

Hwa Chong Institution

Project Work

Category 3 Inventions Log Book

Title of Project:
Jack In The Bag

Group Name:
3-02

Group Members:

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1: Problem finding

First, we would like to use shopping bags with more convenience. With current inventions like the trolley, they take up a lot of space and is simply not easy to use. We would like to make a revolutionary product that is different from all other inventions in terms of way of carrying. This means that unlike other tote bags or trolley that requires the hand to pull or to carry, we will need another method to maximise efficiency and have the least pain.

The second problem is plastic wastage. It should by now be a known fact that plastic has a very huge impact on our environment. Based on plastic pollution, we find it a must to solve the plastic bag issue and even possibly wipe out the use of plastic bags.

Lastly, we wanted to minimise what people brought outside and fuse them into one product. In public, you often see someone either wearing a jacket or carrying a bag. Therefore we decided to fuse them so that you will no longer need to have a jacket tied around your waist while shopping, grabbing books and many more.

2: Define the problem

Based on our findings, we have found a few problems. Problem No.1 is Plastic Bag Wastage. Beaches around the globe are heavily polluted by single-use plastics. We use single-use plastic bags when we are grocery shopping and throw it away afterwards. The single-use plastics will then land up at landfills and cause land pollution. There are about 2500 plastic bags disposed of every 3 seconds

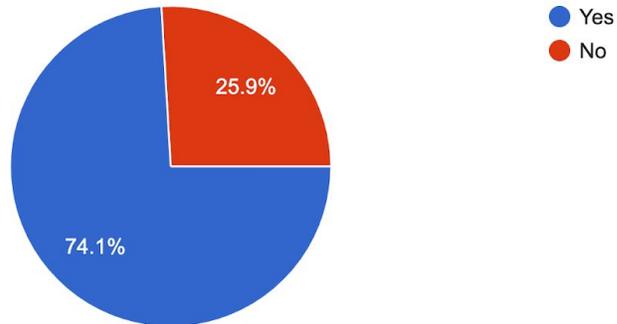
The 2nd Problem we identified is Fingers Hurting. One of our members decided to try carrying a heavy plastic bag on his hand. Surprisingly, after only 3 minutes his fingers turned red. We compared carrying things on hand and on our back. We then concluded that we would rather carry stuff on our backs than hands and change the way of carrying things on hand. This makes it different from other eco-bags.

#3 Our BIG Idea

With ideas to solve problems and feedbacks from friends, we moved on to constructing our idea and bring in to real-life.

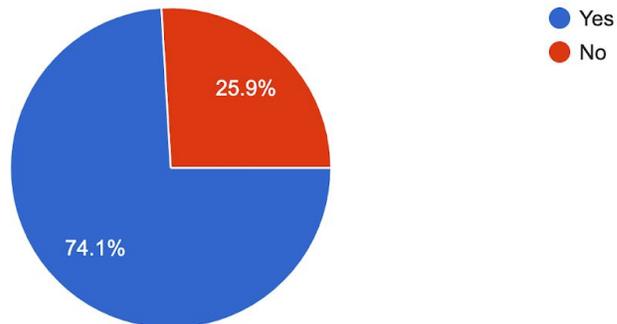
Q3- If this multi-purpose Jacket is made available, will you use it?

54 responses



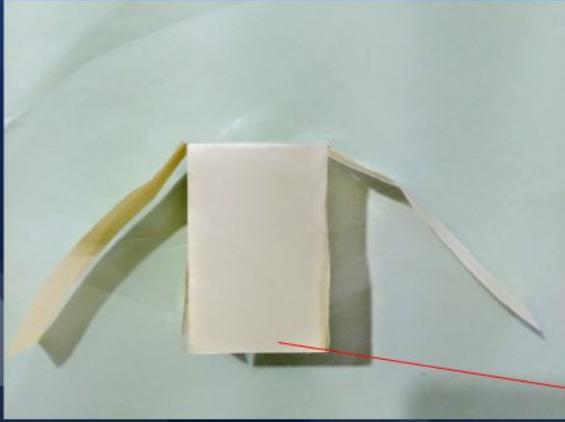
Q3- If this multi-purpose Jacket is made available, will you use it?

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We first made paper models and after several trial and error, we found out how the jacket can transform into a bag.

JACK IN THE BAG

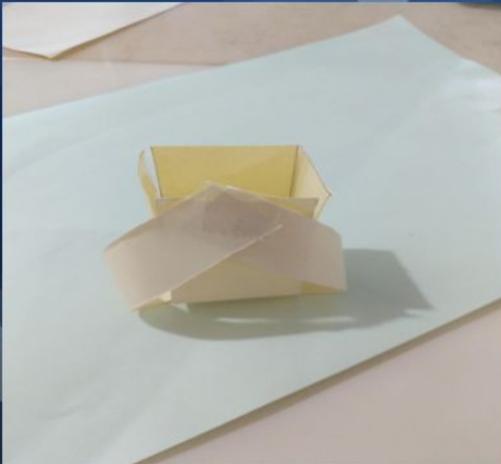


Jacket Form

1. The original form

Where the waist of the wearer is supposed to be

JACK IN THE BAG



Backpack Form

Straps formed with sleeves

Secured with buttons and zippers

With the building blocks in the foundation, we could start on making our first prototype. We wanted to make a product that can change what we all currently use and still acceptable as it maximises efficiency for consumers

4: Construction Process / Testing

As it is our first prototype, we decided to use an old jacket and start modifying it to fit the plan. We attached zippers to the bottom of the jacket and buttons to the bottom of the sleeves. With the basic layout intact, we tried to assemble the jacket for the transformation. As according to the plan, the jacket did successfully transform into a bag under 2 minutes.

5: Modification and Evaluation

After the mid-term evaluation, we heeded the evaluators' feedback and treated them as our consumers. They said that putting sharp objects in the bag would scratch their back and thus we added cushioning to the back so that scratches would be reduced and minimised.

Secondly, they feared the leakage of wet items and smells, so, we attached sealed waterproof compartments.

We also included a phone pouch on the sleeve for conventional purposes.

With everything intact, we can now proceed to the final evaluation for judging.







#6 : References

Environmental Impact. Effects, Dangers of Plastic Bags. (2018, April 03). Retrieved April 1, 2019, from <https://www.reusethisbag.com/articles/plastic-shopping-bags-environmental-impact/>

Excess Shopping Trolley Management and Short Term Storage. (n.d.). Retrieved April 1, 2019, from <http://sosretailsales.com.au/excess-shopping-trolley-management-and-short-term-storage.html>

Multi-Grocery Bag Carrier {Retrieved April 1, 2019, from <https://www.thisiswhyimbroke.com/multiple-grocery-bag-carrier>

Henkler, E. (2016, September 27). Grocery Shopping Evolution - Part I of a Series. Retrieved April 1, 2019, from <http://www.cosyrobo.com/blog2/2016/9/26/grocery-shopping-evolution-part-i-of-a-series/>

The DUOKET Transforms From A Bag To A Jacket In Seconds! (2016, December 06). Retrieved June 27, 2019, from <http://www.droold.com/the-duoket-transforms-from-a-bag-to-a-jacket-in-seconds/>

Paulo, D. A. (2018, April 05). The monstrous scale of plastic bag wastage in Singapore. Retrieved from <https://www.channelnewsasia.com/news/cnainsider/monstrous-scale-plastic-bag-wastage-singapore-charge-recycle-10100010>

RuckJack, the convertible jacket: Backpack. (n.d.). Retrieved from <https://www.kickstarter.com/projects/958021516/ruckjack-the-revolutionary-convertible-jacket?lang=zh>

