

Level 6 – Research Framework Document - expandable template

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Summary Sentence or Research Question:

Biodegradable plant pot made of **Agar and waste wood sawdust**.

Summary Statement:

Replacing plastic plant pots to these beautiful textured environmentally friendly plant pots.

Research Methods:

TOPICS

- Biodegradable bioplastic.
- Types and process of making bioplastic.
- Articles and past papers of experiments conducted.
- Experiment with 4-5 ingredients.
- Design museum talk on organic material and production process.
- Internship at Chips Board to understand whole process from making to finished.

Medium for Research:

I started with **researching** on basic topics about environmentally friendly objects and then moved to bioplastic and **studying papers** about previous experiments done by people using various natural ingredients such as shells, corns and more. After I had some information, I began **experimenting** in making the material and drying them to see the result.

For my project I needed my material to be in context rather than just a sample, therefore side by side I began by going for a **design museum talk called "future generations"**, and then researching on various topics through **BBCs podcasts, past papers and books**. I did have a hard time in figuring out my material for an alternative plastic product. So, I stepped back as my tutor suggested and started looking at my material and understanding its properties and strength and weakness. That's how I concluded making Plant pots. Also during my **internship, I learnt about heat compression and adding papers** that could avoid sticking and giving it a perfect thickness. This knowledge now would help me in the future when I want to remake it.

I visited various **plant shops in Brighton** and noticed many plastic plant pots being sold for cheaper price and they were all in one shape and different colors. My inspiration and decision to make pots for herb plants came from the mineral's agar obtains that could benefit the plant itself during absorption.

In conclusion, towards the end the material and product came hand in hand and is now in designing process.

Key Words:

Biodegradable, Agar, Waste wood sawdust, herb plant pots, minerals, Petroleum' Plastic,

Material and Technical Investigation:

My project is divided into two parts material and design.

Material: -

I started experimenting with **agar, corn, potato and banana**. After the making and drying process, it resulted that agar was the best option for replacing plastic product as it had similar properties. However, I needed it to have better rigid and tensile strength. Luckily during my research for dissertation, I came across a study stating adding **wood fibers (sawdust)** could improve property of a material. Hence, I gave that a try and it gave a beautiful textured strong material. My aim was to use waste as my additional ingredient to have low cost and give meaning and purpose. I have recorded most of it in my sketch books.

On the other hand: -

Technical:-

I was keen on knowing if I could 3d print my material, learning about syringe printing that is used for ceramic printing I bought 2 syringes and began testing consistency to gain the perfect thickness to get any form I wanted. After a few tries I was successful in getting it. However, due to some technical difficulty I couldn't go ahead with printing it. I still do aim to use this technique in one of my final pieces.

The other technique I mainly used was sewing which gave a clean joint opportunity and hence I practiced and then finally used it on my material for completion of my designs. I used fabric glue to first join, so it does not move from its place and then sewed on top of it.

Timescale of work across the year:

October- Researched on basics and types of ingredients

Novemeber- experimented with various ingredients to see results.

December- Continued researching while doing my dissertation that helped in my design work.

January- started thinking of products I could make out of the material innovated.

February – After several rejections of figuring out I came to a conclusion of making plant pots as the material would benefit the plants that could grow in them.

March- Now it was time to create designs, I really did struggle the whole time to create design ideas. That's when I started reading about biomimicry about looking at nature and getting inspired.

April- Did an internship that boosted my confidence and I started designing and getting everything together.

May- Making it into a finished design piece for degree show.

Identify potential professional contexts for your work:

I see my work as **indoors plant pots** for herb plants or any small plants that could be placed in the **living room, kitchen or even office** to have some fresh leaves to have tea or any other purpose.

3D Outcomes:

I will be producing 3 3D outcomes inspired by mint and basil herbs.

Presentation & Display:

- **3 - 3D Designs**
- **3 posters of design thinking process, rendering and professional photos of Final design.**
- **Old experiment materials and process.**
- **Portfolio**
- **Feedback book**

Portfolio / Publication:

- Photography
- Biomimicry book for understanding the inspiration of herb plants to design.
- Experiments and Tests
- Rhino to explain my drawings in digital forms.
- Rendering in real space to show my vision of where my product is most likely suitable.
- Brainstorming ideas in the form of mind maps.

Ethical considerations - If you answer YES to any of these questions then email Patrick IMMEDIATELY

Will you be asking anyone questions (interviews and or questionnaires)?

NO

Will you ask people to test or physically evaluate your work for you?

NO

Do you intend to run a workshop that involves a group of people?

NO

Do you intend photographing, videoing or sound recording anyone?

NO

Does your work involve children?

NO

Brief outline of ethical considerations:

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BA(hons) Dissertation Title / MDes Essay Titles:

IS BIODEGRADABLE BETTER THAN PETROLEUM PLASTIC?

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