

Project Work Written Report
Group 3-29
Category: Inventions
Title: Filtration Straw

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#1 Problem Finding

We identified two problems. One was that when there is too much sunlight on plants, they die. The other problem was that many people from third-world countries lack access to clean water.

Our group was scrolling through news articles and came upon an article which titled "One in nine has no access to clean water" by Straits Times. It stated that 6.3 million Cambodians (40% of population) lack access to clean water. Cambodians bathe, fish and defecate in the water supplies near them.

#2 Defining The Problem

We then gathered more information about people who lacked access to clean water. Worldwide, there are 780 million people lacking access to clean water and an estimated 801,000 children younger than the age of 5 die from diarrhoea each year. Drinking from the polluted water may cause diseases such as cholera. This can be seen as a very serious matter especially for the children so we wanted to help as much as we can by creating a water filter straw.

Currently, there are two main water filter straw, the Oxford aqua marine personal water filter purifier straw and the Lifestraw Water Filter. However, one cannot be used in salt water and the other cannot filter heavy chemicals and salts. This might be problematic as the point of a water filter straw is to be able to filter impurities.



#3 Our BIG Idea

Our proposed invention will be is a water filter that acts as a straw so when people are in need of the water, the portable Filtration Straw would be at their reach so that they can use them. The purpose of our proposed invention is to help the less fortunate countries gain water and reduce risk of water-borne diseases and our targeted audience is people who lack access to clean water Many other inventions have one filter and solely depend on it, however, ours has more. Not only does it filter out the normal things other inventions do, it also improves the taste of the filtered water so it does not taste that bad.

Some problems we expect are that the invention does not work or the water that is filtered out is very little. The major milestones in our invention is that when we are able to have a fully functioning original prototype that is able to filter a lot of water at one time before the final evaluation. We hope our prototype will show a huge difference in advancement compared to other current products.

#4 Construction or Modelling Process

We chose the materials on the conditions of their durability, flexibility, price and most importantly, effectiveness. We chose plastic as our main material of the carrier for water and the filter as it is quite durable and flexible, just like a normal straw. We carefully selected through many filters and decided to use the Renovo Trio Stage 2 Hollow Fiber as it is effective and is cheap. The second filter was the Vornado Carbon Filter. Even though it was costly,

it really helped to improve the taste of the filtered water and we do not have to solely depend on the hollow fiber. This is the progress of our invention:



#5 Modification or Evaluation

We tested the invention on 25 June 2018. It passed all of our criteria of being able to work, being durable for a long period of time and being able to be cleaned. However, we noticed that it was quite inefficient as there was little water that was able to get sucked through the filter. We then found out that we did not tape the plastic tube closely and tightly to the filter. So, we did it. We also used a cleaner tube so that the filtered water will be cleaner and will reduce the chance of it being dirty or infected with bacteria. This is our final product.



#6 References

This is our references:

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