

Christmas Tree Circuit Ornament



Estimated build time: 30-45 minutes

Included in this kit:

- ◇ Craft foam
- ◇ Tree tracing template
- ◇ Battery pack
- ◇ Copper tape
- ◇ Aluminum Tape
- ◇ Pipe cleaners
- ◇ Ornament hook
- ◇ Coin cell batteries (2)
- ◇ Decorations for your tree
- ◇ **Tape, glue, and markers are not included**

A few things of note before beginning your circuit tree ornament!

The parallel circuit is made with **2 copper tape strips**. There are 3 smaller copper tape strips branching from the parallel strips over to the LEDs so the LED legs can connect. The LED legs are taped down on top of the copper tape with aluminum tape. We use aluminum tape because it is a little heavier, stickier and sturdier than the copper tape so it works better for keeping the legs taped down.

You may have noticed the **black (+) on the left and the black (-) on the right**. The long legs on the LED lights need to be placed on the (+) side of the circuit and the short legs of the LED need to be placed on the (-) side of the circuit. **The red wire from the battery pack needs to be placed on the (+) side and the black wire needs to be placed on the (-) side.** Make sure and have the silver part of the wiring touching the copper tape.



Step-By-Step Guide

1. Punch holes in your tree where you want your LEDs to go. Then with a sharpie or pen, add your (+) sign on the left side of the tree, and the (-) sign on the right side of the tree. You can also add the coin cell batteries to your battery pack in preparation.
2. Create the parallel circuit with the 2 long strips of copper tape (copper strips may need to be cut to adjust for the size of the foam tree).
3. Add the 3 short copper pieces from the parallel circuit extending to the holes where the LEDs will be.
4. Attach the battery pack to the tree with tape.
5. Tape down the red wire to the (+) side of the copper tape circuit with aluminum tape.
6. Tape down the black wire to the (-) side of the copper tape circuit with aluminum tape.
7. Place one of the LED heads through the top punched hole. Tape down the long leg to the extended copper tape piece on the (+) side of the circuit with aluminum tape and tape down the short leg to the (-) side with aluminum tape. Coloring the long legs of the LEDs with a black sharpie may make it easier to tell which is which when installing them.
8. Test to see if it works before adding the remaining LEDs. The battery pack has a small switch on the bottom. Turn it on. If the LED turns on, your circuit is working.
9. Now attach the other 2 LEDs through the other 2 holes like you did in step 7, taping the legs with the aluminum tape.
10. If everything is attached correctly all 3 LEDs should be on. Now you can decorate the tree any way you would like, and add your ornament hook to display your creation!

