

Student Designed Laminated Project Procedure

1. Design your laminated project in Inventor. Follow the video tutorials on how to draw it in 3D and produce a working drawing that you will use.
2. Complete a bill of materials as shown by your teacher. See below for an example of wood you might use;

Item	Qty	Name	Material	Size
A	1	Middle Piece	Blk Walnut	$\frac{3}{4}$ " x 3 x 12"
B	2	Outside Piece	Maple	$\frac{3}{4}$ " x 23" x 12"

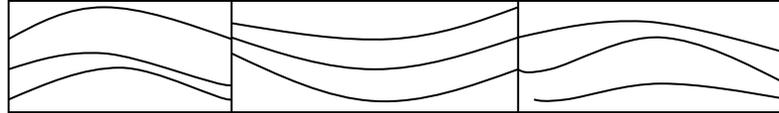
3. Have both your drawing and the Bill of Materials approved by the teacher by having it initialled. **Do not** loose the drawing as it becomes part of your mark later and is used for measuring.
4. Go to the short ends bin **FIRST** and select your wood if possible. Only after you **CANNOT** find a piece of wood in the short ends bin and you have **ASK** the teacher can you take from the main wood pile.

EACH PIECE OF WOOD MUST BE AS FOLLOWS;

Thickness: must be close to 1 inch
width: oversize by $\frac{1}{4}$ " to $\frac{1}{2}$ inch
length: oversize by $\frac{1}{2}$ " to 1 inches

5. Layout the size of wood you require on the wood you have chosen and have the teacher check it. **ONLY** after the teacher has checked it do you proceed.
6. Using the Mitre Saw, cut to rough length the pieces you need. **REMEMBER** – it is $\frac{1}{2}$ " to 1" longer than your final length.
7. If necessary, go to the table saw and rip any extra wood and return it to the short ends bin. **(Do this if the board is more that 1" wider than you need)**
8. On all pieces, use the jointer **(check for it being square)**
 - Joint a FACE SIDE (and mark it)
 - Joint a FACE EDGE (and mark it)
 - Go over the wood **as few times as possible** to make the boards flat and square
9. Rip ALL pieces on the Table Saw to final width.

10. Dry clamp the pieces together (Look at the diagram below for gluing correctly)
- clamp ALL face sides on the same side and as even as possible
 - Use bar clamps
 - If there are any gaps between the pieces, go back to the jointer
 - **have it checked by the teacher**



11. Glue the project together ONLY after the teacher has approved it.
- If it will contact water, use the waterproof glue.
 - Use a wet paper towel to remove any glue.
12. After it has dried, if any glue remains use a scrapper or chisel to remove it.
- clamp project to bench
 - chisel away from you!!
13. Hand plane any badly aligned joints and make one side flat.
14. Plane to thickness
- put the face side down first and plane the opposite side smooth
 - flip the board over and plane the face side smooth
 - try and keep the board as thick as possible
15. Re-create the shape of your cutting board by cutting it out.
- use the Table saw or Mitre saw to cut one end square, then to final length or;
 - use the Band saw to cut out a circle, then Disc Sand it smooth or;
 - use the Band Saw to cut the corners round then Disc Sand
 - go back to your computer and proceed to setup the CNC router to cut the shape out.
16. Do any other operations such as
- drilling holes
 - routing the edges round
17. Sand the entire project starting with 80. Continue with 120, 180 and 220 grits. Don't forget the end grain.
18. Apply a finish;
- a. 2 coats of mineral oil if the project is to be used as a cutting board (1 per day)
 - b. 3 coats of water based stain with a foam brush (1 coat per day) Sand with 400 in between
19. Complete an evaluation sheet and submit for marking
- make sure you include your drawing as it is for marks.