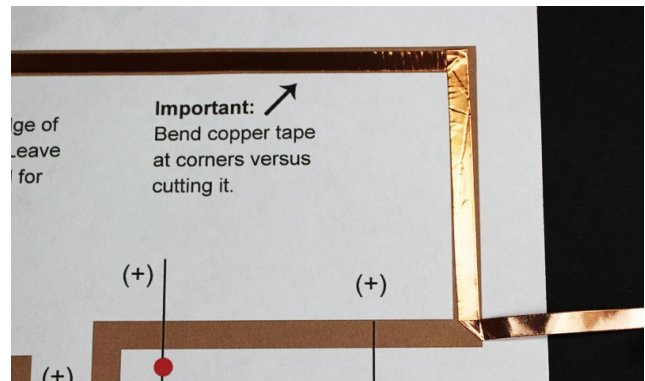
Step 1 – Get your materials ready

Step 2 – Fold the Template

Fold your project template in half.

Step 3 – Apply Copper Tape

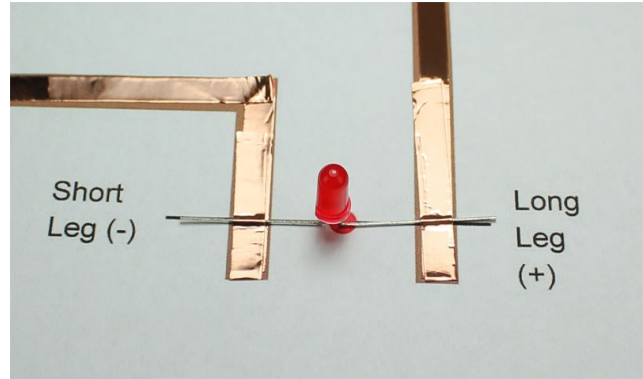
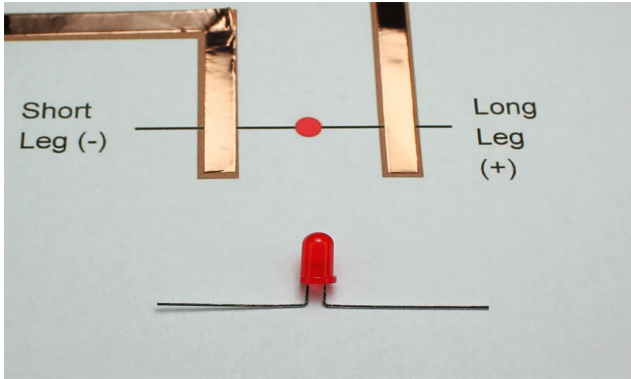
Now it's time to make the circuit that will light your Santa. You will need to apply the copper tape to the brown lines that are found on the template. Try to use a single piece of copper tape versus cutting it into smaller sections. The conductivity is better when there are no breaks. Fold the copper tape at the corners by bending it at a 45' angle in the opposite direction of where you are going. Then fold it back at a 180' angle and continue applying to the trace line.



Step 4 - LED

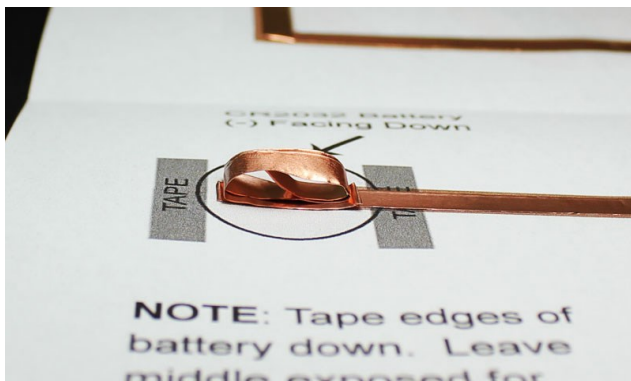
Now its time to mount the LED to the circuit. LEDs come with a long leg (+) which is positive and a short leg (-) which is negative. Bend both legs at a 90' angle and place it on top of the copper tape. Remember to place the long leg on the positive side.

Cut two short pieces of copper tape and use them to affix the legs to the copper tape circuits. Rub the copper tape really well to ensure the LED legs are making good contact with the copper below it.

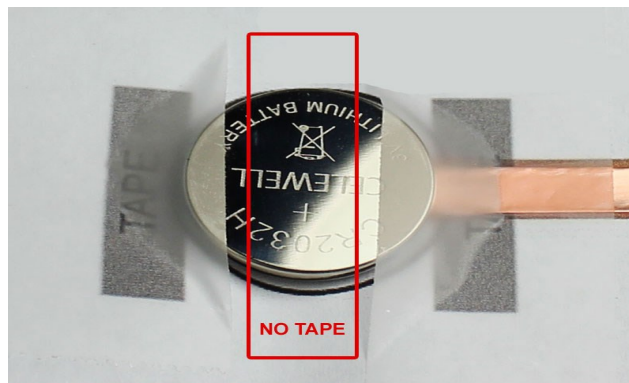


Step 5—Coin Cell Battery

Cut a 3 inch piece of copper tape and roll it up with the adhesive on the outside. Stick the roll of copper tape to the copper tape circuit that's inside the battery circle. Place your CR2032 battery on top of the sticky copper tape. Make sure that the negative (-) side of the battery is facing down. Using transparent tape, secure the edges of the battery to the template. This will ensure the battery doesn't fall off .



NOTE: Make sure to leave the middle exposed so the circuit can contact it .



Step 6 – Complete

Fold your template in half and press it to light it up.



**** Your LED circuit project is done. You can leave it like that or use it as a decoration for a special homemade Christmas card.*

Troubleshooting

If your template doesn't light up try these simple fixes.

- Make sure the LED legs are making good contact with the copper tape below them.
- Verify that the battery (-) is facing down and (+) is facing up.
- Make sure there is NO transparent tape down the middle of the battery.
- Verify the LED legs are on the correct side. Long leg is positive (+)

Worst case scenario – you may have a bad battery or LED. Replace one at a time.

Source: <https://www.makerspaces.com/holiday-paper-circuits-projects-christmas/>