

Nishant Mukherjee

Rover Candidacy 2019

9/19/18

Activity #3 Frankenstein Die Design Plan and Work Log

Times:

9/19/18 → Decided outline for die. Chose which type of wood would work with how each number would be created.

9/21/18 → Cut all pieces of wood to be 5"x5"

9/25/18 → Rastor Cut Side 6 on laser cutter

9/27/18 → Fixed dimensions of each side. (each side no longer 5"x5"). Reason for this adjustment was because of not taking depth of material into account.

10/01/18 → Recut all sides of wood and added dimension row to bottom of table below.

10/02/18 → Redid the rastor cut for side 6 with the laser cutter.

10/03/18 → Completed vector score side 3. Completed hole saw cut for side 1.

10/04/18 → Used drill press to make both side #2** ($\frac{3}{8}$ " drill bit cut to a depth of $\frac{1}{4}$ " into the material) and side #5 ($\frac{31}{64}$ " drill bit cut all the way through the material). I officially began the final assembly for the die. Sides 2, 3, 5, and 6 attached using drywall screws. These four sides are officially finished.

**Due to clamp on drill press not being big enough to clamp sides for the die, me and Mr Cribbs had to hold the piece of wood. As a result, not enough force was put on the piece of wood and the drill press split the wood and the piece was no longer viable to use. However, I was able to recut side 2 and, eventually, successfully use the drill press to make the proper holes.

10/05/18 → Completed side #4 using laser cutter (with help from Ms. Makins). Finished final assembly and sanded down any additional rough sides.

	Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
Type of Wood	¼" plywood	½" plywood	¼" plywood	masonite	½" plywood	2"x6" wood
Number	1	2	3	4	5	6
How Hole will Be created	1 ⅝" hole saw cut all the way through the material	⅜" drill bit cut to a depth of ¼" into the material	laser vector score cut (outline)	Vector cut through material	31/64" drill bit cut all the way through the material	Rastor cut
Tool Used	Hole Saw	Drill Press	Laser Cutter	Laser Cutter	Drill	Laser Cutter
*Dimensions	5" x 5"	4.75" x 4.75"	4.75" x 4.75"	4.25" x 4.75"	5" x 4.75"	4.25" x 4.25"

*Dimensions are meant to be exactly what is listed in the above table, however due to possible inaccuracies with tools and/or error on my part, each side may either be a little shorter or bigger than listed above.

Pictures:

Side 1)

Pre cut:



Post Cut:

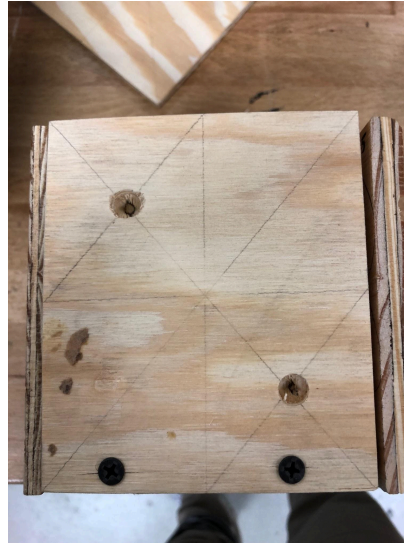


Side 2)

Pre cut:

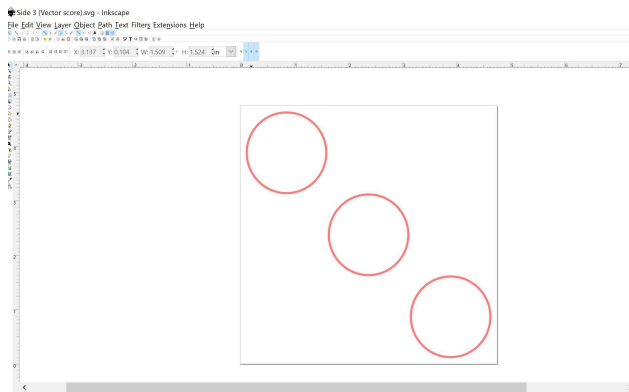


Post cut:

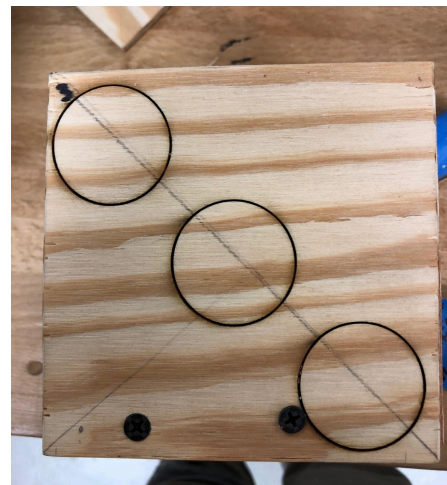


Side 3)

Image of Inkscape file:

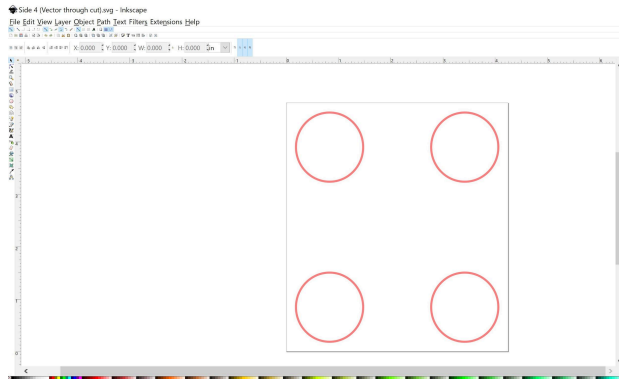


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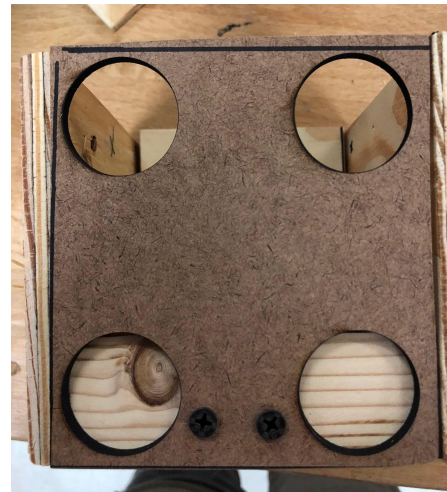


Side 4)

Image of Inkscape file:

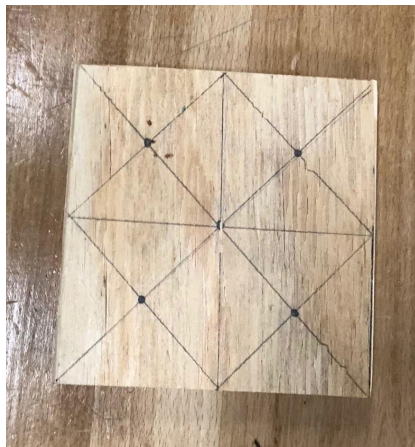


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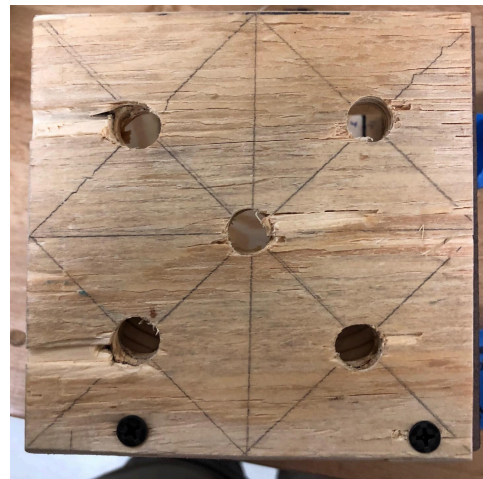


Side 5)

Pre cut:

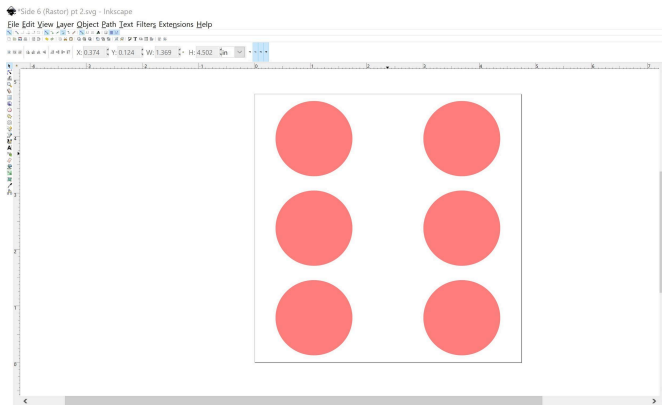


Post cut:



Side 6)

Image of Inkscape file:



Post cut:

**Reflection:**

With the introduction of this project, I was actually pretty nervous. I had some experience with most of the tools in the Den, but at the beginning of this project, I didn't feel as comfortable with all the tools as I needed to be. Luckily, that changed as I got going, but first, I needed to create my design and map out exactly how I was going to make this "monster". The first objective for me was to identify all the materials I was going to use. I Googled what each material looked like, and from here I hunted for them in the wood shop. Once this objective was completed I moved on to figuring out which tool would be best to use on each material. Once I figured this out, I felt ready to cut out my pieces of wood and learn how to make each side. I cut all pieces of my wood to be 5 inches by 5 inches. I quickly figured that this wouldn't work. I hadn't taken depth into account and realized that if all my pieces were 5 by 5, the die itself would not fit inside the guideline of a 5x5x5 die. (I noticed this error after I rasted my sixth side, so I simply flipped the side of this material, recut the wood, and rasted the other side) I admit, making the adjustment of fixing the dimensions of each side was challenging. To visually figure out what the dimension of each side was confusing, but I eventually figured that out. This is where I think CAD would have helped a lot. Last year, I was in Mr. Cribb's CAD/CAM class and got acquainted with CAD, but never really got to the point where I was comfortable with. Moving forward, this will need to change. Getting comfortable with CAD is a must because I

know now that CAD will make projects easier to map out. The CAD project will allow for this to happen. Meanwhile, after watching some videos online and watching some of my peers work with some of the tools, I got so much more comfortable with the tools in the Den. For instance, when me and Mr. Cribbs were using the drill press to make a whole in one of my sides, the drill press damaged the piece of wood to a point where it was no longer useable, but because this project gave me more experience with the tools, I was able to recut the piece of wood and make the holes correctly in just under ten minutes. Had this scenario happened a week ago, it would have taken a significant more amount of time for me to redo this side. Now, this project has made me so much more comfortable with the tools in the Den, but more importantly, I also got a lot more comfortable with working with and communicating with the rest of my peers. They would ask me for help, I'd ask them for their help and I think, overall, the experience made it easier for all of us to communicate with each other in the Design Den space. Additionally, I realize that my die is not the prettiest, but it is still mine, and I am proud of myself that I went from being too nervous to use some of the tools, to creating a die that is mine. My two biggest takeaways from this project, however, was that I need to get more comfortable with using CAD and that even though something may not be perfect, that something is still mine and I should be proud of it. I am excited for what lies ahead and I feel much more ready for the upcoming challenges.