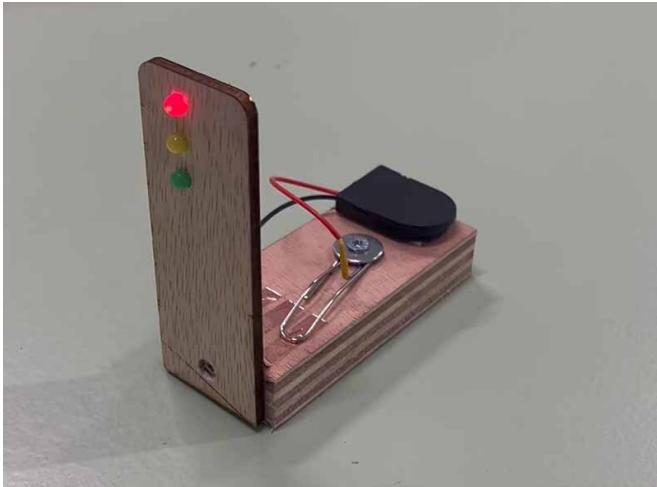


Traffic light



duration: 15 - 30 minutes
age: from 7 years

Make a working mini traffic light

undefined

tools

- ☐ Laser cutter
- ☐ hobby knife
- ☐ drill / drill bit (3mm)
- ☐ screwdriver
- ☐ pencil
- ☐ ruler
- ☐ lighter

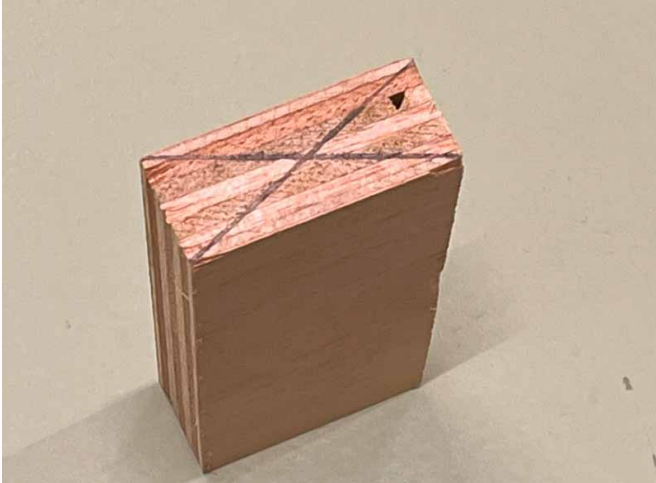
materials

- ☐ thin plywood
- ☐ Thick (18,mm) plywood
- ☐ 5mm LEDs (red, orange, green)
- ☐ narrow copper tape
- ☐ CR2032 Battery holder
- ☐ CR2032 Battery
- ☐ M5 ring
- ☐ short screws
- ☐ heatshrink tube



1 Cut the thin wood

- Use the lasercutter to cut out the template.



2 Mark the hole locations

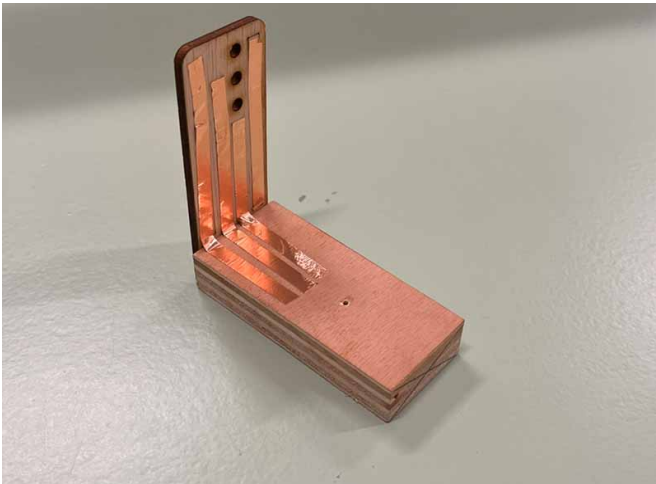
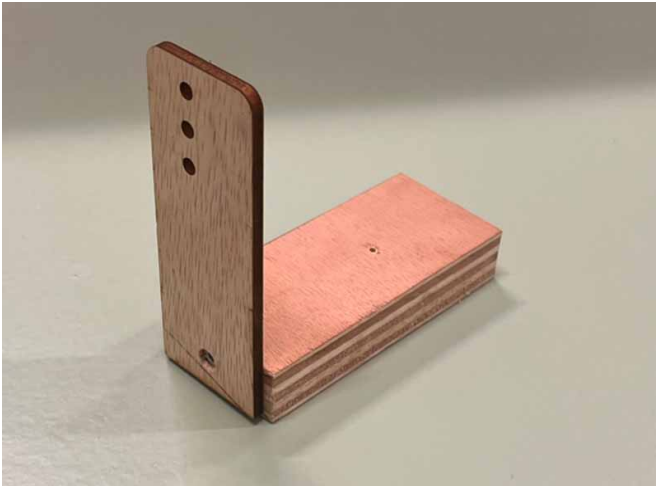
- Use the ruler to draw a cross from corner to corner on the small side of the base.
- Draw another cross in the center of the block, FILL IN SIZE cm from the back.





3 Cut holes

- When using the drill, always make sure strings from your hoodie are tucked away, and long hair is put in a pony tail.
-
- Drill a hole on the 2 locations you marked earlier.
 - Use a screw to attach the laser cut piece to the base. Make sure the engraved side is pointing to the back.



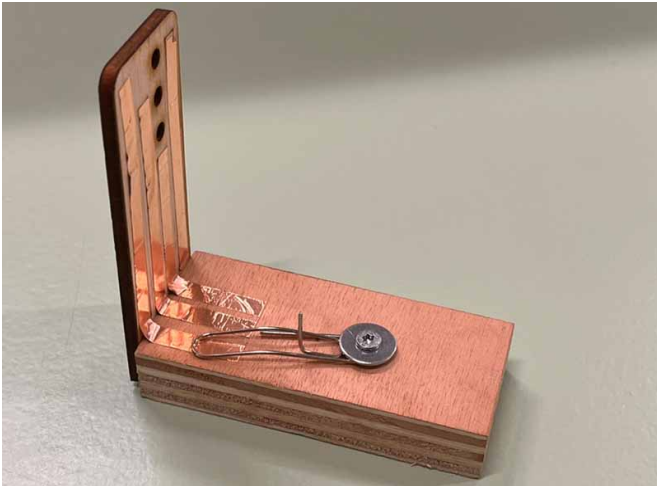
4 Tape

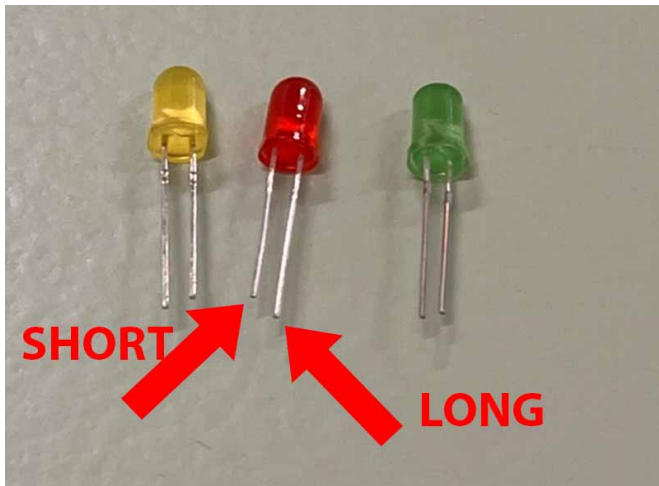
- Cut 4 pieces of copper tape, about 4 inches long.
- Stick the tape as shown in the photo.
- Once all the pieces of tape are on the wood, use a hobby knife to cut the excess tape off.



5 Paperclip

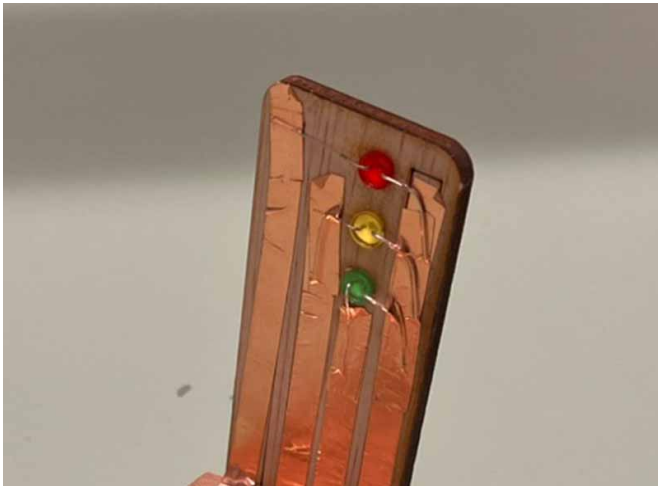
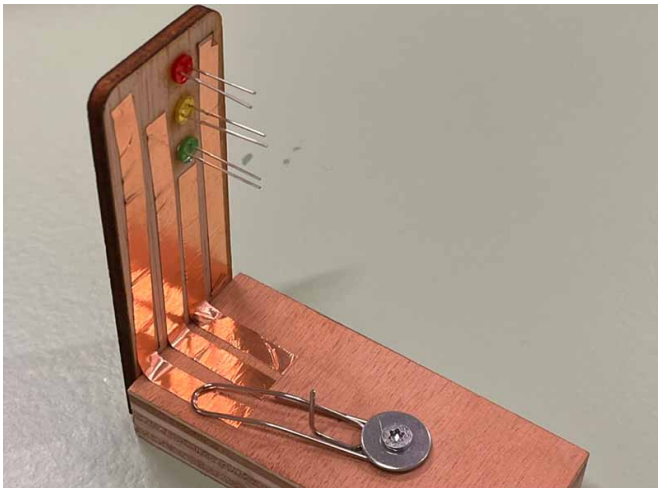
- Bend the paperclip as shown in the picture
- Use a screw and a ring to screw the paperclip onto the wood. It should still be able to move from side to side and touch the tapes.





6 LED's

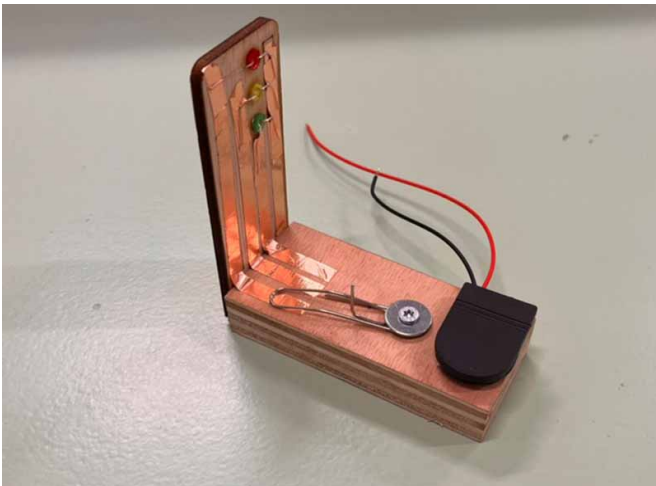
- Each LED has a long and a short leg. Place the LED's in the holes with the long leg to the left.
- Bend the legs so that we can tape them down on top of the copper tape.
- Fix the legs in place with some more tape.





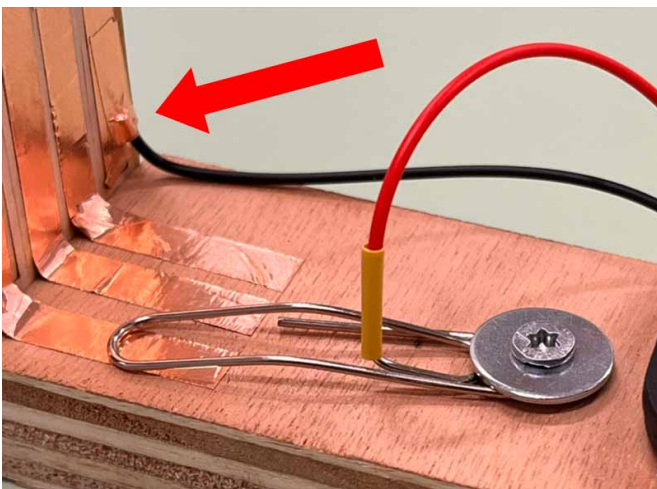
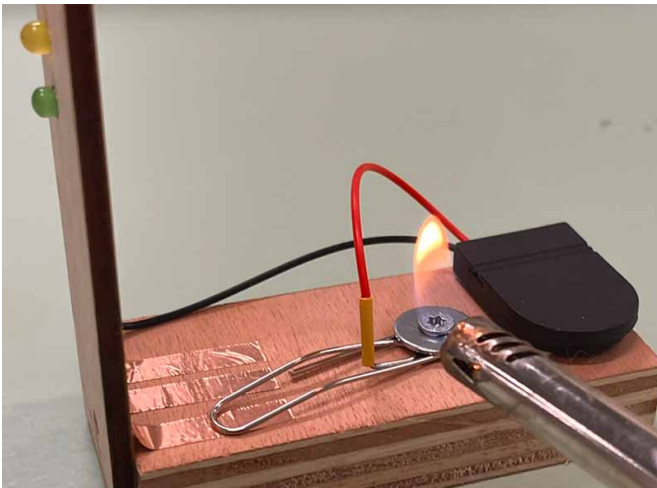
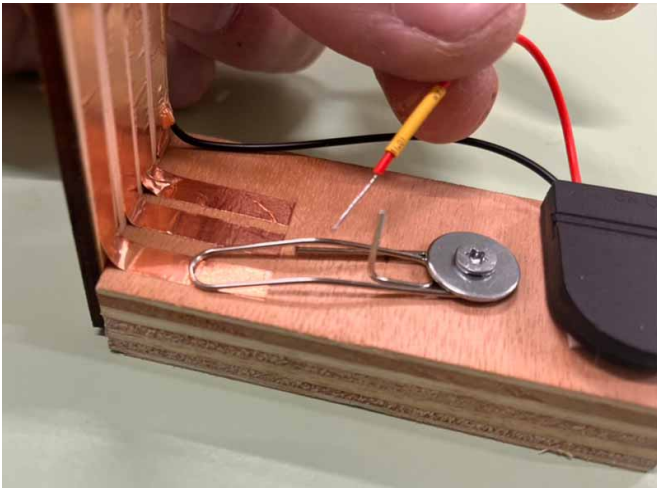
7 Battery

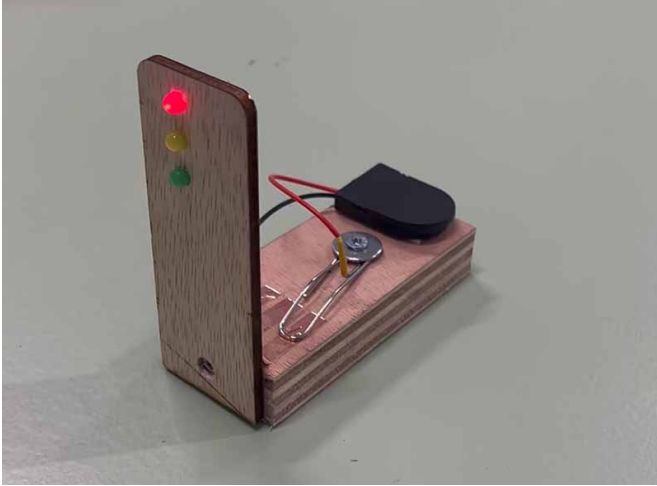
- Attach the battery holder to the base using a bit of double sided tape.



8 Battery

- Trim, strip and tape the black wire to the right piece of copper tape (when viewed from the back)
- Trim, strip and attach the red wire to the paperclip using some heat shrink tube.





9 Done!

- Place the battery. Make sure you have the right side up.
- You're all done! Move the paperclip to turn on the different lights.