

First Quarter Arch Bridge Design Competition

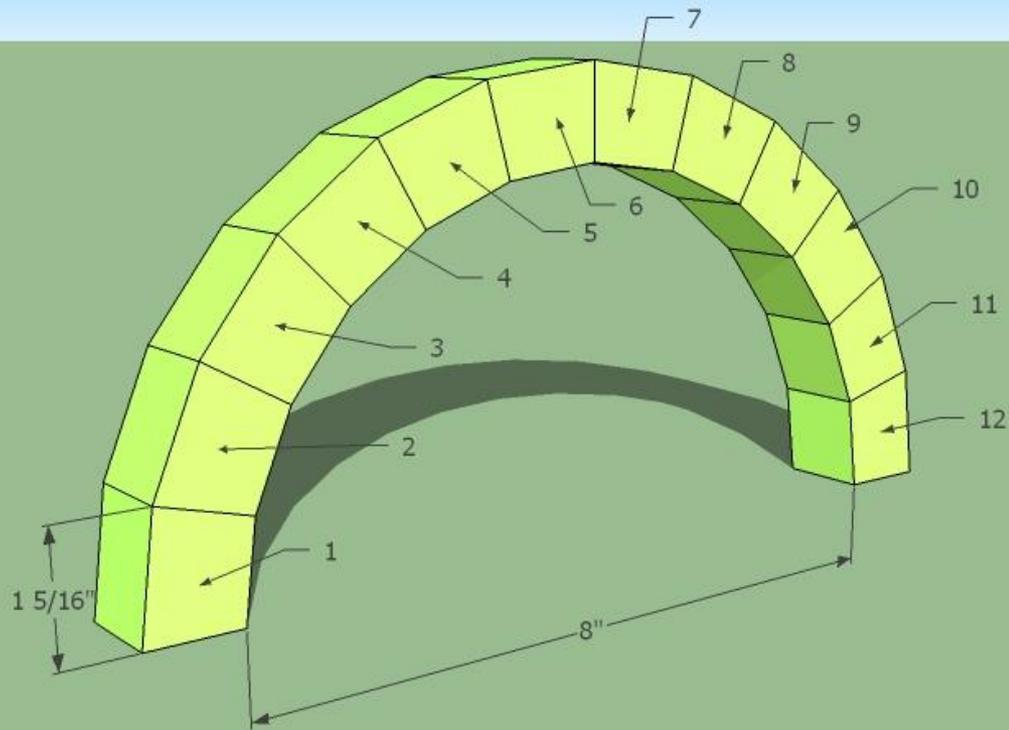
❖ *By: Kevin S, Wesley, Danny*

Design:

- ❖ Our design consists of a foam arc that has been cut up into 12 equal pieces that, when assembled, forms an arc.
- ❖ The keystone is really any piece, since each block is essential to the arc, but the 2 center blocks would be the most likely candidates.
- ❖ Foam is the opportune material, since it is abrasive, light weight, and easy to cut.
- ❖ We predict that the span will be 8 inches long, and that our longest side will be $1 \text{ and } 5/16^{\text{th}}$ of an inch. Therefore, our overall score will be...

6.095238

Picture of our Idea:



And Now...

**The Real
Thing...**

Final Design:



This is our final design. It ended up just barely standing up on its own and the span was $7 \text{ and } \frac{15}{16}''$ and the longest block was $1 \text{ and } \frac{1}{4}''$. So both dimensions were only $\frac{1}{16}''$ smaller, giving us our final score of:

6.35

Lessons Learned:

- ❖ If our team was to repeat this challenge, we would basically make the same bridge again because it worked the best.
- ❖ If we could change our bridge so that it could be better the next time around, we would cut the blocks into smaller pieces so that we would end up having a better overall score.

