Accessible Door Knob Adapter
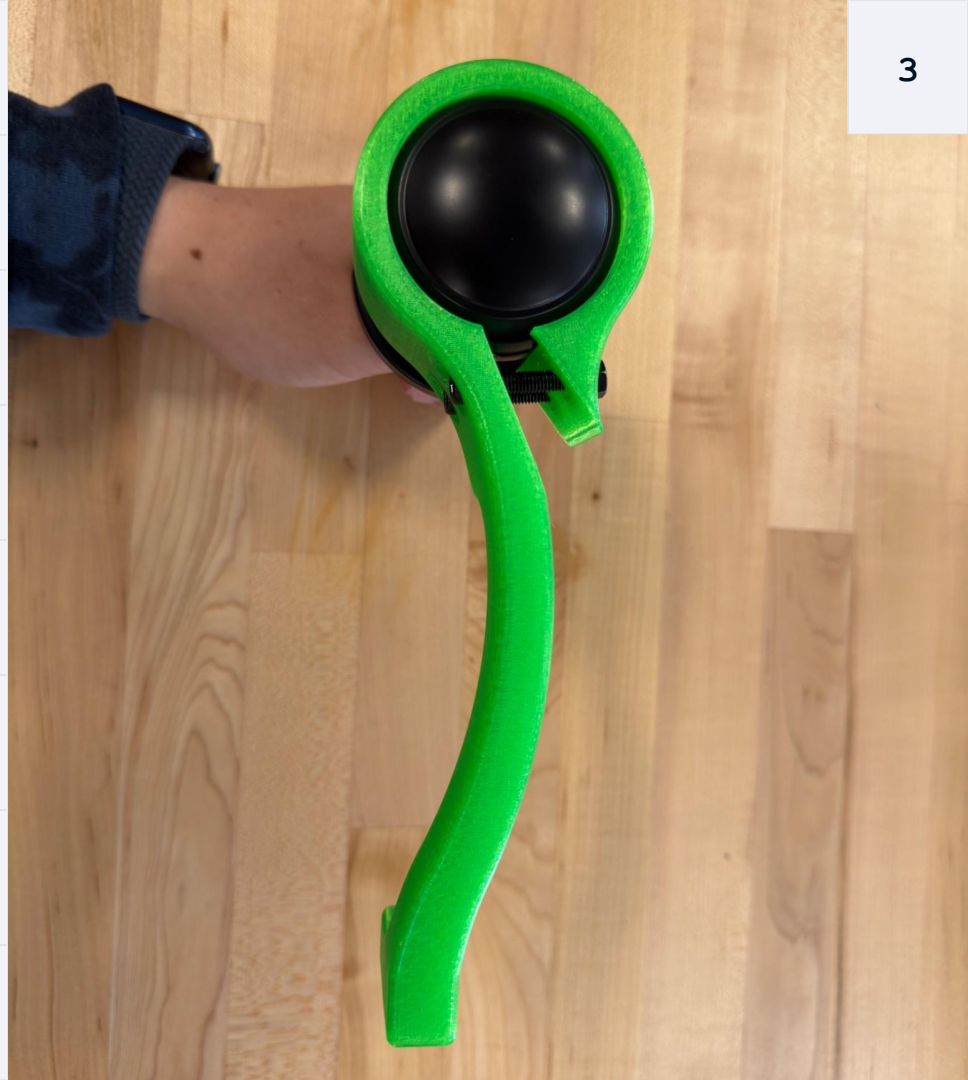
D.O.R.P. Labs
Spring 2025

The Problem

Doors with door knobs are generally less accessible than other types of doors for people with:
- Limb differences
- Arthritis
- Injuries
- Other conditions that impact grip strength and ability

General Solution

Some way of changing an existing door knob to a different door opening mechanism

Customer Needs

Journey Map
- Injured students
- Pain from opening doors
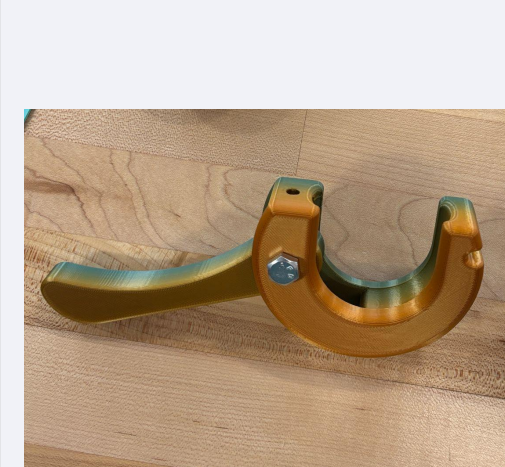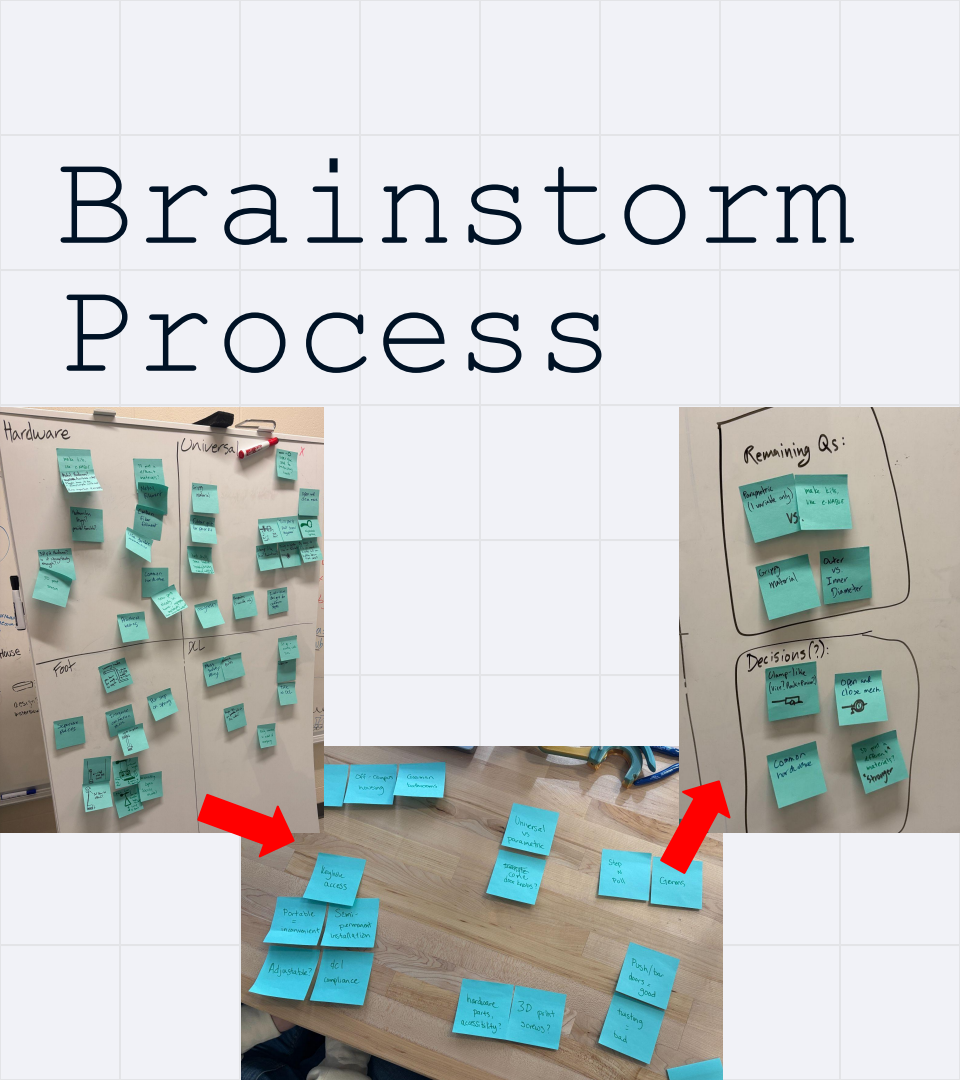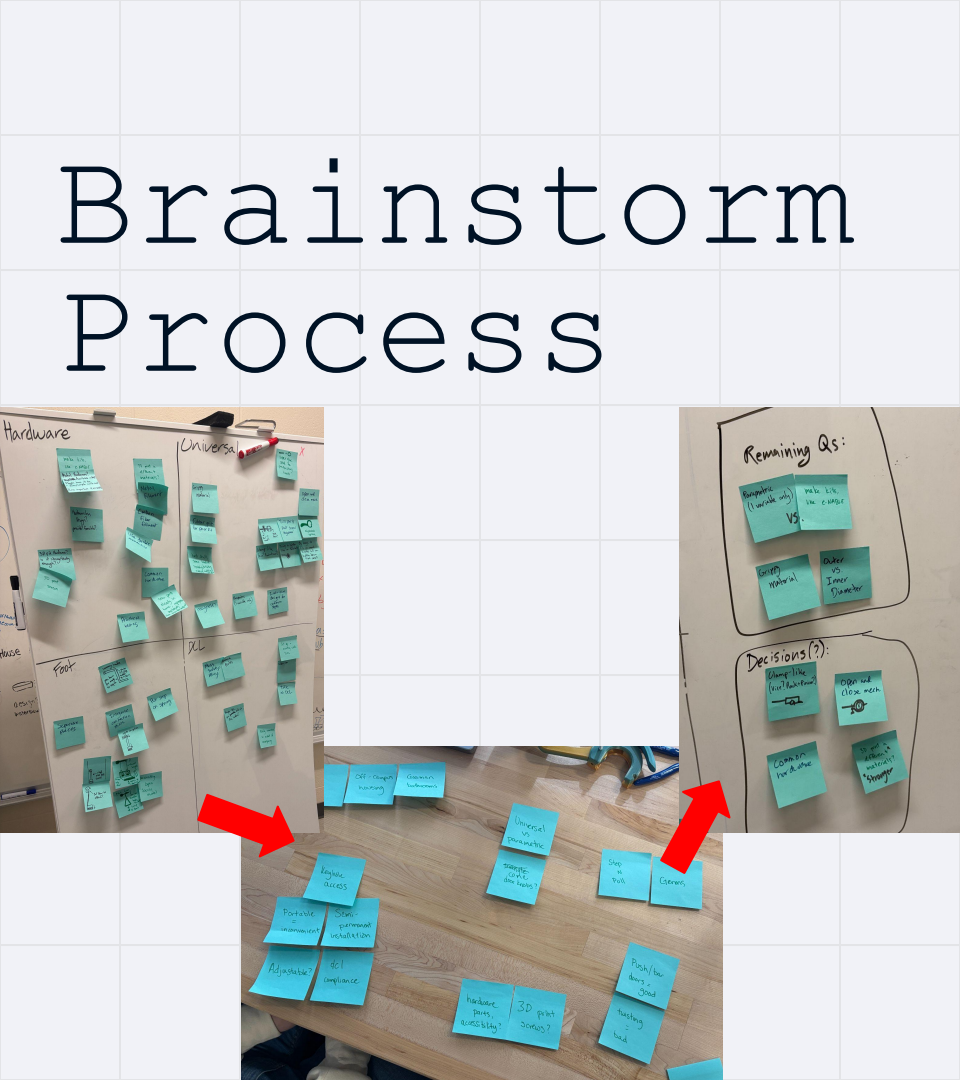- Heavy doors are worse
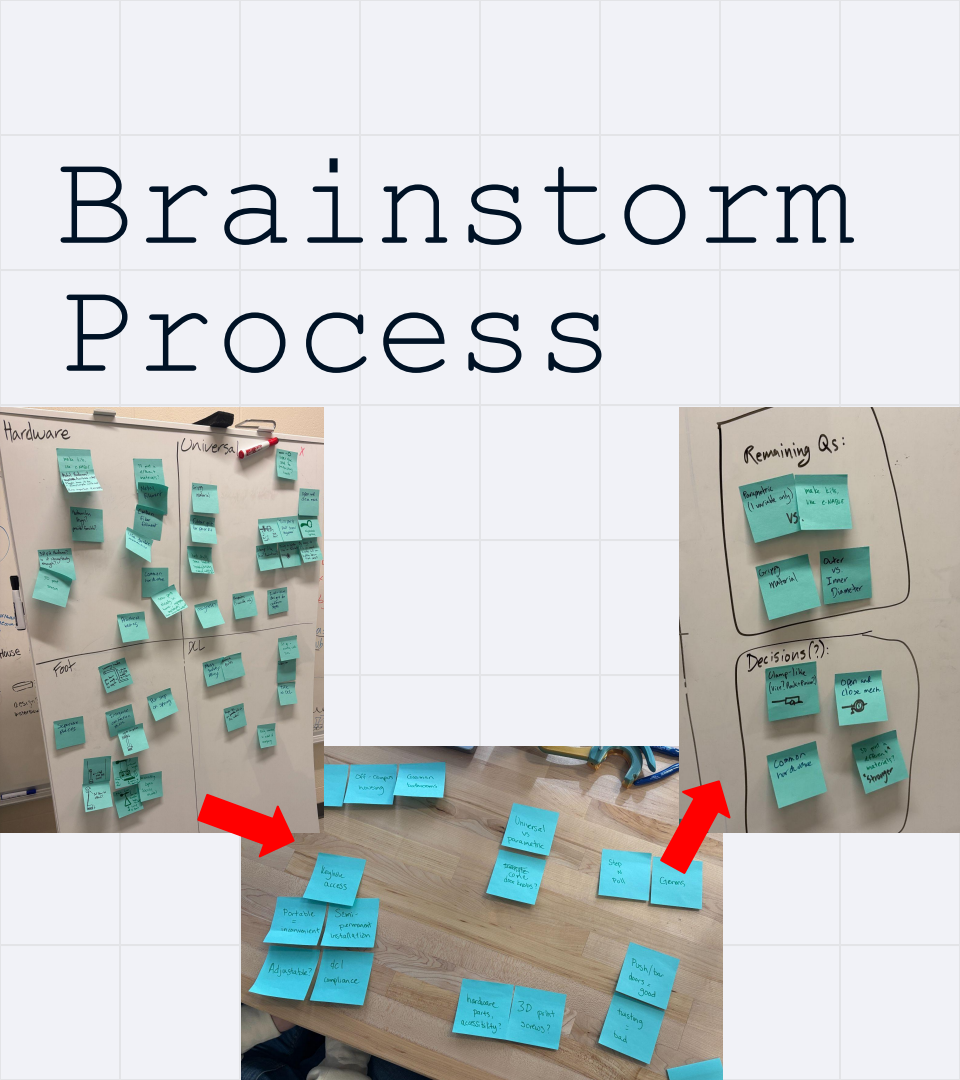- Clunky brace, limits motion

Empathy Map
- Pain from twisting
- Use non-dominant hand/elbow
- Prefer lever/push doors
- High touch surfaces

Brainstorm Process

Idea 1

Design by @CoEngineer
myminifactory.com

Idea 2

Hardwareless design by
@AnonymousHermit
makerworld.com

Prototypes

Prototype 1

Initial clamp design by Ryan Colyer we found on Thingiverse.com

Prototype 2

Same design as prototype 1 in PETG instead of PLA to improve durability
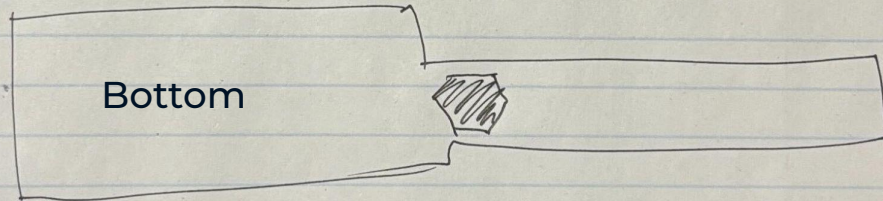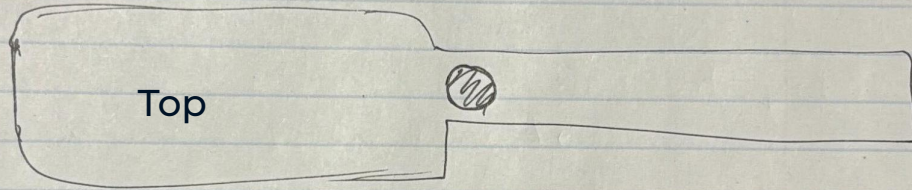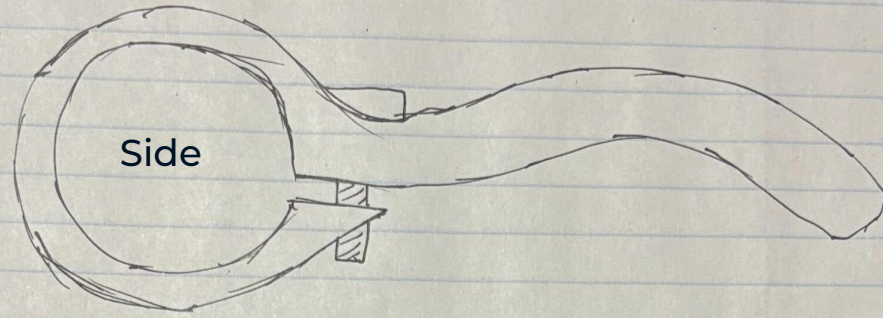
Prototype 3

Our own modelled version based off of the Thingiverse Design, with a simpler mesh and a lip on the front edge

Prototype 4

Prototype 3, but with an extended handle, a hooked end, and a larger lip

Customer Feedback

Likes

- Ergonomic handle
- Sturdy and secure
- Easily installed/fixed
- Less rotation/strength required

Criticisms

- Not enough space between handle & door
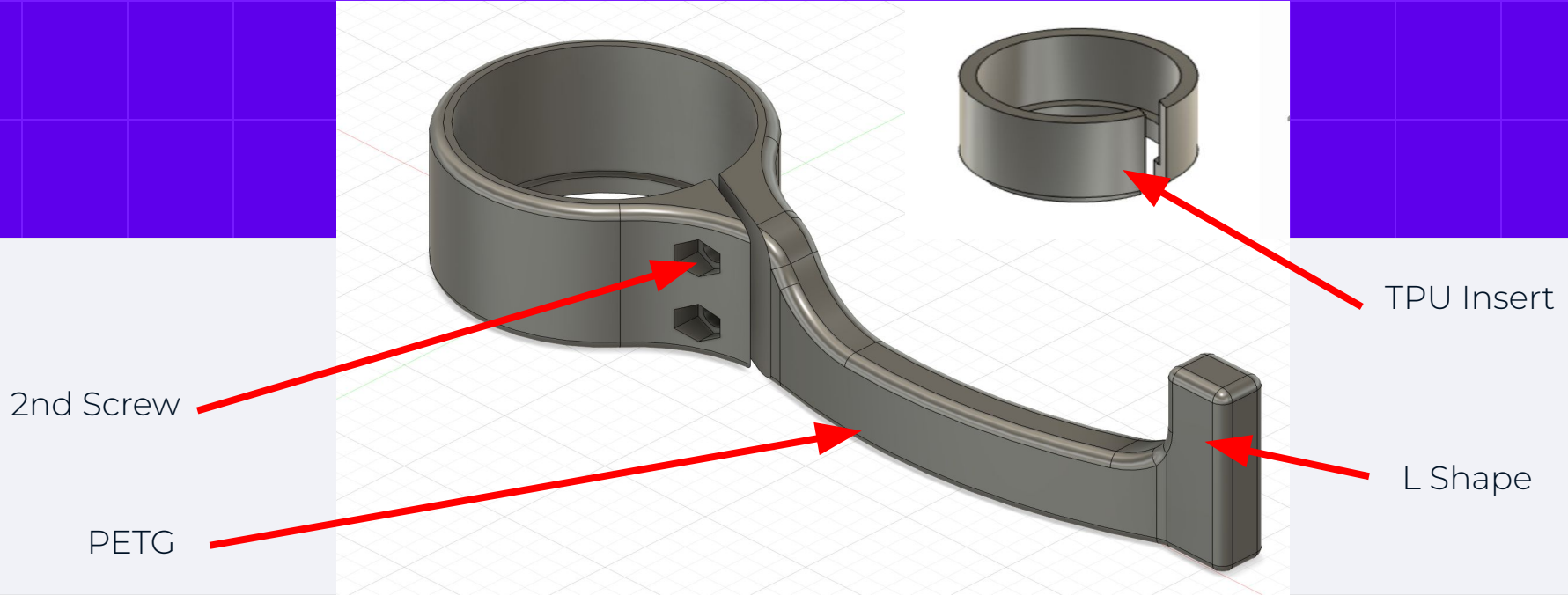- Comes off if you pull too hard
- Twists

Questions

- Any shape door knob?
- Install time?
- Screw accessibility?
- Emergency situations?
- Print settings?

Ideas

- Insert
- L shaped end
- Portable option
- Add a second screw
- Foot operated option

Side

Top

Bottom

Feedback Integration

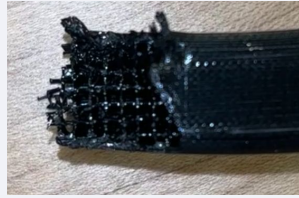
TPU Insert

2nd Screw

PETG

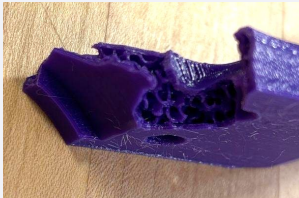L Shape

Product Testing

Printed each testing prototype at 25% infill

Used force gauge to measure how much force each could endure

Rectilinear
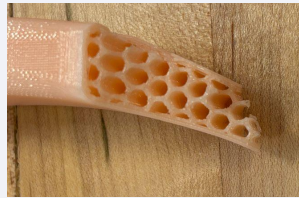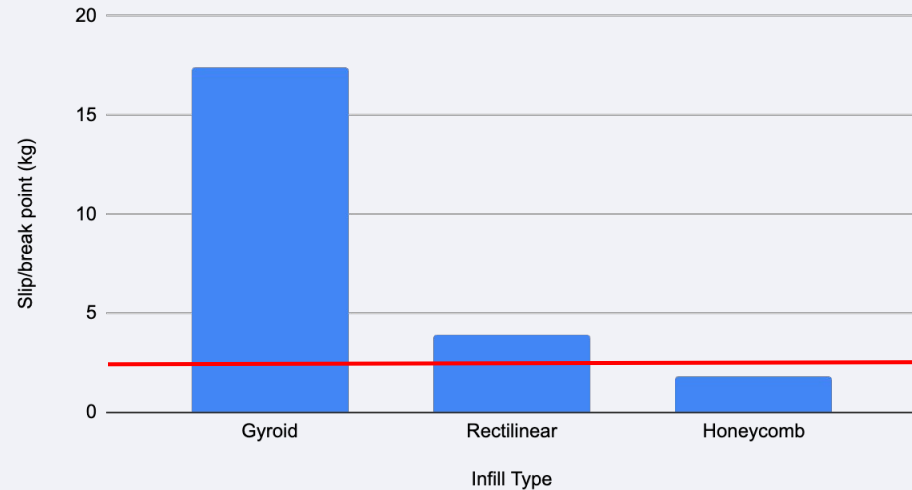

Gyroid

Honeycomb

Breaking Point vs. Infill Type

	(teal)	(gold)	(purple)
Universal	❌	❌	✅
Ergonomic Handle	✅	❌	✅
L Shape	❌	❌	✅
Adjustable	❌	❌	✅
Sturdy	✅	❌	✅

Thank Yew!

Links

Designs Used:
- https://www.thingiverse.com/thing:1695541
- https://makerworld.com/en/models/828347-door-knob-to-handle-adapter
- https://www.myminifactory.com/object/3d-print-portable-assistive-door-handle-22582

Dozuki Guide
- https://brandeismakerlab.dozuki.com/Guide/Accessible+Door+Knob+Adapter/127