

Full Slide package



This slide holds all the previous slides I have made over the span of a few months for this project, it will tell you what i'm thinking and the grogrese i've had.

Problem Definition: Water filter

Primary Functionality:

- Automatic but human operated
- Filters dirty/mucky water
- Produces clean water from the
- different layers of filters

Secondary Functionality:

- Easy to use
- One hand use
- Easy to function

Thoughts:

- It could be useful in the future
- The different engineering processes of the filters
- How do you know when it's at the right PH to drink
- Would it be nice to bring camping/backpacking?

Key Features



Primary Functions

- 1) Mechanical but human operated
- 2) Filters dirty/mucky water
- 3) Produces clean water from the
- 4) different layers of filters

N #2 will be addressed when working on #4 and #3

O

T There will be many different trials for #3

E

S Could find a way to make it fully automatic

#2 Filters unfiltered water to clean water

- Different layers filters clean and filter the unfiltered water
- Enough filters to make the water clear and drinkable
- Reusable

#4 Different Layers of Filters

- **Each filter would need to be reusable**
- **Could use the same materials for different layers**
- **Measured each filter with same amount**

Research of existing solutions

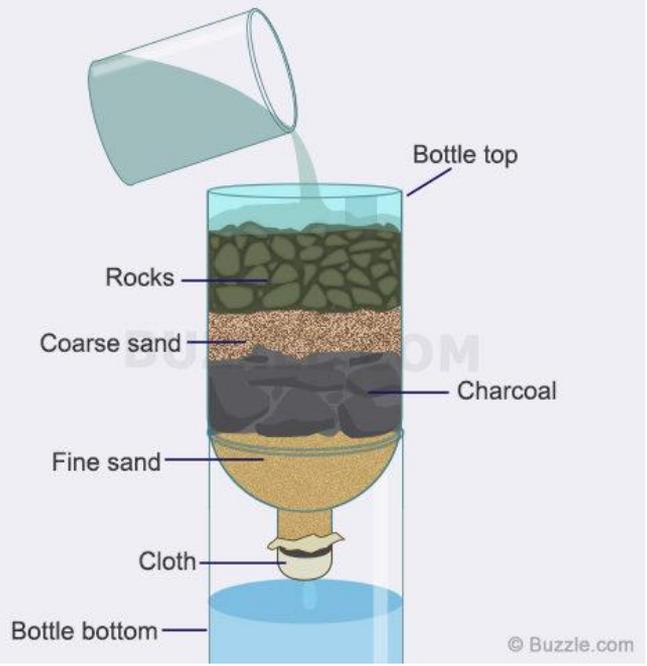
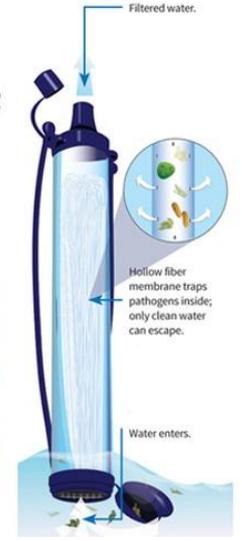
This will show different designs that I looked at to make the it the best I could

Different designs to look at



LifeStraw
PERSONAL WATER FILTER

Filters 1,000 litres (264 gallons) of water



Prototype 1 and 2

Prototype #1



Prototype #2



Testing of prototype #1 and #2

- What Key Features is your Rough Draft addressing?
 - It's addressing the different filters that will try and filter out swapy mucky water.
 - have the filter dispense clean water with no color tint to it
- Testing of the prototype
 - With my first prototype it didn't really filter the water like I wanted it to
 - On the second prototype it worked a lot better (I turned swapy water into almost clear water, it still had a brown green tint to it after the filter process.)

Evaluation of prototype #1 and #2



- **The aspects of my design/build that I like**

- Something that I like is that with each layer it slowly filters the water and so that tells me that it's slowly working

- **The aspects of my design/build don't I like**

- Something that I don't like about my build that I don't have the right materials to filter the water

- **How am I going to improve my design**

- Something that i could do to improve my design is add more of an absorbent material and and more filters to filter the water.

Final Prototype

Aspects of my project that I like

- Aspects that I like about my project is that through the building process everything went smoothly

Aspects of my project that were difficult

- Making the filters work, because most of the time it had some yellow tint to it most of the time.

What I would do differently next time

- Try and have multiple layers so the water would have a higher chance of being clear

Dirty water

Fine Sand

Charcoal



Theres dirt water on top and through the night it filtered everything



My Water Filters

Final Iteration

Iteration 1 - *Area of Focus*



I chose to focus on this area because

- To get more absorbent material

My approach

- To find something that could catch smaller things that go past the first few layers

The results

- The results of this will hopefully catch all the smaller debris coming from the other filters it escaped from.

The
Absorbent
layer



Iteration 2 - *Area of Focus*

I chose to focus on this area because

- More filters

My approach

- Make my own charcoal filter by making charcoal powder that will hopefully absorb dirty water

The results

(The charcoal is the layer above the lip of the cup)
The Charcoal really made a difference when filtering the water, it made it a lot cleaner and there was no tint.

