

Make a Card that Lights Up

1. **Decide what you want to draw.** (Look at the samples for ideas, but you can make anything!!)
2. **Make your drawing.** Be sure it's lined up so the light will be where it is on the template.
3. **Use copper tape to cover the top orange line**—start on the front and wrap it around to the back, be careful not to break or cut that piece of tape. Then **use copper tape to cover the bottom orange line** front to back. The two lines of tape must NOT touch each other!
4. **Set up switch:** Use the hole punch to make a hole where your switch will go. Put the fastener in from the back of the card and spread its legs open flat on the front. Turn the fastener so both legs are touching copper tape. Label that as the "on" position. Then turn it so both legs are NOT touching copper tape. Label that as "off" and leave the switch in the off position for now.
5. **Add the light:** Use a pen to poke a small hole for the light. Look at the light—see how one leg is a little longer than the other? That's the leg that needs to touch the positive + side of the battery. Insert the light from front. Spread the short leg open flat on the back of the card so it lays on the top line of copper tape. Tape that down.
6. **Add the battery.** Put the battery with positive (smooth side) up and the negative (bumpy side) down and laying on the copper tape. Then, bend the long leg of the light down over the battery so it's flat *on top* of the battery. Tape the leg on top of the battery. Then, add tape on top of that to tape the leg/battery to the card securely.
7. **Test It.** Turn the switch to the on position. Does the bulb light up? Hurray! If it doesn't light up, try pressing the legs of the switch down flat on the copper tape. Does it light up? Hurray! If it doesn't light up, try checking that all the connections are solid, and that you have a circuit where you can trace the positive line and the negative line and they don't overlap each other.

