

Name: _____ Block: _____ Date: _____

Simple BOX

INFORMATION AND PROCEDURE

Abstract:

Students are going to be creating pine wood boxes that are all customized in their own way. Students will Ideate various customizations, make safety considerations, learn new machines, build a box, and finally, self assess and reflect on their projects.

Boxes will be:

- made during class time with proper safety procedures
- designed and developed individually
- made of student's choice of wood
- customized (shape and wood burn)

Research of Customization

Sketch from your research at least 4 different designs in the boxes below. There should be evidence of 4 DIFFERENT ideas in these boxes.

Teacher Approval: _____

Building Process

These are general instructions and may need to be adjusted based on your project customization.

1. Ideate 4 ideas. They could include custom shapes and wood burning designs. Pick one and get the teacher's approval.
2. Using the Mitresaw WITH the teacher, measure and cut your center block.

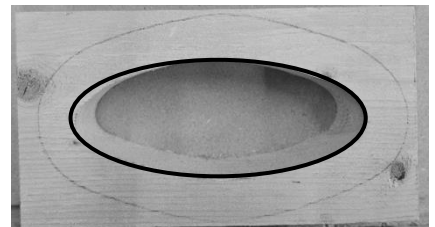
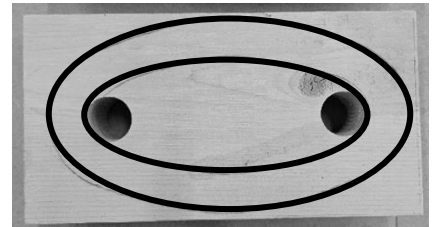
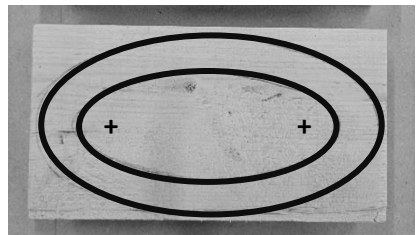
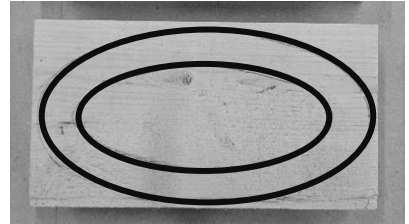
Center block: 6" long x 6" wide x 2" thick

3. Write your NAME on your block.
4. Design and draw the walls of your box. Remember, they must be AT LEAST 1cm (or a finger width)
5. Layout where your corner holes will go - keep in mind that they must be INSIDE of your box and the drill bit is about $\frac{3}{4}$ " diameter. Center punch the center of your holes.

Power Machine Safety Reminders

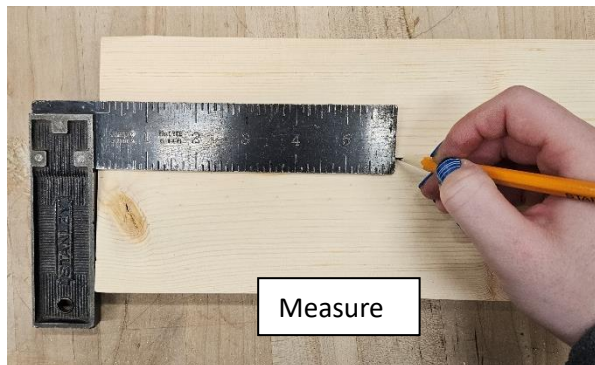
1. Safety Glasses
2. No Loose clothing
3. No jewelry
4. Nothing loose hanging off of you.

6. Use the drill press to drill your holes. Use a pecking action to clear debris.
7. Cut the inside of your box on the scroll saw. Go slow, no sharp turns.
8. Use files, sandpaper and the spindle sander to nicely clean up the **INSIDE** of your box. There should be no machine marks. **Sand completely.**

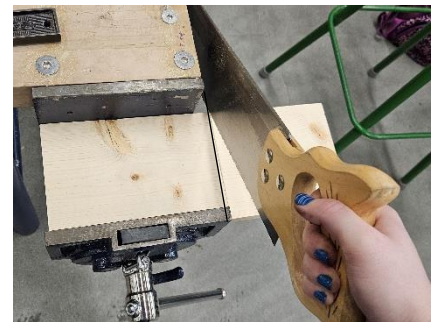


BOTTOM

1. Ask the teacher for 1" x 6" material. Using a square, measure and mark 6" long of it.



2. Find a HANDSAW (not a hacksaw) on the tool board. Put your material in a table vice and cut. I know you have great karate skills and you do NOT need to prove it to me. Cut ALL the way through the wood, do not break the last bit.



DRY CLAMP

3. Upstairs, get a Jorgenson wood clamp to dry clamp your center block and bottom (NO GLUE).
 - a. Ensure that the two sides of the clamp are parallel. They should be clamped onto your wood with no gaps showing between your pieces. Loosen the top handle to remove your block for the next step.



Glue Up

4. Make a single, thin line of glue on the opposite face side (the backside) of your box wall layout. Spread the glue with your finger.

5. Clamp center block and base together in your dry-clamp set-up.



6. Write your name and time of clamp. Set out of the way at the end of the table and leave to dry for 24hr.

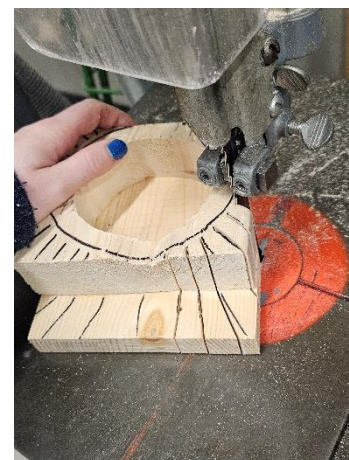


BANDSAW

7. On the bandsaw, make relief cuts for any round or sharp twists. Then, cut the shape of your box leaving a 1/8" border around your drawn outside wall. Your fingers should NEVER be in the path of the blade.

Power Machine Safety Reminders

5. Safety Glasses
6. No Loose clothing
7. No jewelry
8. Nothing loose hanging off of you.



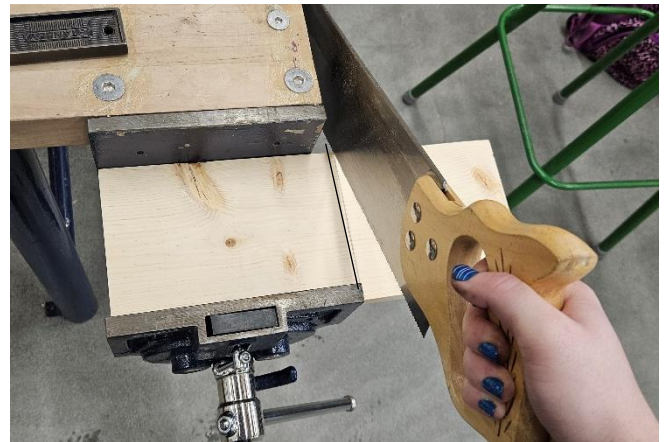
SANDING

1. If edges are rough, use a file to remove excess material.
2. Use the disc and belt sanders to smooth the outside of the box. There should be no bandsaw marks remaining.
3. Hand sand to remove marks from the electric sanders. Also remove “fluff” from the electric sanders. You want to see the grain pattern from the natural wood.



MAKING A LID

4. Find the stack of 1" x 6". Measure and mark with a square a piece large enough to fit your box onto (same procedure as making your bottom).
5. Use a HANDSAW to cut the material to size.



6. Drill Press:

- a. Ensure that the depth stop is set to drill 1" into your base with the 1/8" drill bit.
- b. Line up your bottom so that you will be drilling into the thickest section of the wall of your box.
- c. Without moving the base, place your top on top and clamp down.
- d. Drill.



7. Measure 1" of 1/8" welding rod.
8. Use a HACKSAW to cut your piece.



9. There will be a burr on the end of your piece. Use a file to smooth it flat.



10. Use a hammer to lightly tap your metal into your hinge hole.



11. With your bottom attached, trace it onto your lid. Disconnect the lid and cut it 1/8" larger than your bottom.

12. Sand your lid to match your bottom on the belt or disc sander.



WOOD BURNING

13. Draw your design first in pencil. At the very least you need to do your initials on the inside of your lid.
14. With the wood burning pen, practice on a scrap piece of wood.
15. Wood burn on your box.

3 P's of Woodburning

Pull (don't push the pen across the wood)

Patience – Take your time, don't rush

Pressure – Don't stab your wood, light pressure on the surface

FINISHING

16. Sand everything to 220 grit. There should be **no machine marks or scratches**.
17. Finish as desired. Recommendation is mineral oil blend.

Simple Box Assessment

Marks Breakdown:

Were you on task throughout the building stage? Did your instructor need to bug you to get to work? Did you show up on time? Were you following proper safety guidelines?

Self-Assessment: /10	Ms. Meyer's Mark: /10
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Project Assessment:

Design Creativity How original is your box? Did you wood burn? Did you add a customization?	Self-Assessment: /10	Ms. Meyer's Mark: /10
Machine Accuracy Based on specifications, how accurate is your box to dimensions?	Self-Assessment: /10	Ms. Meyer's Mark: /10
Sanding Is your box sanded nicely to 220 grit? Is there evidence of pencil, scratches, or machine marks?	Self-Assessment: /10	Ms. Meyer's Mark: /10
Finish Was the finish applied with a nice even coat? Are there signs of dry patches from under-finishing or sticky spots from over-finishing?	Self-Assessment: /10	Ms. Meyer's Mark: /10

/50 Total

If you were to build this project again, what would you do differently? _____

Did you enjoy this project? Explain. _____
