


BIO-CYCLE BIKE SEAT

bar bendet

A cyclist is riding a road bike on a paved road that curves through a dense, dark forest. The cyclist is wearing a dark jersey and shorts, and is seen from behind. The road has white lane markings. The overall scene is dimly lit, suggesting a late afternoon or early morning setting.

how might we implement
biomaterials
in our everyday life?



MATERIALS



ERGONOMICS



KOMBUCHA



GELATINE



MYCELIUM

KOMBUCHA

LEATHER ALTERNATIVE

3/4 TRIAL

Measurements:

- 12 cups water
- $\frac{3}{4}$ cup sugar
- 5 bags of black tea
- 4 tbsp of apple cider vinegar
- Full bottle of kombucha

Process:

- 16 day processing
- Washed with dish soap + baking soda
- 3 days to dry fully

3/4 TRIAL



3/4 TRIAL



3/4 TRIAL



3/4 TRIAL



3/4 TRIAL



2/14 TRIAL

Measurements:

- 8 cups water
- ½ cup sugar
- 4 bags of black tea
- 2 tbsp apple cider vinegar
- ½ bottle of kombucha

Process:

- 35 day processing
- Washed with dish soap + baking soda
- 5 days to dry fully

2/14 TRIAL



2/14 TRIAL



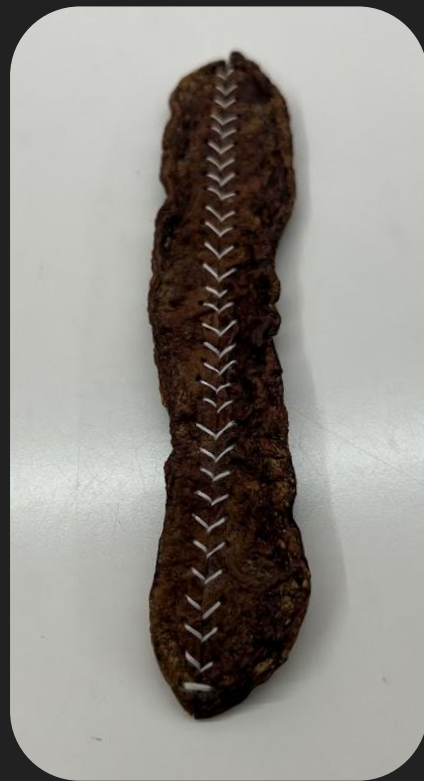
2/14 TRIAL



2/14 TRIAL



2/14 TRIAL



FAILED

2/20 TRIAL

FAILED

Measurements:

- 12 cups water
- $\frac{3}{4}$ cup sugar
- 5 bags of black tea
- 4 tbsp of apple cider vinegar
- $\frac{1}{2}$ bottle of one kombucha bottle, with a full bottle of expired kombucha

Process:

- Ended up not having enough air to create a sheet
- Put in jars to see if it would still grow, and it did

FAILED

2/20 TRIAL

FAILED



FAILED



2/20 TRIAL



FAILED



FAILED

2/20 TRIAL

FAILED



GELATIN

FOAM ALTERNATIVE

2/21 TRIAL

Measurements:

- 3 tbsp gelatine
- 4 tbsp water
- 3 tbsp glycerin
- 1 tbsp dish soap

Process:

- Mixed dish soap when sample was cooling
- Some places hardened faster
- 5 days to dry fully (not sticky)

2/21 TRIAL



3/11 TRIAL

Measurements:

- 6 tbsp gelatine
- 8 tbsp water
- 6 tbsp glycerin
- 2 tbsp dish soap

Process:

- Power whisked dish soap when sample was on medium heat
- Some parts were burnt, then solidified faster
- 4 days to dry fully (not sticky)

3/11 TRIAL



3/11 TRIAL



OBSERVATIONS:

Layering:

- **Bubbles** rose to the top of the sample
- Film of gelatine sunk, at the very bottom of the sample
(**strongest part**)

3/13 TRIALS

Measurements:

- 2 tbsp gelatine
- 3 tbsp water
- 2 tbsp glycerin
- 1 tbsp dish soap
- Yellow or Green food coloring

Process:

- Yellow: hand whisked dish soap until bubbles plateaued
- Green: Power whisked dish soap until stiff peaks (like meringue)
- 4 days to dry fully (not sticky)

3/13 TRIALS





MYCELIUM

PLASTIC ALTERNATIVE

2/21 TRIAL

Substrates:

- Cotton balls
- Sawdust

Process:

- Tried to layer substrates together with premade mycelium
- After two days, everything was mixed together and compacted to add pressure
- Water was sprayed in about every week

2/21 TRIAL



2/29



4/25

2/22 TRIAL

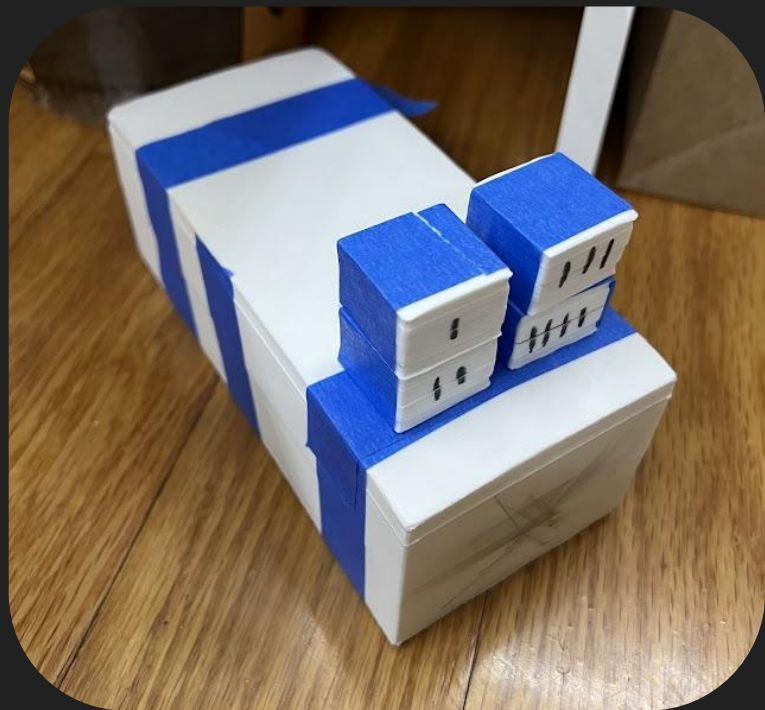
Substrates:

- Sawdust

Process:

- Layered sawdust with the existing substrate, with water
- Closed and taped the mold together
- No adjustments made after sealed

2/22 TRIAL



2/29



3/18

2/22 TRIAL



3/22



4/4

FULL TEST RUN:
MATERIALS

COMBINING MYCELIUM WITH GELATINE



COMBINING MYCELIUM WITH GELATINE

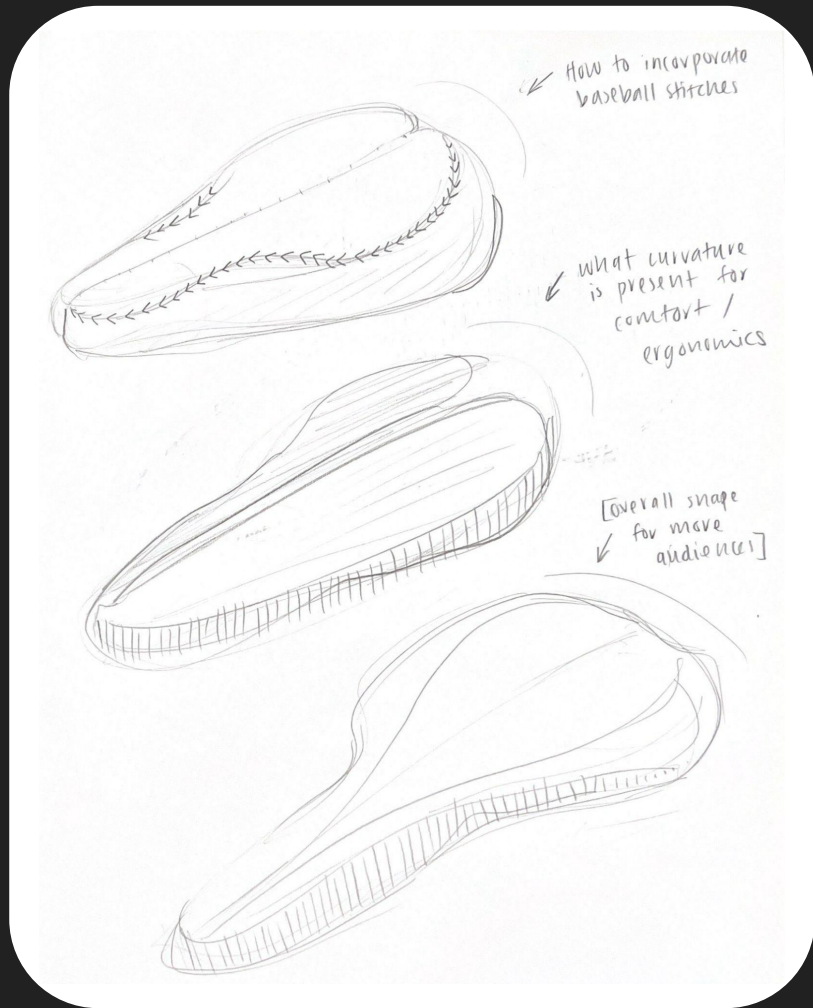


COMBINING MYCELIUM WITH GELATINE





DESIGNING THE SEAT

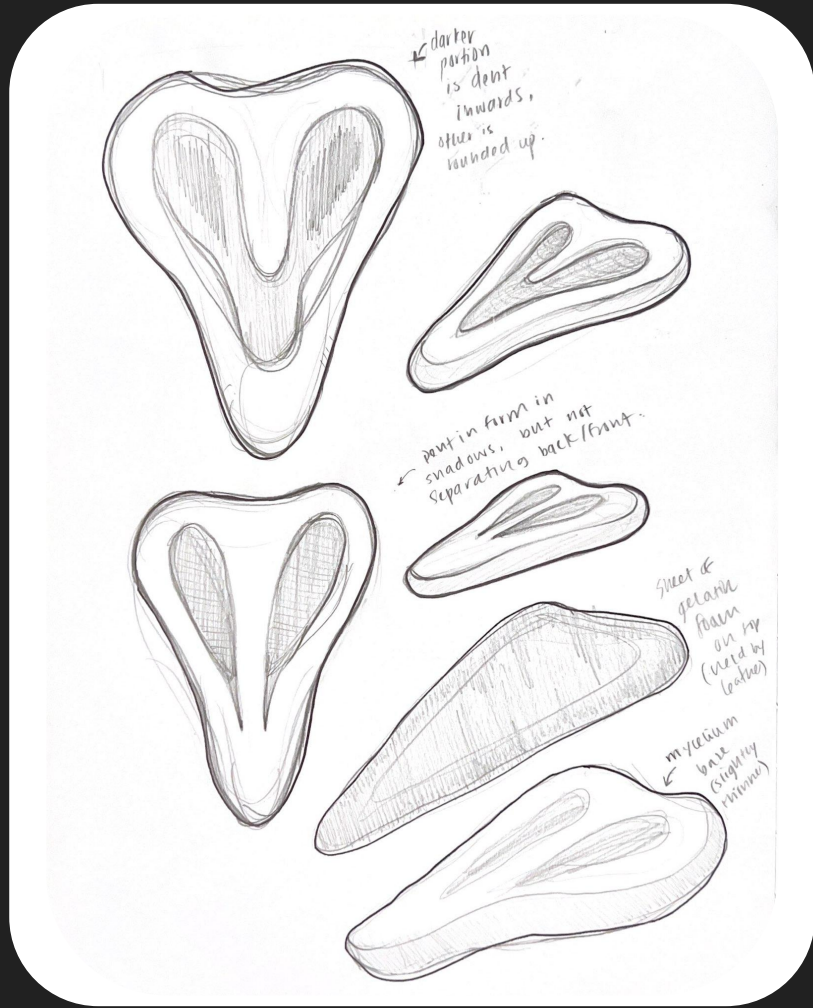


FIRST CONCEPTS

Figuring out **stitching**

Overall **shapes**

Design language

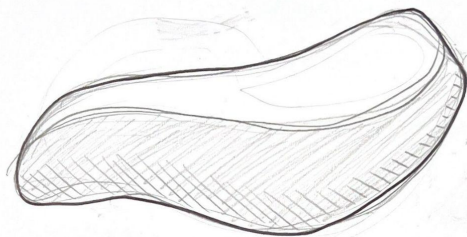


ERGONOMICS

Target audience

Decreasing pressure

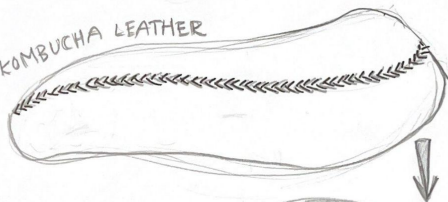
[ergonomics research link](#)



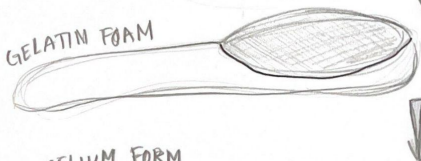
gelatin
mycelium
kombucha



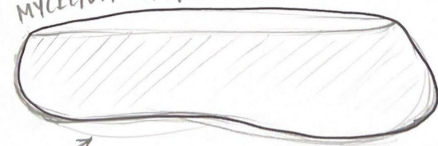
KOMBUCHA LEATHER



GELATIN FOAM



MYCELIUM FORM



metal grown into
the form, or added
later?

[layered and
put together
with pressure
on kombucha]

TESTS:

- ergonomics, how it fits on a body (comfort)
- angles and aesthetics of final product
- how do layers interact within the final form?

MATERIALS x DESIGN

Putting together materials

Interaction between user and materials

Incorporating the **final design**























