

PAPER CIRCUIT

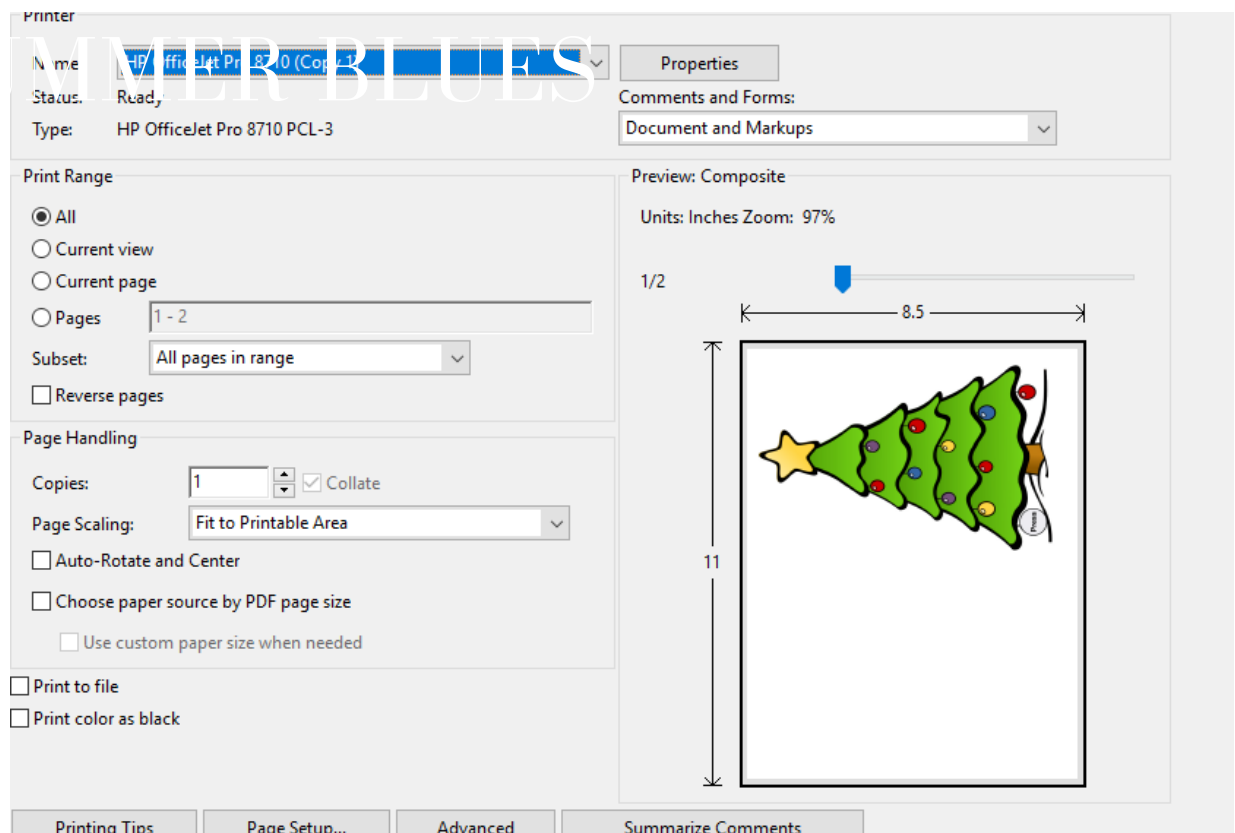
We are going to learn how to use copper tape and led's and coin battery to make light-up greeting card.

Material Needed

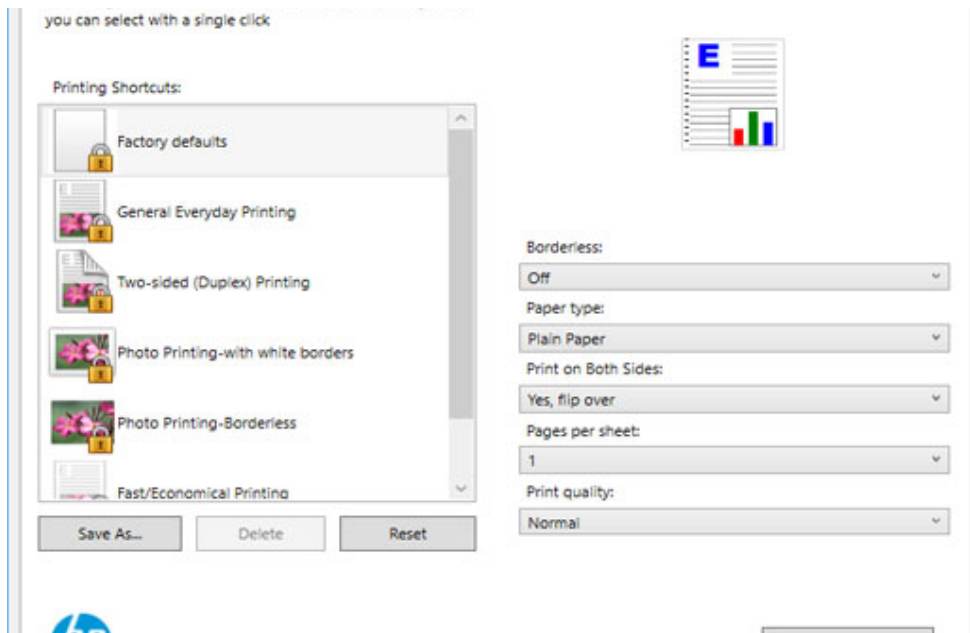
- LED
- Conductive Copper Tape
- CR2032 Coin Cell Battery

Print Templates

- Down the project templates from our Google classroom and print out the templates as per the instructions.
- Each project is 2 pages and it is recommended to print them on one sheet of paper (front and back).
- For two-sided printing , check your printer property of settings.



- Check an option to print on both sides of the paper, select "printing on both sides" and then choose "flip over".
- select B&W option to save printer ink.
- If your printer doesn't allow for two-sided printing, you need to print the templates out on two separate sheets of paper.



Apply Copper Tape

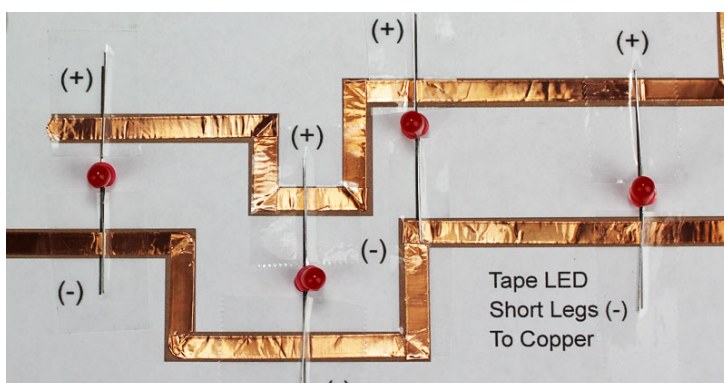
- You will need to apply the copper tape to the lines in the circuit page.
- Try to use a single piece of copper tape rather than cutting it into smaller sections. Conductivity is better when there are no breaks in copper tape.

Cut Holes In Tree

- Flip over the template and cut an "X" in the 3 red ornaments on the tree. Also, cut and "X" at the bottom of the yellow start. These cuts will allow the LEDs to fit through the ornaments so that are visible.

Add LEDS

- The long leg of the LED is the positive (+) side and the short leg is the negative (-) side.
- Bending the long leg (+) at a 90 degree angle and then do the same with the short leg.
- Make sure you remember which leg is which because once they are bent they look the same.
- Tape the long leg to the side marked with a (+) and tape it down. Do the same with the short leg as well.
- Make sure there is a solid connection with the copper tape.
- Attach the (4) LEDs to the spots marked on the template.



Add Battery

- Place the negative side (-) of the coin battery facing down on the gray circle on top of the copper tape.
- Tape the edges of the battery down to the paper, ensure there is no tape down the middle of the battery.
- The middle of the battery is where the copper tape needs to touch when the paper is folded.

