

QUEEN PLATFORM BED DESIGN



Entry Level Wood Working Skills

Affordable

Easy to Move – Simple Assembly

Modern style

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Introduction

The bed frame dimensions are 60" X 80" when fully assembled. It provides a sturdy platform for a queen sized mattress. The frame is designed as an entry level wood working project. The frame once built is sturdy and can be assembled/taken down with limited tools. The frame can even be transported in a car.

Bill of Materials

2	8' length 2x6	150" ½" wide cotton strap or backing
1	10' length 2x6	3/8" Staples
4	8' length 2X4	Wood Glue
1	6' length 4x4	Sand paper (180 grit)
5	10' length 1x4	Paint
8	#10 screw 4" long	
44	#10 screw 2.5" long	
2	2"x4" joist hanger	
8	3/8" bolt 6" long	
8	3/8" nut	
16	3/8" flat washers	

Tools Required

- Wood Cutting Saw either Handsaws, Circular, or Miter saws will work
- Screwdriver, electric impacting preferred
- Drill with drill bit index (13/32" X 8" drill bit preferred)
- Paint Brush, Disposable for use with wood glue
- Pair of 9/16-inch wrenches
- Staple Gun
- Tape Measure
- Right Angle square
- Pencils
- A positive attitude

Cut List

Base Stock	Part Name	Qty	Length
2x6 - 8'	Frame Sides	2	77 inches (6 feet , 5 inches)
2x6 - 10'	Frame Head and Foot	2	60 inches (5 feet)
4x4 - 6'	Frame Legs	4	14 inches (1 foot, 2 inches)
2x4 - 8'	Frame Support Head and Foot	2	48 inches (4 feet)
2x4 - 8'	Center Support	1	73-3/4 inches (6 foot, 1.75 inches)
2x4 - 8'	Center Support Leg	1	14 inches (1 foot, 2 inches)
2x4 - 8'	Frame Side Slat Support	2	69 inches (5 feet, 9 inches)
1x4 - 10'	Slats	12	56 3/4 inches (4 foot 8.75 inches)

Section 1: The Frame-Ends (Head and Foot Boards)

The first step in the construction of this bedframe design starts with the frame-ends, these pieces will make the head and foot board on the frame that are identical. You will make 2 of the assemblies pictured below.

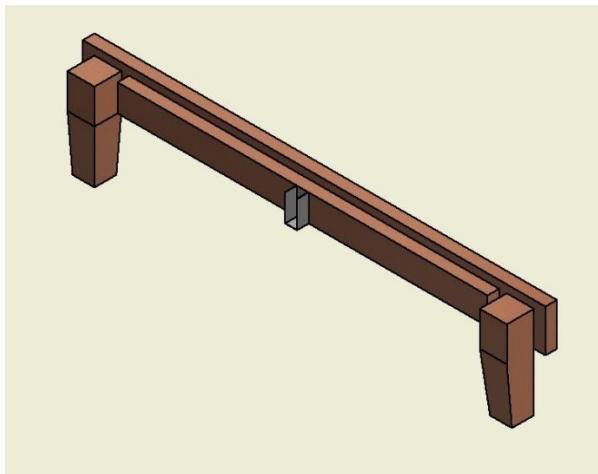


Figure 1. Head/Foot Board

Each head and foot board is comprised of 5 primary pieces, 4 sawn pieces of lumber and a metal joist hanger. The best starting point is to cut the dimensional lumber to size. The boards are made of standard 2x6 lumber cut to a 60-inch length, this can be done with a standard 10 foot section sawn in half.

The next component is the legs which are made from 4x4 post, sawn to 14 in lengths. In figure 1 you can see 2 angles cuts on the legs, these cuts serve for aesthetic purposes and can be omitted if desired. To make the angled cuts, select 2 adjacent surfaces and mark 4.5 inches from the top with a straight edge, draw a cut line angled 5 deg inward. This line should leave a roughly $2 \frac{3}{5}$ in of material at the foot of the leg. Use this line as a guide to cut the leg. A circular saw makes quick work of this task. To finish each leg, flip over 90 degrees and cut a similar angle. Repeat this process for the other legs.

The last cut parts for the head and foot boards is the center supports. These are made from cutting a standard 8ft 2X4 in half for two 48" pieces. Don't worry if the

pieces are not perfectly 48" as this support is for holding the slats at the head and foot board and not critical.

Head and Foot Board Assembly

Locate the two 60" 2X6 pieces and two of the 48" 2X4's. Mark 1" from the long edge of the 60" pieces as a guide for placing the 48" piece. See figure 2 for details. Now brush a light amount of wood glue on one of the long surfaces of the 48" center support bracket and carefully place it on the outer board. Use the alignment mark to align the top of the bracket 1 inch below the top of the outside board, and center the support leaving 6 inches on each side. Use 6 2.5" screws to hold the pieces together as the glue dries. Repeat for the other 60" board.

To attach the legs use two of the 4" screws and place the leg 1" down from the top and 1.5" in from the end. Make sure to use glue as well as the screws. See figure 2 for details. Use a 90 deg square to ensure the leg is both level with the center support bracket and perpendicular to the outer board. Take special care when attaching the leg, that the angled cuts, if present, are placed towards the center of the frame end and away from the outer board.

Lastly attach the joist hanger flush with the top of the center support bracket with 2 -4 screws, while centered (30 inches from the outside board to the center of the hanger).

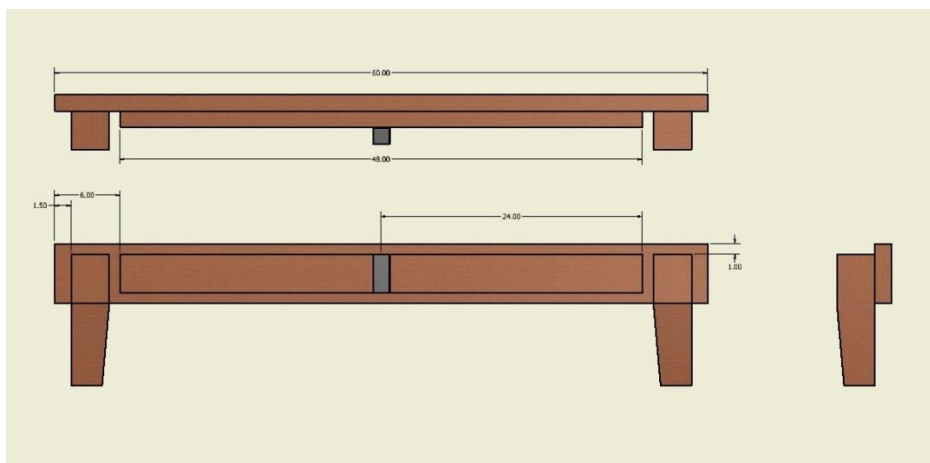


Figure 2 – Head and Foot Board Detail

Section 2: Frame Sides

The frame sides, similar in construction to the frame ends are comprised of a sandwich of a 2X6 and a 2X4 support. Two sides are required. See an example of an assembled side in figure 3.

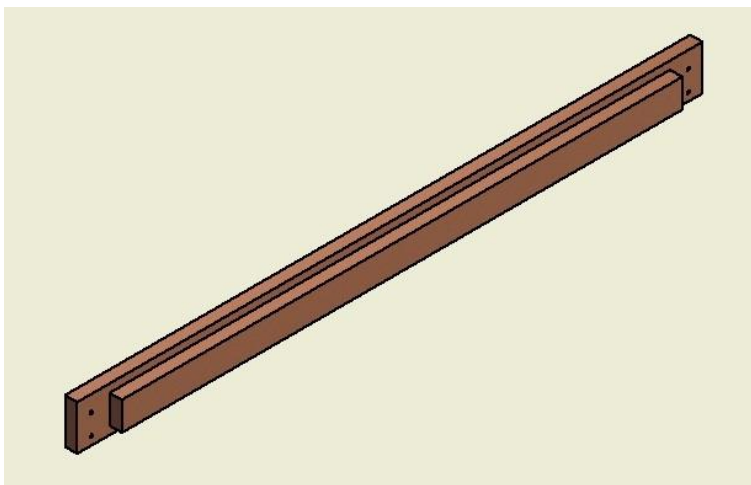


Figure 3 – Assembled Bed Frame Side

The frame sides are made of 2 pieces of 2X6 at 77-inch long each. A 2X4 support that runs along the inside edge is made from 2 pieces at 69". The remainder of the 2X4 can be used later as a center support leg, so save one of the scrap 2X4 pieces.

Frame Side Assembly

Construction will begin with marking the outer 2x6 board. Use a right angle and a straight edge to place a mark 1 inch below the top surface running the entire 77-inch length. Next place marks to help center the slat support board by marking 2 lines perpendicular to the first, each 4 inches from the end of the outer board. Finally on either side of the board mark 2 points both $1\frac{3}{4}$ inch inside the board, with 1 point being 1 inch from the bottom with the other being $3\frac{1}{2}$ inches off the bottom. These marks will be used to drill holes for the assembly bolts. See Figure 4 below for details.

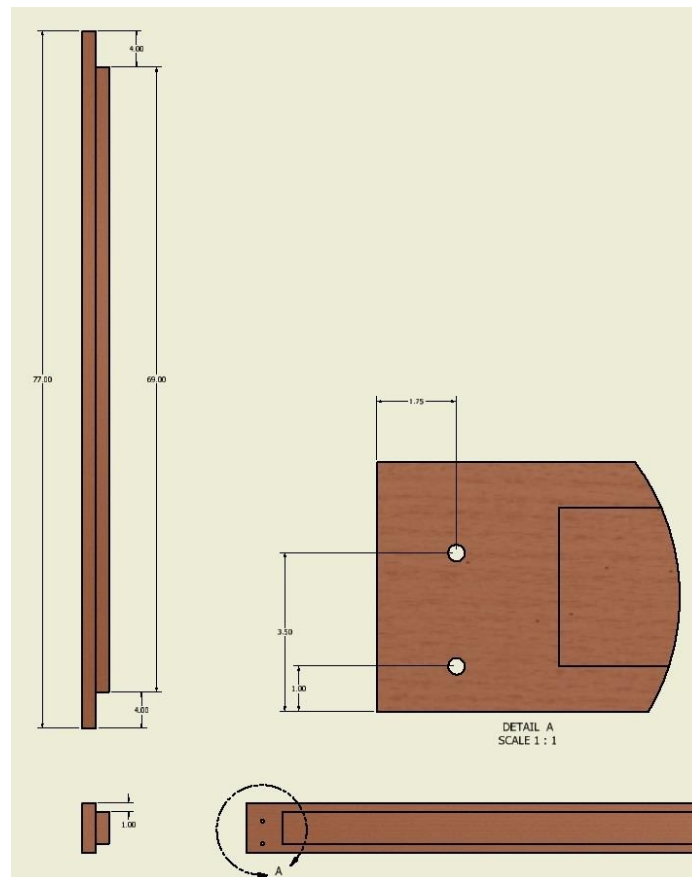


Figure 4 – Frame Side Detail

Now brush on a light amount of glue onto the 2x4 and place it so the top edge lines up with the mark, 1-inch below the top of the outer board, while centering the board using the 4-inch marks. While maintaining alignment of the 2x4, drive 8 2.5" screws into the 2x4 evenly at a roughly 10-inch interval, while being mindful not to drive too deeply. The final step consists of using the drill to drill the 4 13/32" holes in the outer board on the marked points which will be used during final assembly.

It's a good idea to mark the top and bottom of the frame sides so that assembly later will be easier.

Section 3: Slats & Center Support

Once all four sides of the bed frame are complete there are only a few steps remaining. The center support with a 2X4 centered leg and the supporting slats.

The center support is a 2x4 which runs the length of the bed to support the slats in the middle with a simple leg for additional support. To make the center support cut a 2x4 down to 73 3/4 inches and a scrap 2x4 section to 14 inches for the leg. Use glue and two 2.5" screws to attach the leg to the middle of the center support. Take care that the top of the leg and support are flush and that the leg runs perpendicular to the beam.

Slats are made from the 10-foot long 1x4's. Simply cut 12 boards of 56 3/4 inches in length.

Section 4: Final Assembly

Final assembly will be using all the components from the previous sections to create the finished bedframe. This will involve final drilling and bolting of the frame sections together, followed by center support and slat installation.

Frame assembly is a fairly straightforward process however a couple of workers may be required to help with alignment. Start by taking 1 of the frame end-pieces and a frame side panel . Make sure the side piece is oriented with with the top side up. Hold the top of the side panel planar to the endpiece. The ends of the side panel should rest against the leg and inside surface of the end pieces outer board. Finally check with the right-angle square that side and end panels are positioned perpendicularly to each other. See figure 5.

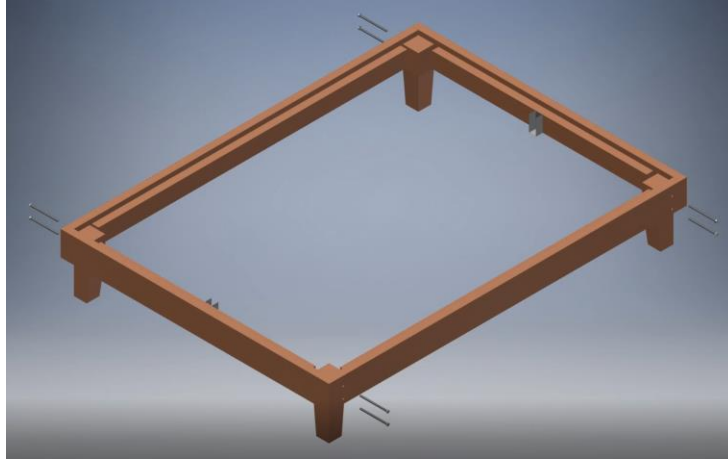


Figure 5. Final Bed Frame Assembly minus center support and slats

Finally use the $\frac{13}{32}$ " drill to extend the holes in the side panels through the frame legs. With the holes drilled, install two 6-inch bolts with outer washers through the side panel into the legs and fasten with washers and nuts. Be careful to not overtighten at this stage. Repeat this process on the remaining three corners of the bedframe and use a tape measure to verify that outer dimensions of the frame measure 60 x 80 inches. Ensure that the diagonal measurement from corner to corner is consistent. Once done, tighten the fasteners and prepare to install the center support.

The center support bracket installation is very simple. Drop the ends of the center support into the joist hangers. The top of the center support should be flush with the slat supports and 1 inch below the surface of the outer perimeter of the frame. See figure 6 below.

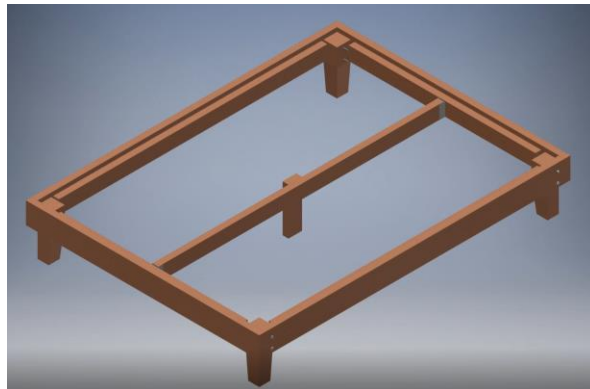


Figure 6. Center Support Installation

Slat installation is the final step of the build. Simply lay each slat on the frame width wise spaced equally. This should result in slats at each end with slats spaced roughly every $3\frac{1}{8}$ inch apart from one another. Screw the outer 2 slats into the legs with 2.5" long screws to secure them. The final step is to cut and lay two 75-inch-long piece of cotton strapping on top of the slats on each side. Staple the slats to the strapping. This is best accomplished by stapling the ends while holding the strapping taut and stapling the intermediate slats. If the bed is moved the strapping will allow the slats to be rolled up as an assembly.

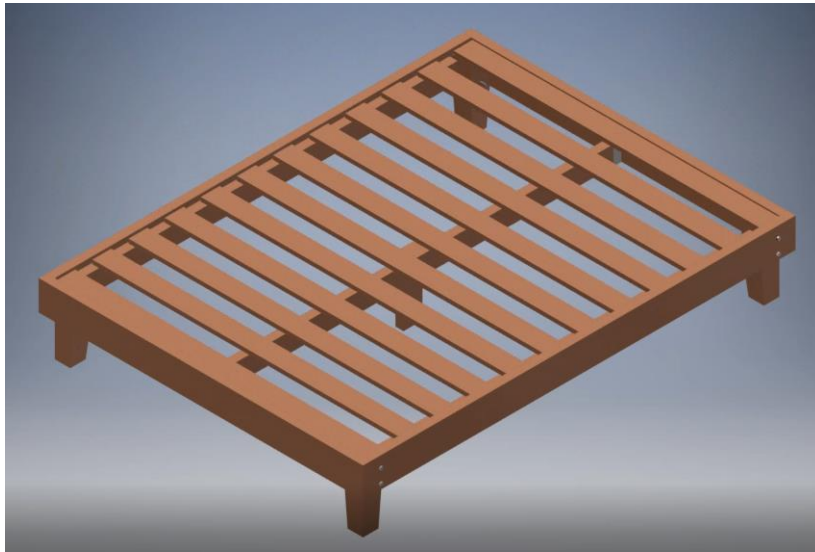


Figure 7. Slats Installation and Complete Bed Frame

Congratulations you have completed building a bed frame from the ground up.