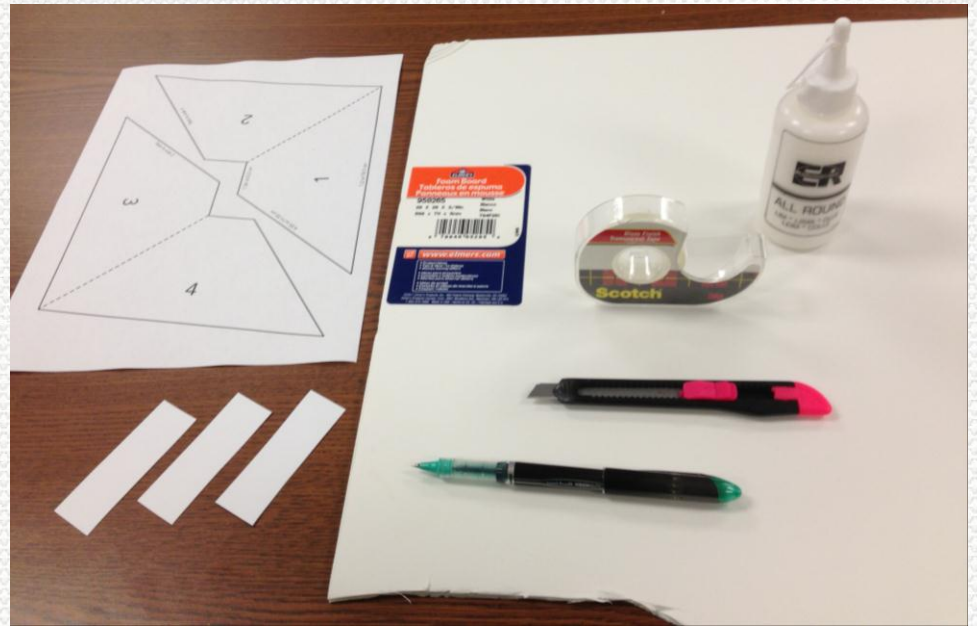




The Tension Builds:
Constructing a
Pyramid Tester Base
out of Elmer's Foam Board

Materials

- 1 Printed pyramid template on 8 1/2in. x 11in. sheet of paper.
- 1 Pen/Pencil
- 1 sheet of Elmer's foam board 20 x 28 x 3/16in (508 x 711 x 5mm)
- 1 Xacto knife/Box cutter
- 1 pair of scissors
- 3 strips of paper
- Craft glue
- 3M Scotch brand clear tape



Important Note

- The dimensions of the foam board PTB will not match the dimensions in the Challenge: The Tension Builds. This is because the thickness of the foam board is different from the thickness of the tournament-sanctioned steel PTB. However, if the team follows the provided pattern and uses Elmer's foam board, the final product will be a very close facsimile of the steel version. If the team plans to test their Structure with a weight-bearing load, they should purchase their own steel PTB on ShopDI.org. These steel PTBs will be available by mid-September and will be sold at cost for \$20 + shipping.



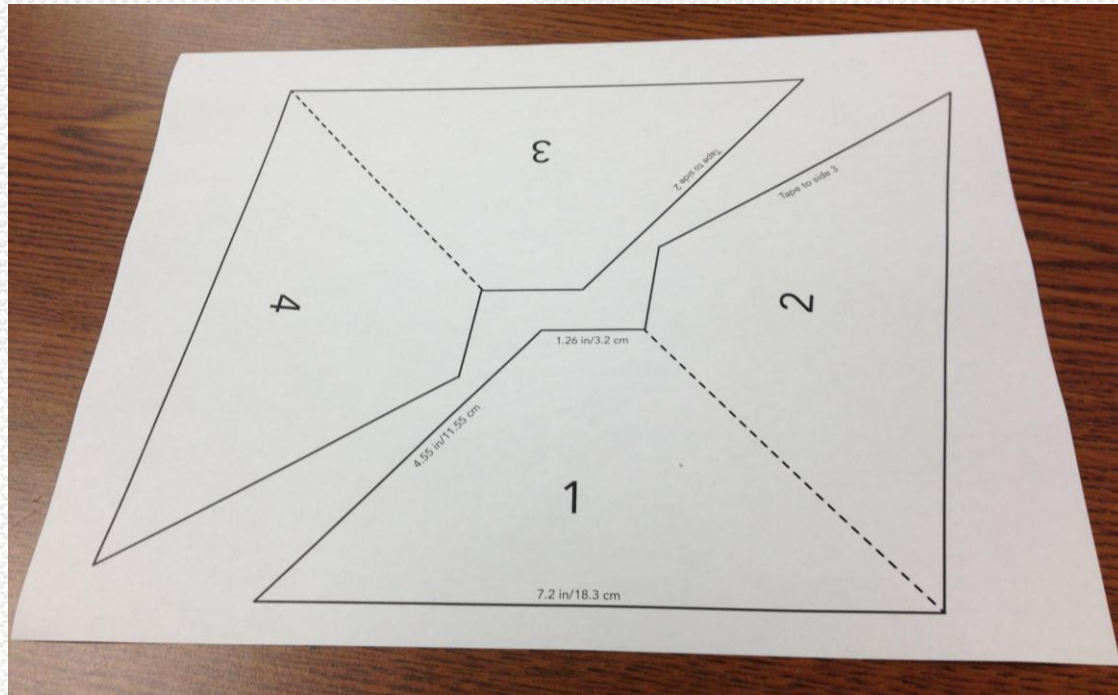
Important Note (continued)

- Anyone can make this foam board facsimile PTB. A team member, a parent, a Team Manager etc. There is no Interference rule that applies to this component of the Challenge.
- The materials necessary to build this foam board facsimile PTB are also exempt from the team's Expense Report.



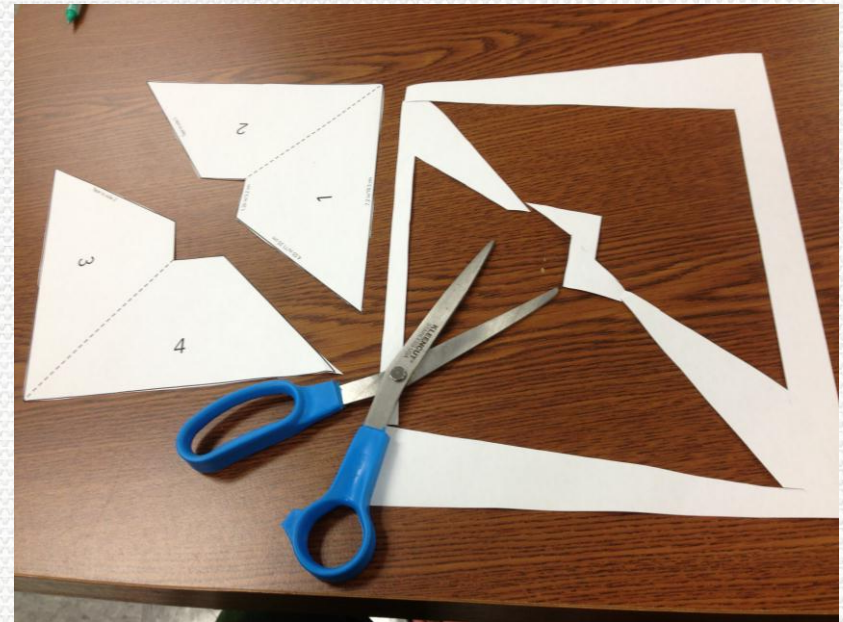
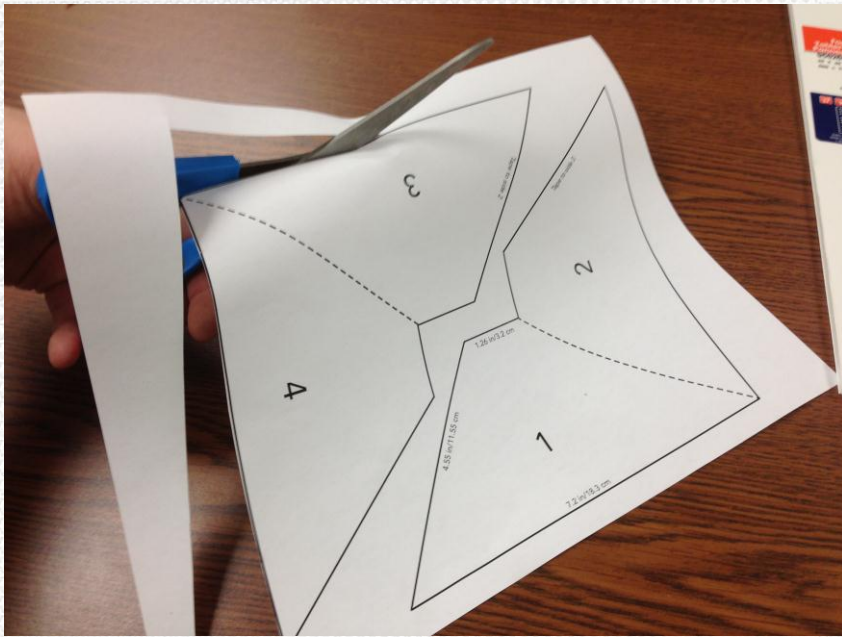
Step #1

- Download and print the PTB foam board template on a sheet of 8 1/2in. x 11in. computer paper or cardstock (Make sure that the print setting is “Landscape”)



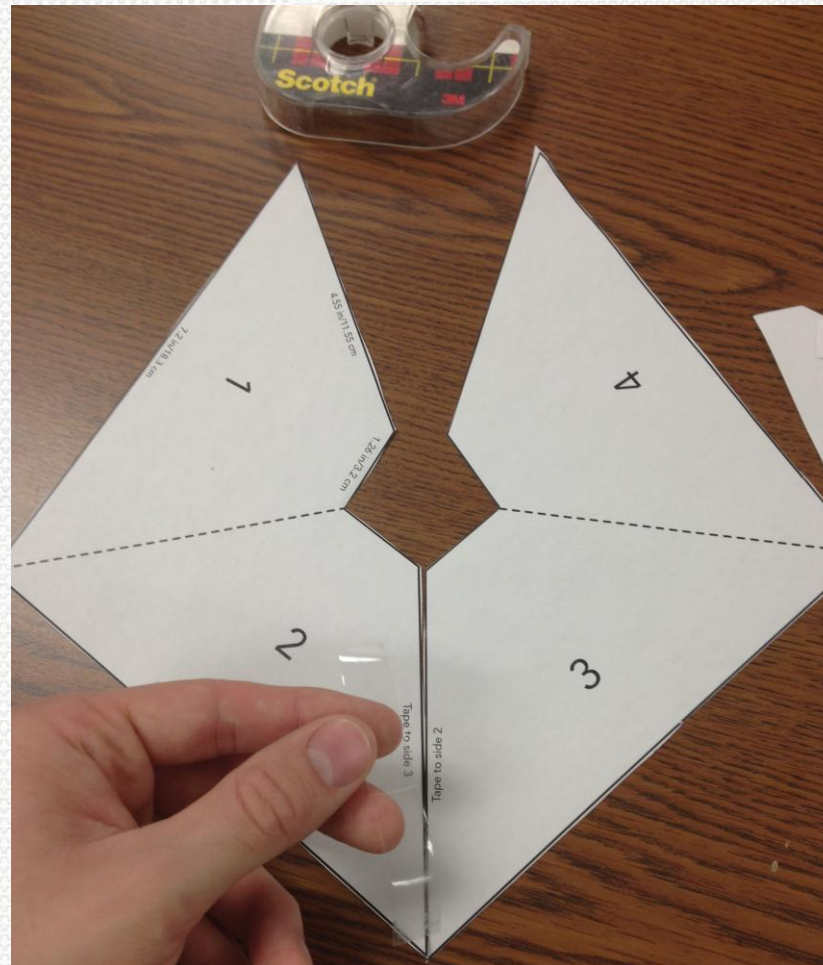
Step #2

- Use the scissors to cut out the pattern along the thick black lines



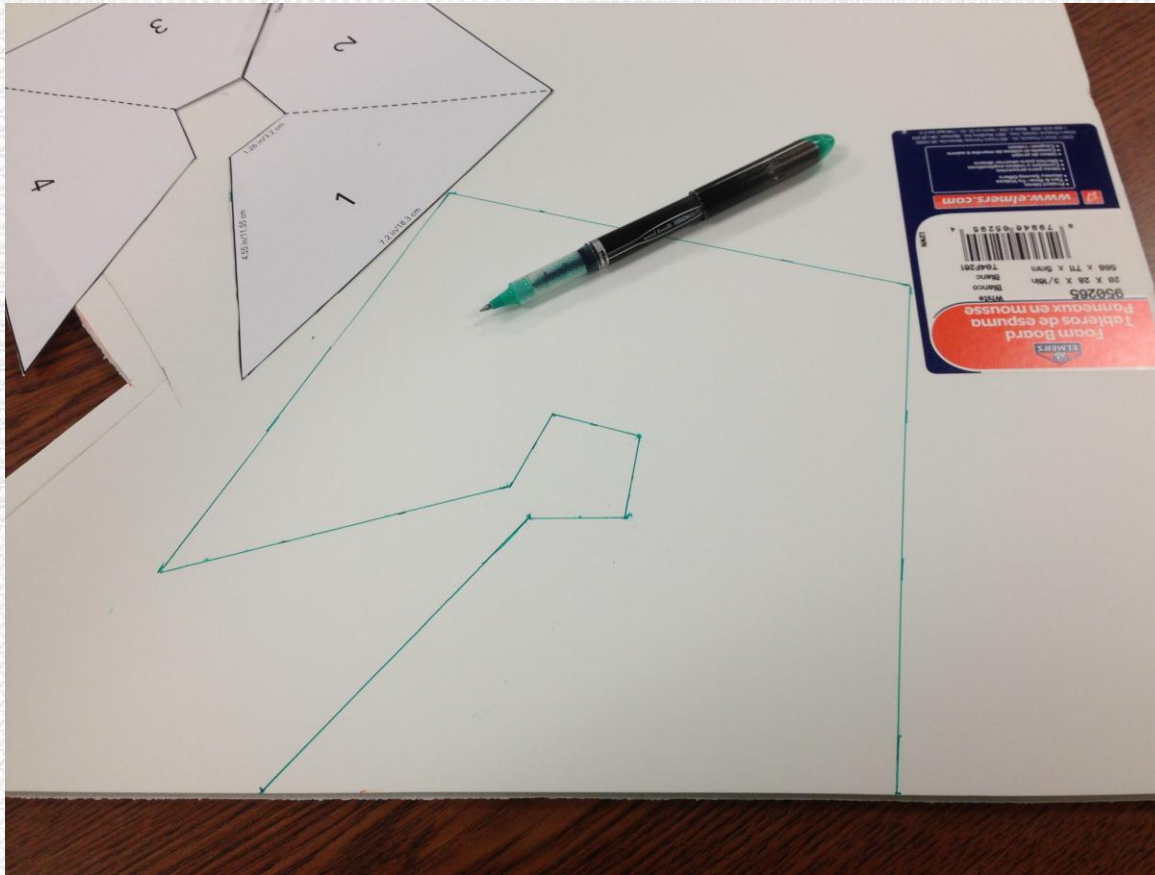
Step #3

- Use the 3M Scotch brand clear tape to connect trapezoid 2 and 3



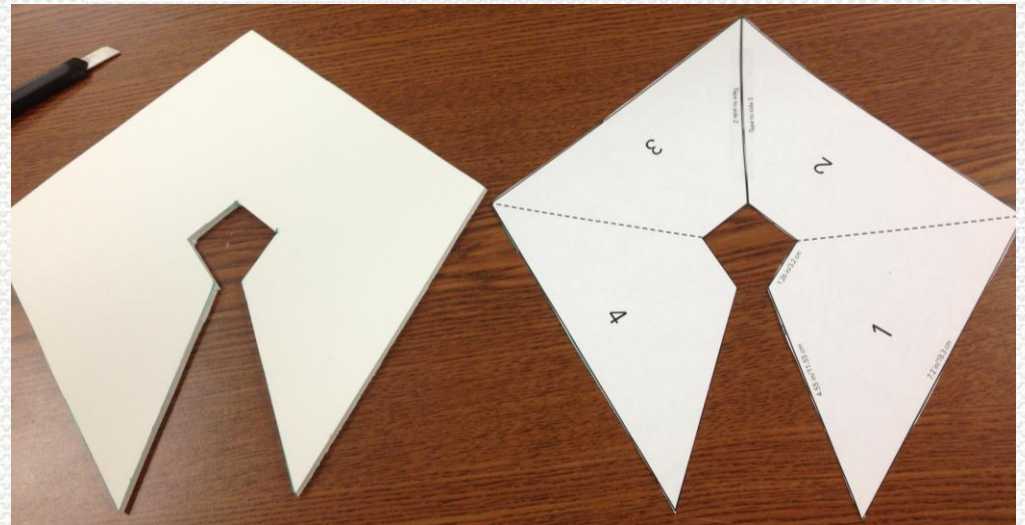
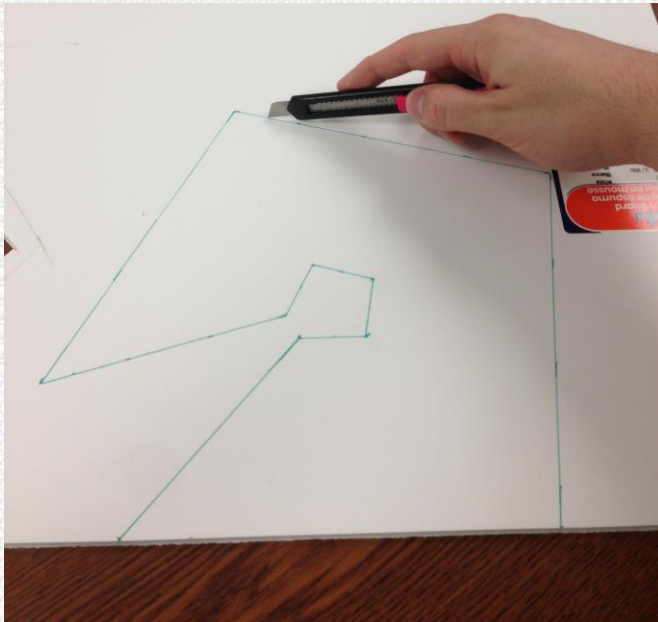
Step #4

- Trace the outline of the pattern on Elmer's foam board



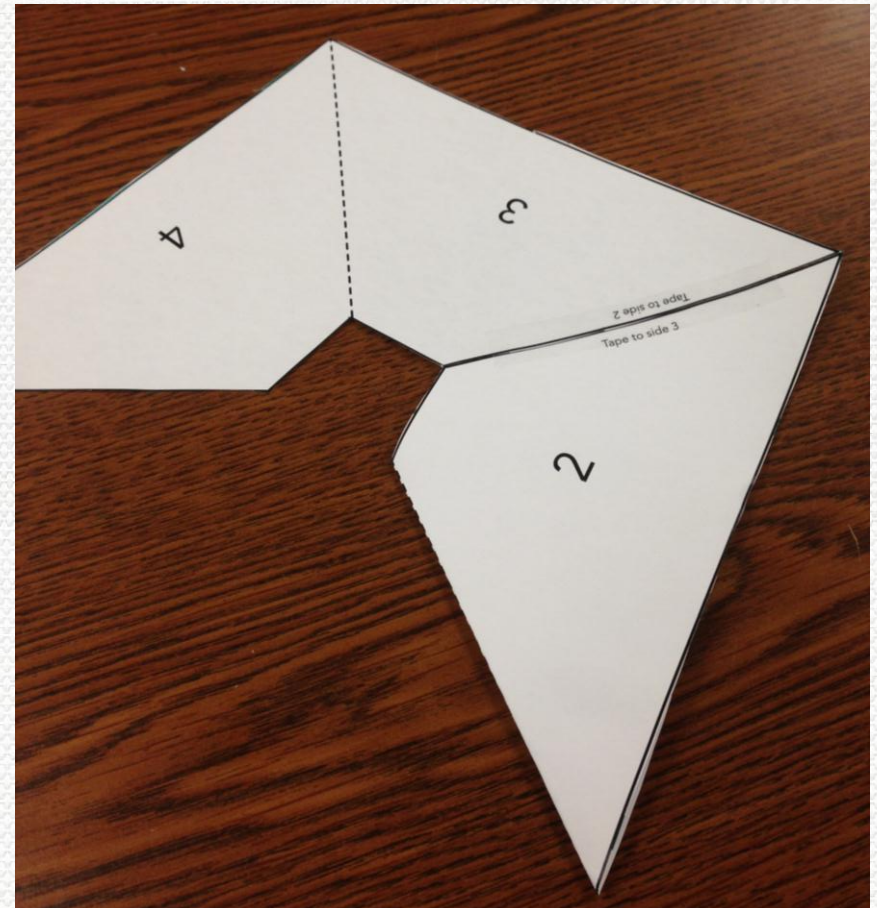
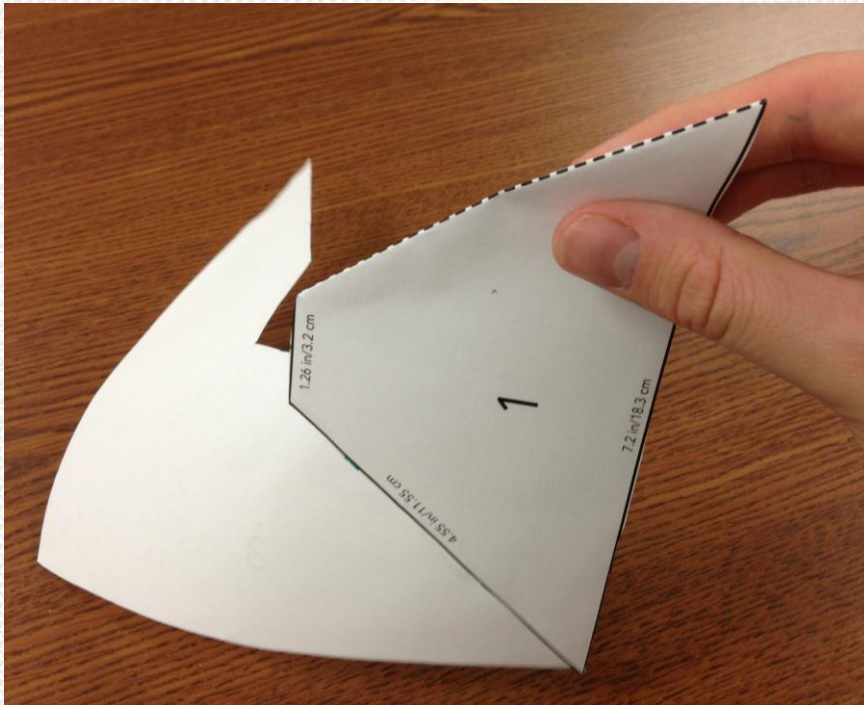
Step #5

- Use an Xacto knife or box cutter to carefully cut the traced pattern out of the foam board



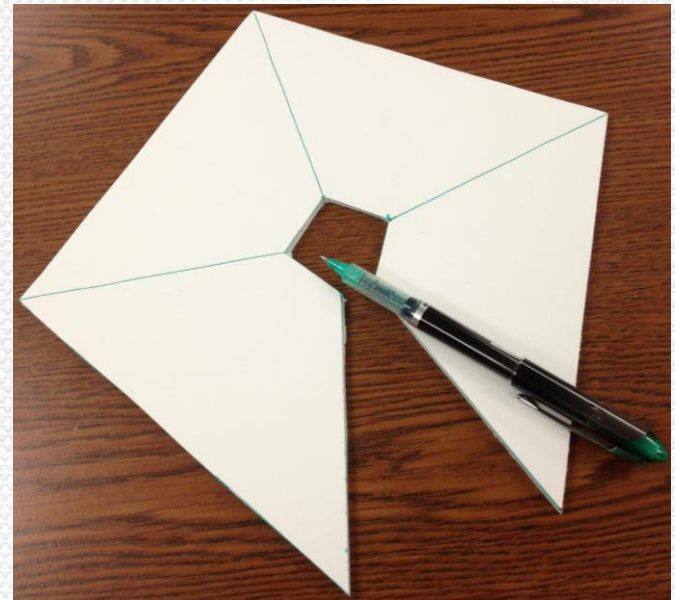
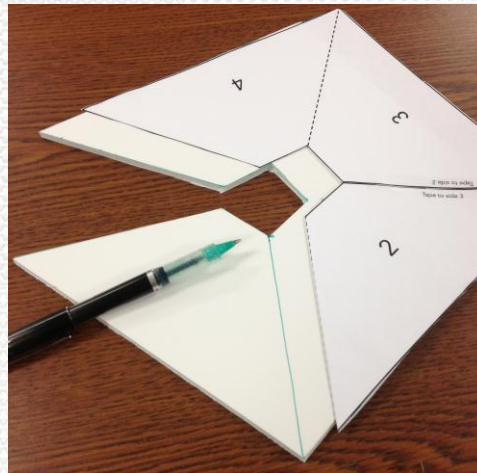
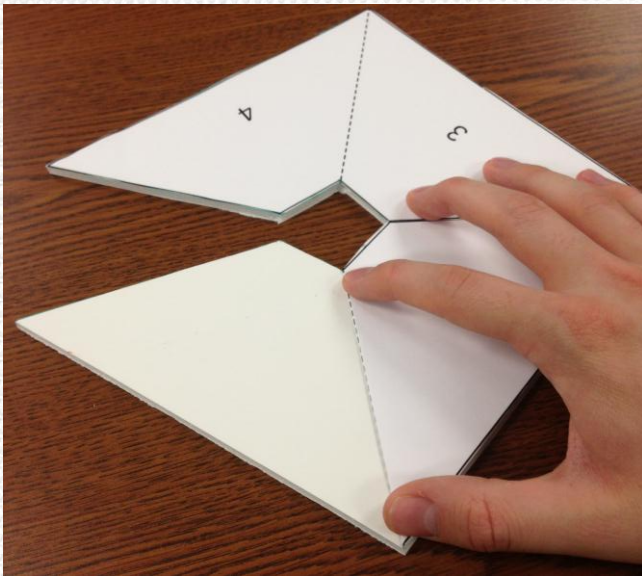
Step #6

- Using the pattern, fold trapezoid 1 under trapezoid 2 along the dashed line



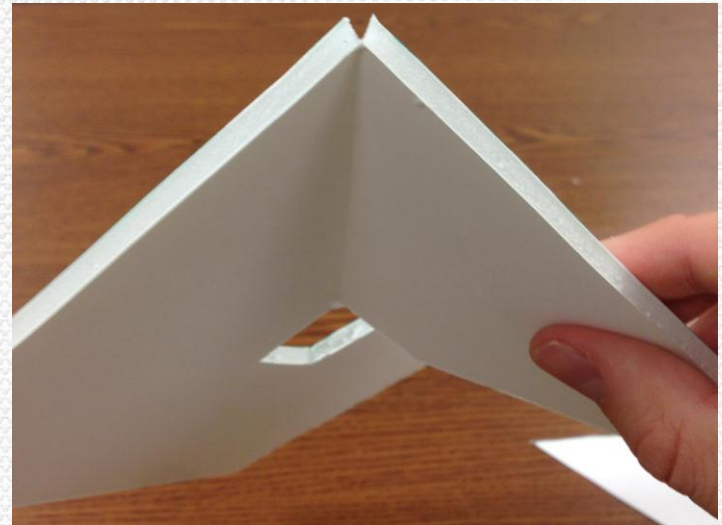
Step #7

- Use this fold as a ruler to draw three lines at the vertices on the foam which correlate with the dashed lines on the pattern



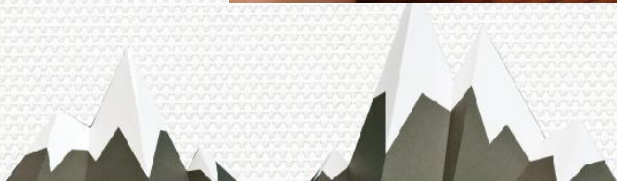
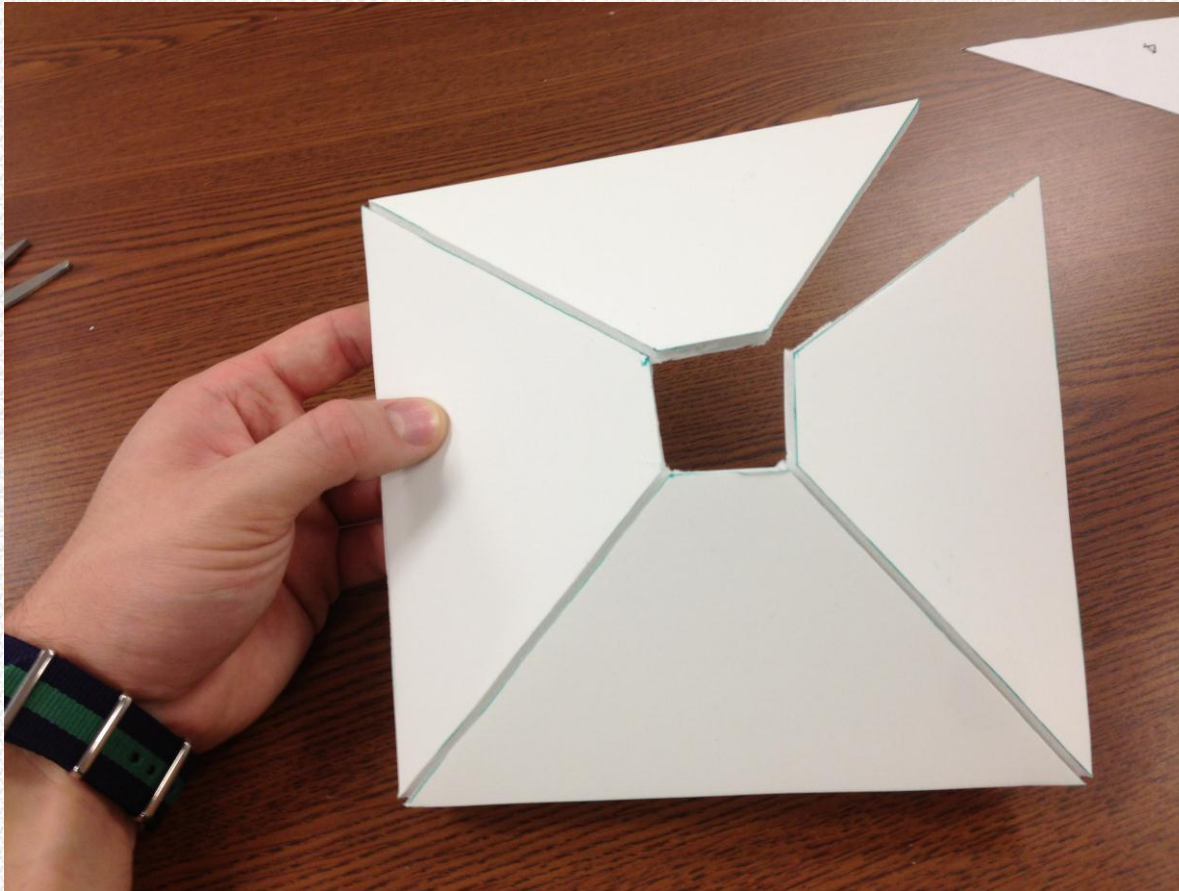
Step #8

- Use the Xacto knife to score the lines at the vertices. Scoring means that you only cut through one side of the paper and part of the foam. That way, you can bend the pattern into a pyramid while only having to glue one seam



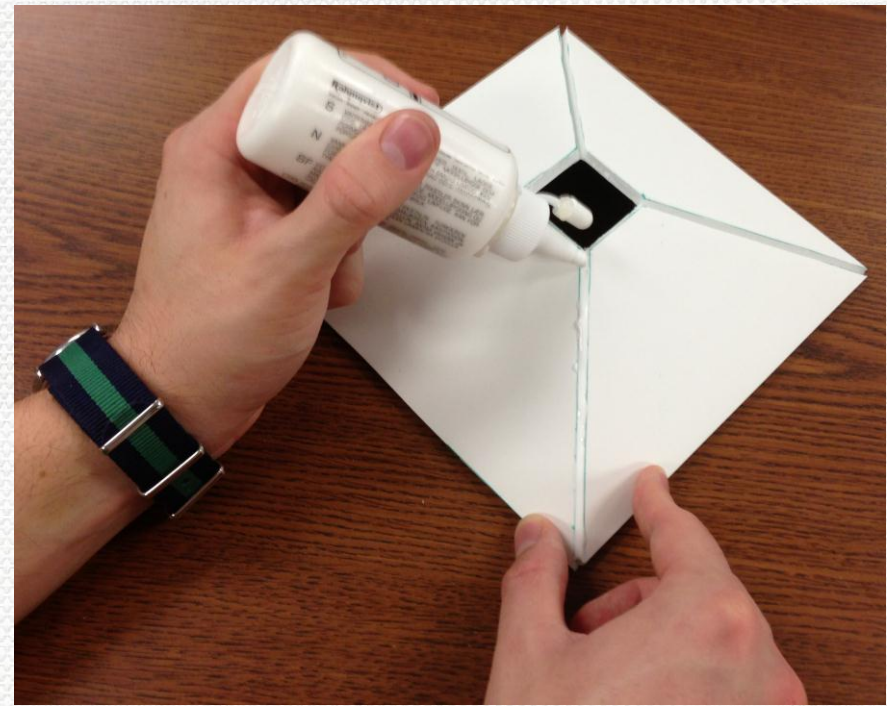
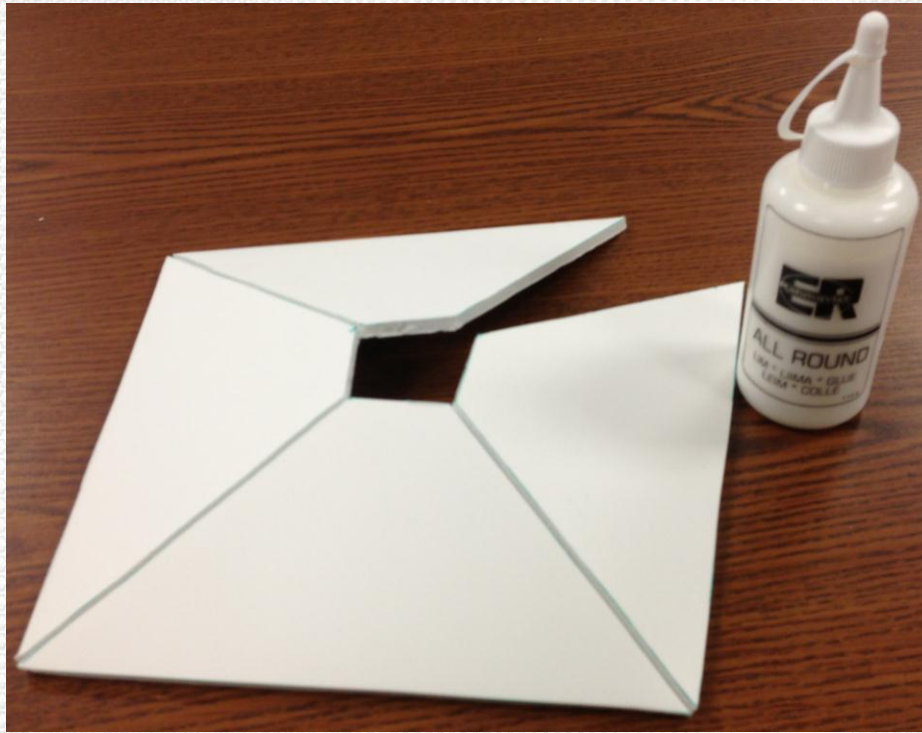
Step #9

- Bend the cut and scored foam into a pyramid



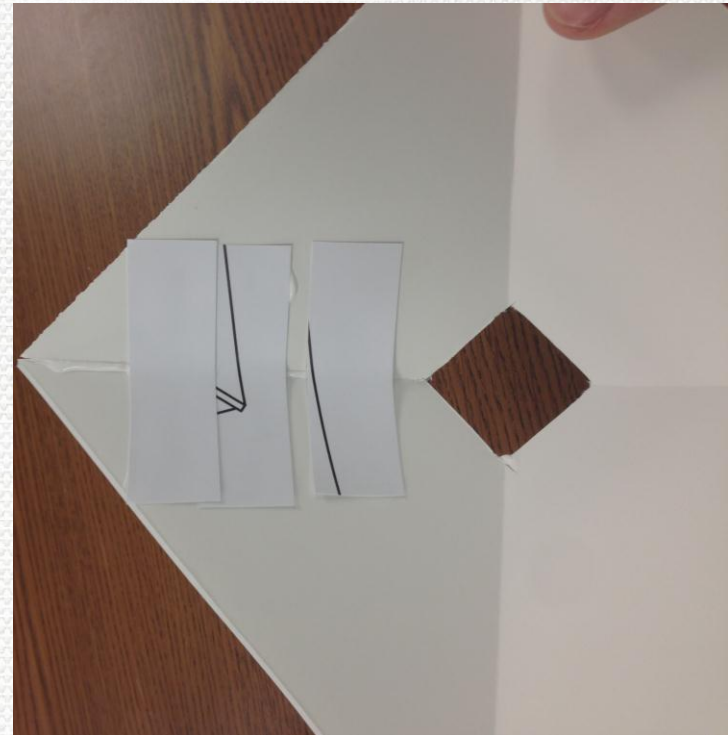
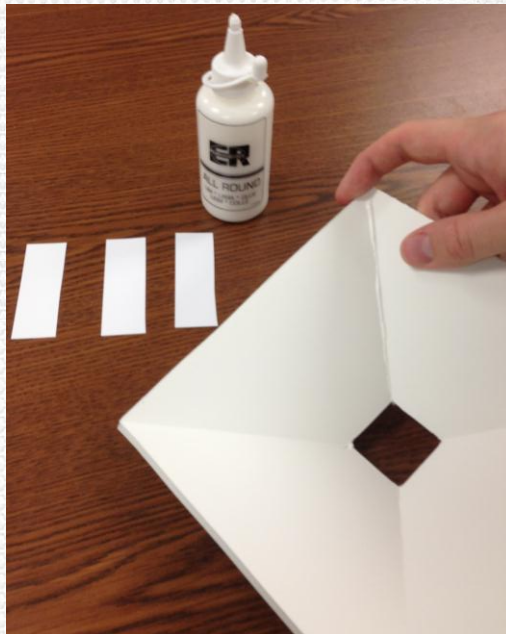
Step #10

- Use the craft glue to fuse trapezoid 1 and 4 together (Hold for 3-5 minutes or until firm)

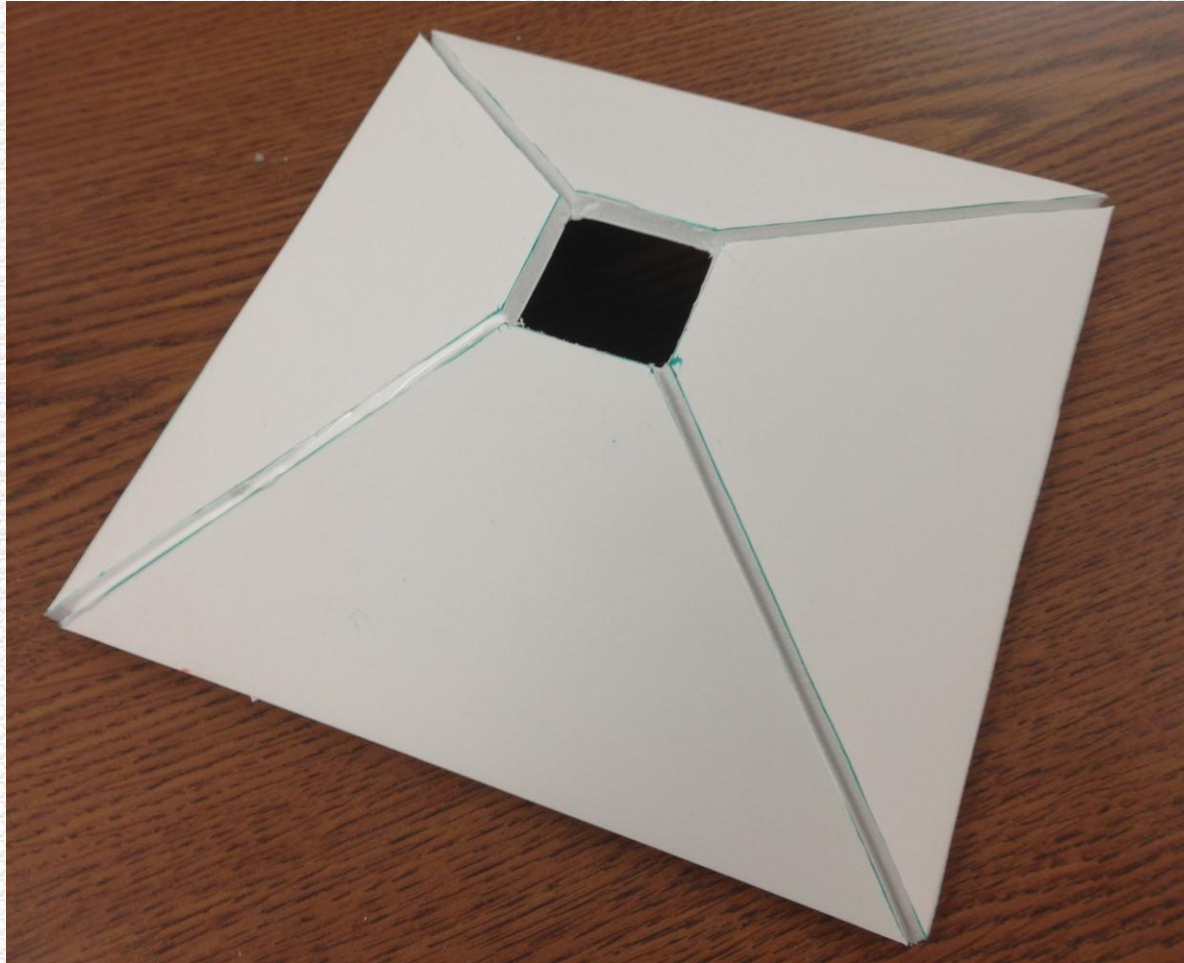


Step #11

- To reinforce the glued seam, flip the pyramid over and glue strips of paper perpendicular to the seam (You can use leftover paper from the pattern if you would like)
- Let dry



Final foam board pyramid



Completed Pyramid Tester Base Facsimile

- This facsimile is NOT meant to bear weight.
- Teams should only use a foam board PTB to test their Structure to make sure that it complies to the height requirements of the Challenge (A.3.c.).
- If teams are interested in purchasing a steel weight-bearing PTB that is tournament sanctioned, they can be found at ShopDI.org for \$20 plus shipping. They will be made available by mid-September for all teams to purchase.

