Stairway to Reading Presents
The Banaue Bookshelf

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PROJECT MISSION

CREATE A BOOKCASE WITH A HIGH SAFETY RATING THAT WOULD NOT TOPPLE OVER ONTO THE OWNER. WE WOULD LIKE TO CONSTRUCT THE BOOKSHELF USING SUSTAINABLE MATERIALS.

PROJECT GOALS

Use SolidWorks to create a design for a bookcase that would be strong, safe, and visually appealing.

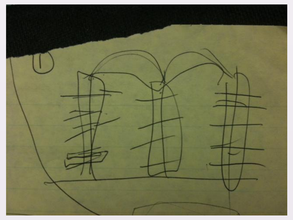
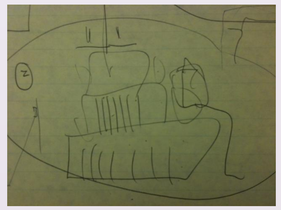
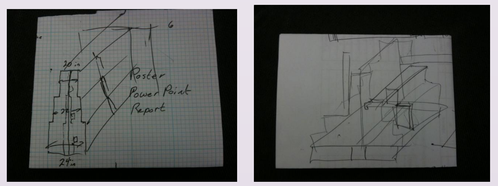
PROJECT EVALUATION

Although we could have easily made a traditional bookcase it would have been uninspiring it it's space. An unique design would make our bookcase stand out from others and easier to sell in the marketplace. After reviewing ideas online we decided to use a tiered design. The tiered form mimics the UNESCO Banaue Rice Terraces in the Philippines. This design incorporates a natural theme into an otherwise utilitarian piece of furniture and brings a sense of serenity to the home/office.

PROJECT PLAN

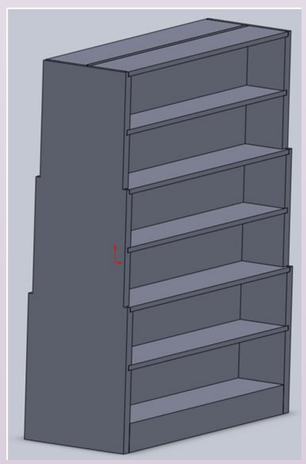
We decided to create a two sided tiered bookcase. The bookcase height is 6 ½ feet, length is 5 feet, and the tiers (shelves) are 11.5", 9.5", and 7.5". There are a total of two shelves for each tier length which results in a total of 6 shelves.

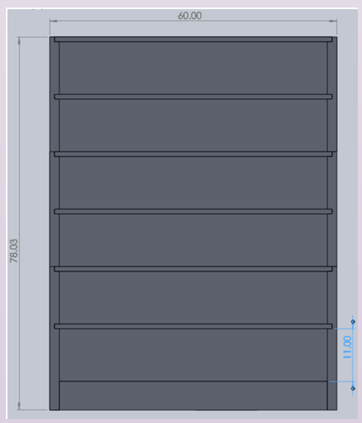
POSSIBLE SOLUTIONS

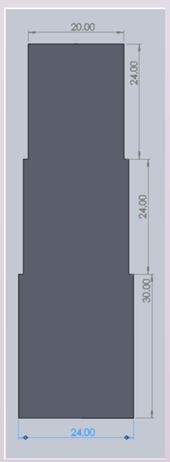
#	Inspiration	Sketch
1		
2		
3		

FINAL SOLUTION

We chose the design that we thought would hold the most books and be the most visually appealing.







LESSONS LEARNED

Mating was very challenging. The best way we found was to mate one position first and then slide the two parts into position.

SolidWorks will automatically update the assembly if you make adjustments to a part.

The heaviest stress occurred in the back of the shelf. This makes sense because this is where the shelf is connected to the vertical back panel.

TAKE AWAYS

We learned to create a detailed assembly and test for stress.

Our bookshelf can hold 762 books which is equivalent to 603 pounds.

If we had more time we would have researched materials and incorporated this knowledge into the EDP.