

# Handtools Induction - Practical Exercise

SLQ Wiki Fabrication Lab 2026/01/31 20:40

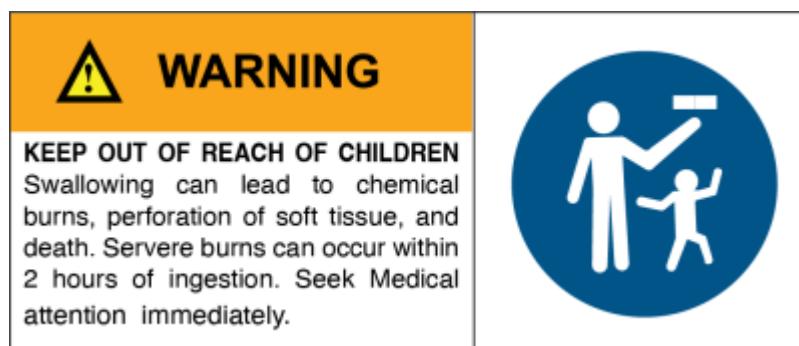
~~REVEAL~~

# Handtools Induction - Practical Exercise

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**THIS WORKSHOP HAS NOT BEEN RUN SINCE 2022, IS AVAILABLE FOR ARCHIVAL PURPOSES ONLY. ANYONE SEEKING TO ADAPT THIS WORKSHOP SHOULD CONSIDER THE FOLLOWING INFORMATION.**

**WARNING - This workshop makes use of small coin cell/ button batteries.**

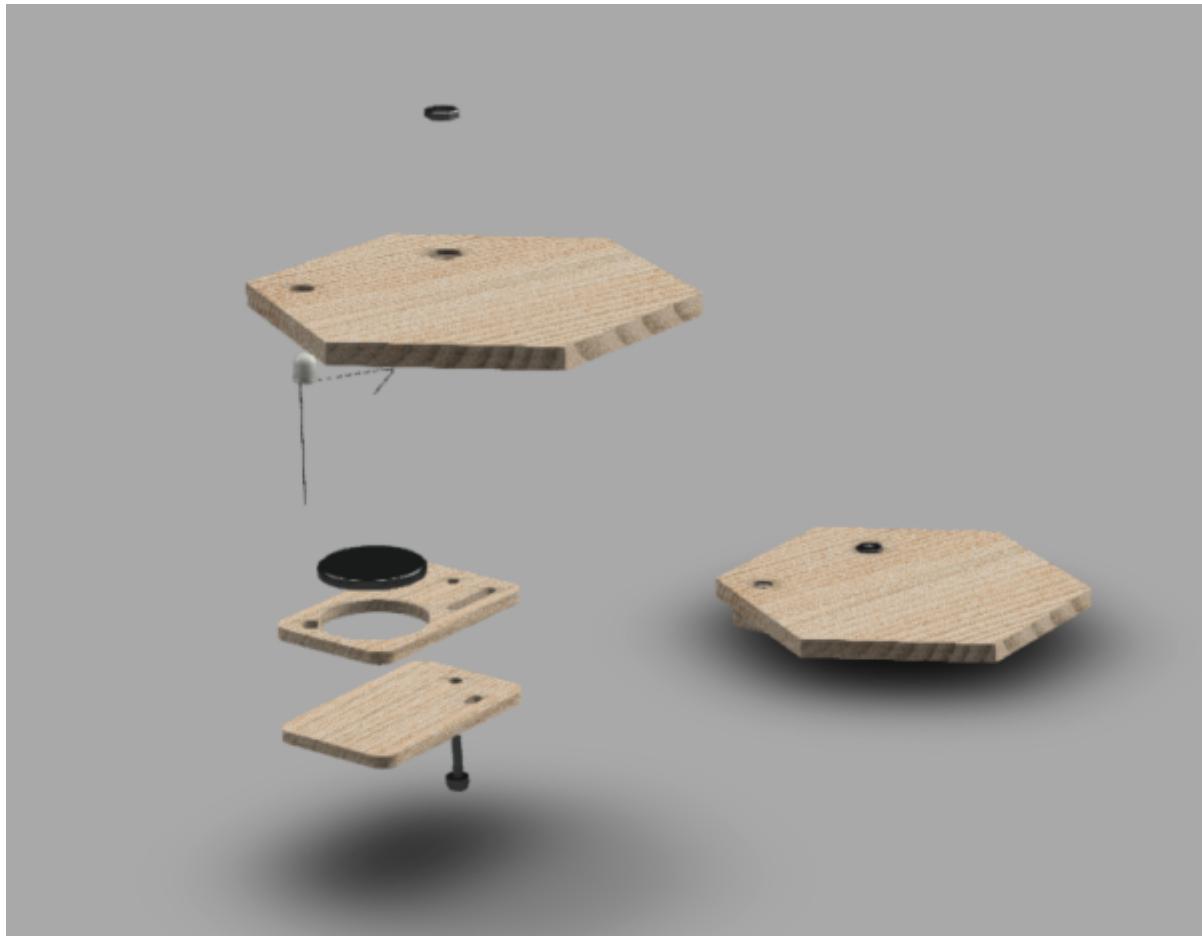


In December 2020, the Australian Government made mandatory safety and information standards for button/coin batteries and consumer goods that contain button/coin batteries (the standards). The standards included an 18 month transition period and became mandatory from 22 June 2022. From 22 June 2022 manufacturers, importers, wholesalers and retailers of button/coin batteries or consumer goods that contain button/coin batteries supplied to Australia, must comply with the applicable Australian mandatory safety and information standards. Supplying or selling non-compliant products to consumers in Australia is illegal. The four mandatory standards are as follows:

- [Consumer Goods \(Products Containing Button/Coin Batteries\) Safety Standard](#)
- [Consumer Goods \(Products Containing Button/Coin Batteries\) Information Standard](#)
- [Consumer Goods \(Button/Coin Batteries\) Safety Standard](#)
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## Summary

Participants will assemble a laser cut LED badge and familiarises themselves with the variety and safe use of hand tools in The Edge Fabrication Fab. This is the practical exercise for the Edges Hand tools induction.



The aim of the activity is to provide inductees with an opportunity to :

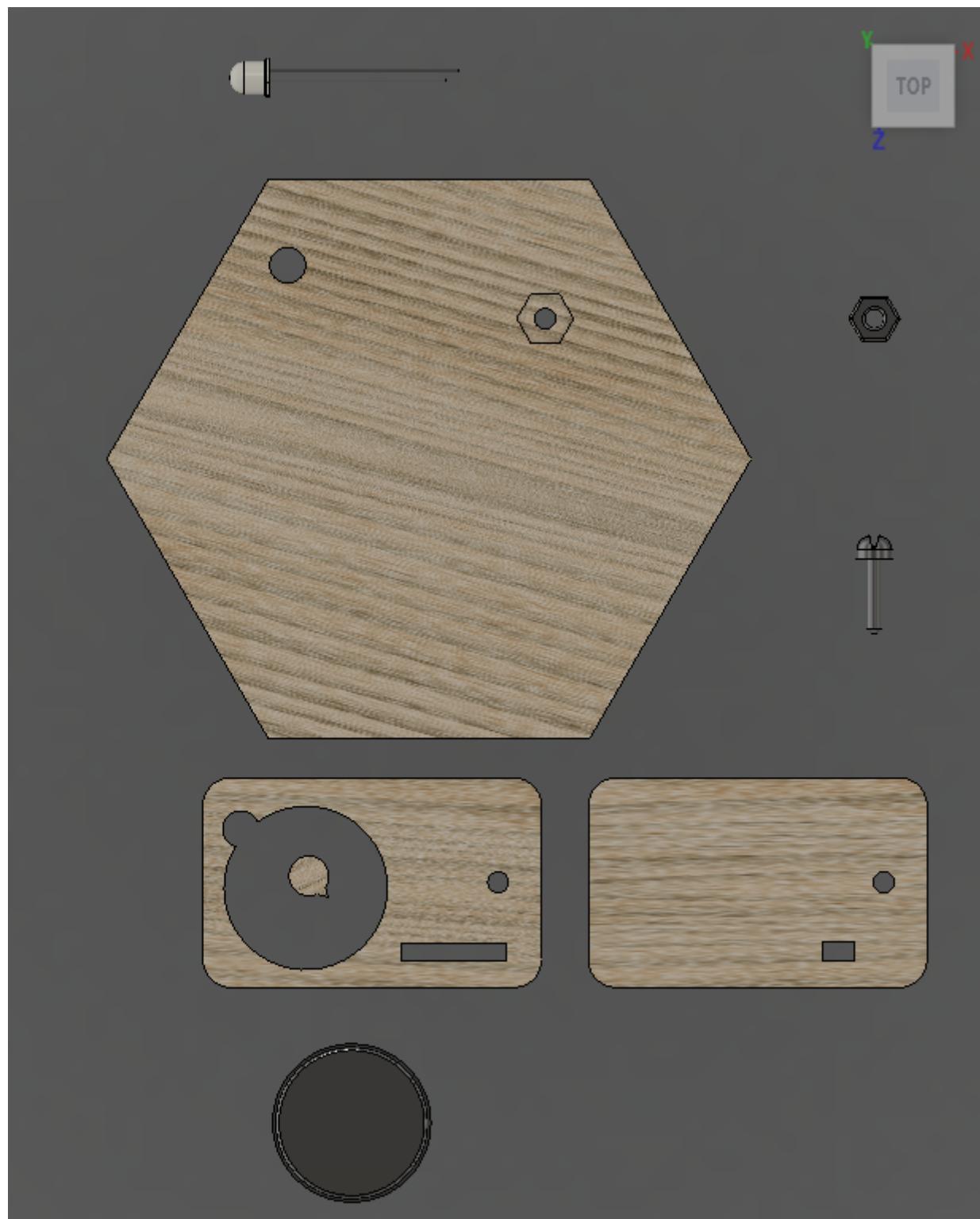
- Gain a hands-on, practical understanding of the basic categories of hand tools found in in the Fabrication Lab
- Identify the risks associated with these categories of tools and learn safety and handy tips for using these tools.
- Put together an inexpensive, cool and quick little take-home project that's been made with the equipment in the Fabrication Lab.

## Materials

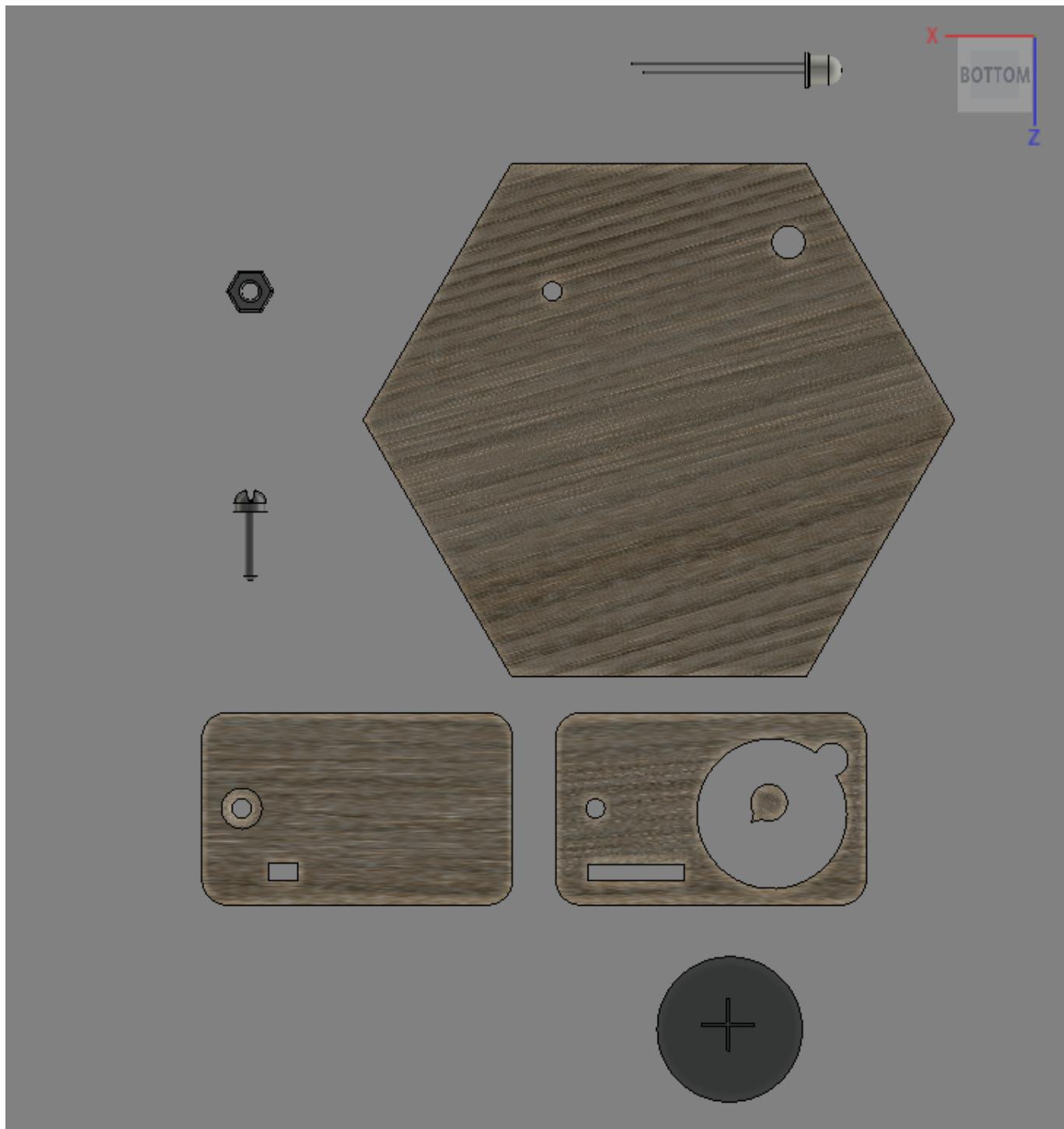
Part #	Part Name	Image
Laser Cut Parts		
1	badge front	

Part #	Part Name	Image
2	logo	
3	Battery retainer	
4	Battery back	
<b>Other Parts</b>		
5	Cr2032 Calculator Cell (Battery)	
6	Flashing 5mm LED (various colours)	
7	M3 Nut	
8	M3 12mm screw	
9	Metal Badge Back	

## Parts Back



## Parts Front



## Tools

1. Hot glue gun & glue
2. Pointy nose pliers
3. Philips head screwdriver
4. Awl
5. Adjusting spanner
6. Countersinking bit
7. Cordless Drill
8. Hand saw

9. Clamp or mini vice
10. Sand paper

## Assembly Instructions

### Step Zero:

When ever you are in the Fabrication Lab

- make sure you're keeping your space tidy



- You are use correct manual handling technique



Manual Handling

- Check you have all you parts and that these are cut through cleanly.
- Check you have all the tools you require... and the right tool for the job

For instance if you need to clean up laser cut parts, use an awl (not a screwdriver). An awl is designed for poking... screwdrivers are for *driving screws*. 😊

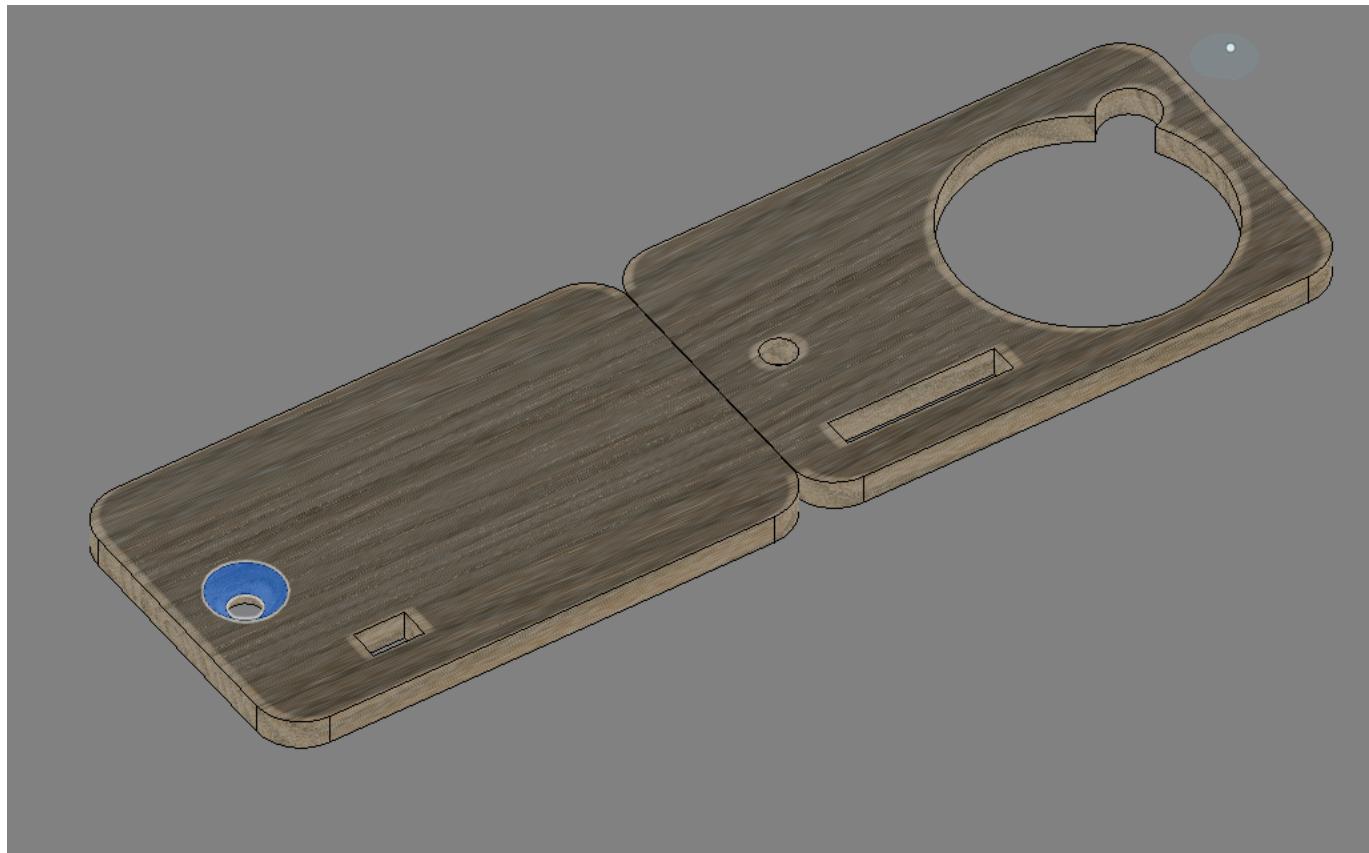


Awl

### Step One:

First, with the Cordless Drill and a counter sink bit, countersink the hole in the **Battery back (Part 4)**

*make the counter sink about a match head deep*



Any time you are using a spinning blade or tool you also need to be care careful not to get hair or clothes caught in the equipment... **Take it off, tie it back or tuck it in**



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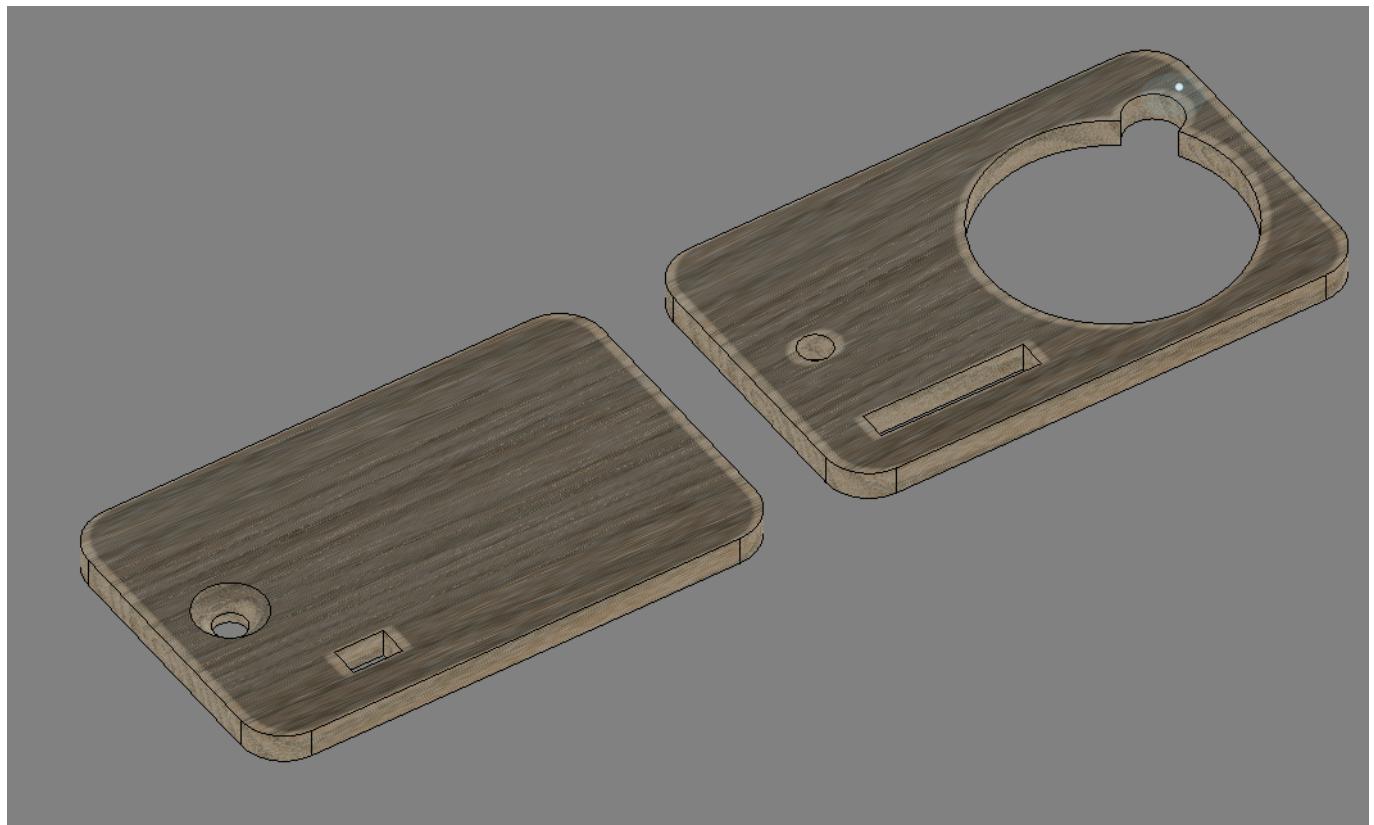
Also any time you are using a spinning blade or tool you could be creating friction... **Be careful of hot tools and keep track of where your hot swarf ends up**



Also any time you are using a spinning blade or tool you could be creating friction... **Be careful of hot tools and keep track of where your hot swarf ends up**



Next, separate the **Battery Retainer (Part 3)** from the **Battery Back** by sawing the part in half.



**Are you applying force? Make sure you secure your work...** clamp the material down or put it in a vice when using a drill or saw

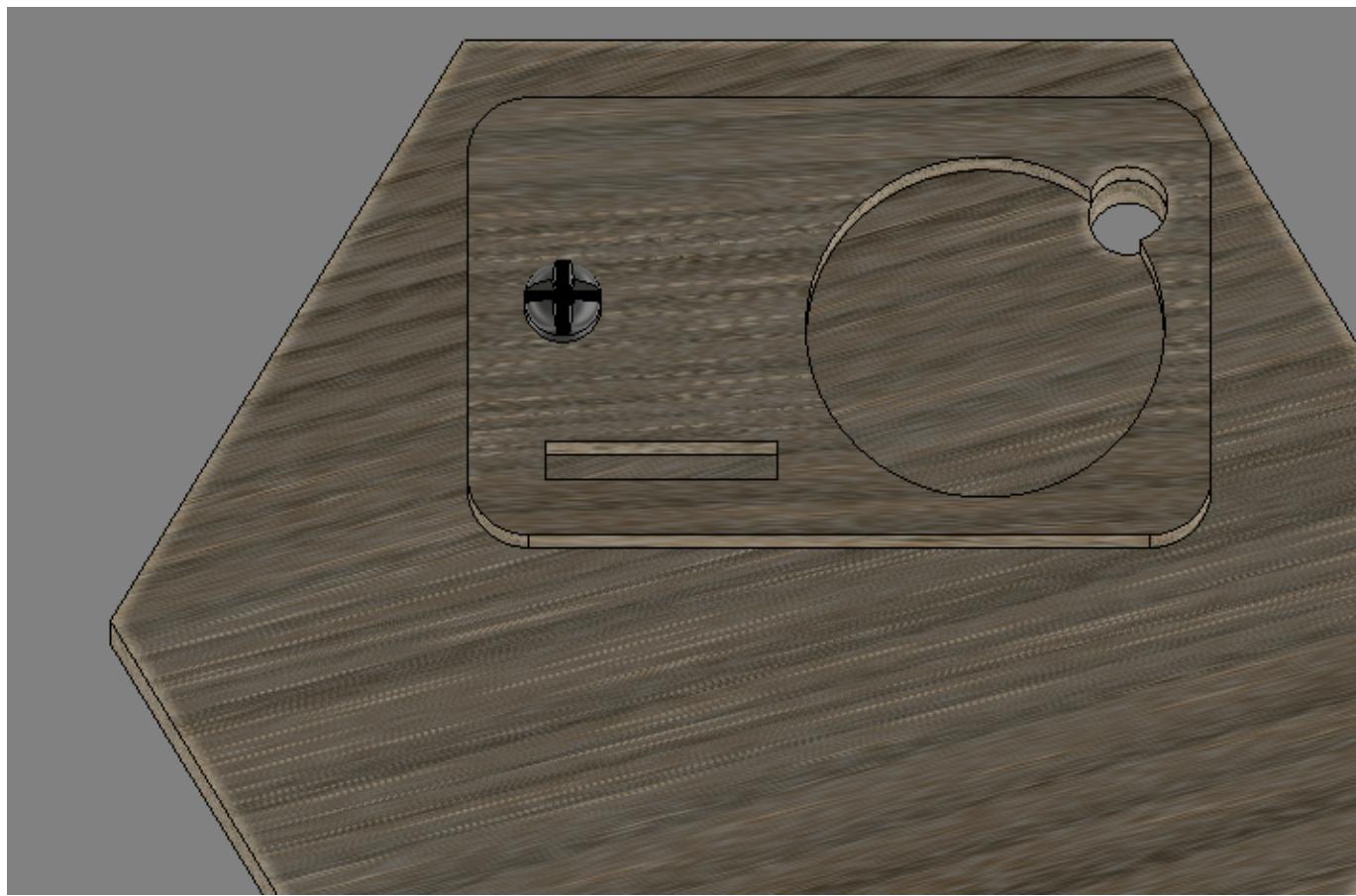


**Are you applying force? Make sure you secure your work...** clamp the material down or put it in a vice when using a drill or saw

## Step Two:

With hot glue, stick the **Battery Retainer (part3)** to the back of the **Badge Front (Part1)** make sure you have aligned the screw holes and LED holes on both parts.

*your blob of glue should be about the size of a pea*



**Hot Glue Burns** - if you manage to get hot glue on you skin cool it under cold running water immediately. **trying to wipe it off will spread the burniness around.**



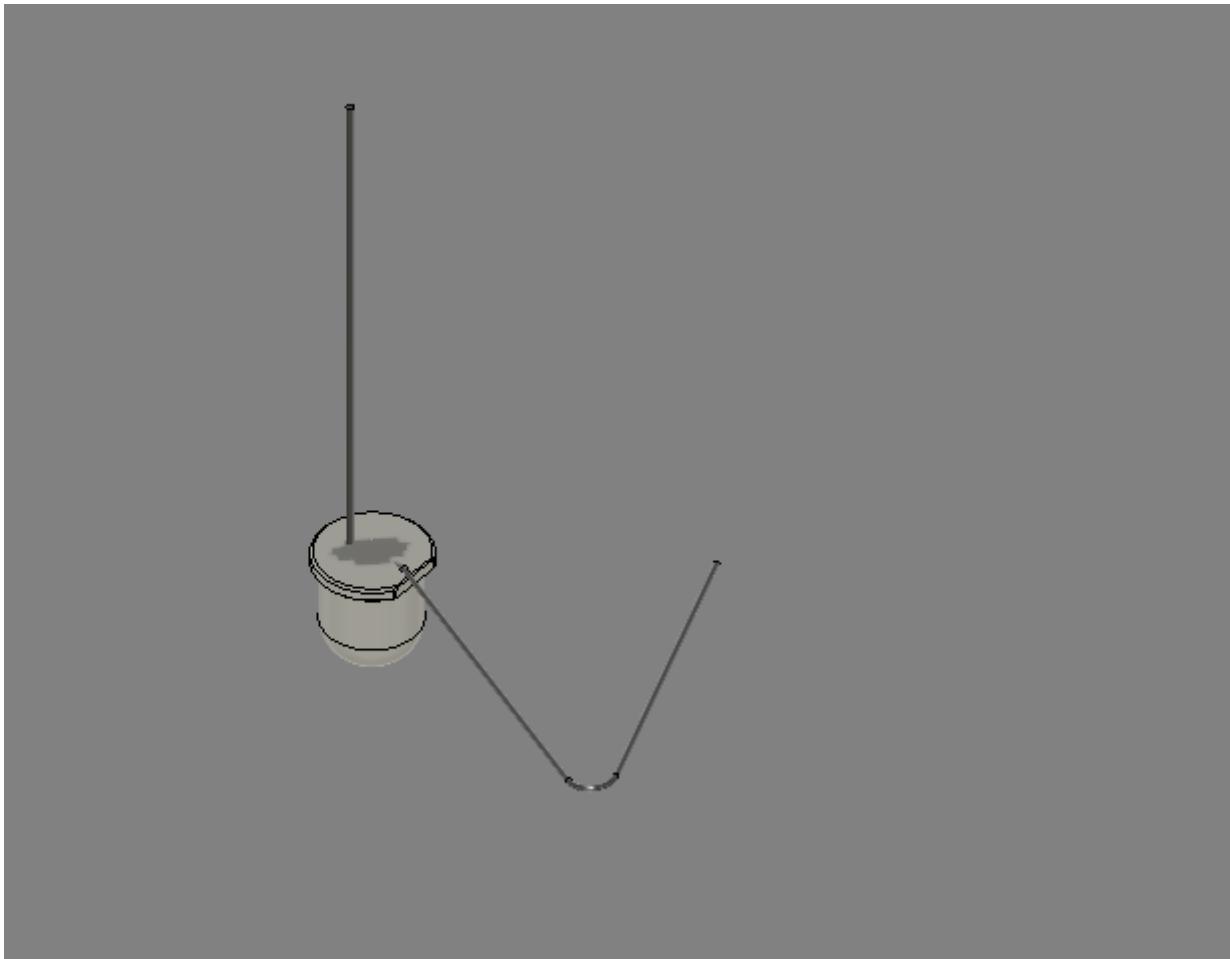
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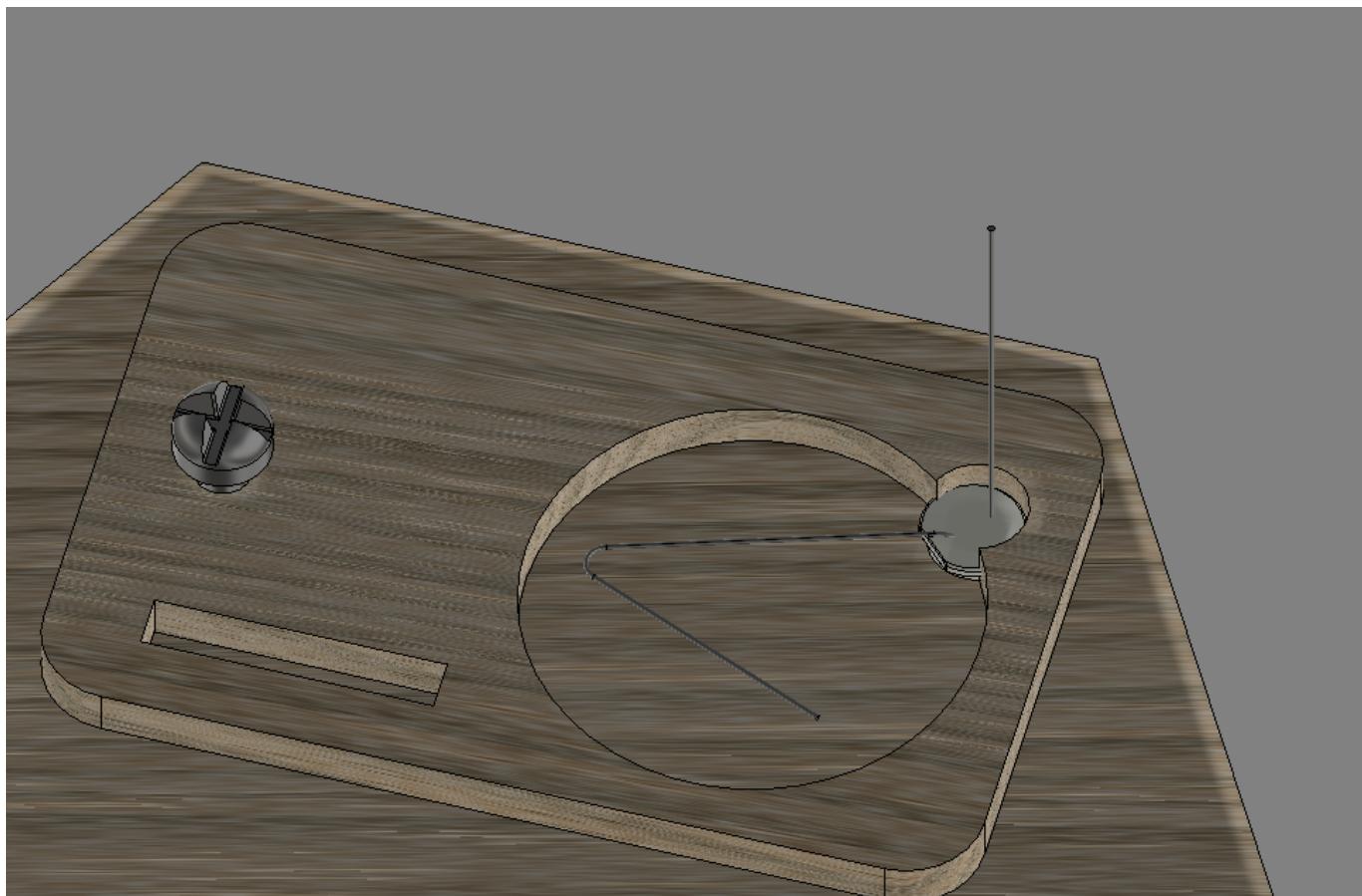
### Step Three:

Test your **LED (part 6)** by placing the long leg over the positive (+) of the **Cell(battery)(part 5)** and the short leg over the negative (-) side.

with pliers bend the short leg over at 90 deg and back on itself

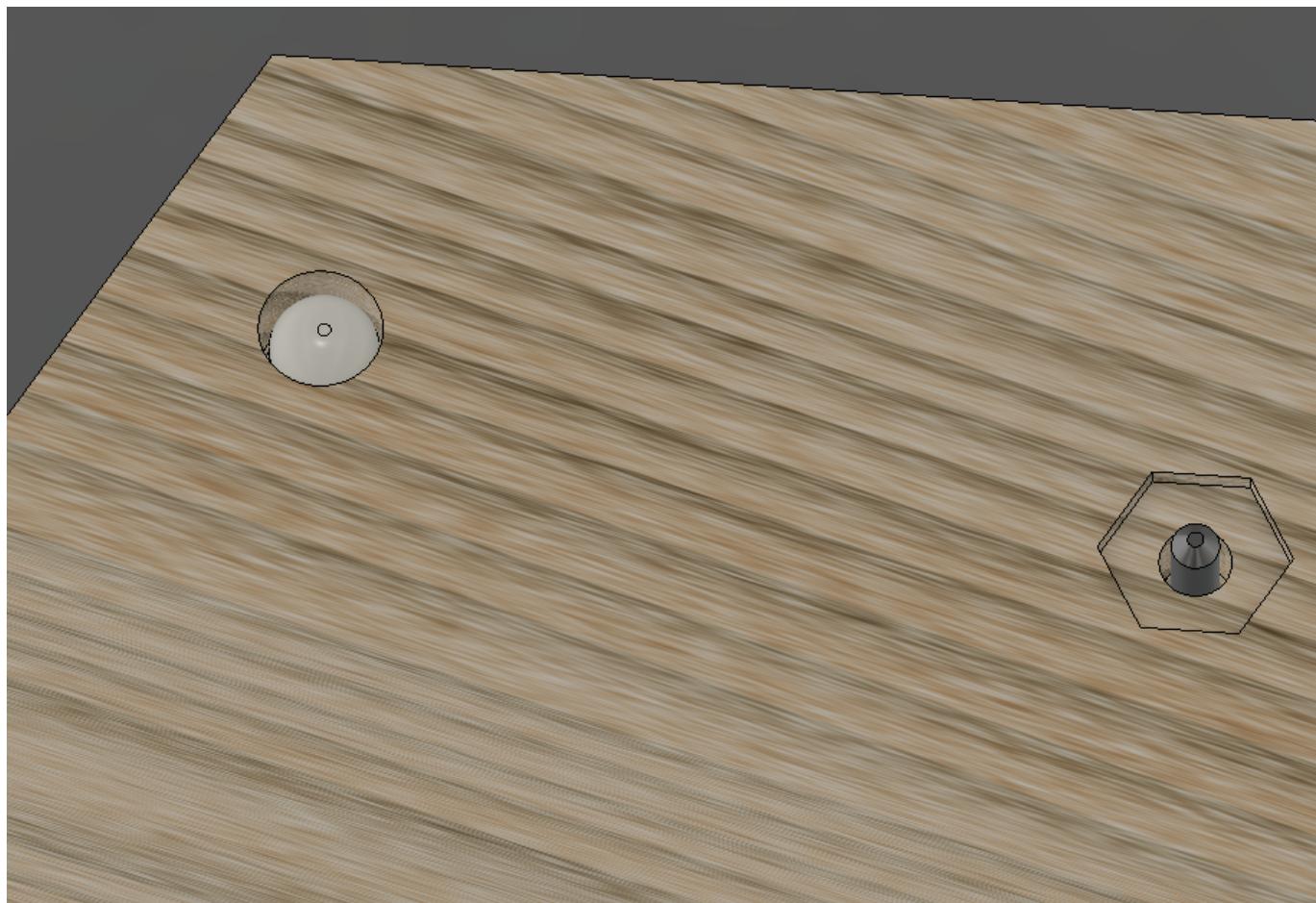


orient the LED so the short bent leg is *inboard*- towards the cell (battery) and the positive (+) long leg is *outboard*.

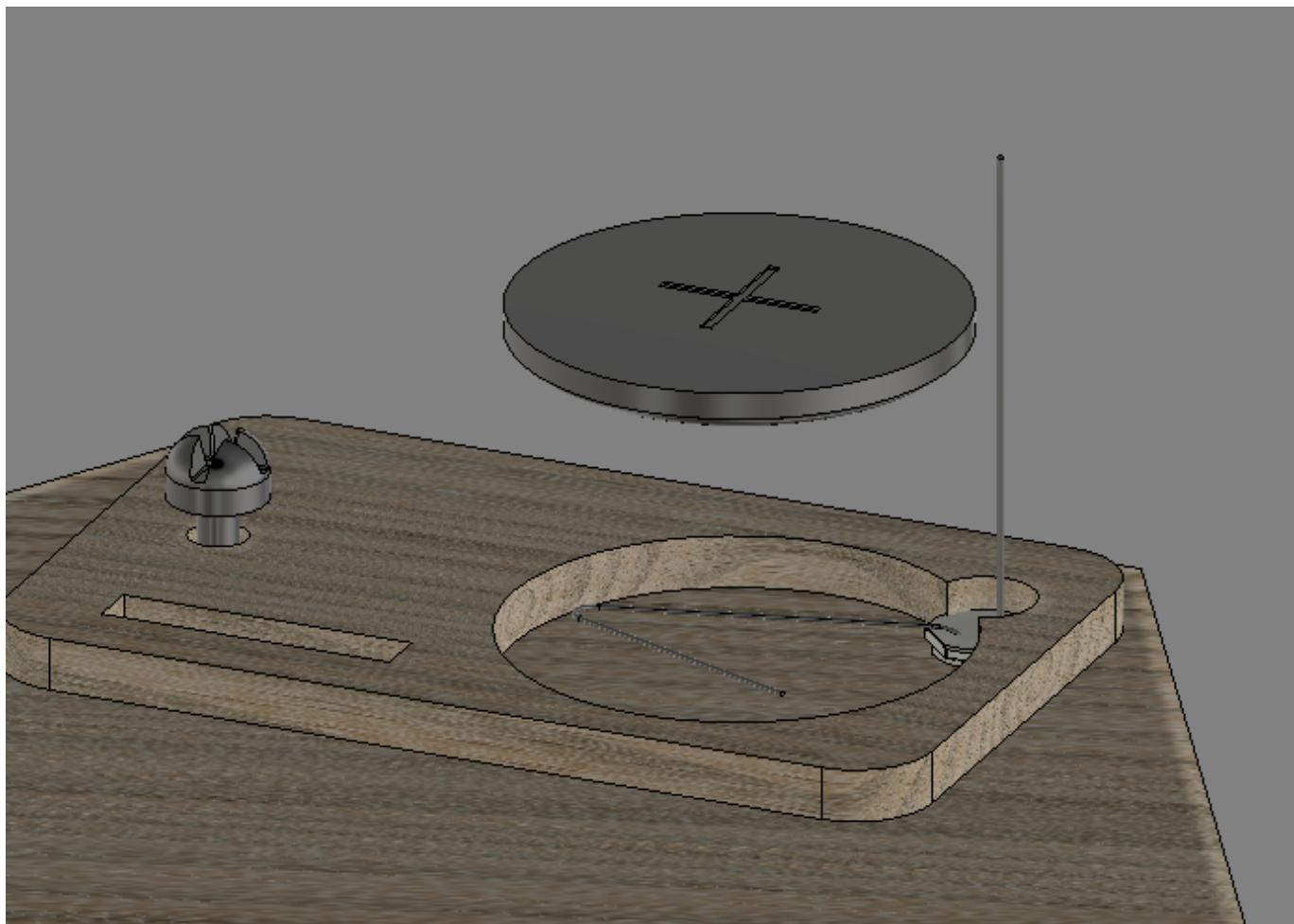


### Step Three: - Continued

Turn the badge over so you are looking at the face and hot glue the LED in the hole in this position from the front

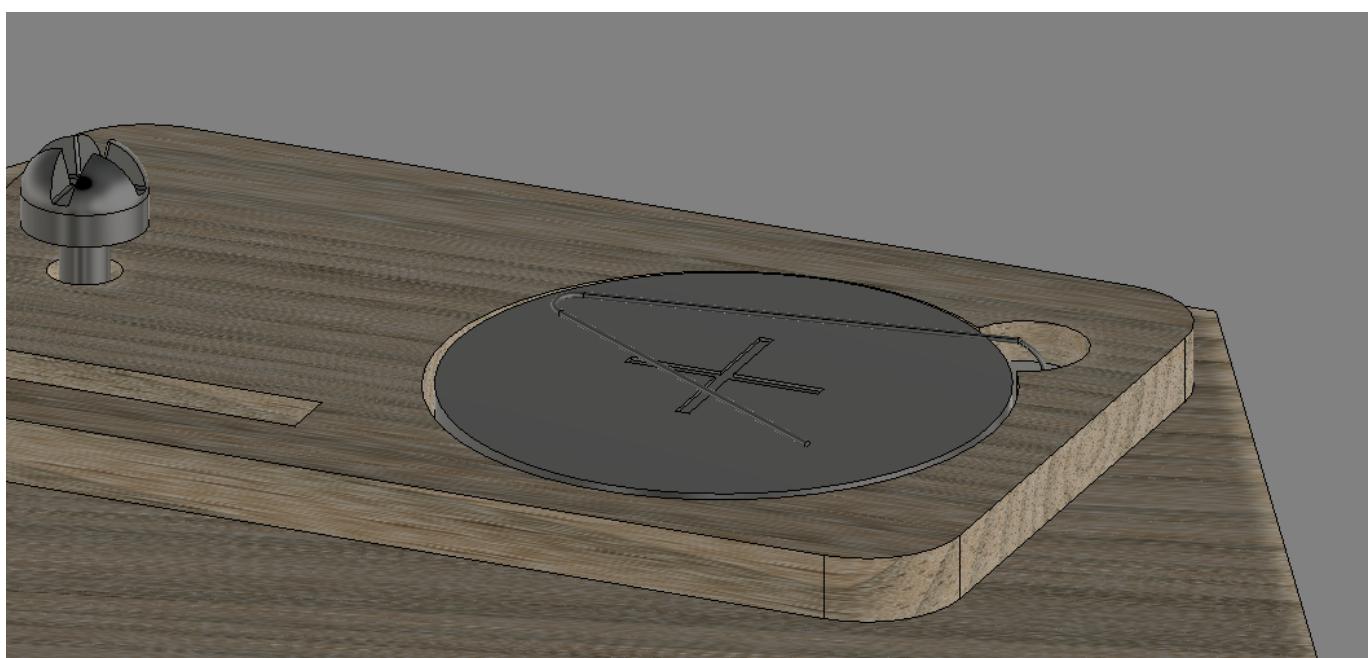


Turn the badge over again so it is face down and insert the Cell (battery) with the positive (+) up.



## Step Four:

Bend the long positive leg over the Cell and back on itself



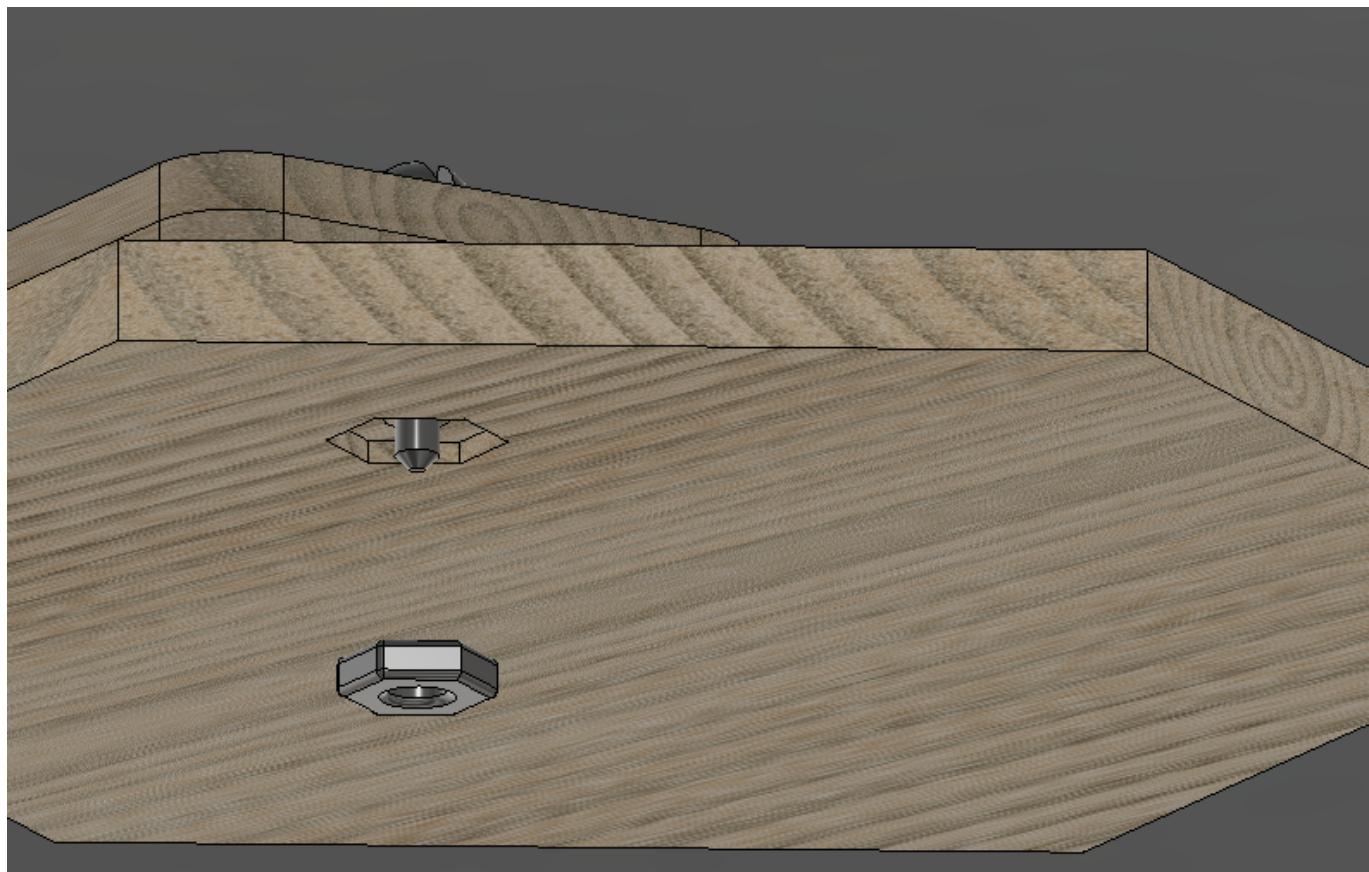
The LED should Light up.

## Step Five:

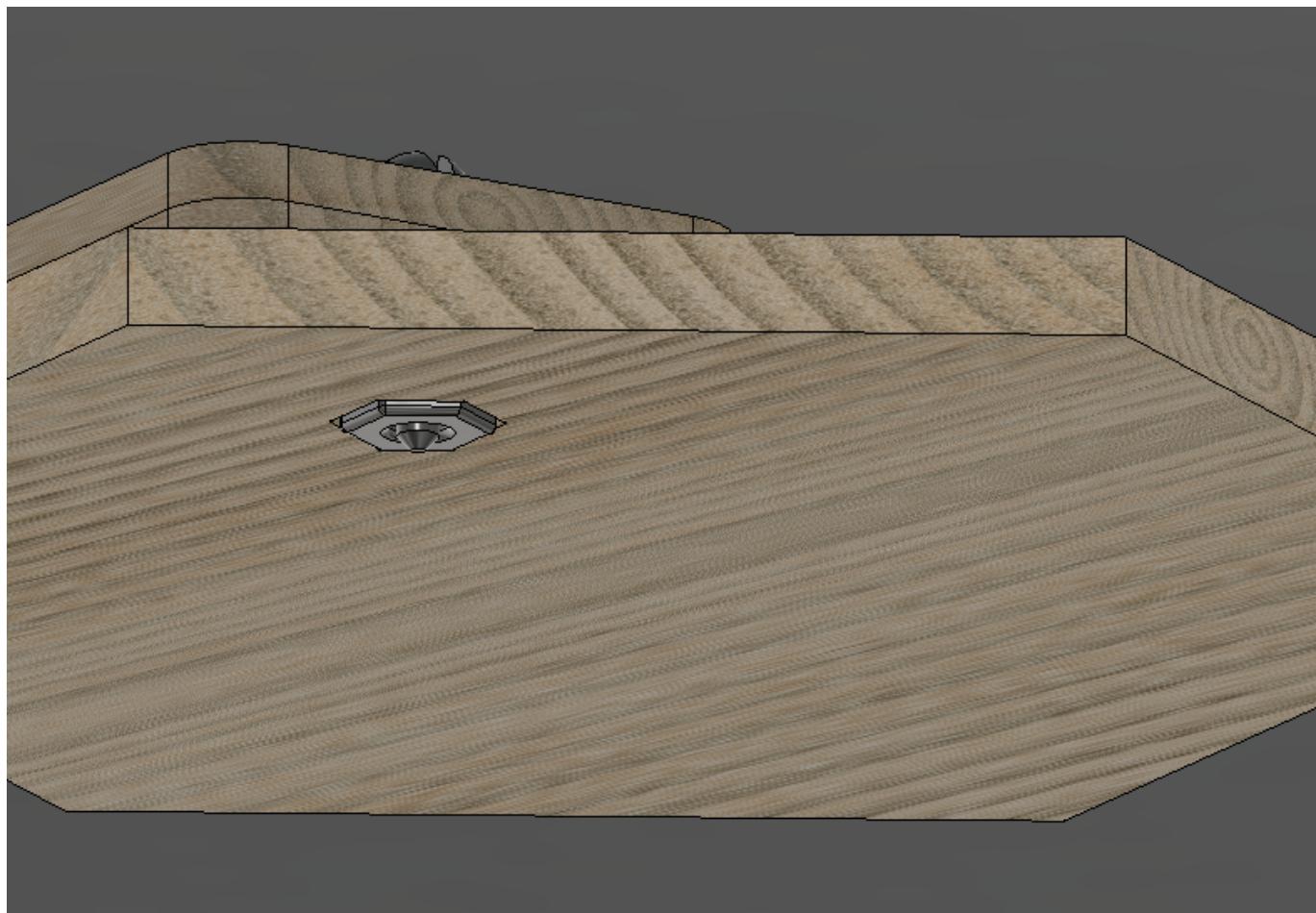
Align the **Battery Back (Part 4)** screw hole with the screw hole in the badge front/ battery retainer.



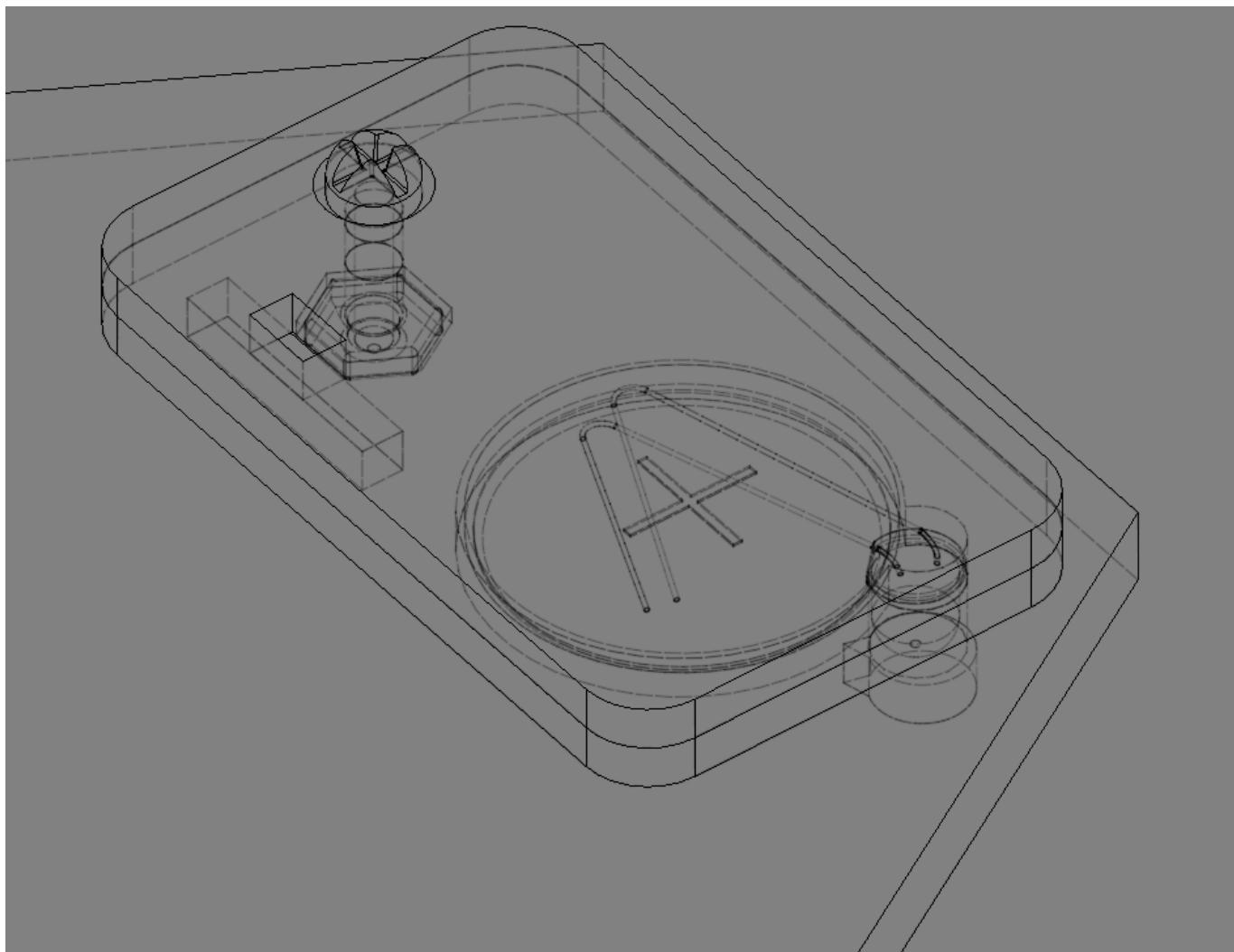
Insert **Screw (part)** from back to front and screw on nut.



Allow **nut** to seat in captured nut recess on **Badge Front**



Tighten Nut and bolt using Phillips head screwdriver and adjustable spanner.



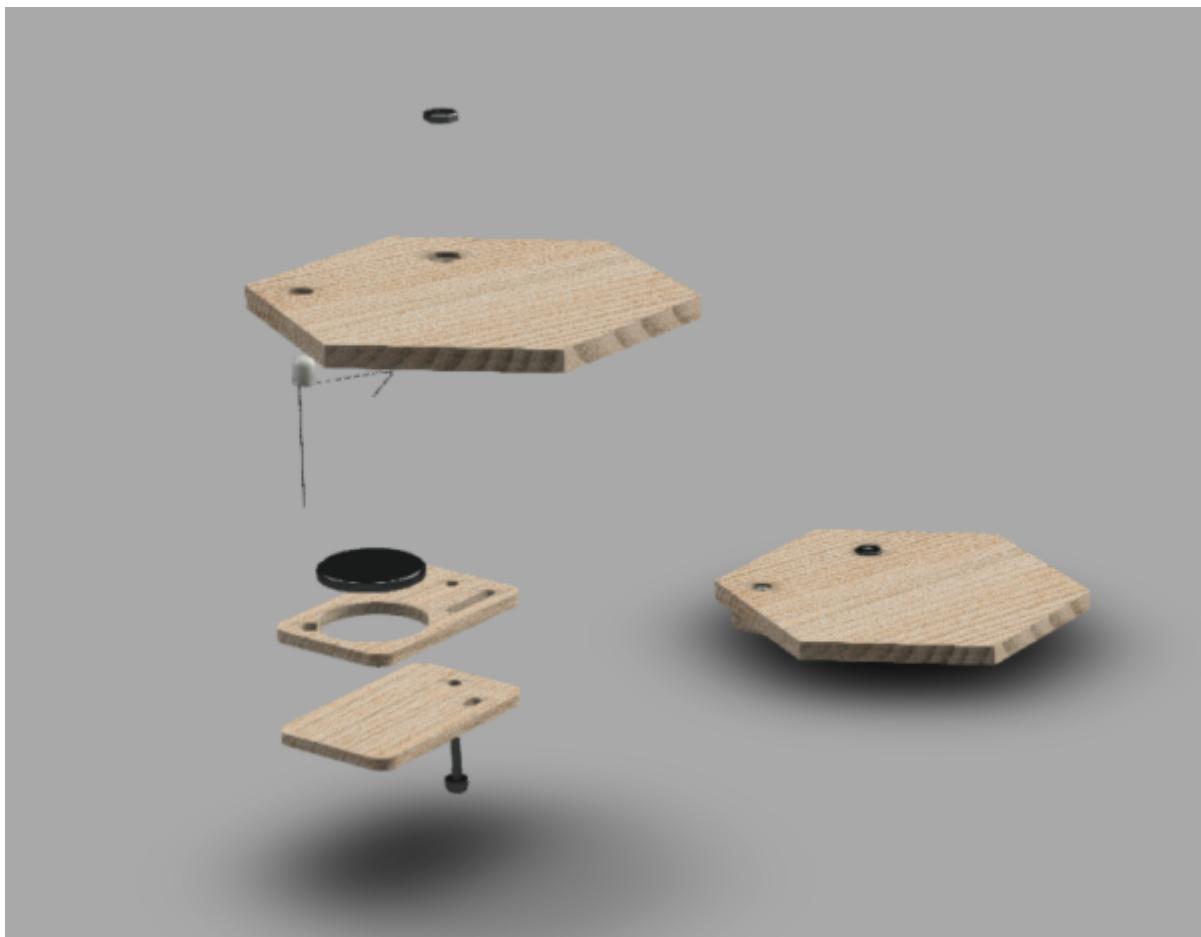
## Step Six

hot glue the badge back



Hot glue the Logo over the LED





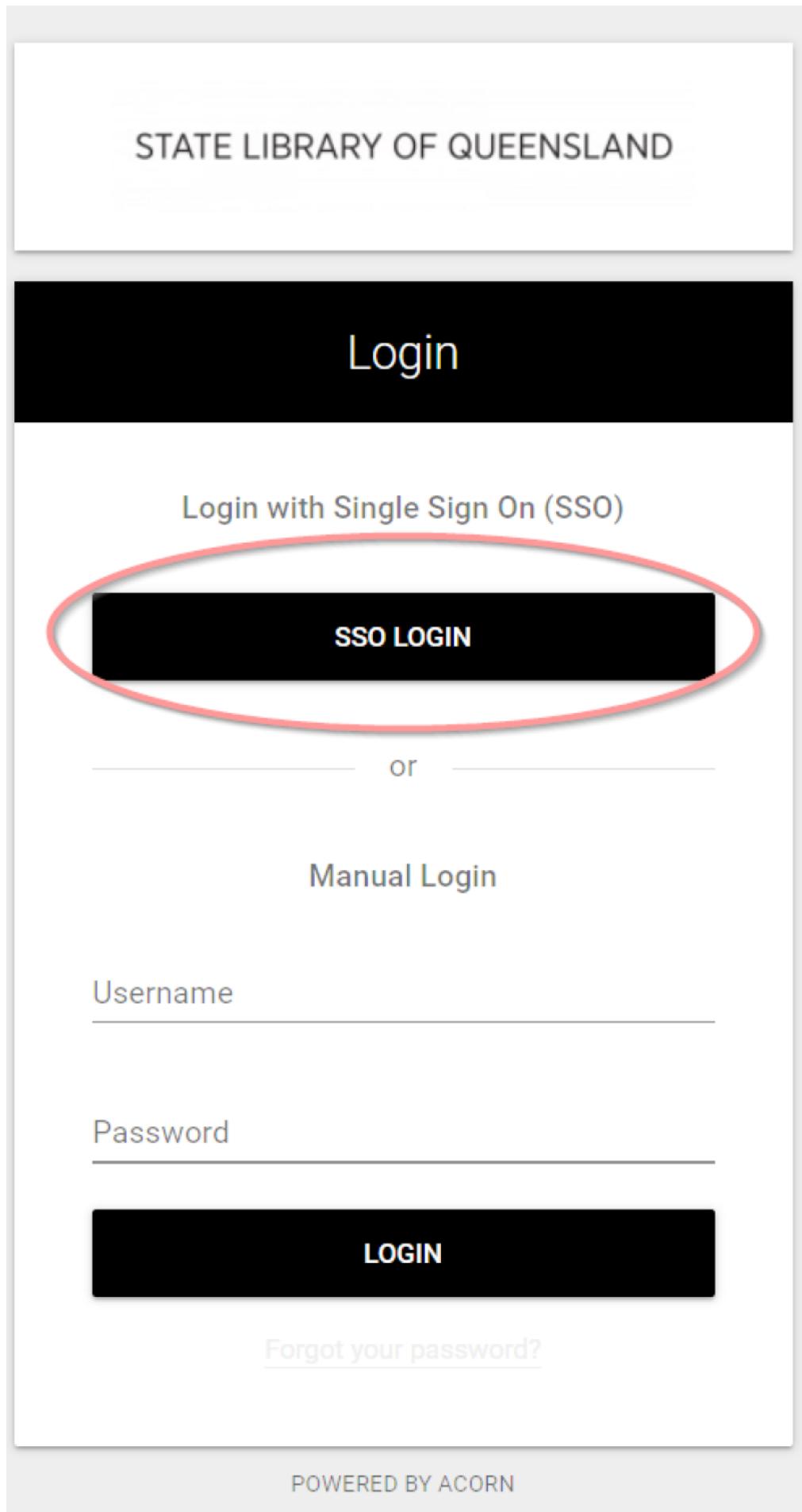
[3D explodable view online](#)

## Complete the General Induction Online

Now its time to complete your General Induction online quiz. Go to State Library's [inductions site](#).

A screenshot of the State Library of Queensland's General Induction website. The top navigation bar includes links for Home, Training History, Search, Home, Catalogue, and a user icon. The main content area features a welcome message: "Welcome to the Fabrication Lab inductions! Find and click the induction you are here to complete. You will also find a link to our website and wiki for more information about the services and resources available in the Fabrication Lab and The Edge." Below this are two main induction options: "GENERAL INDUCTION" and "LASER CUTTER INDUCTION". Each option has a corresponding image (a gear for General Induction and a laser cutter for Laser Cutter Induction) and a link to "General Induction" or "Laser Cutter Induction". The footer of the page also features the "STATE LIBRARY OF QUEENSLAND" logo.

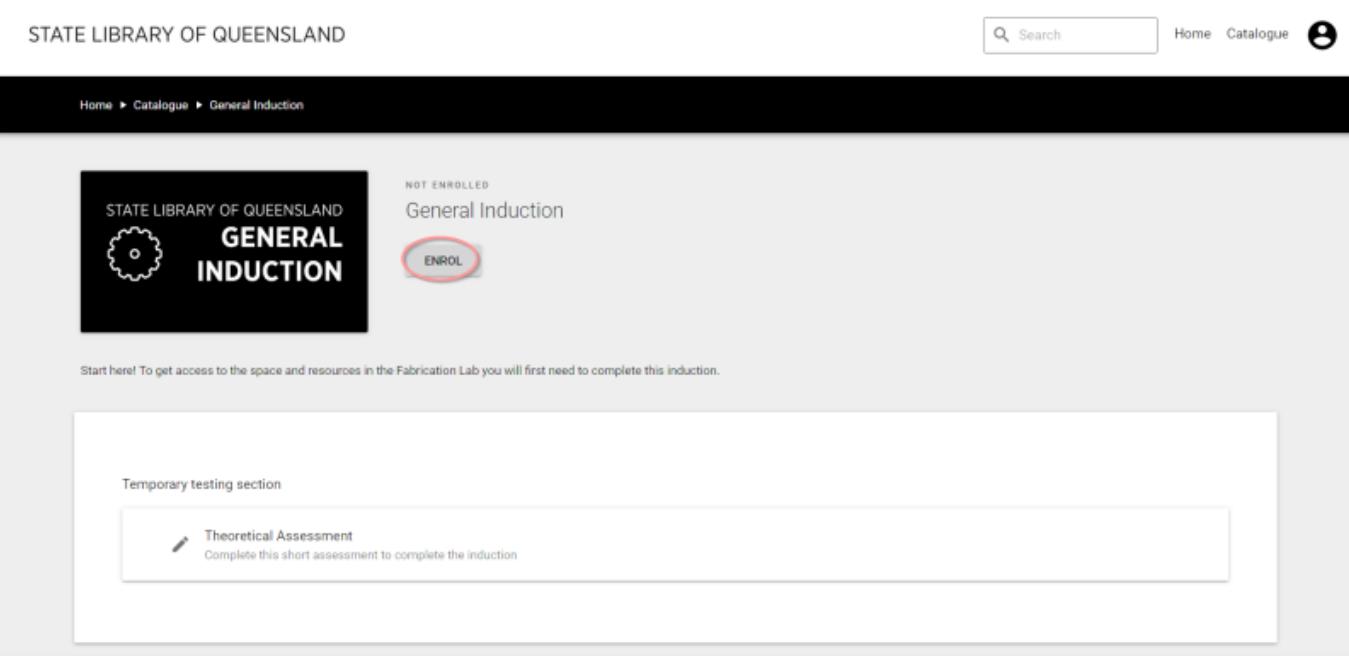
You will be asked to log-in - use the SSO option



Select the General Induction



Click on enroll



And start your assessment

STATE LIBRARY OF QUEENSLAND

Home Catalogue General Induction

ENROLLED ⓘ General Induction

UNENROL

Start here! To get access to the space and resources in the Fabrication Lab you will first need to complete this induction.

Temporary testing section

Theoretical Assessment  
Complete this short assessment to complete the induction

INCOMPLETE

Drag the cross-hairs (not the mouse) over the correct answer.

## General Induction

[Theoretical Assessment](#)

Question 1  
Not complete  
Marked out of 1.00

Match safety tips with its explanation.

Wear the right safety gear	① It's there for your protection
Clean up as you go	② It's easy to ask and you could prevent an injury
Correctly use the right tool for the job	③ They protect your feet and help prevent slipping
Always wear appropriate covered footwear	④ Most injuries come from missing tools
No kids under 12. Sorry!	⑤ There are hazardous equipment and substances used in the Fabrication Lab
Ask questions if you have any doubts	⑥ Accidents happen in untidy spaces

2 3 4 5 6

Check

Question 2  
Not complete  
Marked out of 1.00

MATCH THE TOOLS WITH ITS CORRECT USE.

① Turning nuts and bolts

13032021\_handtoolsbadgefnested\_captured\_nut.cdr

## Preparation

This workshop requires

- the below to be cut out on the laser. Total cutting/ etching time (for 60 parts) = 1.5 hours

## Files

### Badge fronts

New Corel file  
to suit new machine profiles. Just print as colour with 6.9mm plywood profile or use this  
trotech job file

### Badge Backs

#### Badge backs

handtools\_induction\_backs.cdr  
are to be cut on 4mm plywood