

What do I do next?

Name

1. Grab some knowledge

- Complete all your worksheets about safety, drawing, layout, and math with fractions.
Then get your lumber: one 8' piece of 2x6 lumber for the **sides** and **steps**
 four 16" long pieces of resawn 2x4s for **support slats**

2. Cut up your 2x6 into rough lengths on the mitre saw. You will cut it into 6 pieces roughly 16" long.

- 2 pieces 16" long for the **steps**.
- 2 pieces 16" long for the **long sides**.
- 1 piece 16" long for the **short sides** (it will be cut in half later).
- 1 piece 16" long to **give back** to your teacher
- Write the part name and your name on each piece of wood. For example: "long side 2 — Trenaë"

2. Mill your lumber to thickness and width

- Use the jointer to make one face and both sides flat on every piece of wood
- Use the planer to make all three **support slats** 1/2" thick.
- Use the planer to make the **steps** to 1" thick. Do not plane the sides yet!
- Use the table saw to rip the wood for the **support slats** to 3" wide
- Use the table saw to rip the wood for the **steps and sides** to 5" wide

3. Make the sides

- Use a mitre saw to cut the 16" long **short side** into two pieces that are 8" long each.
- Glue each **short side piece** to a **long side piece** to make the **side assemblies**:
 - make sure that it forms an **L** shape with the two pieces lining up at the bottom
 - make sure that jointed side of both the long and short sides are facing the same way
 - use clamps, make sure the pieces line up well, and let dry overnight
- Use the planer to plane both side assemblies to 1" thick.
 - start with the jointed side down, get the top clean, and then flip it over
 - these are wider parts, so use quarter turns instead of half turns
- Lay out the cut and router lines on your side assemblies
- Use a mitre saw to cut the top and bottom off each side assembly. It should end up 10" high.
- Use a router with a rabbet bit to cut the rabbets that will hold the support slats

4. Shape the steps and support slats

- Use the mitre saw to cut the **support slats** to 13" long
- Use the mitre saw to cut the **steps** to 15" long
- Use a router with a rabbet bit to cut the rabbets on each end of the **support slats**

5. Assemble the step stool

- Put all the pieces together without glue to make sure everything fits
- Put paper down on the workbench and glue together the **side assemblies** and **support slats**
- Clamp it up tightly with strap clamps. Check that all the corners line up well and are 90 degrees.
- Now you can add glue to the sides and support slats and attach the **steps** with clamps
- When the glue is dry, you can lay out the drill holes
- Use a drill or drill press to drill 1/4" or 3/8" holes through the **steps** into the sides
- Glue dowels into each drill hole to reinforce the joint. Cut the dowel tops off when dry.

6. Sand to smoothness

- Use the stationary sander to quickly smooth your joints. Fill if needed. Let the wood filler dry.
- Use a palm sander to sand from 40 -> 60 -> 100 -> 150 grit.

7. Finish

- Use paint or water-based polyurethane to finish your project. Wait at least 30 mins between coats.
- Sand with 220 grit sandpaper after the second and each following coat.
- Apply 3-7 coats for the best quality.