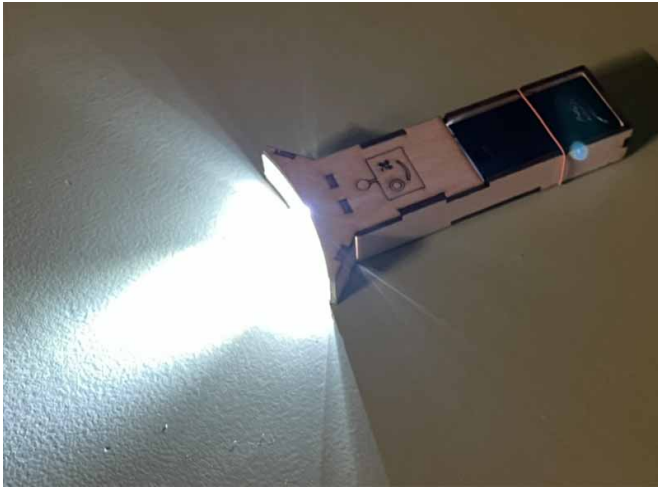


Flash light



duration: 20 - 45 minutes
age: from 7 years

Make a working flashlight.

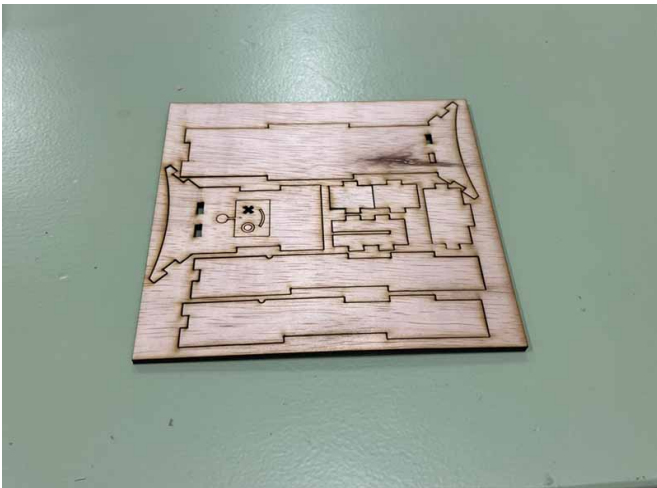
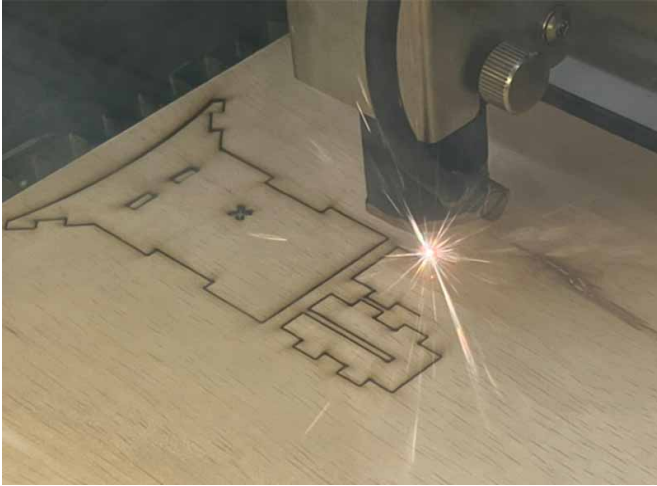
undefined

tools

- ☐ lasercutter
- ☐ soldering iron
- ☐ wire cutters

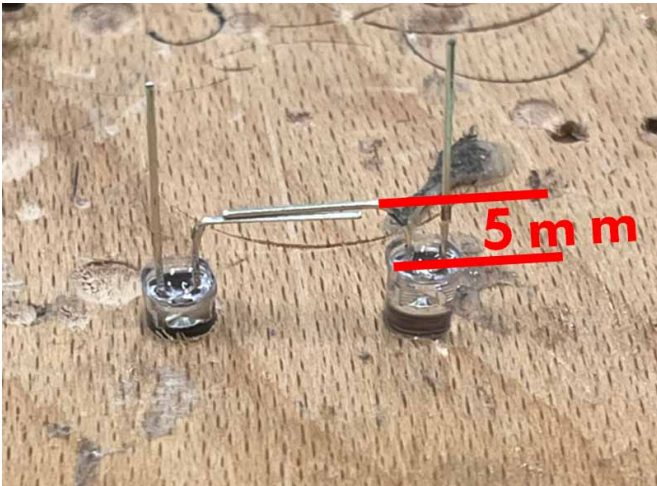
materials

- ☐ wood (3mm thick)
 - ☐ 2x 5mm white LEDs
 - ☐ 2x 22 Ohm resistor
 - ☐ rubberband
 - ☐ woodglue
 - ☐ battery holder for 2 AA batteries
 - ☐ 2 xAA battery
-



1 Cut the wood

- Use the provided template to cut the wooden parts using the lasercutter.



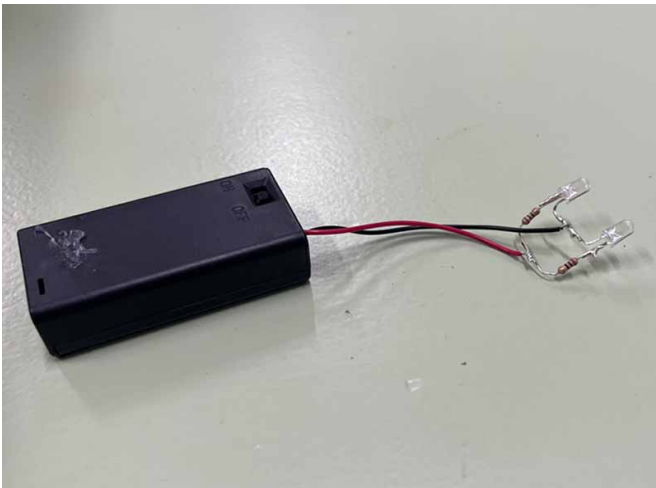
2 Solder the short legs

- Use a piece of foam or some wood with holes in it to hold the LEDs while soldering.
- Place the 2 LEDs with the short legs close to each other.
- Bend the short legs toward each other. The bend should be about 5mm away from the LED body.
- Solder the short legs together.



3 Solder the long legs

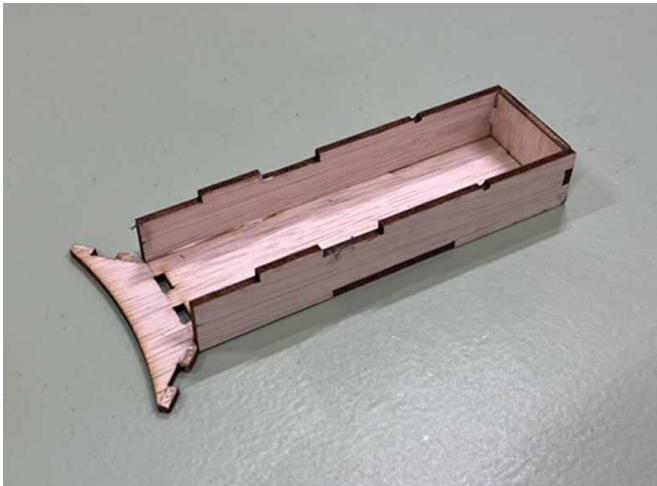
- Cut the long legs down to about 1cm
- Cut one leg of each resistor down to about 1cm
- Solder the short legs of the resistors to the shortened legs of the LEDs.
- Bend the free legs of the resistor and solder them together.



4 Attach the batteries

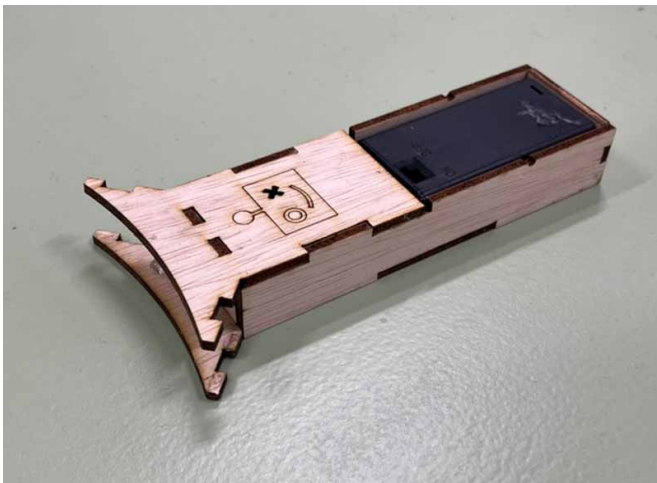
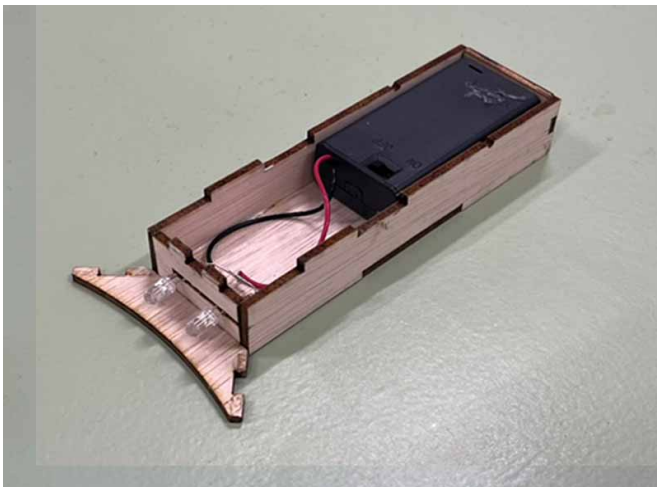
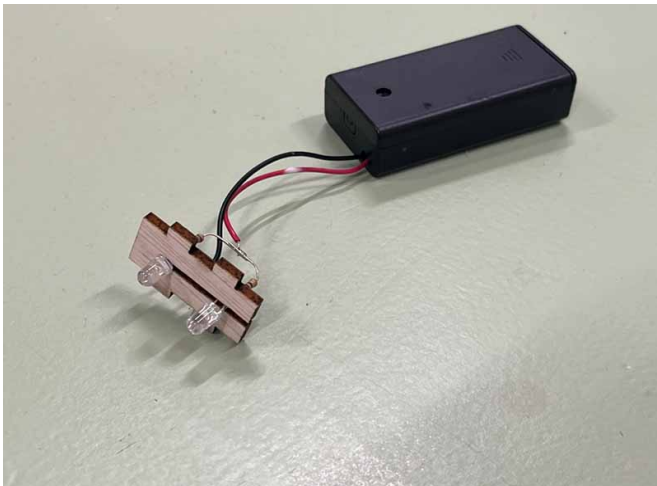
- Solder the red wire of the battery holder to where the resistors are joined together.
- Solder the black wire of the battery holder to where the LEDs are soldered together.
- Put some batteries in the holder and test your light.

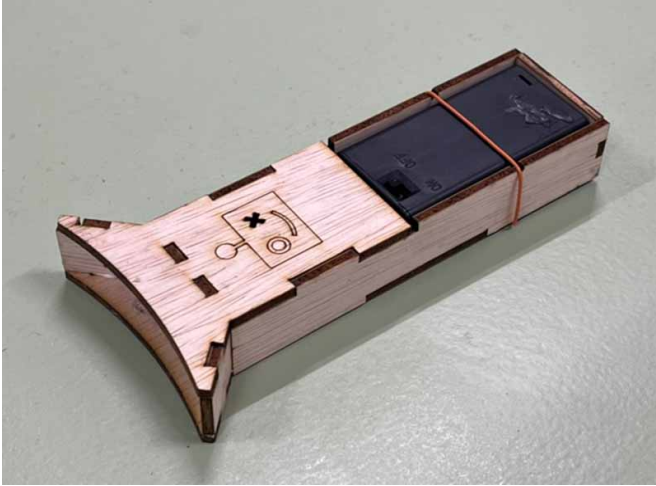




5 Assemble the flashlight body

- Start by glueing the bottom of the light together.
- Slide the LEDs into the slit and place it in the front of the light.
- Glue the rest of the wooden pieces in place.





6 Finish up

- Use the rubber band to hold the battery pack in place.
- You're all done!

