Build a Toy Box

A toy box is a treasure chest for a child. Opening the the lid opens the door to a new world of possibilities, limited only by the imagination. If your treasured person isn't a child, this piece also makes an attractive storage bench. A moderately skilled woodworker should be able to build this toy box with typical shop tools in two weekends for under $75. Lowe's is happy to provide this information as a service to you.

Tools	Materials
• Table saw • Drill/driver with bits • Router (optional) • Combination square • Tape measure • Hammer • Clamps • Safety glasses • Dust mask	• Six 2x4x96" boards • Two #2 1x6x96" boards • One #3 1x12x96" board • Five 1/2x48" dowel rods • One 3/8x24" dowel rod • Two hinges • One friction lid support • 2" wood screws • 8d finish nails • Wood glue

Cut List

(For an illustrated version of this cut list, click here.)

A: 5 – 2x4x40" Rails for front frame, back frame and top rail for backrest.

B: 1 – 2x4x35" Cross rail for backrest. *

C: 4 – 2x4x14" Rails for side frames.

D: 8 – 2x4x13" Stiles for front, back and side frames. *

E: 2 – 2x4x29" Stiles for backrest. #

F: 2 – 33 3/4x11 3/4" Lauan for front and back panels.

G: 2 – 7 3/4x11 3/4" Lauan for side panels.

H: 2 – 40" Pieces of #3 1x12 for floor panel.

I: 4 – 42" Pieces of #2 1x6 for lid.

J: 1 – 2x4x38" Support rail for lid.

K: 16 – 1/2" diameter dowel rods. Length will be determined at a later stage during assembly.

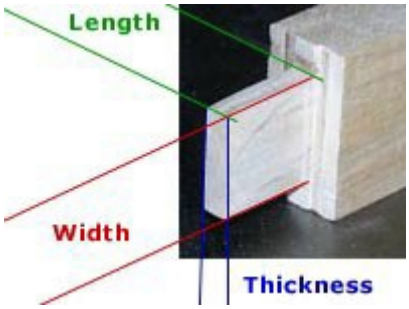
These instructions are designed for assembling the toy box using mortise and tenon joinery. If you use dowel joints or simple butt joints with reinforcing screws, subtract 2" from the cut list items indicated with an * and 1" from the item indicated with a #. To learn more about mortise and tenon joinery click here.

Prepare the Lid and Floor

1. Edge glue and clamp three of the #2 1x6x42" pieces (I) together for the lid. Use dowels in the edges of the boards to strengthen the joints.

2. Edge glue and clamp the #3 1x12x40" pieces (H) together for the floor. Use dowels in the edges of the boards to strengthen the joints.

Boards prepared for gluing.

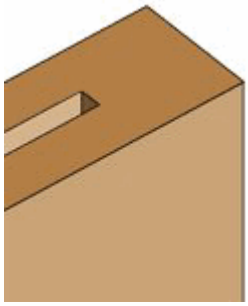


Build the Box

1. Cut blind, 1" long by 1/2" thick tenons in both ends of each front, back and side frame stiles (D) and both ends of the backrest cross rail (B).

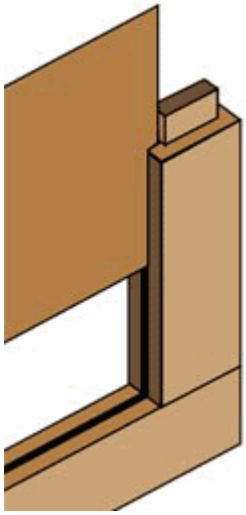
2. Cut blind 1" long by 1/2" thick tenons in one end of each backrest stile (E).

3. Rout or cut a 1/2" deep by 5/16" wide groove in one edge of each front, back and side frame stile (D).



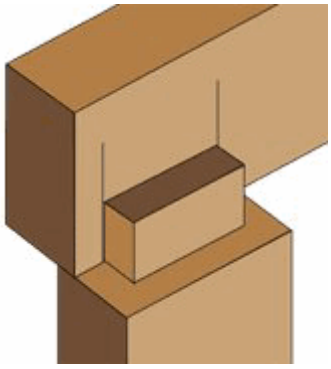
Stopped groove in rail.

4. Rout or cut a 1/2" deep by 5/16" wide groove in one edge of each side frame rail (C). Rout or cut a 1/2" deep by 5/16" wide stopped groove in one edge of each front frame and back frame rail (A). You should only make the groove in four of the five 2x4x40" rails. The fifth one is the backrest top rail and doesn't need a groove. The grooves in the rails should stop just short of either end of the rail so they aren't visible from outside the toy box (see image at left).



Stile receiving panel.

5. Lay out the pieces for the front and back panels. Mark the rails (see image at right) and cut mortises to receive the stile tenons.



Rail marked for mortise.

6. Dry fit the front and back frames with the lauan panels in place. Trim any of the parts as needed.

7. Glue and clamp the front and back frames with the panels in place.

8. Lay out the pieces for the side panels. Mark the rails and cut mortises to receive the stile tenons.

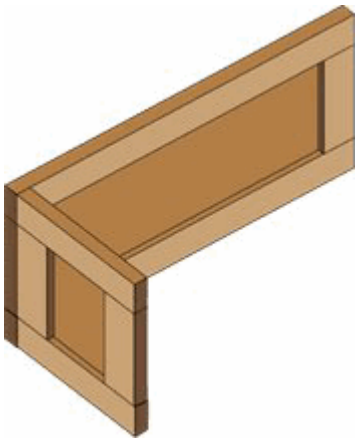
9. Dry fit the side frames with the lauan panels in place. Trim any of the parts as needed.

10. Glue and clamp the side frames with the panels in place.

11. Rout or cut a 7/8" wide by 1/2" deep groove on the inside face of the bottom rail of each front and back frame. The groove should be 1" up from the bottom edge of the rail and stop just short of the end so it's not visible from outside the toy box.

12. Rout or cut a 7/8" wide by 1/2" deep groove on the inside face of the bottom rail of each side frame. The groove should be 1" up from the bottom edge of the rail and extend the full length of the rail.

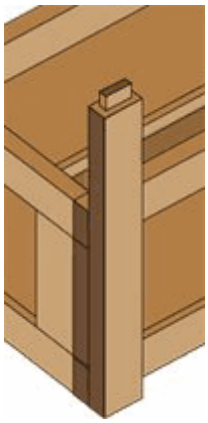
13. Butt the back edges of one side frame to the inside face of the back frame. The outside face of the side frame should be flush with the end of the back frame. Counter sink screws through the back frame into the side frame to secure it in place. Secure the second side frame to the opposite end of the back frame.



Side frame butted to back frame.

14. Trim the floor piece from step 2 to 14 7/8 x 37 7/8" and slide it into the groove in the bottom of the assembly.

15. Dry fit the front panel to the assembly. You should be able to move the floor slightly with all the frames in place. Trim the floor if needed and secure the front frame as you did the back.



Backrest stile aligned with back frame.

Assemble the Backrest

1. Align one of the backrest stiles with the outside edge of the back frame. The end of the frame should be flush with the edge of the stile and the bottom of the frame should be 1/8" below the bottom end of the stile.

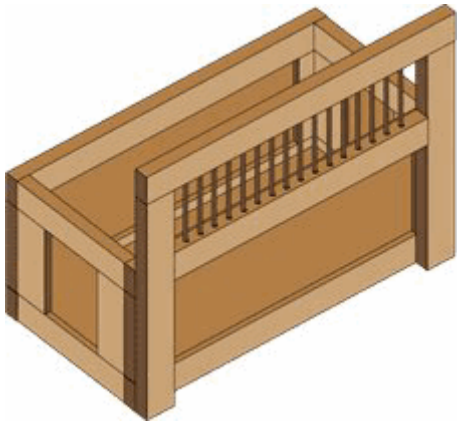
2. Clamp the stiles in place. Use the backrest cross rail to lay out the mortise on each stile. Position the backrest cross rail so it extends 1" above the top rail on the back frame. Cut the mortises in the backrest stiles.

3. Dry fit the backrest cross rail and stiles and align the assembly with the back of the box assembly. The stiles should line up as they did in step 18. The top of the backrest cross rail should extend 1" above the top rail on the back frame. Trim the pieces as needed. Glue and clamp the backrest assembly.

4. Position the backrest assembly on the back of the box assembly and fasten with screws. Screw through the box assembly into the cross rail and stiles so the screws aren't visible from outside the box.

5. Lay the backrest top rail across the tops of the backrest stiles and mark the rail for mortises to receive the stile tenons. Mark the bottom edge of the top rail at the inside edge of each backrest stile and label the marks 1 and 2. Cut the mortises in the top rail.

6. Place a tape measure along the bottom edge of the top rail starting at mark 1 and ending at mark 2, you should have a total of 33" between the marks. Mark the center of the rail edge at 2" intervals, starting 1 1/2" from mark 1. You should have a total of 16 marks between marks 1 and 2. Transfer the marks to the top of the backrest cross rail.

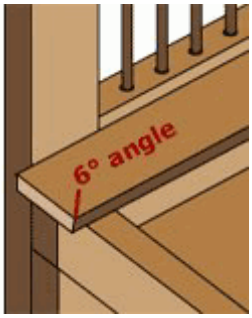


Backrest assembly attached to box assembly.

7. Drill 1/2" diameter by 5/8" deep holes at each mark on each rail.

8. Dry fit the backrest top rail over the stile tenons. Make any adjustments needed. Measure the distance from the top edge of the backrest cross rail to the bottom edge of the backrest top rail. Cut 16 dowel rods 1" longer than this distance.

9. Insert the dowel rods into the cross rail and dry fit the top rail over the stiles and dowel rods. Trim the pieces as needed. Glue and clamp the top rail in place. Glue only the top rail at the mortise and tenon joints. The dowels should be free-floating.

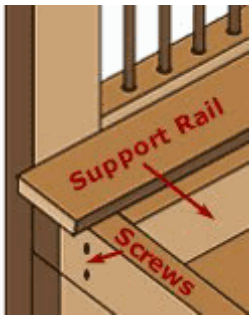


1x6x42" piece with 6° bevel.

Install the Lid

1. Rip the 1x6x42" piece (I) to 3 1/2" wide. When ripping the piece, adjust the saw to put a 6° bevel on the board's edge so the longest face is 3 1/2". Use 8d finish nails to secure the piece, centered left to right and butted against the face of the backrest cross rail.

2. Trim the lid support rail (J) to fit between the side panels and install it with wood screws as shown in the graphic.



Lid support rail placement.

3 Trim the lid piece you made in step 1 so it extends 1" past the front of the toy box. Use a router or sander to round over the outside edges of the lid. Align the lid with the 3 1/2" wide piece from step 27 and install the hinges. Open the lid and install the friction lid support.

Friction lid support installed.

Complete the Box

1. Cut pieces of 3/8" dowel rod to plug the visible screw holes.

2. Paint or stain the toy box, as you like.

Toy Box Illustrated

Back to Build a Toy Box

Cut List

A (5) 2 x 4

B (1) 2 x 4

C (4) 2 x 4

D (8) 2 x 4

E (2) 2 x 4

F (2) Luan

G (2) Luan

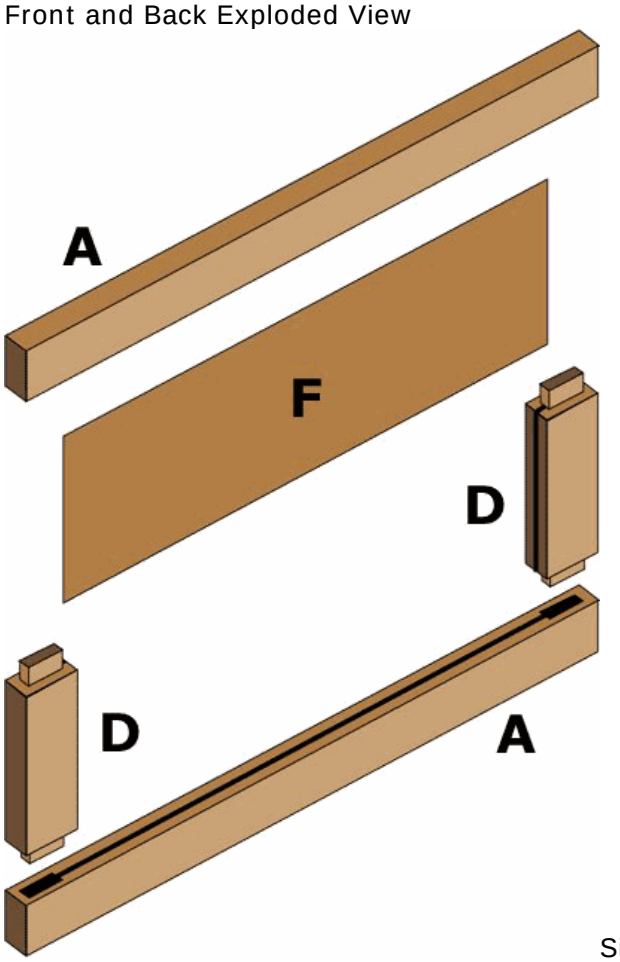
H (2) 1 x 12

I (4) 1 x 6

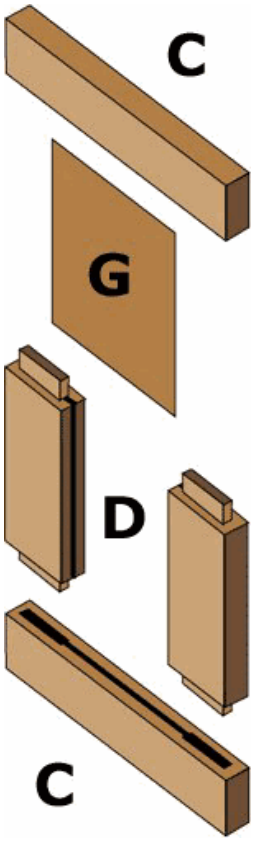
J (1) 2 x 4

K (16) 1/2in. dowel rod

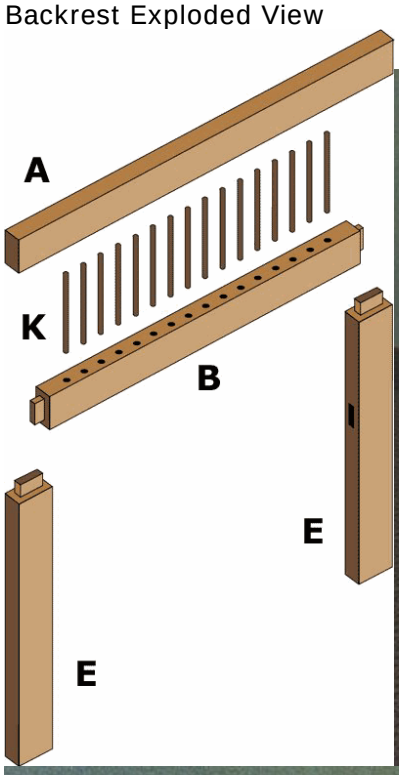
Front and Back Exploded View



Side Exploded View



Backrest Exploded View



Note: The above photo was taken prior to the installation of the lid support.