Utensil Holder

This project evolved through physical failure and manufacturing constraints, directly shaping the final form.

Design Specification

In this project I will design a **kitchen holder** that solves the everyday problem of where to put a **hot pan lid** *or* **dirty utensil.** Instead of leaving messy utensils on countertops.

- Utensils placed **dirty surfaces** and leave mess.

- Pan lids placed **awkwardly** to avoid contamination or mess.
- Hot lids **risk burns** when picked up.

Design Specification

Functionality

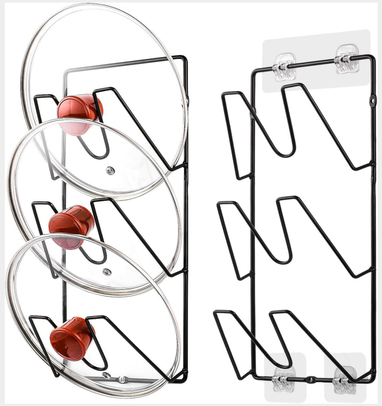
- Holds a **2-3 Small utensils** like a fork or spoon.
- Holds **1 Larger utensil** like a spatula
- Holds one or a range of pan sizes.
- Prevents **contamination** from countertops whilst not making a mess.
- Stable and wont tip if knocked.

Usability

- **Ergonomic** to place or lift utensils or lids.
- Items can be placed by **one hand.**

Existing Products

Joseph Joseph Duo - Set of 3 Pot and Pan Lid Holders



EXAIEW Pot Lid Organizer Rack, 3-Tier Pot Lids Holder for Cabinet Door/Wall

ausyde Kitchen Utensil Holder, Large Cooking Utensils Holder

Design Specification

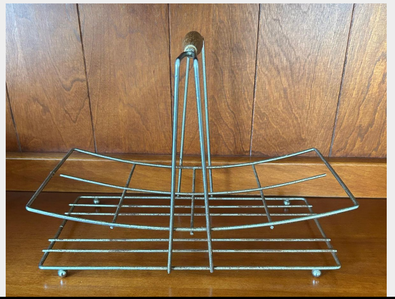
Materials & Manufacture

- Main parts must be **2 part moulded.**
- Smooth surfaces with no deep crevices so it is **easy to clean.**
- Will be made of food safe plastics (PP/HDPE), Steel wire, Ceramics, Jesmonite or composites

Aesthetics

- Inspiration from **Studio B~Du** – sculptural, tactile, and material-driven.
- Designed to feel both **practical and beautiful** in everyday use.

MoodBoard



(Unknown) Mid Century Glass caddy

Pearl City Clay House

@ceramika.nana (Instagram)

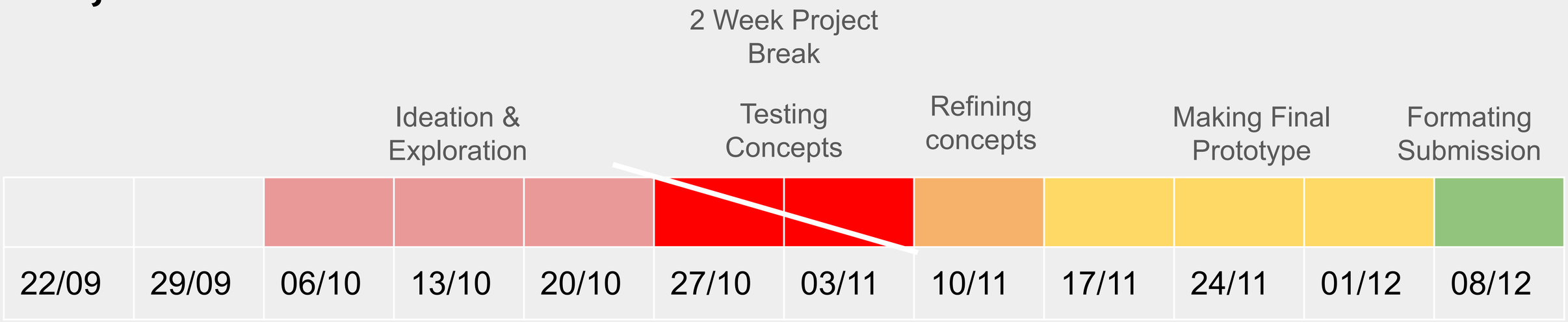
studiobdu.com

Design Specification

Sustainability

- Long lasting or recyclable materials
- Designed for **durability and longevity**
- Minimise material **waste**

Project Timeline



Initial Ideas.

I did some quick sketches, exploring how different forms can accommodate both a pan lid and utensils. I liked this organic shaped design in the bottom right, though I realise its restrictive, the pan lid blocking the path to the utensils.

Prototype 01

This design only works with certain pan lids, as some handles aren't shaped well enough to hook on securely. The cutlery slot is also too wide, so utensils lie flat—*a divider in future versions would fix this.*

I 3D printed this prototype and used the **existing handle on the pans** to let them **hook onto the holder**. This keeps the **handle accessible** while **avoiding obstruction to the cutlery**, unlike some earlier versions.

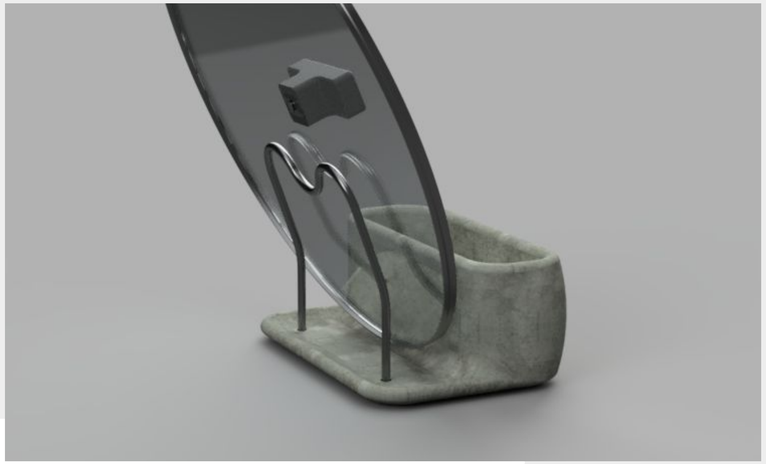
This is important because the pan lid may be hot, and the user shouldn't have to reach around it to grab utensils.

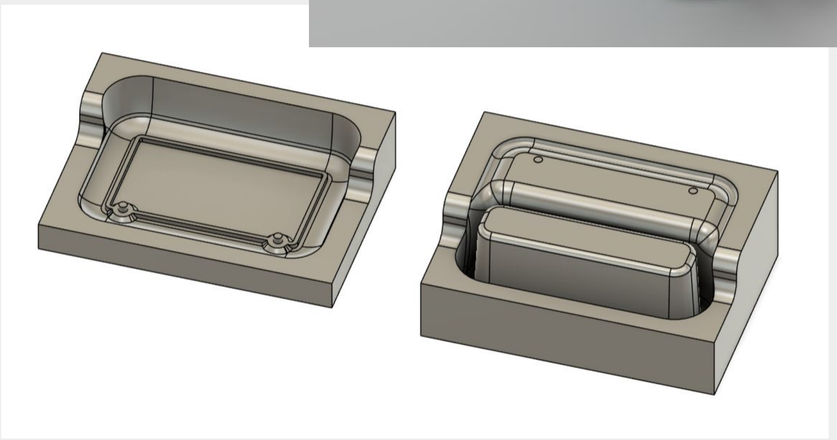
Prototype 01

This design only works with certain pan lids, as some handles aren’t shaped well enough to hook on securely. The cutlery slot is also too wide, so utensils lie flat—*a divider in future versions would fix this.*

Prototype 02

I added a **back rail** to make it **compatible with different lid sizes and handle shapes**, improving its overall versatility. I tried to minimise flat surfaces this time for easier mould removal and cracking during drying.





Prototype 03

I reduced the size of the cutlery holder since it was unnecessarily wide, and added a curved support and drip tray beneath the pan lid. I also split the design into two parts to make molding and cleaning easier.

Slip Casting

- Liquid Slip poured into 2 part, plaster mould.
- The plaster absorbs the moisture, forming a solid clay wall.
- The longer its left until excess slip is poured out, the thicker the walls will be.

Advantages

- Good for complex shapes
- Nice surface Finish
- Easy to attach other parts before firing

Disadvantages

- Takes longer to produce due to drying times
- Moulds can wear over time and lose accuracy

Mould Research

Ceramic Injection Moulding

- Fine Ceramic powders are mixed with a thermoplastic binder.
- This binder helps with qualities like flow of ceramic into the mould or removability from the mould.
- The binder is removed after moulding, either with solvents on in the kiln

Advantages

- Highly accurate, consistent, and fast for batch production.
- Excellent detail replication (tight tolerances).
- Stronger and denser final part than slip cast.

Disadvantages

- High tooling cost — suited for medium to large runs.
- Shrinkage during sintering (~15–20%) must be predicted.

Mould Research

Silicone Casting

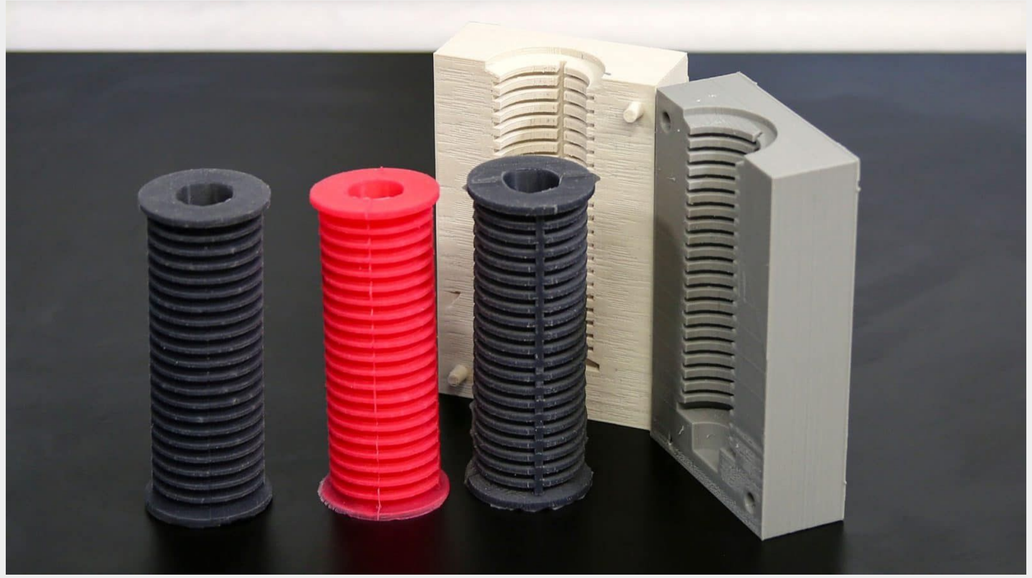
- 3D printing moulds is a quick and easy way to do silicone moulding.
- Fine layer heights, Ironing help a finer result, also sanding the mould can help achieve a smoother surface finish.
- Once the mould is ready, its coated in a release agent or PTFE spray to prevent silicone adhesion.

Advantages

- Rapid iteration: Moulds can be reprinted or modified easily in CAD.
- Low cost: Ideal for prototyping or small-batch production.
- Accurate fit: Produces a flexible base that aligns precisely with the ceramic part.

Disadvantages

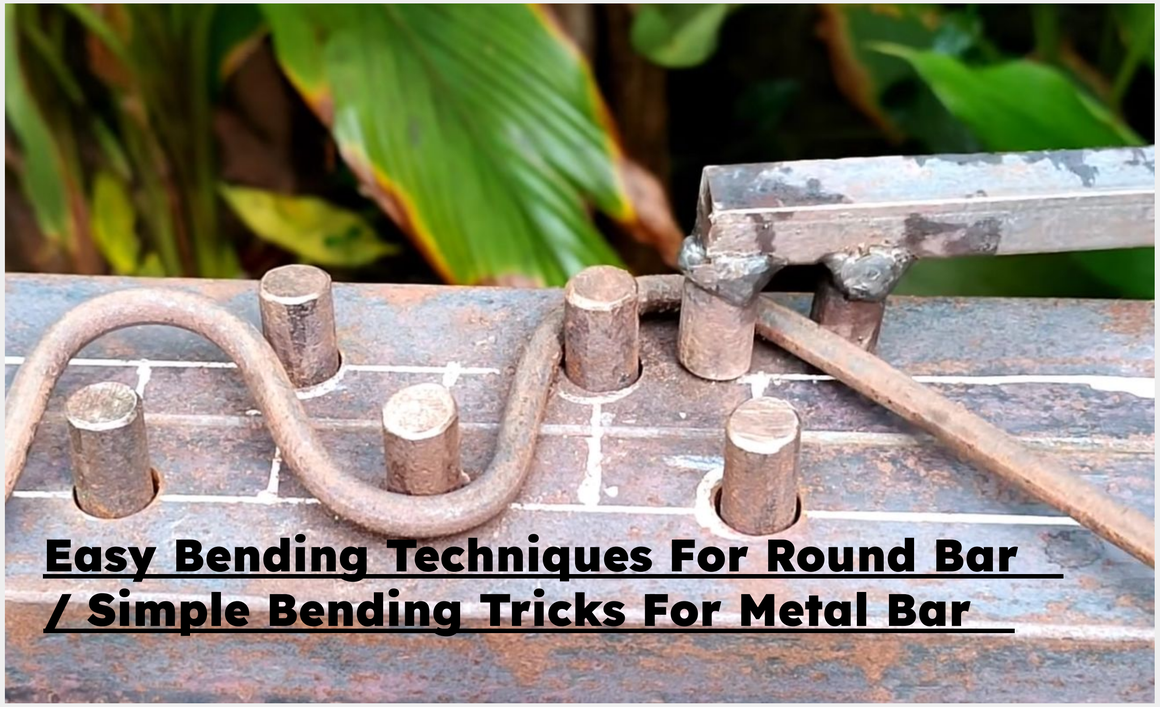
- Printed moulds can deform, warp, or wear out after a few casts — unsuitable for high-volume production without reprinting or reinforcement.



Mould Research

Metal Bar bending (Prototype/Batch)

Simple Jigs can be made for bending metal or for batch production. On a larger scale, special bar bending CNC machines can be used to achieve more consistent



User Observation

Method
Observed personal cooking habits as well as flatmates in everyday use.
Focused on moments where utensils and lids are temporarily put down.

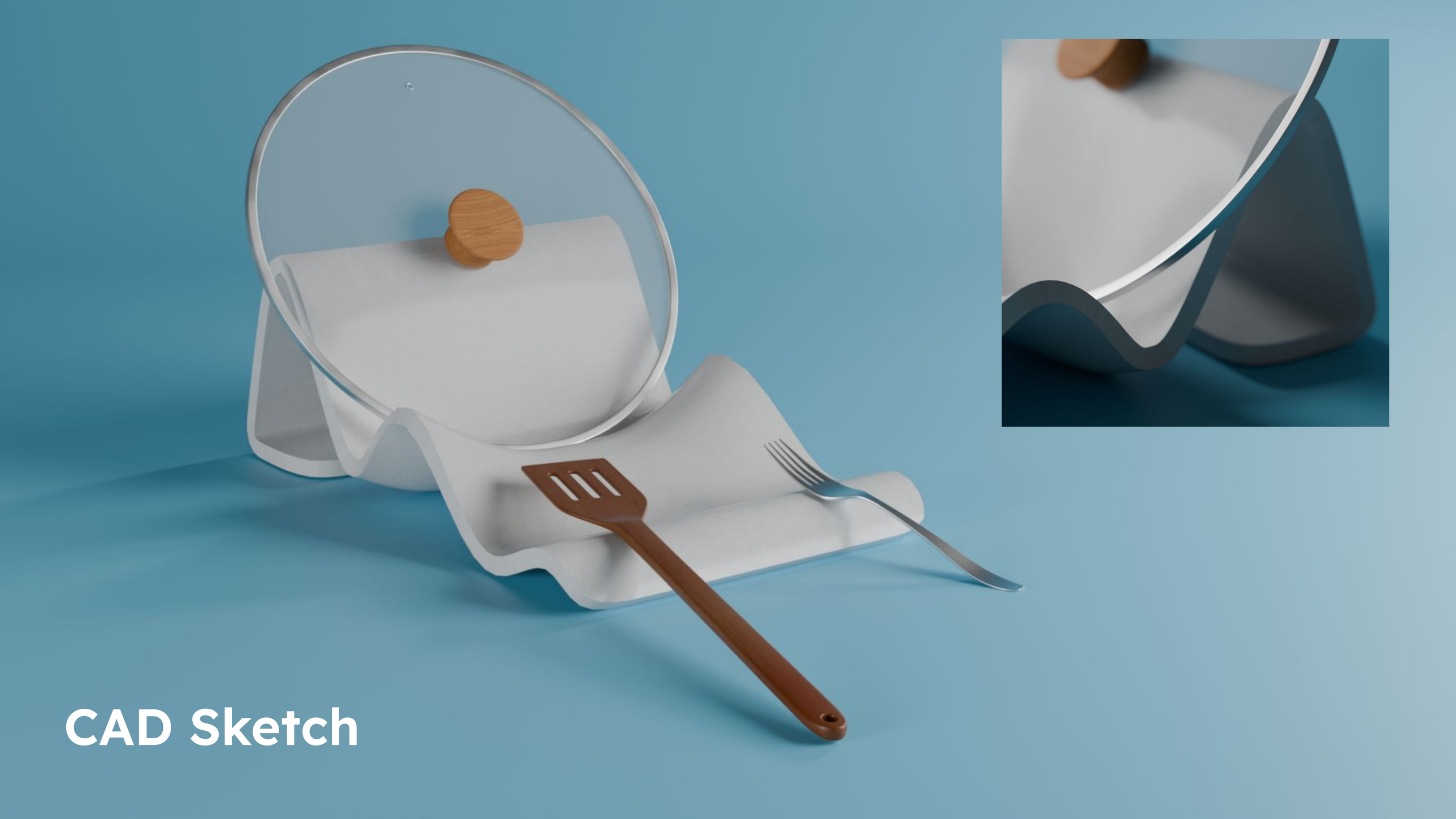
Key Behaviours
Utensils placed on food packaging and sometimes even raw food packaging.
Utensils rested in pans leading to burnt plastic.

Design Implications
Utensils should easily and quickly be able to put down with one hand.
Keep utensils off contaminated

Cardboard Prototyping

Wave like design that keeps mess in the channels

The form makes for items to easily be placed down and the form should be 2 part mouldable.



CAD Sketch

Refinements

Slip Casting seems like the most appropriate Process for this form

Mould Prep

I 3D printed this model to set the moulds. I added a extra compartment on the back for extra utensil storage to make it a 2 part mould.

This did not go to plan as I ended up needing to do a 4 part due to this added complexity.

Moulding

The slip cast mould came out pretty well other than one or two small bits that broke off. I did have to make it 4 part mould however it is feasible to produce this form from a 2 part mould.

The first one I made the walls felt quite thin (about 4-5mm) so I waited a extra 15 mins.

Cracking issues

I made 2 stands, unfortunately both of them cracked, ...I realised both times it was after i cut the sides off. After reconsidering I decided to keep the sides due to their strength adding qualities

The Solution

I decided to keep the sides, the first one i did, the curved edge (the image on the left). It didn't seem to have the Same aesthetic. I decided to extrude the edge inwards. I believe this makes

Branding Opportunities

Le Creuset and Material Kitchen are two well established premium kitchen brands. These brands succeed because they combine high performance with beautiful, display-worthy design.

Their audience already values premium ceramic accessories, clean counters, and high-quality tools, which makes them exactly the type of user who would engage with this product.

The form, material, and function align with their existing product language, and this object fills a gap in their catalogues.

LE CREUSET

material

Reflection

- I did really well finding a everyday problem.
- I got lots of good feedback on it (that it would be a useful product
- I created a good design spec, but struggled find one design to fit criteria.
- I decided to experiment with cardboard prototyping which made me focus on simply how utensils and pan lids could be placed.
- I did not understand how to design for 2 part slip casting moulds
- I made mistakes like adding detail to try make it 2 part but ended up making it 4 part
- It was a shame I didn't make a functioning one before the project deadline however I did overcome a manufacturing issue by using constraints to influence the design