TEAM MEMBERS

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ANGLICAN HIGH SCHOOL

Supervisors : Mr Gey & Mr Lim
Recycling in Japan: Why successful?

Recycling Point in Japan
Recycling Point in Singapore
Why are we not successful in recycling?
Approach: Educate through **REPEATED ACTION**
In a typical classroom...

- Rubbish are not sorted out
- Rubbish bin not big enough

“How might we” get students to sort out rubbish...
Though our students have been educated on the importance of recycling, they **do not have the chance to sort out their waste in the classroom** as there are no recycling bin in classrooms.
DESIGN BRIEF

- Design and make a easy-to-use recycling bin for the classroom with 4 separate sections for different types of waste, namely: paper, metal, plastic, and others to inculcate in students the habit of sorting out recyclable waste.

- It will also have a shelf at the bottom of the bin for newspapers/bulky items.
USER ANALYSIS

- Generates quite a lot of rubbish, bin often full
- Throw 4 types of rubbish (metal, paper, plastic, others)
- Don’t sort out rubbish
- Bin not very accessible

- Rarely throw rubbish in classroom
- Often have to ask students to empty bins and clean up classroom

- Empty bin 2-3 times/day
- Disrupts lesson in order to clear bin
- Separate newspaper from paper rubbish
Product Research - Things to avoid

No indication

Difficult in bag removal

Small openings

Occupy space
Product Research - Things to include

- Minimalistic Approach
- Bin Cover
- Tiered design
- Foot pedal
- Re-using bags
Desired Specifications

- **Separate compartments** for different waste type (Paper, plastic, metal, general waste & newspapers)
- Easily tell if it bin is **full**
- Easy to **use**
- Maximum **capacity**
- Minimum **space** utilization
- Minimum **resources** required
- **Lid** to keep out the smell of food waste
Ideation & Prototyping

(March to July 2016)
Ideation & Prototyping
World’s First

Binnit™ – 5-in-1 Recycling Bin
How Binnit™ works…

https://www.youtube.com/watch?v=O_Pm8HsqhLU
Main Challenge

- Lid to keep out the unpleasant smell
- Easy-to-use Locking Mechanism for holding bin bags in place
- Separator to support bin bags
- Retractable platform for newspapers
Special Features

Flat-Pack Design

84cm x 36cm x 16cm

Simple and quick assembly

Quick & easy tying of newspaper
Educational Poster in classroom

Encourage Recycling and items that cannot be recycled
Effectiveness of Binnit™
Survey Results
(Sample size of 240 students from all 4 cohorts)

1) This bin allows you to **sort out your trash** and hence let you recycle more. Do you agree?

- 95% Agree
- 5% Disagree

2) Do you agree that this bin makes you **more aware about recycling** than the normal waste paper basket?

- 83% Yes
- 17% No

3) Over time, this bin can help to instil in you the **habit of sorting** out your trash. Do you agree?

- 88% Agree
- 12% Disagree

4) Do you agree that this bin is **easy to use**?

- 87% Yes
- 13% No
What Binnit™ can achieve

Small idea, Big dream...

Binnit™ everywhere!

4-10 years

Current Rate

<table>
<thead>
<tr>
<th>Material</th>
<th>%</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>54%</td>
<td>679,400</td>
</tr>
<tr>
<td>Plastic</td>
<td>11%</td>
<td>91,100</td>
</tr>
<tr>
<td>Food</td>
<td>13%</td>
<td>100,000</td>
</tr>
</tbody>
</table>

Advocates
Family, Community

Semakau Landfill
Cost: $610 million
Area: 350 hectares
Estimated lifespan: till 2035
Thank you
Q&A