



Ingredient List



Glycerol



Gelatin



Water

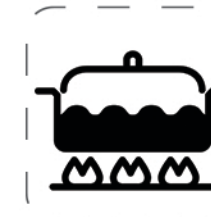
Preparation Steps



Adjusting the quantities of ingredients.



Mix together.



Stir over medium heat until it thickens and bubbles form.



Pour it into a mold.

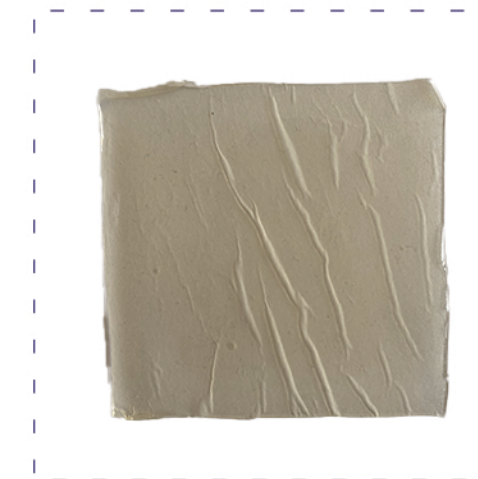
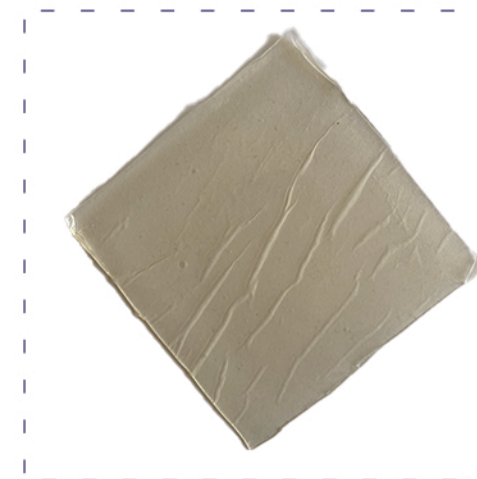
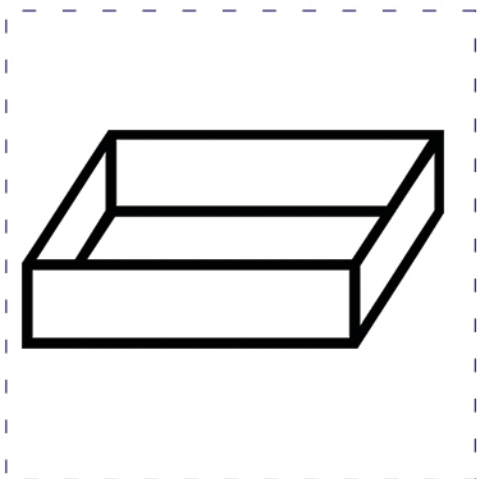
Material Assessments

hard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	soft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	rough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
matte	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	glossy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
strong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	weak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

opaque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	transparent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
tough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ductile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	heavy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not-fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RECIPE 01

Forming Technique Molding



References

http://web.archive.org/web/20230228055611/https://issuu.com/nat_arc/docs/bioplasic_cook_book_3



Ingredient List



Glycerol



Gelatin



Water

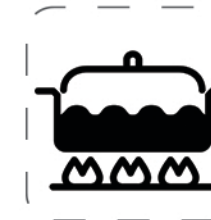
Preperation Steps



Adjusting the quantities of ingredients.



Mix together.



Stir over medium heat until it thickens and bubbles form.



Pour it into a mold.

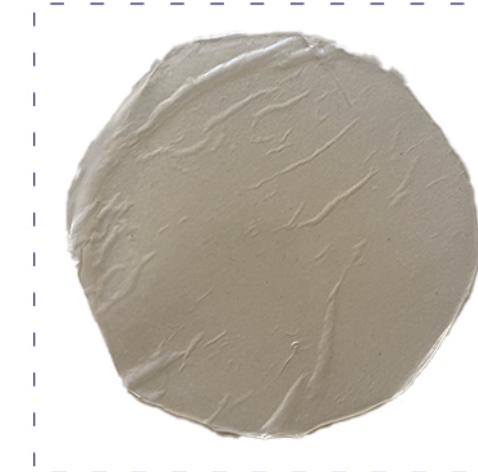
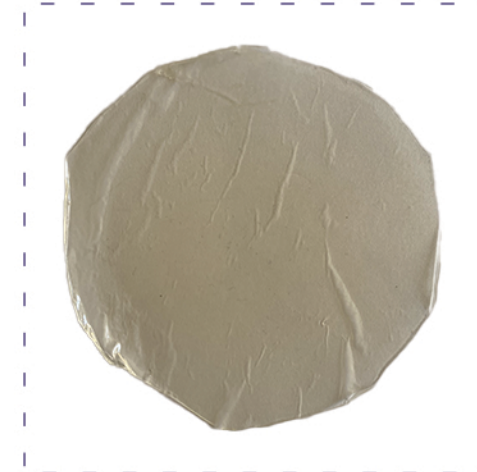
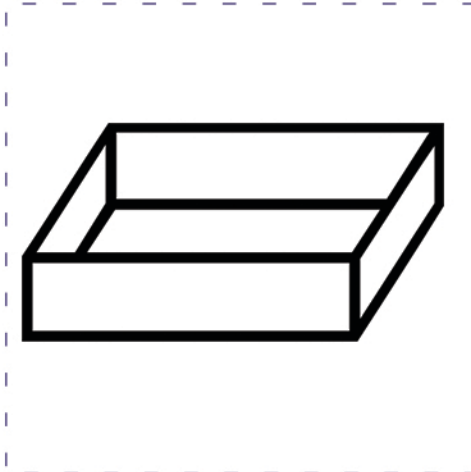
Material Assessments

hard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	soft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	rough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
matte	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	glossy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
strong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	weak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

opaque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	transparent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
tough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ductile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	heavy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not-fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RECIPE 02

Forming Technique Molding



References

http://web.archive.org/web/20230228055611/https://issuu.com/nat_arc/docs/bioplasic_cook_book_3



Ingredient List



Glycerol



Gelatin



Water

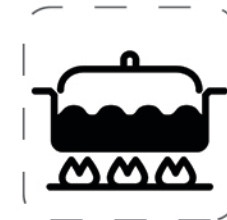
Preperation Steps



Adjusting the quantities of ingredients.



Mix together.



Stir over medium heat until it thickens and bubbles form.



Pour it into a mold.

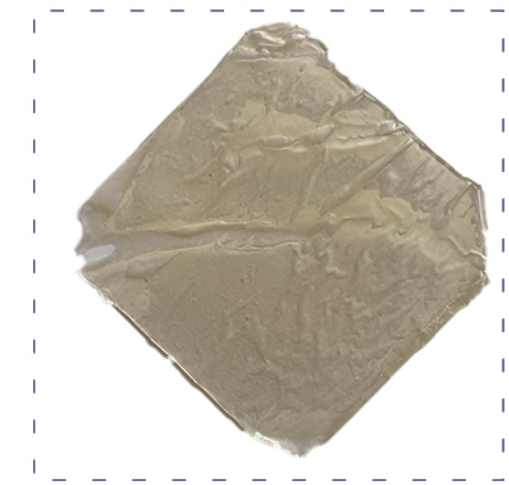
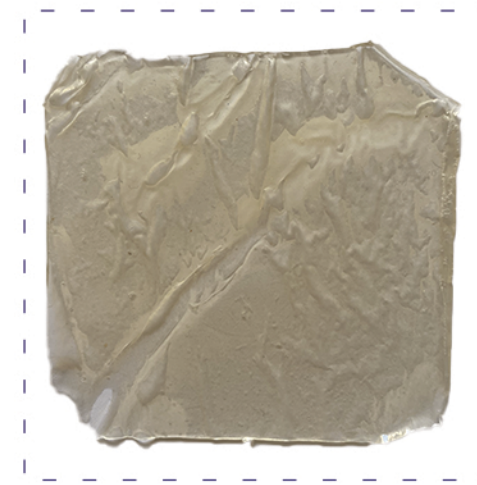
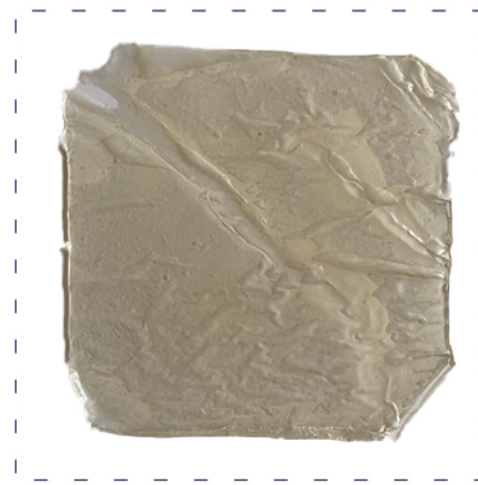
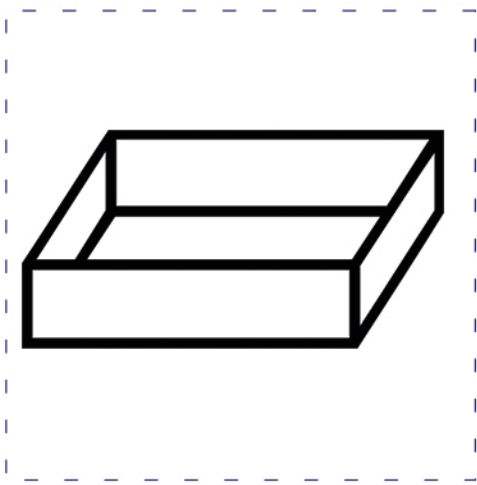
Material Assessments

hard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	soft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	rough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
matte	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	glossy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
strong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	weak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

opaque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	transparent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
tough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ductile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	heavy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not-fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RECIPE 03

Forming Technique Molding



References

http://web.archive.org/web/20230228055611/https://issuu.com/nat_arc/docs/bioplastic_cook_book_3



Ingredient List



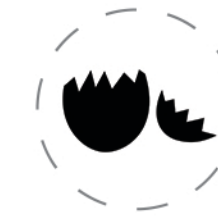
Glycerol



Cornstarch



Water



Egg Shell

Preperation Steps



Adjusting the quantities of ingredients.



Mix together.



Stir over medium heat with bain-marie technique until it thickens and bubbles form.



Pour it into a mold.

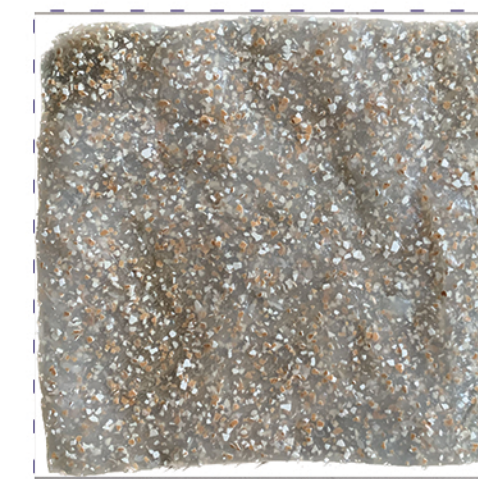
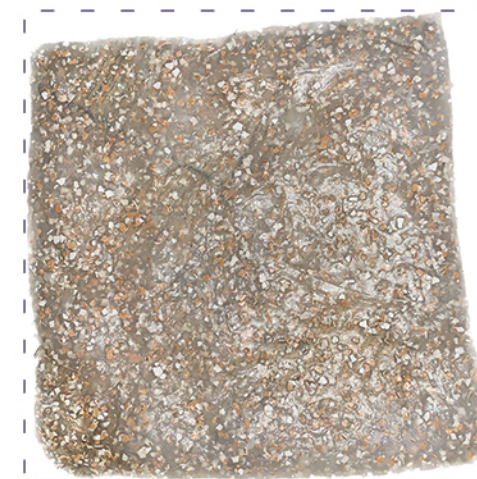
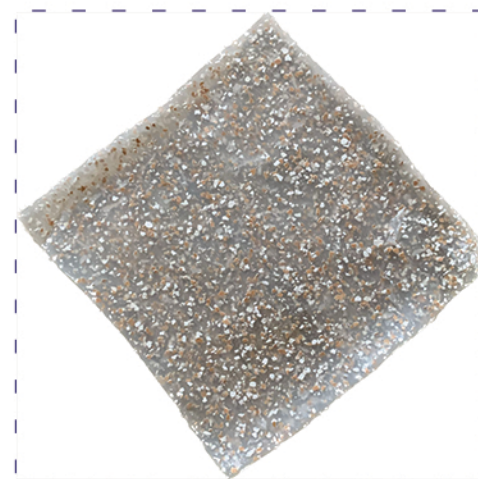
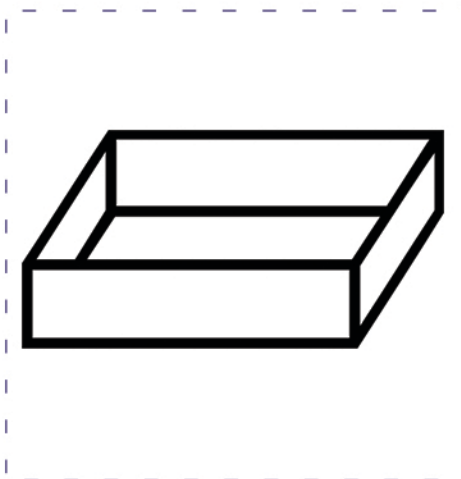
Material Assessments

hard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	soft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	rough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
matte	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	glossy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not elastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
strong	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	weak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

opaque	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	transparent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
tough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ductile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
light	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	heavy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not-fibred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RECIPE 04

Forming Technique
Molding



References
<http://www.materiom.org/recipe/682>



Ingredient List



Glycerol



Cornstarch



Water



Egg Shell

Preperation Steps



Adjusting the quantities of ingredients.



Mix together.



Stir over medium heat with bain-marie technique until it thickens and bubbles form.



Pour it into a mold.

Material Assessments

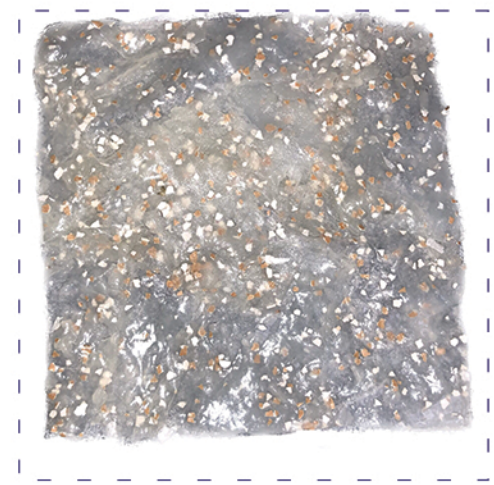
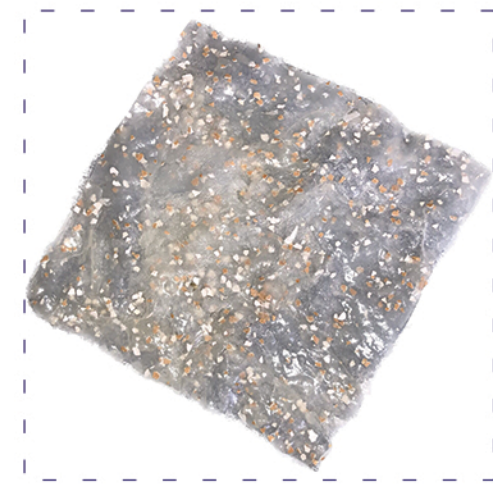
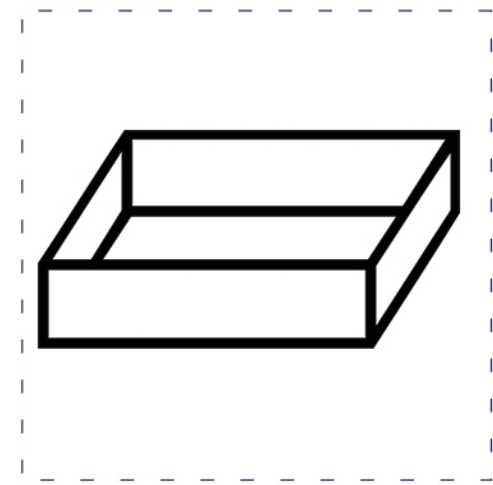
hard	<input type="checkbox"/>	soft	<input type="checkbox"/>
smooth	<input type="checkbox"/>	rough	<input type="checkbox"/>
matte	<input type="checkbox"/>	glossy	<input type="checkbox"/>
elastic	<input type="checkbox"/>	not elastic	<input type="checkbox"/>
strong	<input type="checkbox"/>	weak	<input type="checkbox"/>

opaque	<input type="checkbox"/>	transparent	<input type="checkbox"/>
tough	<input type="checkbox"/>	ductile	<input type="checkbox"/>
light	<input type="checkbox"/>	heavy	<input type="checkbox"/>
fibred	<input type="checkbox"/>	not-fibred	<input type="checkbox"/>

RECIPE 05

Forming Technique
Molding

References
<http://www.materiom.org/recipe/682>






RECIPE 06



Ingredient List

			
Glycerol	Cornstarch	Water	Egg Shell

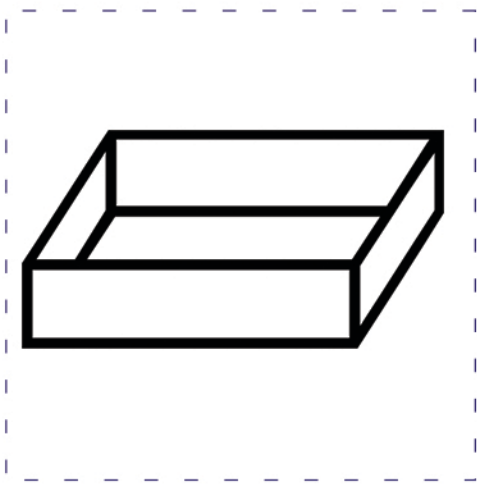
Preperation Steps

			
Adjusting the quantities of ingredients.	Mix together.	Stir over medium heat with bain-marie technique until it thickens and bubbles form.	Pour it into a mold.

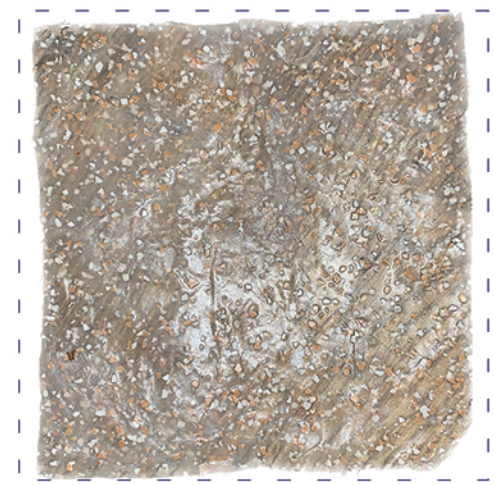
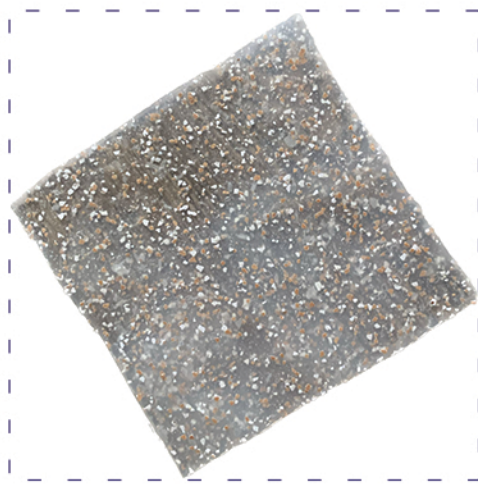
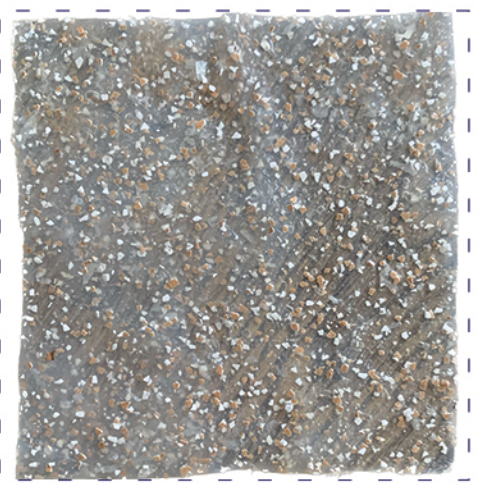
Material Assessments

hard <input type="checkbox"/>	<input type="checkbox"/>	soft <input type="checkbox"/>	opaque <input type="checkbox"/>	transparent <input type="checkbox"/>
smooth <input type="checkbox"/>	<input type="checkbox"/>	rough <input type="checkbox"/>	tough <input type="checkbox"/>	ductile <input type="checkbox"/>
matte <input type="checkbox"/>	<input type="checkbox"/>	glossy <input type="checkbox"/>	light <input type="checkbox"/>	heavy <input type="checkbox"/>
elastic <input type="checkbox"/>	<input type="checkbox"/>	not elastic <input type="checkbox"/>	fibred <input type="checkbox"/>	not-fibred <input type="checkbox"/>
strong <input type="checkbox"/>	<input type="checkbox"/>	weak <input type="checkbox"/>		

Forming Technique
Molding



References
<http://www.materiom.org/recipe/682>

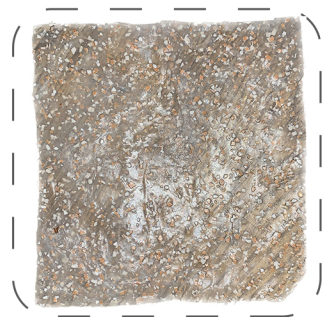




S-1



S-2



S-3

Starch based samples

S1,2,3



G-1



G-2



G-3

Gelatin based samples

G1,2,3

- S-1
- 5gr Glycerine
 - 100ml Water
 - 11gr Corn Starch
 - 10gr Eggshell

oven:

air fryer:

air dry:

20C

72hours/3days

- S- 2
- 10gr Glycerine
 - 100ml Water
 - 11gr Corn Starch
 - 10gr Eggshell

oven:

air fryer:

air dry:

20C

72hours/3days

- S- 3
- 15gr Glycerine
 - 100ml Water
 - 11gr Corn Starch
 - 10gr Eggshell

oven:

air fryer:

air dry:

20C

72hours/3days

- G-1
- 4gr Glycerine
 - 60ml Water
 - 12gr Gelatin

oven:

air fryer:

air dry:

17C

96hours/4days

- G- 2
- 6gr Glycerine
 - 60ml Water
 - 12gr Gelatin

oven:

air fryer:

air dry:

17C

96hours/4days

- G- 3
- 8gr Glycerine
 - 60ml Water
 - 12gr Gelatin

oven:

air fryer:

air dry:

17C

96hours/4days

Drying Method

Temperature

Time period

Drying Method

Temperature

Time period

Observations about the materials and their effects: (gelatin based)

- 1) Gelatin thickens and hardens the material.
- 2) Glycerine acts as an emollient.
- 3) As glycerine increased, the bioplastic softened.
- 4) Since I kept the amount of gelatin the same, the colors did not change.

Observations about the materials and their effects (starch based)

- 1) Cornstarch is a biopolymer and provides hardness and durability to the bioplastic.
- 2) If the bioplastic mixture is spread thickly, it cracks as soon as it dries.
- 3) As glycerin increases, the bioplastic becomes more flexible.
- 4) In our experiments using vinegar, we got the result of cracking and breaking.