

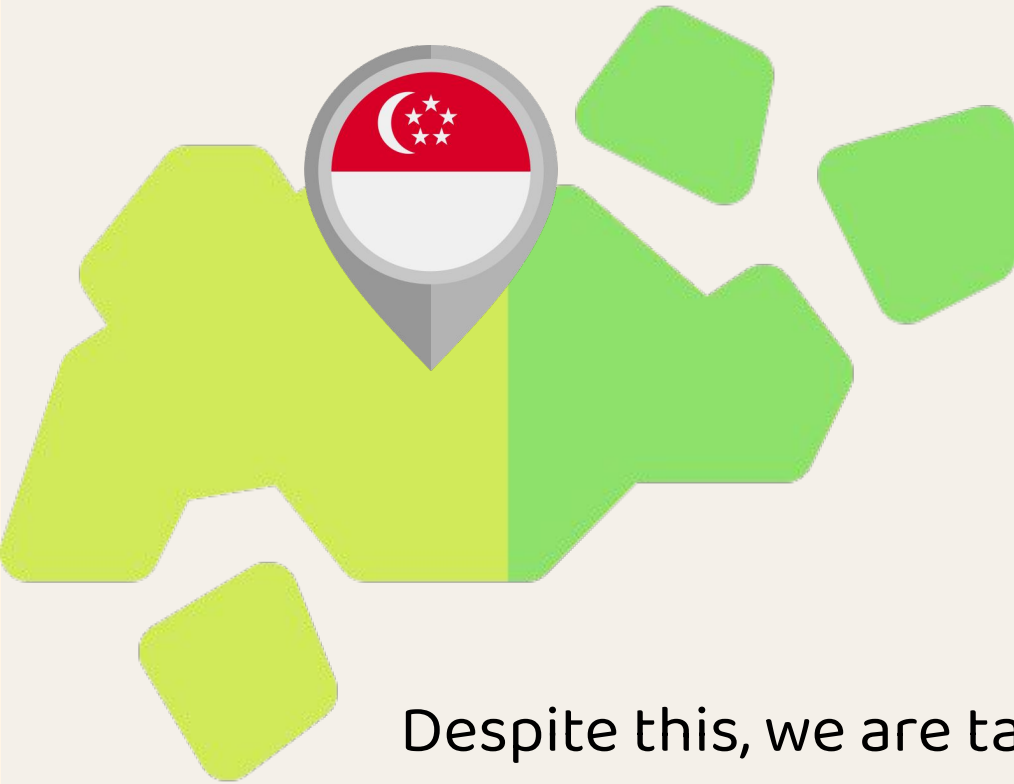


National Design Project Eco VermiTech

Global Advocates

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Chung Sunho
Deng Kaile





In Singapore alone,
every day,

2 million

Kilograms of food is
wasted. That's about
the weight of 1,142
Teslas!

Despite this, we are taking things for granted and
we are continuing to waste food.



Global warming

When food is wasted, so are all of the resources used to grow and deliver the food to our tables, as well as to dispose of it. This increases our carbon footprint, contributing to global warming and climate change.

Food waste accounts for one-third of all human-caused greenhouse gas emissions and generates 8% of greenhouse gases annually.



Our research



1. [Making treasure out of trash: Firms turn food waste into compost, insect feed - CNA](#)
2. [Don't squash it: Insects are helping to combat Singapore's food waste problem - CNA](#)
3. [Strategies for combatting food wastage](#)
4. [Food Waste](#)
5. [What Is Fly Ash and How Is It Used in Concrete?](#)

Explanation: They all explain how we can upcycle our food waste of all types (with or without bones) by turning them into and compost. By converting them into more useful materials, we can not only lessen food waste, but also create useful stuff.



Our story



The Vietnamese stall in our canteen is very generous and gives us a lot of food. Sometimes, it isn't really good, as there are some days where students feel like they do not want to eat a lot of food that day, which causes them to dispose the food into the bins rather than eating it. Thus resulting in the food getting wasted



Persona

Name: Chung Sunho

Age: 14

Gender: Male

Occupation: SJI Student

Background that will reflect on the design solution: This Josephian buys food every day from the canteen. He is sometimes unable to finish eating his meal during recess when there is limited time. Thus, he has no choice but to waste it. If he could choose the amount of food that goes on his plate based on how much time he has, he would probably waste less food.



Low Fidelity Prototype



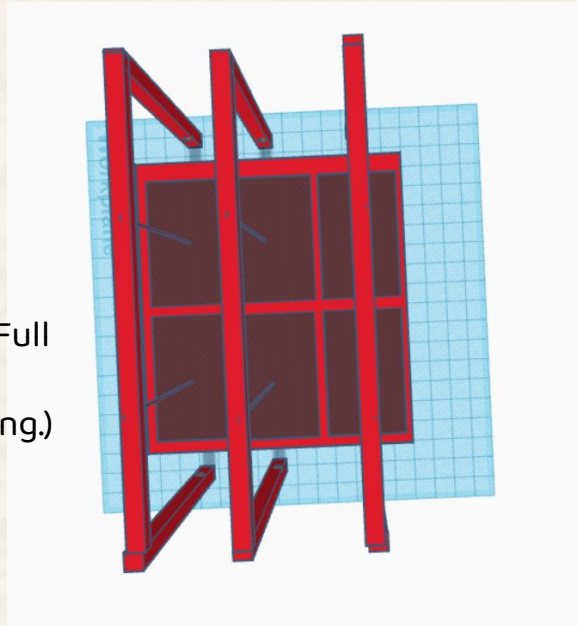
Ropes to pull the boxes up

Support beams



Pulley system



Compost bins (Full of worms for vermicomposting.)



Issues with low-fidelity prototype

- Pulley system would be redundant and difficult to use thus making it less user friendly
- Design is sub-par, not attractive
- Looks complicated 
- Takes up a lot of space
- May cost extra to build and to use. 





Our Product

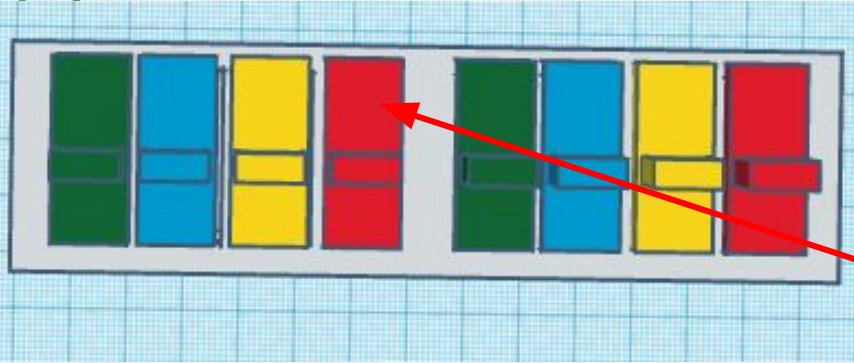
Introducing...

《EcoVermiTech》

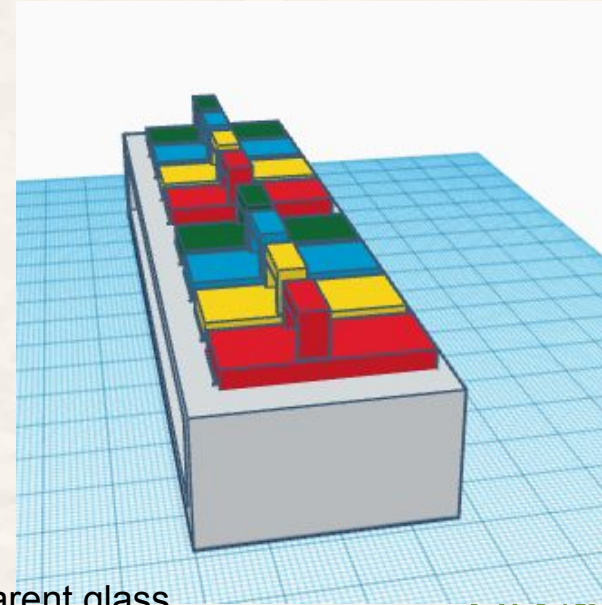
A product that aims to solve the issue of food waste by converting it into compost which can be used in gardens, using vermicomposting.



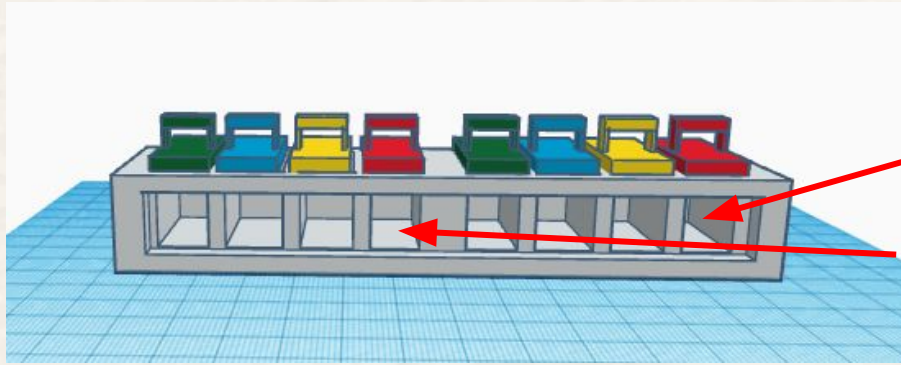
High-fidelity Prototype



Lids to cover
Compartments
which hold
composts
(Watertight)



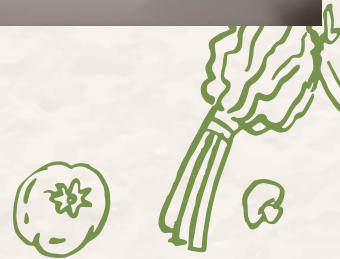
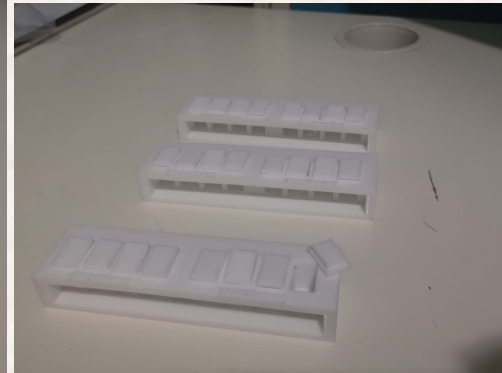
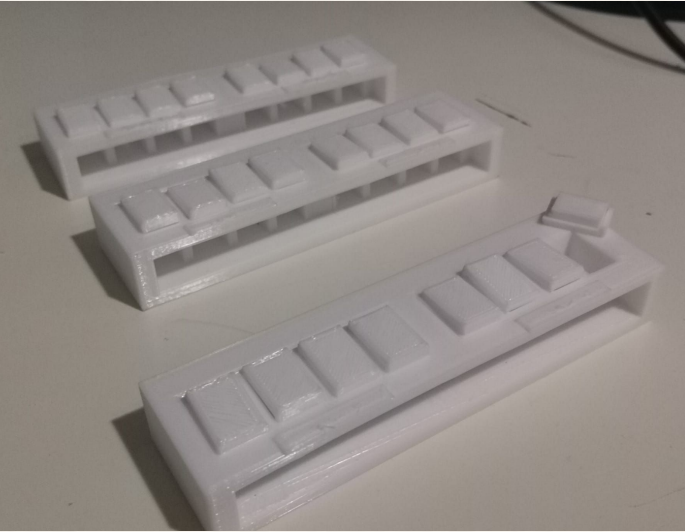
Transparent glass



Compost bins



3D Printed Model



How does VermiComposting work?

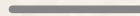
Vermicomposting is a composting technique that uses worms to break down organic waste, producing fertile soil amendments called worm castings. This method is known for its effectiveness, speed, and high-quality compost.



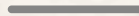
Students waste food



Waste is collected in bins and transferred



Waste is composted through worms



Fertiliser is collected and used

g.





Compost usage

- Compost can be given to local community gardens in community centers/ housing estates to give back to communities
There are around 1900 gardens in Singapore that make Singapore a more vibrant and green place
- We can have a gardening corner in SJI to inculcate a greener environment
- By helping the gardens out , we are able to encourage others to take up gardening!



Team Global Advocates



Akshaj Prabhakaran

Babu Monish

Aidan Chong

Deng Kaile

Chung Sunho

Designer



Questioner



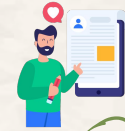
Leader



Labeller

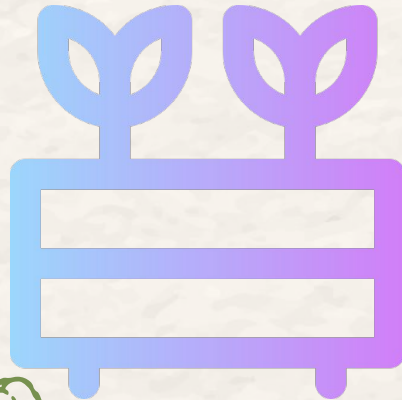


Storyteller





"Doing our part, making a
difference, just trying to
compost"





**Thank
you!**