

Objective

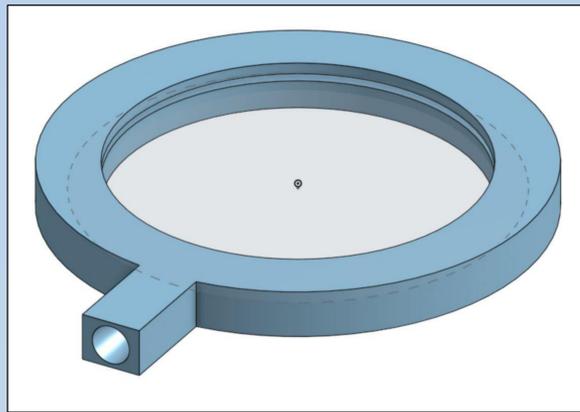
Objective: To reduce the amount of glasses a person needs to buy in their lifetime by creating adjustable lens.

Rules & Restrictions: The product must be easily manufactured and cost effective

Our Device: 3D printed frame with two plastic lenses, one mylar sheet and one acrylic sheet that are bent in opposite directions by glycerin administered through a plastic tube and syringe in order to change the refraction of light to make an image bigger and smaller.



Final Build



Final Lens Prototype

Group Members



Jack Keefer
In charge of material research, the valve, and the commercial.



Casey Fienberg
In charge of CAD models, documentation, and surveys.



Anneliese Hanson
In charge of assembly of prototype, documentation, and poster.

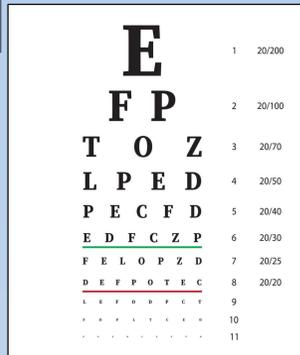
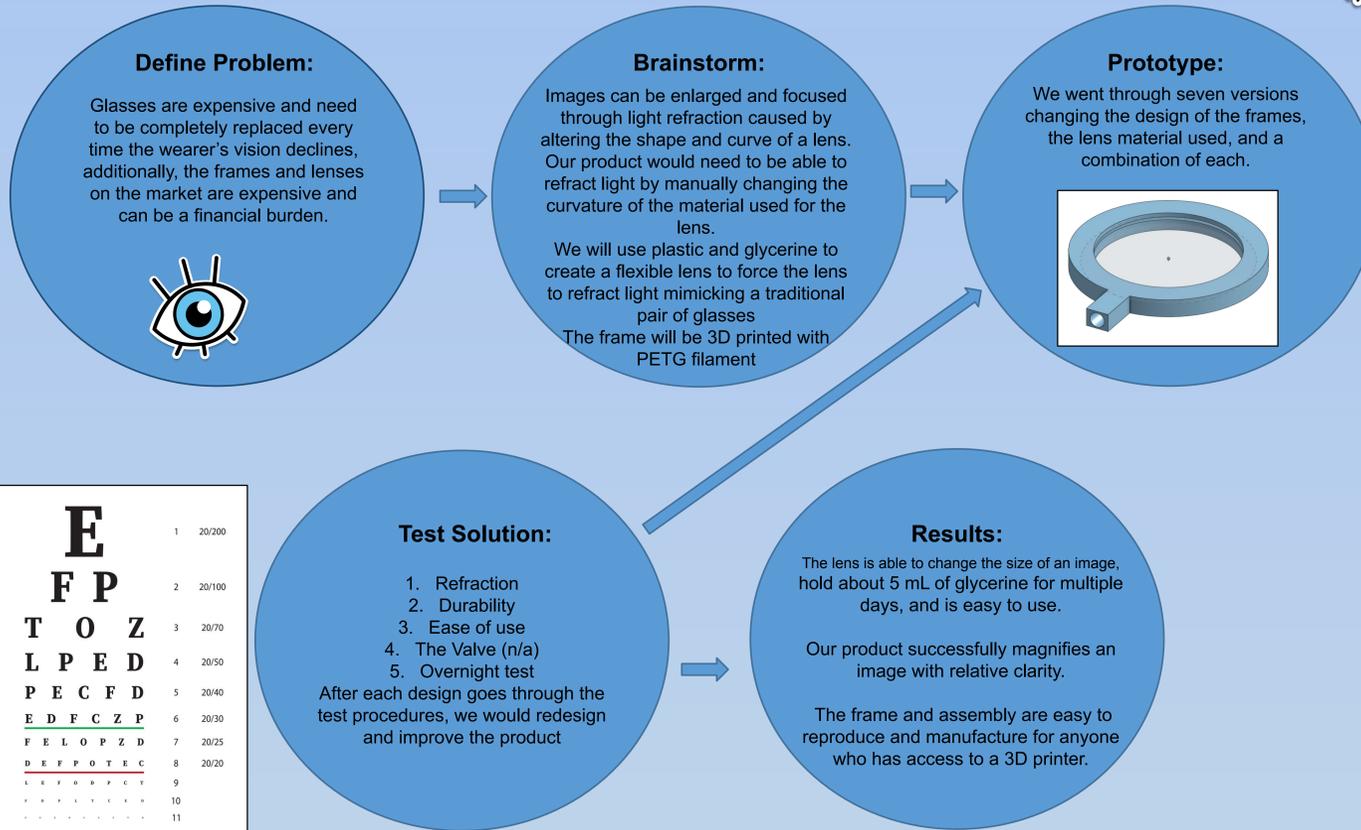


OptimEyes

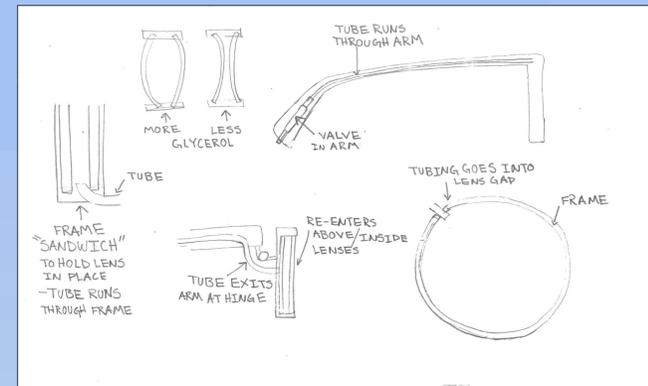
Anneliese Hanson, Casey Fienberg, Jack Keefer



Design Process

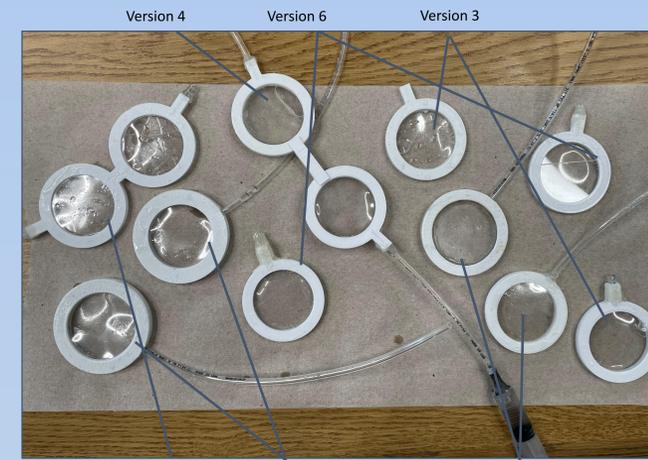


Design and Redesign



Initial Sketch

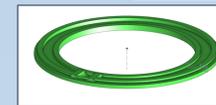
Lens Evolution



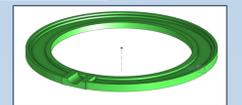
Frame Evolution



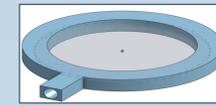
Frame 1



Frame 2 (top)



Frame 2 (bottom)

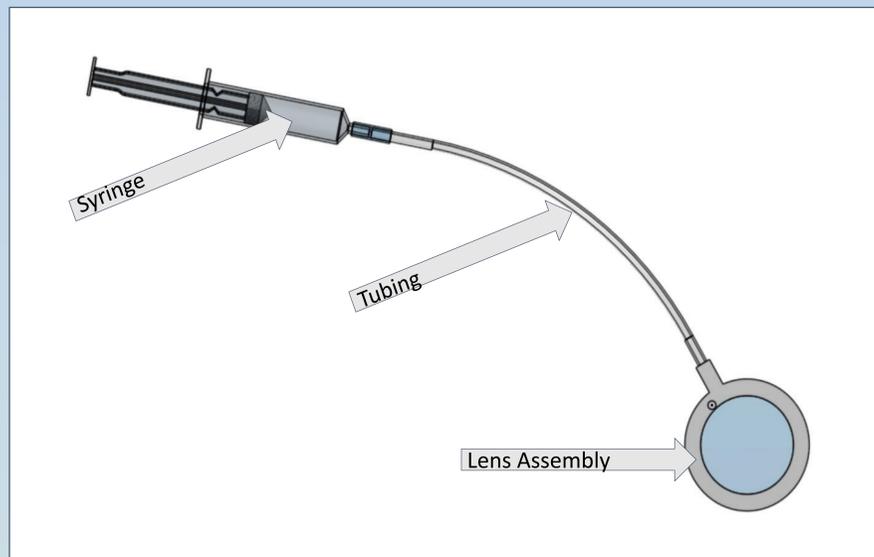


Frame 3



Frame 4

Final Product



Testing:



Increasing the size of an image

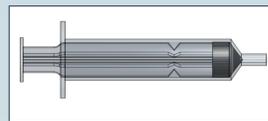


Decreasing the size of an image

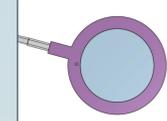
Assembly:



Valve Casing



Syringe



Lens

Future Modifications

- Testing a vinyl lens to replace the mylar lens in order to get a clearer and more uniform image.
- Reducing the size of the mechanisms in order to be able to fit the tubing and syringe through a traditional frame arm.
- Remodeling the frame shape to be more aesthetically pleasing.
- Creating a real "frame" for the lenses.
- Replacing the syringe with a working valve and valve casing to reduce the bulkiness of our design and make the lens adjustable.

