Easel project

SCHS/SVW

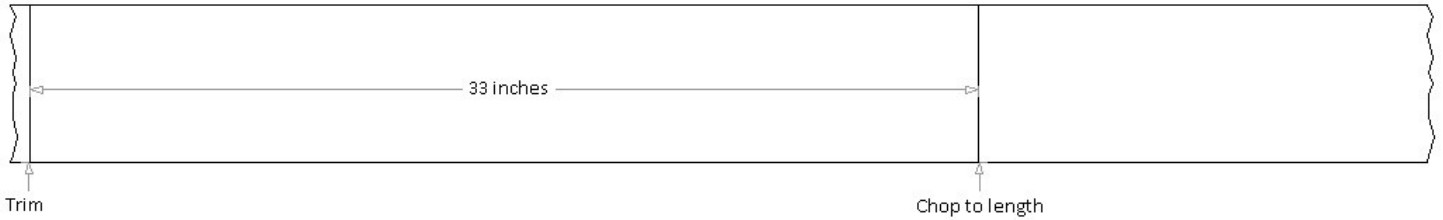
Construction 1

2018

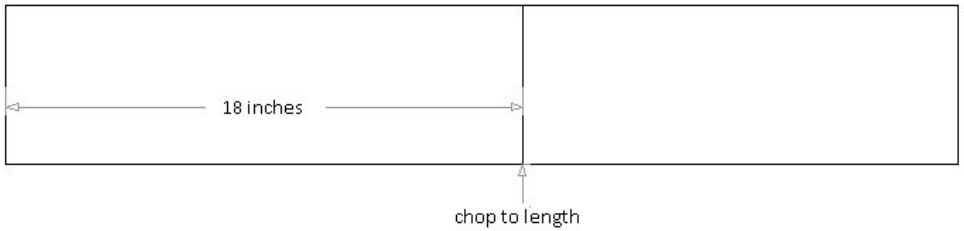
by Ray Hari

Stage 1 – On the chop saw

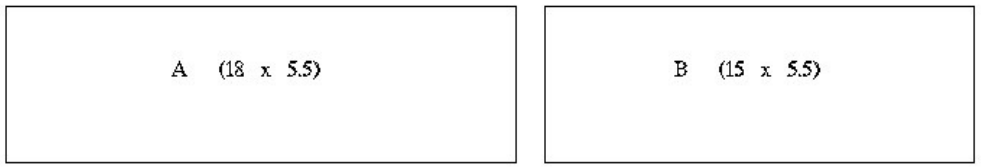
- Step 1



- Step 2



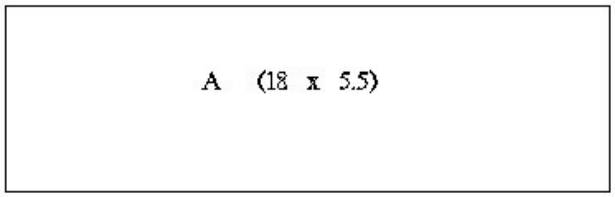
- Result



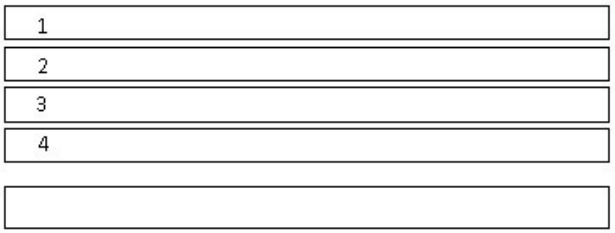
Stage 2 – On the table saw (with board A)

- Set the fence on the table saw 1 inch away from the blade
- Rip 4 strips from board A (the one that is 18 inches long)
- Mark the 4 strips as #1, #2, #3 & #4 using a pencil

Before:



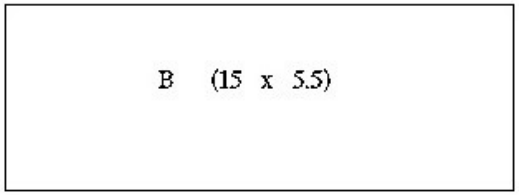
After:



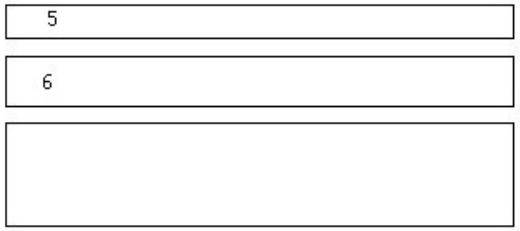
Stage 3 – On the table saw (with board B)

- Set the fence on the table saw 1 inch away from the blade.
- Rip 1 strip from board B (the one that is 15 inches long). Mark the piece as #5 using a pencil.
- Reset the fence to 1 ½ inches away from the blade.
- Rip 1 strip from the rest of the board B. Mark this piece as #6.

Before:



After:

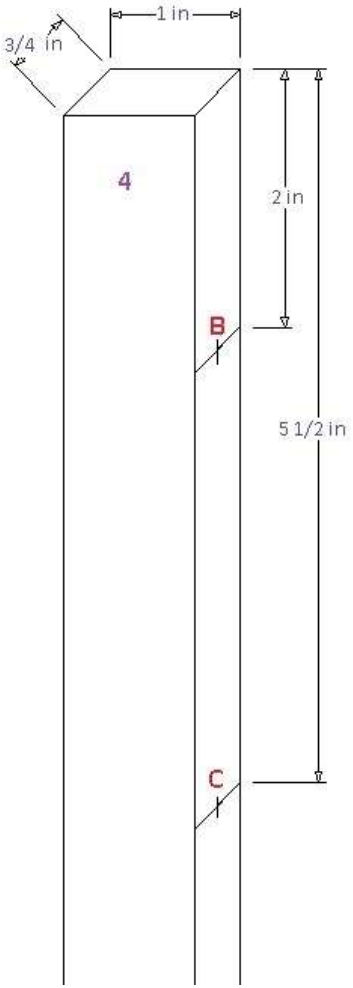


Stage 4 – Hand sanding

- By now you should have
  - 4 pieces that are 1 inch wide and 18 inches long. (#1, #2, #3, #4)
  - 1 piece that is 1 inch wide and 15 inches long. (#5)
  - 1 piece that is 1 ½ inches wide and 15 inches long. (#6)
- Hand sand all the pieces to remove sharp edges and corners using 120 grit sand paper. (note: Do not sand off the numbering on the pieces.)

Stage 5 – Drill hole prep.

- On pieces #1 & #2
  - Measure 2 inches from one end and make a mark on the side that is ¾ inches wide. Name the mark as ‘A’.
- On pieces #3 & #4
  - Measure 2 inches from one end and make a mark on the side that is ¾ inches wide. Name the mark as ‘B’.
  - Measure 5 ½ inches from the same end and make another mark on the same side. Name the mark as ‘C’.
- On piece #5
  - Measure 1 inch from one end and make a mark on the side that is ¾ inches wide. Name the mark as ‘D’.
  - Measure 1 3/4 inch from the other end and make a mark on the side that is 1 inch wide. Name the mark as ‘E’.
- On piece #6
  - Find the mid point (approx. 7 ½ inch from one end) and make a mark on the side that is ¾ inch wide. Name the mark as ‘F’.



Get approval and grade (G1)

- Show the 6 pieces to one of the instructors to get approval before moving to the next stage.

IMPORTANT **Do not go to next stage without approval.**

You will be graded at this point of the project.

Grade:

Automatic 30 pts if you are allowed to go to next stage.

Another 5 bonus pts based on workmanship, following instructions, time management & good citizenship in the workshop.

Stage 6A – On the drill press A

- Set a 3/8 inch drill bit on the drill press. (Note: This will be done for you by one of the instructors)
- Use a scrap piece of wood under your piece before drilling through holes.
- On pieces #3 & #4
  - Drill a through hole at location marked ‘C’.
- On piece #5
  - Drill a through hole at location marked ‘D’.
- On pieces #3 & #4
  - Drill a blind hole that is ¾ inch deep at location marked ‘B’.

Stage 6B – On the drill press B

- Set a 1/8 inch drill bit on the drill press. (Note: This will be done for you by one of the instructors)
- Use a scrap piece of wood under your piece before drilling through holes.
- On piece #5
  - Drill a through hole at location marked ‘E’.
- On piece #6
  - Drill a through hole at location marked ‘F’.

Stage 7 – On the drill press A (holes at an angle)

- Use the same 3/8 drill bit as before.
- Set the drill press table angle to 5 degrees. (Use the 2 knobs at the bottom of the drill press table to loosen the table prior to setting the angle. Tighten those knobs after setting the angle)
- On pieces #1 & #2
  - Drill a blind hole that is ¾ inch deep at location marked 'A'.

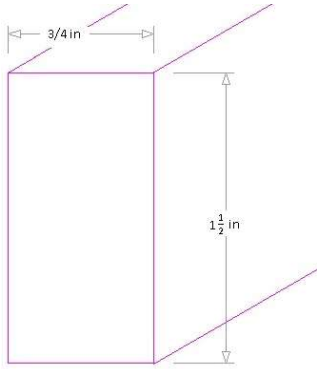
    VERY IMPORTANT: This hole will be at an angle. Pay careful attention to how you place the piece of wood on the drill press for this. If in doubt ask the instructor for help.
- Reset the drill press table back to zero degrees.

Stage 8 – On the router table

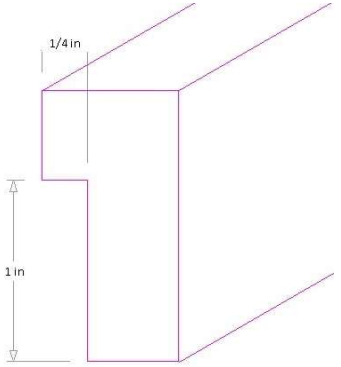
- Take piece #6 (one that is 15 inches long and 1 ½ inches wide) to the router table and make a rabbet cut.
- Make sure the router table is set to make a rabbet that is 7/8 inch high and ¼ inch depth.

Note: If the router table is not set to do the correct rabbet ask the instructor to make the setup for you. Do not change the settings yourself.

Before:

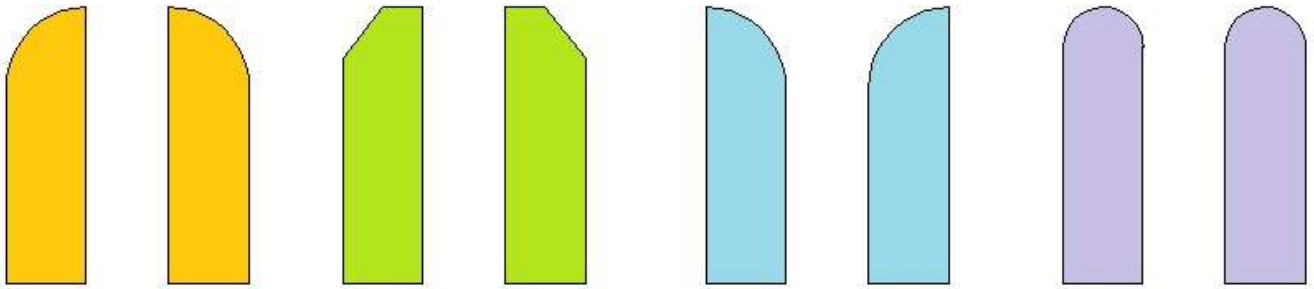


After:



Stage 9 – On the belt sander

- Shape the end profiles on all the pieces. There is no hard and fast rule as to how they should look like as long as it is appealing to the people who look at the final product. Use your own imagination and creativity.



Get approval and grade (G2)

- Show the 6 pieces to one of the instructors to get approval before moving on to final assembly.
- The project requires 2 dowel rods, 8 nails, and a string for the final assembly. Get them from the instructor now.

IMPORTANT **Do not go to next stage without approval.**

You will be graded at this point of the project.

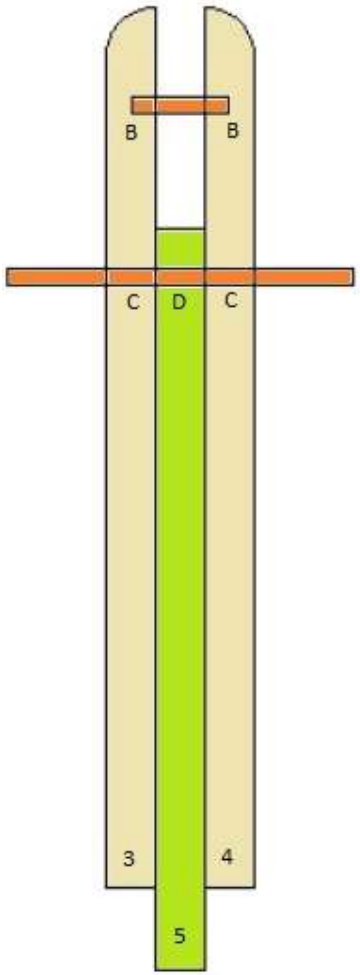
Grade:

Automatic 30 pts if you are allowed to go to next stage.

Another 5 bonus pts based on workmanship, following instructions, time management & good citizenship in the workshop.

Stage 10 – Final assembly (1)

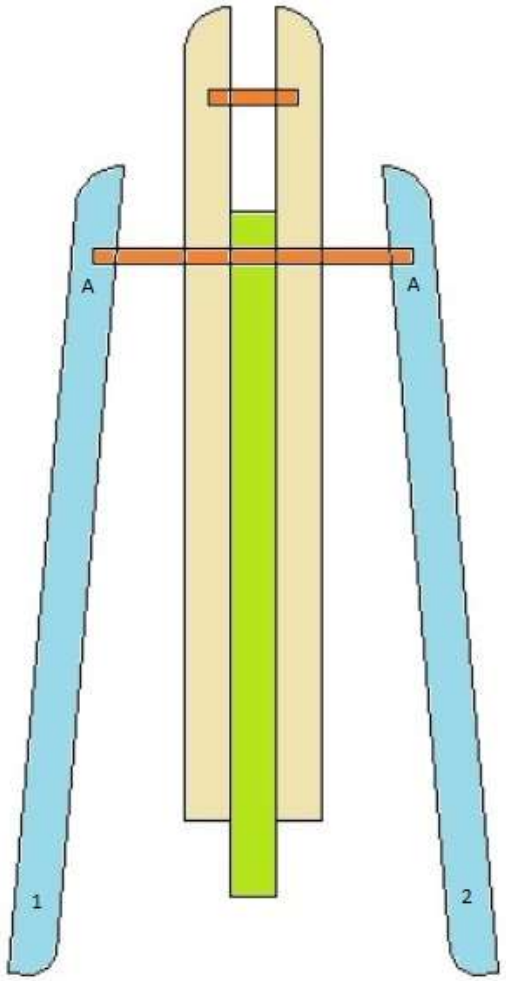
- Sand the ends of the dowel rods to make them slightly conical in shape. This will help in inserting the dowel rod with ease into the holes in the pieces.
- Insert the short dowel rod in hole B of both pieces #3 & #4. (Do not tighten yet)
- Place piece #5 between pieces #3 & #4 and align the holes C and D. Insert the long dowel rod through the holes in piece #3, #5 and #4.
- Make sure #3,#4 and #5 are touching each other and they are centered on the long dowel rod.



Stage 10 – Final assembly (2)

- Insert the long dowel rod in hole A of both pieces #1 & #2.

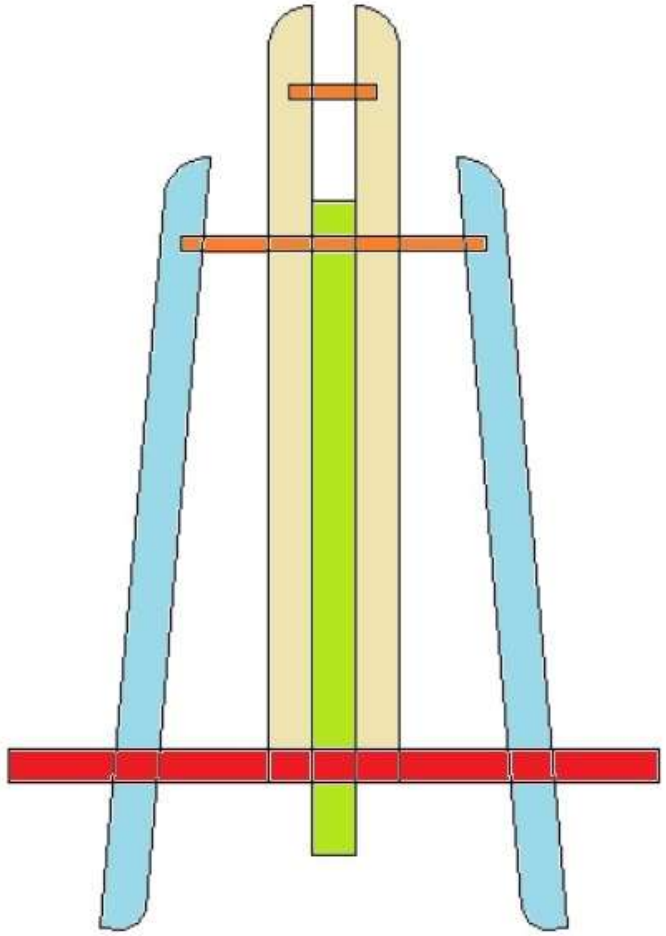
Note: Pieces #1 and #2 will be attached at an angle of 95 degrees to the ends of the long dowel rod. Do not try to straighten them to 90 degrees.



Stage 10 – Final assembly (3)

- Attach piece #6 to pieces #1, #2, #3, #4 using 8 nails. Use a hand drill to pre-drill holes for the nails. Use a hammer to drive in the nails.
- Attach the string to piece #6 and piece #5. Pass the string through holes E and F on piece #5 and piece #6. Tie knots at the ends of the string to prevent them from slipping back through the hole.
- Sand off any excess pencil marks using a 120 or 180 grit sand paper and make the easel look clean and smooth to the touch.

EASEL IS FINISHED.



Get it graded (G3)

Grade:

Automatic 25 pts for finishing the project.

Another 5 bonus pts based on workmanship, following instructions, time management & good citizenship in the workshop.

Final grade (G)

- Your final grade is **G1 + G2 + G3** (max 100)
- **Plus B** (subjective bonus pts. Max 5)
- **Minus P** (penalty pts for each excuse you give for not doing a proper job. Max 5) – No one likes excuses.
- **Plus TP** (Teacher's pet. Max 5) – If you donate your work to a teacher or any staff of the school. Take a picture of them holding it. Show the picture and tell me their name to get this extra point.

G = G1+G2+G3+B–P+TP (Max. 110/100)