

Case-X



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About each group member...

Overview

- Our problem
- Potential solutions/products
- Our solution
- Engineering Aspects
- Time Frame



Our Problem

We found that a common issue among glasses users was the ability to keep your glasses clean throughout the day without lugging your bottle of cleaning solution with you everywhere you go. Inconvenient right?! Well we have come up with an idea that could make keeping your spectacles clean more convenient than ever!



Potential Solutions

With a bit of brainstorming we were able to come up with a few different potential solutions.

- A glasses case with a special compartment to hold your bottle of solution.
- A case that cleans the glasses on its own
- Smudge proof glass
- Changeable lenses

These ideas were either too complex, or just not good ideas at all.



Our Solution

Then we had it! A glasses case with a built in spray bottle! This will save you from bringing a bottle of cleaning solution with you everywhere you go and instead you will have it with you everywhere you go! Genius Right?



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Design Features

- Alter the design of glasses case to include the cleaner fluid, glasses and cleaning cloth, all while keeping a slim and easy to carry design.
 - Small
 - Light
 - Convenient
- Optimize space and ensure the mass remains within a reasonable margin of other glasses cases.
- Compartment to keep fluid separate and waterproof, away from the glasses and cloth
 - Leak free

Target Market

- This is a product that could be used by a wide range of individuals that wear glasses on a daily basis
- It will be easy to use, so each individual using the product is able to operate and benefit from it
- Strong enough to withstand everyday wear and tear, but easy enough for each individual to use



Potential Problems/Questions

- How much liquid should be dispensed?
- How much should it/will it weigh?
- How heavy is too heavy? (should be able to carry it without it being too heavy)
- What kind of materials?
- Ease of use for all individuals that would be using this product.
- How much will this cost? Will the benefits outweigh this?
- Will the case fit in your pocket or purse?

Different Aspects of Engineering

- Fluid Mechanics
- Engineering Economics
- Strengths of Materials
- Physics



Engineering Economics

- Used during the cost analysis
- Build a design at a price that would be competitive and cheap enough that people would buy
- Deciding which materials to use while keeping in mind the cost of each material
- Cost/Benefit Ratio



Fluid Mechanics

- Determining the optimal amount of spray needed to clean the surface area of a pair of glasses without wasting any product.
 - Wasting product has negative economic impacts, waste of product is a waste of money.
- Waterproofing and sealing of fluid compartment
 - No leakage is acceptable
- Dispenser traps air in the tube to draw fluid upwards using interior components (piston/spring)
 - Velocity of fluid moving and while at rest
- Looking into making sure the liquid doesn't freeze if left in the car or garage

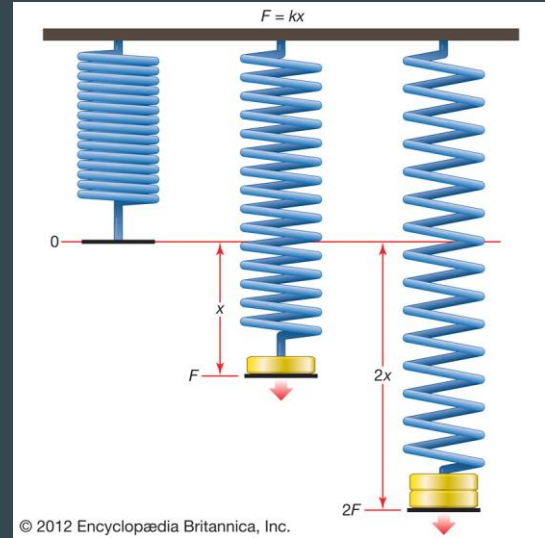
Strength of Materials

- We need to use materials that are durable enough to withstand everyday activities such as sitting on it, dropping it, etc, to ensure your glasses are kept safe.
- We will also need to find a material that is lightweight, in order to make up for the extra weight added from the mechanical aspects and fluid.
- We also need to ensure that the mechanical aspects of the case is durable and won't break while being used.
- Our goal is to create a quality case that has similar properties to a normal case such as the weight and dimensions.

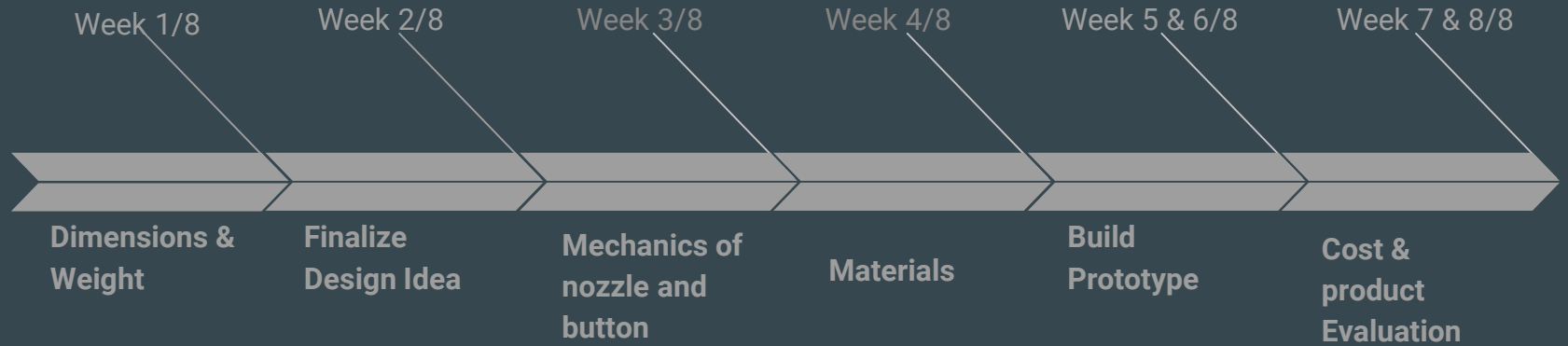


Physics

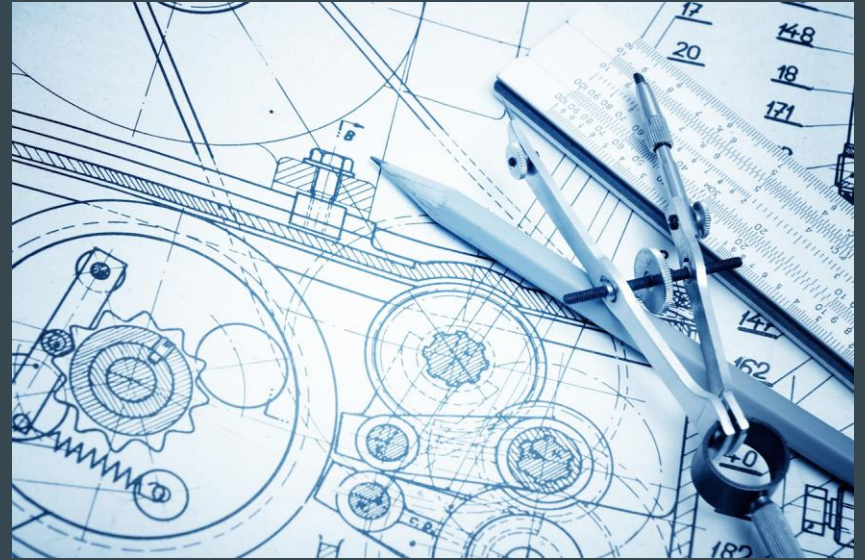
- Determine the required force needed to release the pin on the nozzle
- Dimensions of the spring required to push the nozzle in place
- The amount of work done on the system



Time Frame



Conclusion



Questions?...