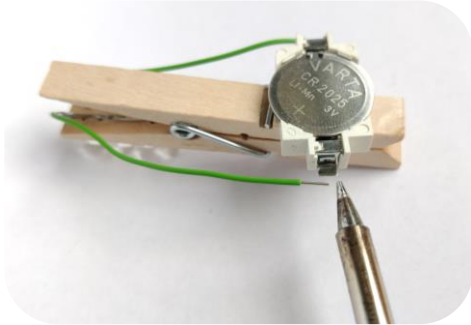


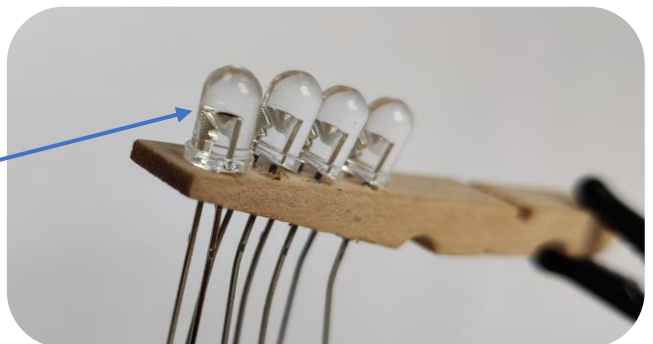
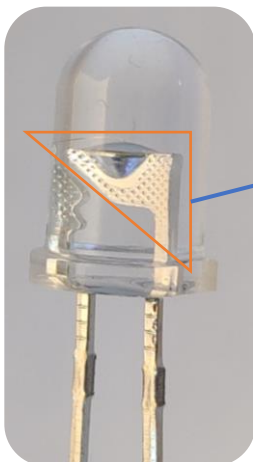


- Place battery into battery holder
- Hold one wire to each leg of the holder
- Check if all LEDs light up
  - If not, swap cables (left side with right side and vice versa) and test again
  - If they still do not light up, check below
- Solder cable to battery holder so that LEDs light up



- Reassemble peg
- Use hot glue to attach battery holder to the back side
- Optional: paint and decorate peg
- Finished

If none of the LEDs light up, one might be rotated: You can spot a small triangle in every LED. All of these triangles must be in the same direction. If you spot a reversed one, use the soldering iron to remove and turn it around

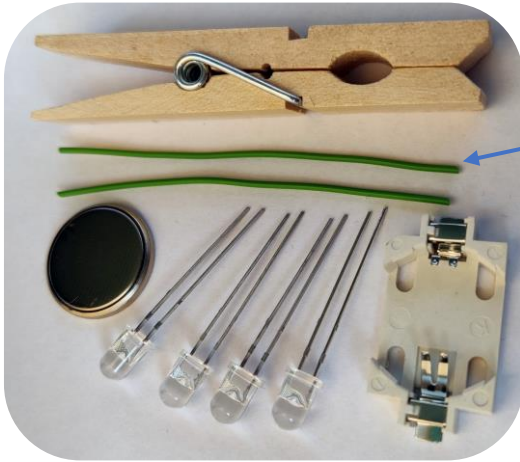




## Nibbleklammer

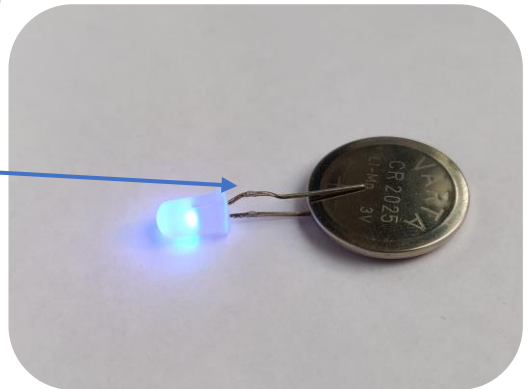
A tutorial

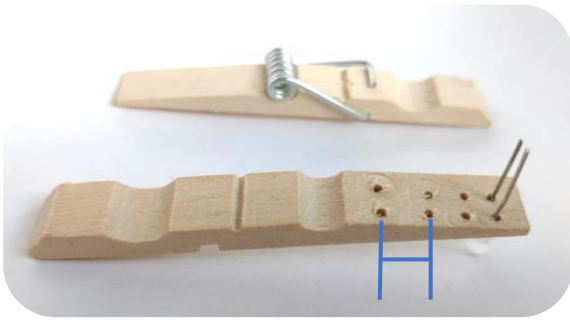
“nibble” = a small byte  
 $\frac{1}{2}$  “byte” = 1 nibble = 4 bit



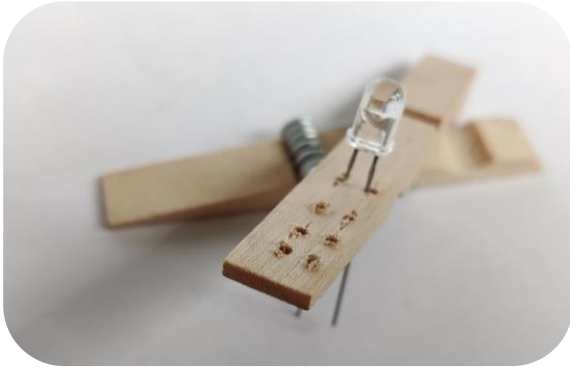
- 1 peg
- 2 wires, as long as the peg
- 1 battery
- 1 battery holder
- 4 LEDs (Nibble variant)  
or 3 LEDs (fast variant)

- Test one LED and battery
- Long leg of LED needs to touch plus of battery
- Strip both ends of both wires (cut gently and pull to remove plastic or use a wire stripper)

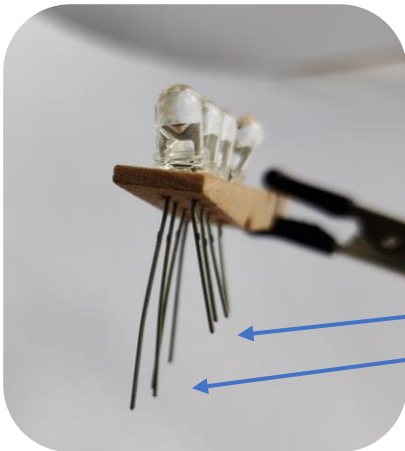




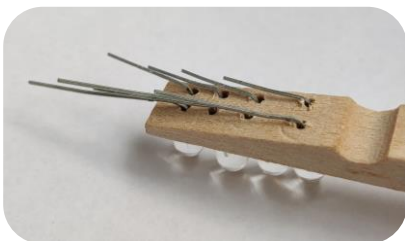
- Disassemble peg
- Drill two holes for each LED
- Leave enough space in between the holes for the LEDs to fit (as shown in the picture)



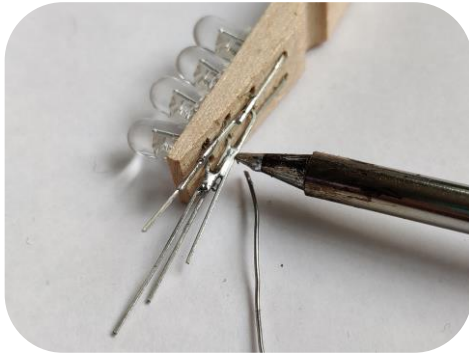
- Insert legs through holes to (from straight side of the peg to angled side)
- Important: All long legs to one side



- Check again:
- All short legs on one side
- All long legs on the other side

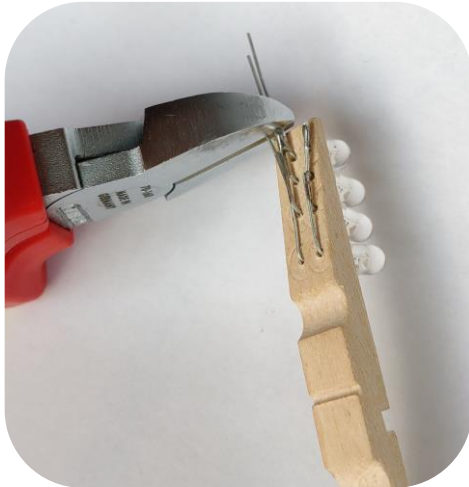


- Bend all legs of the LEDs to one direction (preparing for soldering)
- All long legs should touch each other
- All short legs should touch each other

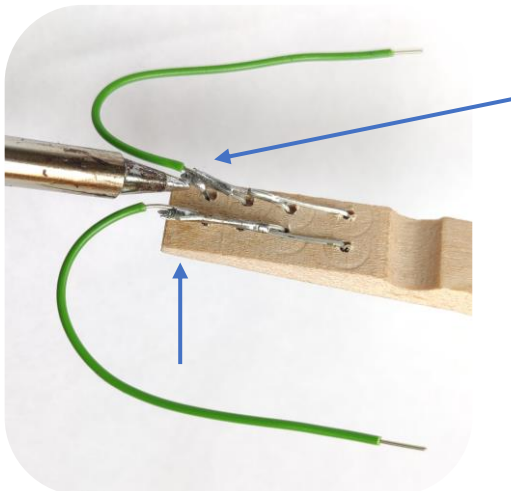


## Soldering

- 1 soldering iron 320-350°C
- Some solder (looks like some very soft wire)
- Solder long legs together (connect them using solder and soldering iron)
- Solder short legs together



- Remove excess legs with wire cutter



- Solder one wire to each row of legs
- 1 wire is for “plus” of the battery
- 1 wire is for “minus” of the battery