

Wooden Folding Table



First things first. I did not design this table, I copied it from a table my sister-in-law has. It is not a perfect copy and has some changes in construction modified to suit my assembly skills.



This has turned out to be a perfect little table to hold my laptop while using my star map software while observing and would work equally as well for laying out star maps. The table top dimension when set up is 22" x 24". It would not be hard to enlarge or shrink the size based on your needs. It is very light, folds up easily and can be carried in one hand using the main dowel rod as a handle.



Setting up the table is a two hand operation. Start by placing it upright on its' legs. (shown on its' side here for clarity). Grasp the leaves on either side, lifting them up. Once the tops clear the legs push the tops towards each other and slide them together. It is very stable once erect. Fold up by lifting the edges of the leaves, pulling the frame apart and lowering the leaves.



*** Any dimensions given on these pages or in any drawings should be checked by laying out all pieces prior to drilling assembly pilot holes to ensure proper alignment. Variances in lengths and widths of final cuts will impact the exact placement of assembly especially for the top. ***

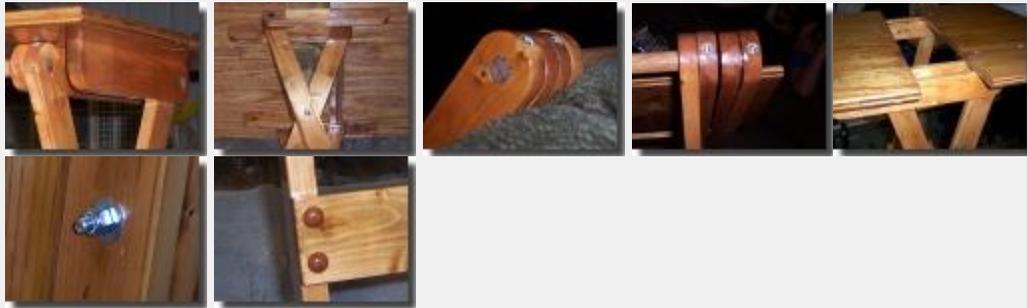
Here goes my best explanation of how to build this table. Please examine all photos carefully and compare to instructions before beginning.

MATERIAL:

Wood of your choice but make sure it is dry so it will not warp after it ages. I made this table from scrap 1" x 4" boards and plywood that have been laying around for years.

- 4 ea. - 3/4" x 2" x 30", these will make the four legs.
 - 4 ea. - 3/4" x 2" x 13", these will make the table top support arms.
 - 2 ea. - 3/4" x 11" x 24" for the table tops. I used plywood but recommend a reasonably clear 1" x 12" or laminated pine board for that rustic look.
 - 1 ea. - 3/4" x 2" x 16" for the [leg brace](#) on the inside legs.
 - 1 ea. - 3/4" x 2" x 17 1/2" for the [leg brace](#) on the outside legs.
 - 2 ea. - 3/4" dia. oak dowel, 1 1/2" long for the outside leg/support hinge.
 - 1 ea. - 3/4" dia. oak dowel, 16" long for the inside leg/support hinge.
1. Cut the 30" legs and round both ends with a 2" radius. Drill a 3/4" hole in one end of each of the 4 legs, centered and 1" from the end. This will be for the dowel hinge. Drill a 1/4" hole in each leg, centered and 16" from the bottom for the carriage bolt. During final assembly it will be necessary to re-drill this hole with all of the legs laying flat on a bench so the table will close properly and fully when folded up.
 2. Cut the 13" support arms, rounding one end with a 2" radius and drill the same 3/4" hole for the hinge. On the other end, draw and cut/sand the radius on **ONLY** one side. The flat side will support the table top.
 3. Make the [two leg braces](#) per the dimensions above. Drill pilot holes per this [drawing](#) for attachment to the front of the legs with #8 x 1 1/2" wood screws. I wait until after the finish is applied to countersink the holes in the braces to prevent the polyurethane from building up and puddling inside. You will use these braces as templates to square and drill the pilot holes in the braces during final assembly.
 4. Cut your dowels per the dimensions above.
 5. Cut your table top pieces and rout/round your edges and/or corners as desired. The layout dimensions for the mounting holes for the tops are different depending on whether it will mount to the inside or outside support arms. The outside mounted drawing is [here](#). The inside mounted drawing is [here](#). Do not drill the pilot holes until final assembly. The hole locations on the drawings are for reference only and may have to be adjusted to the center of the support arms depending on cut accuracy.
 6. At this point I stained and finished all of my pieces before proceeding to final drilling and assembly. I saw no way to completely finish the table once it is assembled.
 7. Assemble the [inside legs and supports](#) first. Carefully examine all photos for details of assembly. Thread the two inside supports onto the 16" dowel first, making sure the flats are facing the same direction. Slide the legs on the dowel after coating the dowel with wood glue. Lay this assembly flat on a bench to ensure the legs are parallel with each other and carefully square one leg at a time and drill a pilot hole through the top edge of the leg and the ends of the dowel. Countersink the top of the legs just enough to flush the screw heads. See [photo #1](#) and [photo #2](#). Install a #8 x 1 1/2" wood screws in the end of the two legs into the dowel, making sure that both legs lay flat on the bench when you are done. An alternate method would be to use smaller dowel rods to "pin" the hinges in place.
 8. At this time install the table top leaf for inside supports. See [drawing](#) for detailed placement. Layout the table top per the drawing but ensure that the hole placement is correctly aligned with the support arms. The top is installed on the flat side of the 13" support arms. You may desire to install the brace first which is detailed in the next step. Drill the pilot holes, countersink the top and glue and screw it into place. You may opt for a hidden screw installation from the bottom with longer screws but I chose not to go to the trouble. Will be replacing the plated screws with brass ones for a nicer look as soon as I can get to Lowes again.
 9. Install the 16" leg brace. Make sure the brace is installed on the same side as the flat support arms or the table top if you chose to reverse these steps. The brace is installed 7" from the bottom of the legs to the bottom of the brace. Square the brace to the leg one leg at a time, drill your pilot holes into the legs, countersink the brace deep enough for [buttons to hide the screw holes](#) if you desire and attach with 4 #8 x 1 1/2" wood screws. I also glued the braces to the legs with polyurethane glue.

10. Install the 1 1/2" dowel hinges in the outside support arms in the same manner as you installed the 16" one. They will be held into the legs by the top.
11. Slide the outside legs onto the INSIDE of the support arms and install the table top according to the . Make sure the flat sides of the support arms are facing the same direction. Flat side, table tops and leg braces will be on opposite side from their counter parts. Again, check hole alignment before drilling. I slid the inside leg and support arm assembly inside the outside legs during this step to ensure clearance and squareness.
12. Install the 17 1/2" brace to the outside legs.
13. All there is left is to install the two 1/4" - 20 x 2" lag bolts through both sets of legs to build your scissor that lets the table work. I found that placing a flat washer between both sets of legs set the spacing and aligned everything better. I aligned all of the legs and layed the assembly flat on the bench and re-drilled my 1/4" holes in the legs to make sure the table will fold up completely flat. Actually, did this the second time after finding that it would not go all the way flat.



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