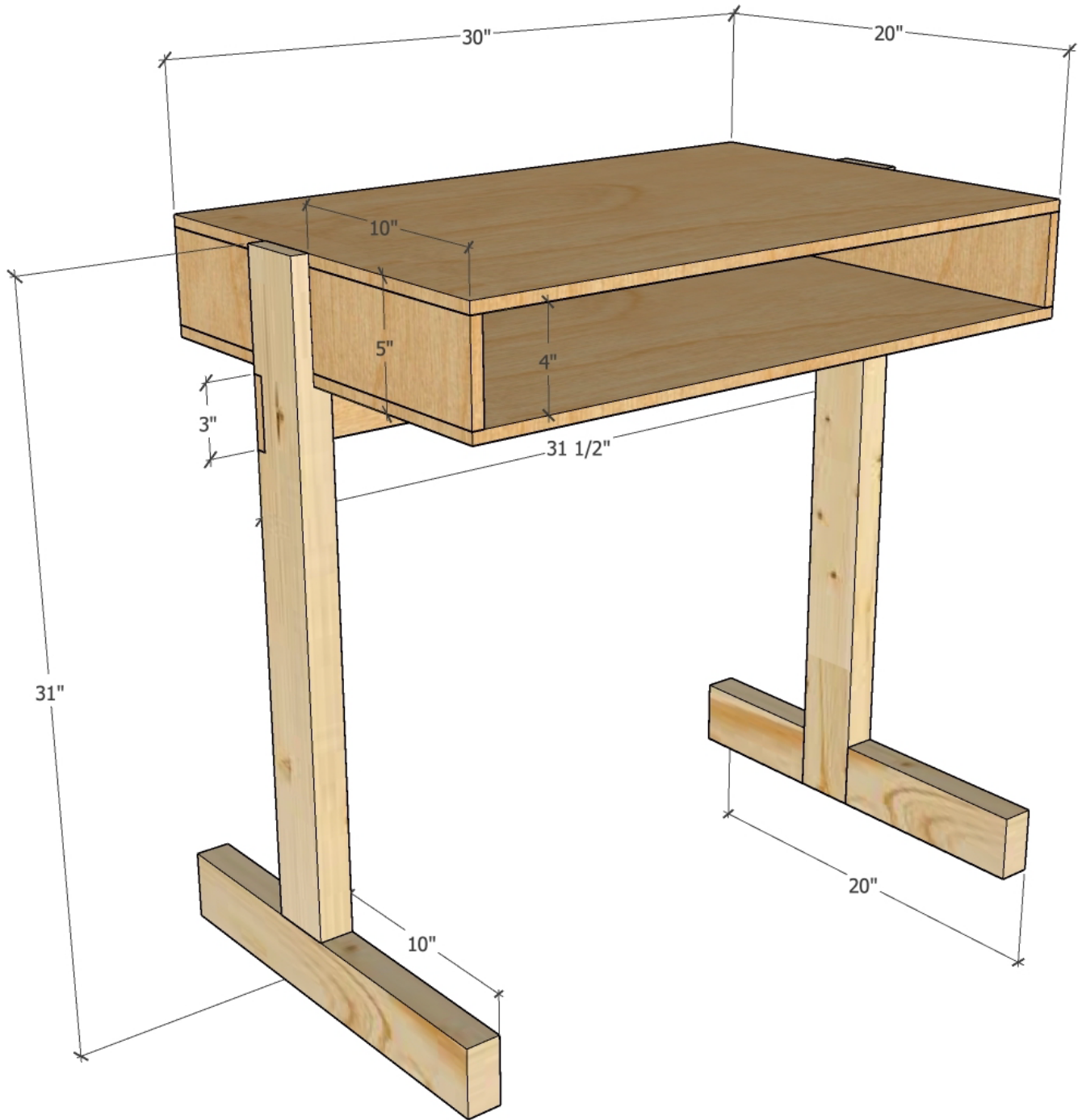


Student Desk

20x30-inch writing surface, 31-inches tall.



Introduction

The basic student desk is a scaled-up version of a design by Marc Spagnuolo, a.k.a. *The Wood Whisperer* (<https://thewoodwhisperer.com/>) and is copyrighted by him. A video showing the construction of the smaller sized version of the desk can be found on that website.

A single sheet of ½-inch 4x8 feet sanded plywood and three 104-5/8-inch 2x4 standard studs are all that is needed to construct three such desks, putting the cost at around \$25 per desk. The desk is assembled using glue and brad nails, but glue and 1-inch screws would work just as well.

The purpose of the design was to be relatively inexpensive, placing function over looks. Do not fret if you are not a fine-furniture builder.

Tools

A table saw is essential to rip the 2x4 boards to 3 inches wide as well as for making the dado cuts. You could use stock 2x4s (3-½ inches wide) and adjust the plans accordingly, and use a circular saw for the plywood and dado cuts. You would need a long, straight edge guide for accurate cuts.

The use of a nail gun for the brad nails is ideal but you could use 1-inch wood screws instead, all that is needed is a drill (for pilot holes) and a screwdriver.

Any interior wood glue will suffice for all the joints.

120-grit sandpaper is used for final sanding and a wood rasp, plane, or file is used to clean up the dado cuts.

Optionally, a clamp that opens to 32 inches wide for the final leg attachment would be useful to have.

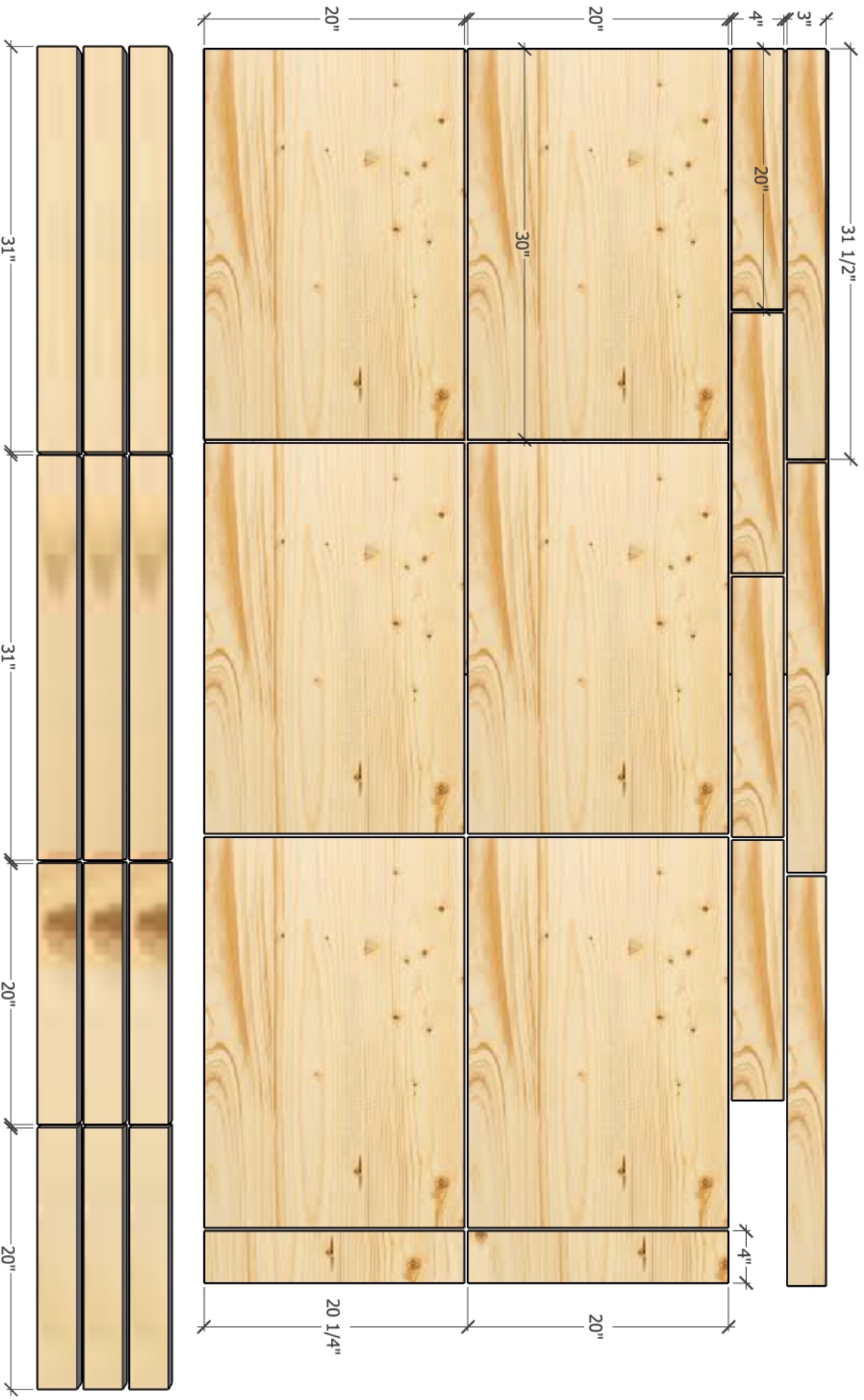
Construction Steps

1. Begin by cutting out the plywood pieces needed to make the box top. (See *cut list* illustration.) First, rip the 3-inch wide strip from which the stretchers will be cut. Next, cut the 4-inch wide strip that will be used for the sides (*exploded view* illustration). Lastly, cut the 20-inch wide strips that will be used to cut out the desk top pieces and the final two side pieces.
2. Do not cut the stretchers to length at this point. Go ahead and cut the side pieces to 20-inch lengths, matching the width of the top pieces. Cut out the individual top pieces.
3. Construct the desk top box by applying glue to the side piece edges and aligning the top pieces as shown in the illustrations. Use 1-inch brad nails to hold the pieces firmly in place. Wipe off excess glue and set aside for the glue to dry, at least 12 hours.
4. Cut the leg and foot pieces from the 2x4 boards. Each board should yield two legs and two feet, cut to the dimensions shown.
5. Rip the leg and feet pieces to 3-inches wide to remove the rounded edges. First, remove 3/16-inch from one edge, then rip to the final 3 inches.
6. Cut the 3-inch wide, ¾-inch deep dados in the feet. These cuts start in the middle of each foot (see illustrations) leaving

- 10-inches protruding towards the front of the desk and 7-inches towards the rear.
7. Cut the matching 3-inch wide, $\frac{3}{4}$ -inch deep dado cuts at the bottom of each leg piece.
 8. Cut the 5-inch wide, $\frac{3}{4}$ -inch deep dado cuts on the top of each leg **ON THE OPPOSITE SIDE** from where the bottom cuts were made (see illustrations).
 9. Cut the 3-inch wide, $\frac{1}{2}$ -inch deep dado cuts for the stretcher on the back side of each leg, just below the top dado cut.. **NOTE: The legs will be mirror images of each other**, so decide which is the left and which is the right for these last cuts. The stretcher holds the legs together and supports the underside of the desk top.
 10. Clean out the dado cuts on all pieces with a file or chisel and ensure leg and foot pieces mate together cleanly.
 11. Construct the left and right leg assemblies (see *leg detail* illustration). Apply glue to the lap joint on each foot. Press the leg piece into place and ensure it is square. Drive in three $1\text{-}\frac{1}{4}$ -inch brad nails to hold the assembly together. Wipe off excess glue and set aside to dry. Make sure you have a matching set of left and right leg assemblies at this point.
 12. After the top assemblies have dried, sand them with 120-grit paper, making sure side edges are flush at each joint. Sand to round over all edges to prevent sharp edges and remove splinters.
 13. Sand all the leg assemblies to smooth out joints and to round over all the edges.
 14. Attach the legs to the desk tops using glue applied to the 5-inch leg dado cut. These are set 10 inches starting from the front of the desk, matching the feet. Press the leg into place and drive in 3 or 4 1-inch brad nails. Wipe away excess glue. Optionally, use a clamp to hold the legs to the desk top until the glue dries.
 15. Measure the distance between the outside edge of each leg at the point where the stretcher attaches. It should be $31\text{-}\frac{1}{2}$ inches but this may vary depending on the actual depth of your dado cuts and other factors during assembly. Cut a stretcher to length to match this measurement. Glue the stretcher into place and drive in 2 brad nails on each side to hold in place. Wipe off excess glue.

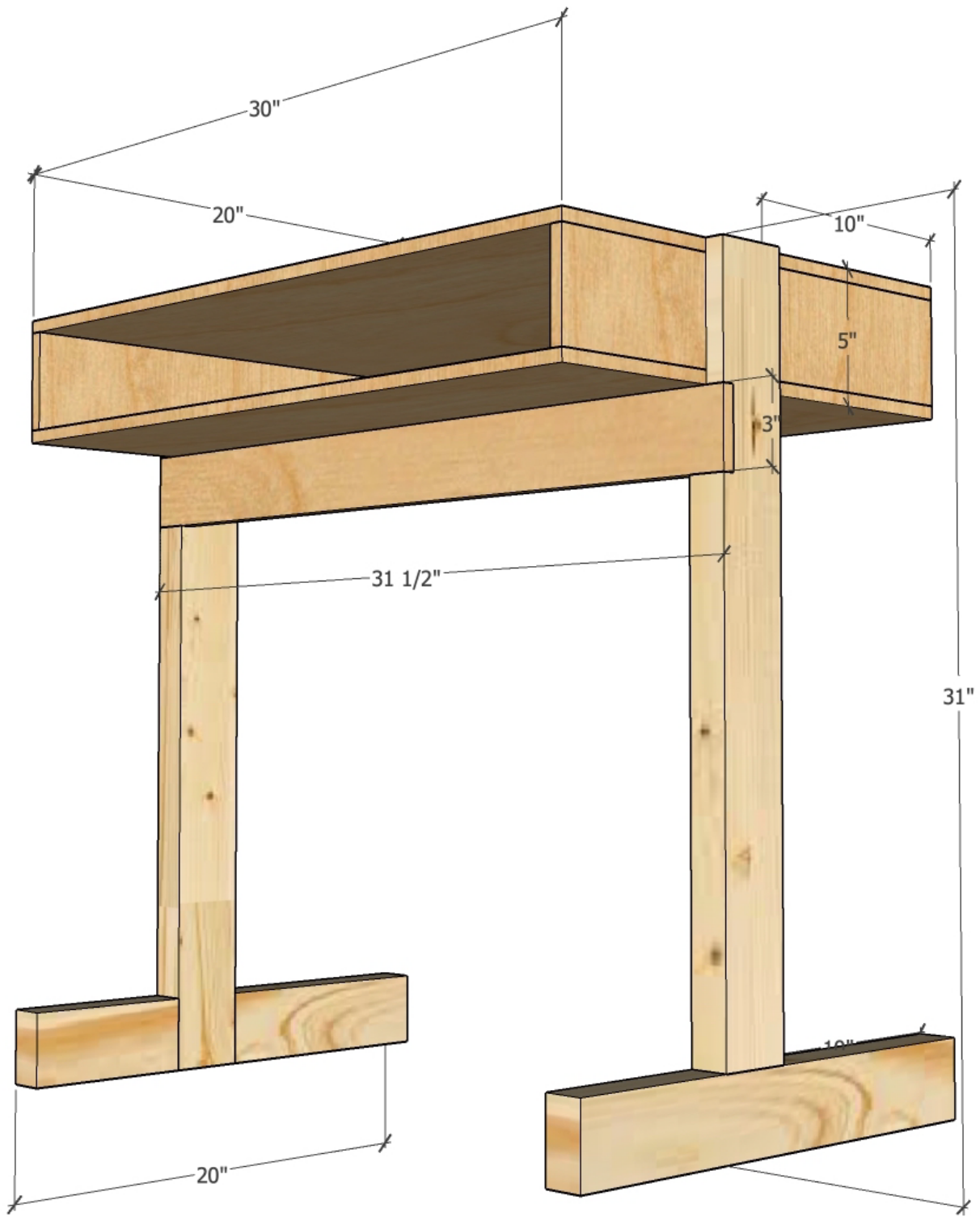
Student Desk - cut list for 3 desks

- (1) sheet sanded ply, 4x8x1/2"
- (3) 2x4x104-5/8" studs



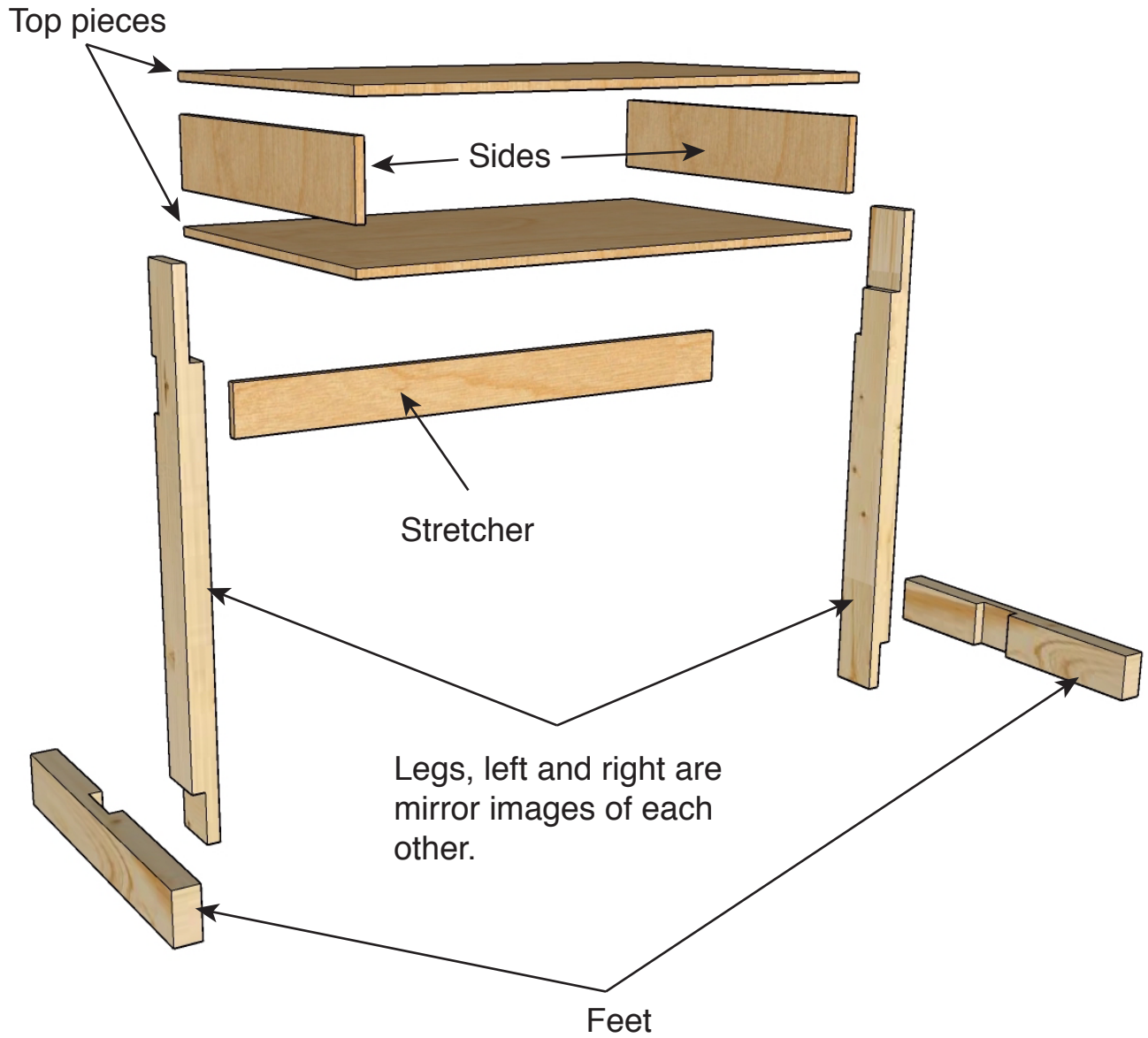
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Rear View



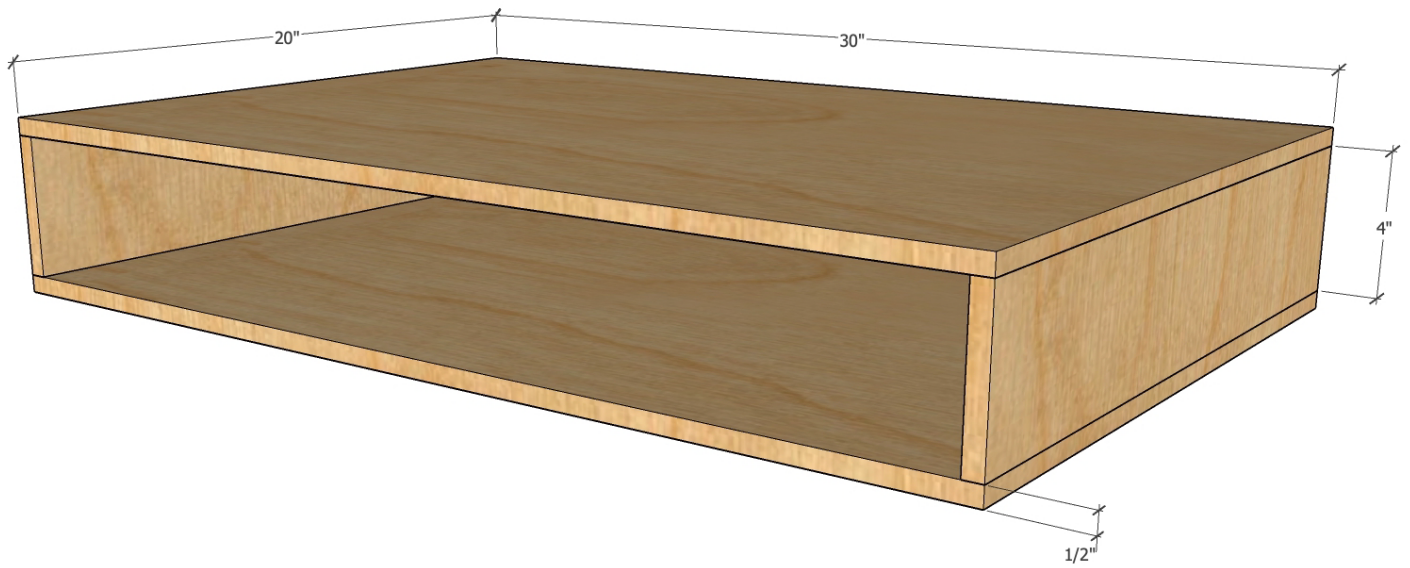
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Exploded View



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Top Construction



The top is construction from 1/2-inch sanded plywood, end-glued as shown and held in place by brad nails.

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Leg Detail

