



EF 158 Project 1 The Equilibrium Enforcers

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Design Slide 1

When researching our design, we came upon two major issues-

- the fact that volume has to be minimized
- the fact that all the foamcore pieces must be connected.

When researching, we came upon a design idea

- Took a long, unfolded piece of cardboard folded along specific, templated lines in order to get a design that fit the criteria and solved our issues.

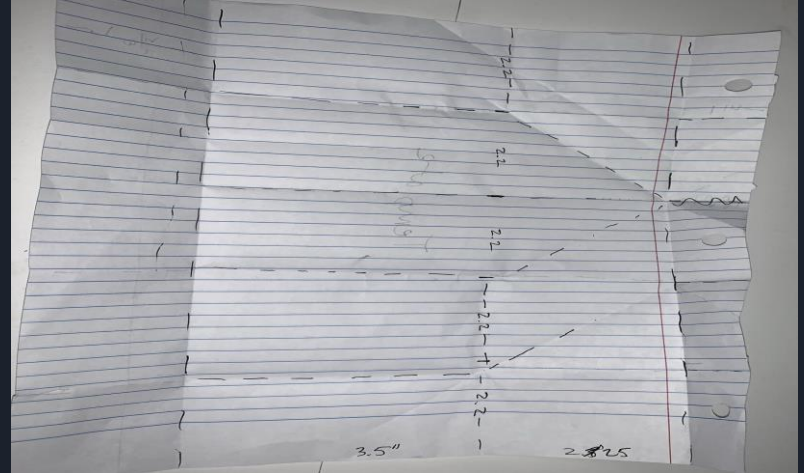


Design Slide 2

Once we found the design, we :

- Created a template on a sheet of paper in order to gauge dimensions/folds
- Created a model chair in order to test weight loads

Once the model was created, we then translated the dimensions and scaled the model up to create a full-scale model.



Rationale Slide 1



- Least Volume
- Wanted to Hold At Least Light Sitter
- Didn't want to rely on external aspects such as the restriction on tape and unreliability of elmer's glue
- Wanted to focus on how to achieve the most amount of points feasible, which meant focusing on tiny volume and perhaps neglecting the back support angle
- Knew the weight was going to be concentrated in the middle so made it extra thick to withstand the weight

Rationale Slide 2

- Static Equilibrium Equations
 - $\sum T = 0 \text{ N}$ $\sum F = 0 \text{ N}$
- For our design, our strong points are:
 - Easily unfoldable
 - Miniscule area when unfolded
 - Simple design; no cuts, only folds
- For our design, our possible failure points could be:
 - Buckling in the front two corners
 - Back not being able to support the load
 - Not meeting some deliverables

