GRAINBENCH ORIGINAL | CONFIDENT BEGINNER

The Daily Sort Recycling Station

A simple two-bin station made with square legs, 2x4 rails and a fitted plywood floor. Buy and measure the bins before cutting.



SIZE	SKILL	TIME	JOINERY
32 in wide, 18 in deep, 30 in tall	Confident beginner	About 5 to 6 hours, plus finish drying	Pocket screws, glue and panel screws

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01 / MATERIALS AND TOOLS

What to buy.

LUMBER AND SHEET GOODS

BUY	USED FOR
1 x 2x2 board, 8 ft	L square legs
1 x 2x2 board, 4 ft	L square legs
2 x 2x4 board, 8 ft	A front and back rails, E end rails
1 x 2x4 board, 4 ft (or an offcut at least 16 in long)	C centre top rail
1 x 3/4 plywood, 2 ft x 4 ft panel	B floor blank - 4 notches

Use straight, dry softwood for the posts and all 2x4 rails, plus flat 3/4 in plywood. Square posts are nominal 2x2; measure their actual faces before marking notches. The light plywood colouring is for material clarity, not a required stain. The two nominal clear bays are 13-3/4 in wide and 15 in deep, with 20-3/4 in height above the floor to the top rail undersides. Recommended bin maximum: 13-1/4 x 14 x 20 in, including handles and rims. Confirm the actual bins slide in from the front. Centre rail C can come from a sound 2x4 offcut at least 16 in long instead of buying the short board.

HARDWARE AND SUPPLIES

ITEM	AMOUNT
2-1/2 in coarse-thread pocket-hole screws	36 used; buy a box of 50 for setup and spares
#8 x 1-1/2 in flathead wood screws	12 used; buy a box of 25 for setup and spares
Wood glue	One small bottle of interior wood glue
Sandpaper	120 and 180 grit
Finish	About 1 L (1 quart), depending on coverage; coat all faces and cut edges
Bins	2 store-bought bins, recommended maximum 13-1/4 x 14 x 20 in including rims/handles
Anti-tip strap kit	1 kit; use the strap manufacturer's specified wall fixings for your wall type and fasten into a stud where specified

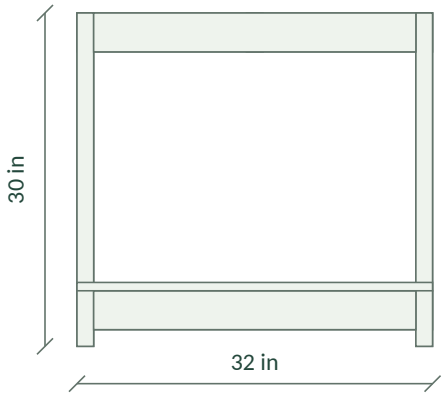
01 / MATERIALS, CONTINUED

TOOLS

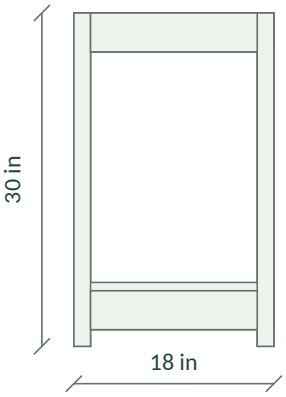
- Saw and supported setup suitable for the square posts and 2x4 rails
- Circular saw with straight-edge guide for plywood, or store-cut blanks
- Jigsaw for the leg notches
- Pocket-hole jig for 1-1/2 in stock, stepped bit, stop collar and long driver
- Drill/driver, suitable pilot and countersink bits
- Tape, pencil, square, straightedge and clamps opening at least 48 in
- Sanding tools, eye/hearing protection and dust protection

FINISHED SIZE

FRONT



SIDE



All four lower rail bottom edges are 1-1/2 in above the ground. Rail outside faces are flush with the outside post faces; no fractional setbacks are needed. The notched lower shelf covers all four lower rails. Fit it before installing the upper rails. Floor underside/top: 5 / 5-3/4 in. Upper rail bottom/top: 26-1/2 / 30 in. The centre C rail divides the top into two 13-3/4 in openings. All A/E rails are the same 2x4 section; square legs preserve bin space.

02 / CUT LIST

Cut the parts.

Finished dimensions are below. Square one end, cut matching pieces together and label every part. Cutting layouts allow 1 in of end trimming per board and 1/8 in saw kerfs. Mark the front and top edges before drilling. Use offcuts only if they are sound, straight and large enough for the stated cutting allowance.

ID	PART	QTY	LENGTH	WIDTH	THICK	FROM
L	Square legs	4	30 in	1-1/2 in	1-1/2 in	2x2
A	Front and back rails	4	29 in	3-1/2 in	1-1/2 in	2x4
E	End rails	4	15 in	3-1/2 in	1-1/2 in	2x4
C	Centre top rail	1	15 in	3-1/2 in	1-1/2 in	2x4
B	Floor blank - 4 notches	1	32 in	18 in	3/4 in	3/4 plywood

CUTTING DIAGRAMS

2x2 x 8 ft

91-1/4 in used, including 1 in to square the end and 1/8 in per cut



2x2 x 4 ft

31 in used, including 1 in to square the end and 1/8 in per cut



2x4 x 8 ft

88-1/4 in used, including 1 in to square the end and 1/8 in per cut



2x4 x 8 ft

90-1/2 in used, including 1 in to square the end and 1/8 in per cut



2x4 x 4 ft

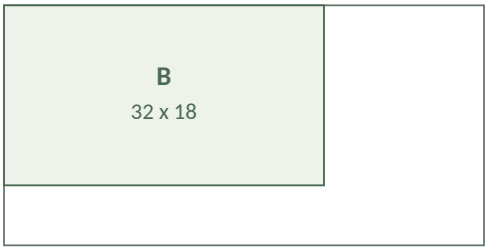
16 in used, including 1 in to square the end and 1/8 in per cut



02 / CUT LIST, CONTINUED

3/4 plywood, 2 ft x 4 ft

Long edge runs left to right. Allow 1/8 in between parts for the saw.



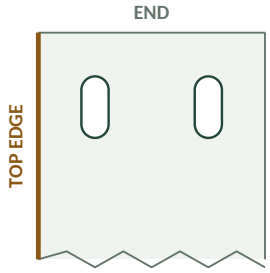
03 / BUILD

Put it together.

STEP 1 Check the bins and drill the rails

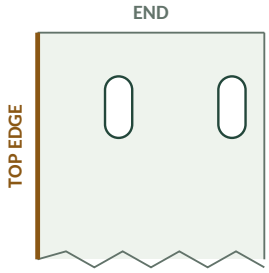
Measure the actual bins, including handles and rims, before cutting any frame parts. Set the jig and bit stop for 1-1/2 in stock. On the inward faces of A and the left face of C, drill 2 pockets at each end of A and C at 7/8 and 2-5/8 in from the top edge; drill E at 1-1/4 and 3 in. These staggered rows keep perpendicular screws at different heights inside the narrow posts. Use 2-1/2 in pocket screws. Test both rail directions into a matching scrap post; check for screw collision or exposed tips before assembling the frame.

A **Front and back rails**
Inward face



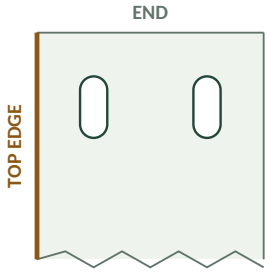
Same at the other end
2 at each end | 16 total
7/8, 2-5/8 in from top edge

E **End rails**
Inward face - staggered rows



Same at the other end
2 at each end | 16 total
1-1/4, 3 in from top edge

C **Centre top rail**
Left face

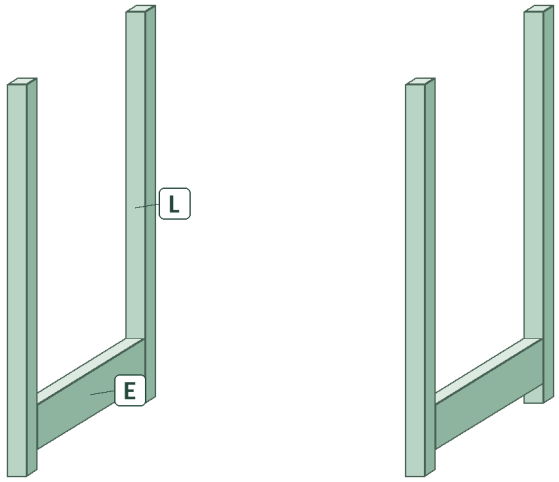


Same at the other end
2 at each end | 4 total
7/8, 2-5/8 in from top edge

Ovals = pocket-hole entries, enlarged. Not a drilling template.

STEP 2 Build the two lower end frames

Pair two L legs for each end frame. Mark each leg 1-1/2 in above the bottom; fit one lower E with its bottom on the lines and outside face flush with the post outside faces. Clamp square, glue and use 2 pocket screws at each end, 4 per rail, with the staggered E rows facing inward. Check that both lower end rails sit at the same height.

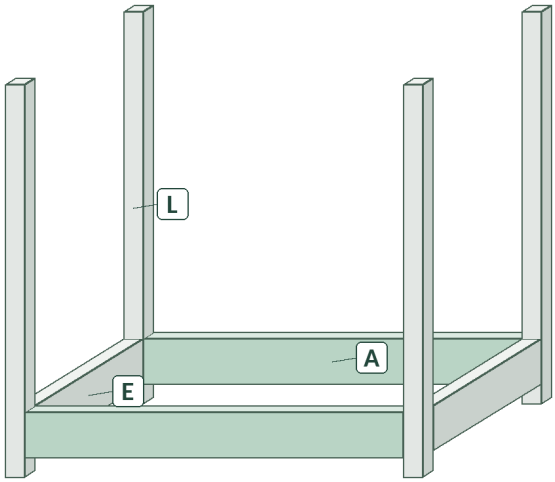


GREEN: added in this step | GREY: already in place

03 / BUILD, CONTINUED

STEP 3 Join the lower frame

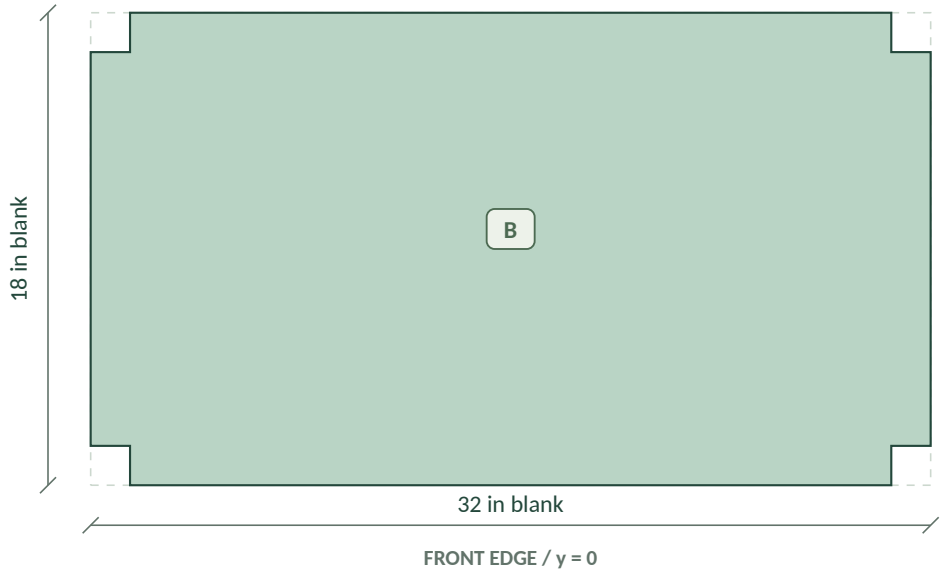
Fit the two lower A between the end frames. Keep their bottom edges on the same 1-1/2 in marks and outside faces flush with the posts. Clamp, glue and use 2 pocket screws per end, 8 for the two rails. Keep the upper rails and centre rail off. Match the diagonals, check all feet sit flat and inspect the post corners for screw interference.



GREEN: added in this step | GREY: already in place

STEP 4 Notch the fitted plywood floor

Cut B from a 32 x 18 in blank. Mark a nominal 1-1/2 x 1-1/2 in notch at each corner around the actual square legs. Jigsaw inside the waste and ease each cut to the line, with only the sliding/finish clearance needed. Keep the rest of the floor at full size. Dry-fit the notches against actual leg stock and seal the cut edges before final assembly.



4 notches
1-1/2 x 1-1/2 in
Mark actual posts.

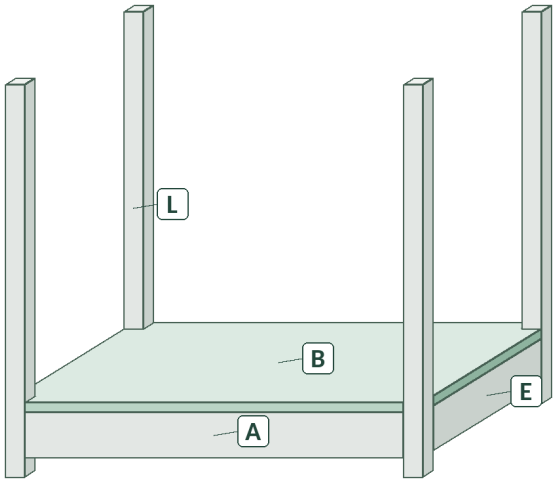
Dashed line = blank.
Top view.

Coordinates start at the front-left blank corner. Not a full-size template.

03 / BUILD, CONTINUED

STEP 5 Install the floor before the upper rails

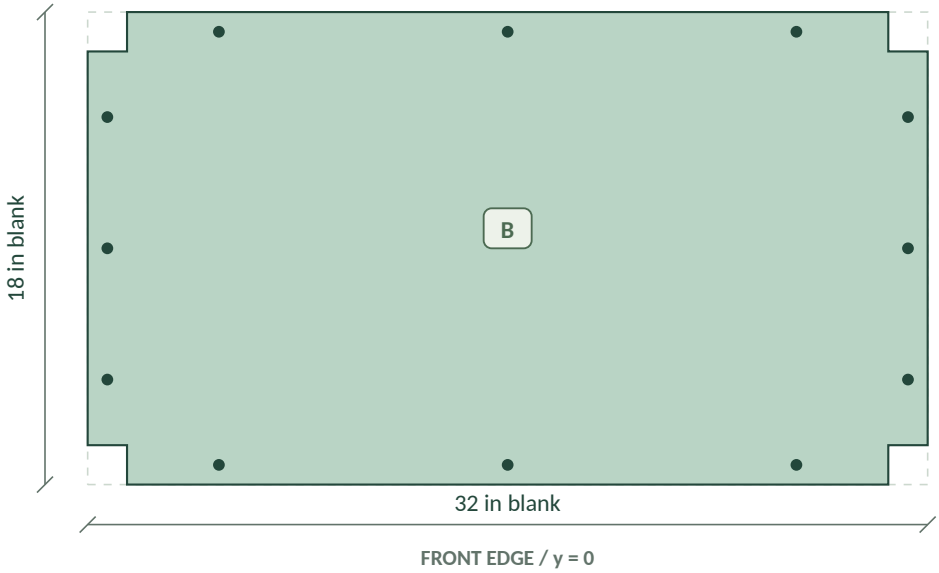
Lower B over the four leg tops while the upper frame is open. Its underside sits at 5 in on all four lower rails and its outside edges align with the post outside faces. Fit each leg in its notch, clamp the plywood flat and keep the entire rail perimeter covered. Check direct bearing around all four sides; there must be no open strips beside the floor.



GREEN: added in this step | GREY: already in place

STEP 6 Fasten the floor to the rails

Mark the twelve fixing positions shown below. Centre each pilot on its receiving rail, measuring from the original front-left corner of the blank. Predrill, countersink and drive twelve 1-1/2 in flathead screws, 3 per rail. Stop with heads flush, not buried. Check the floor remains flat and no screw misses a rail or exposes its tip.



Coordinates start at the front-left blank corner. Not a full-size template.

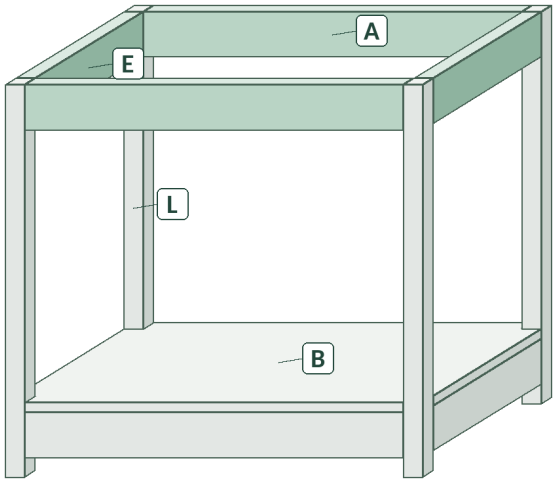
12 panel screws
Front/back: x = 5, 16, 27; y = 3/4, 17-1/4 in.
Ends: x = 3/4, 31-1/4; y = 4, 9, 14 in.

03 / BUILD, CONTINUED

STEP 7

Fit the four upper rails

Fit the remaining two E and two A between the posts. Their bottom edges are 26-1/2 in above the ground and their tops finish flush with the leg tops at 30 in; keep outside faces flush. Clamp square, glue and use 2 pocket screws per rail end, 16 for the four rails. Retain the different A/E row heights. Check for screw interference in the narrow posts and confirm the upper frame is level.

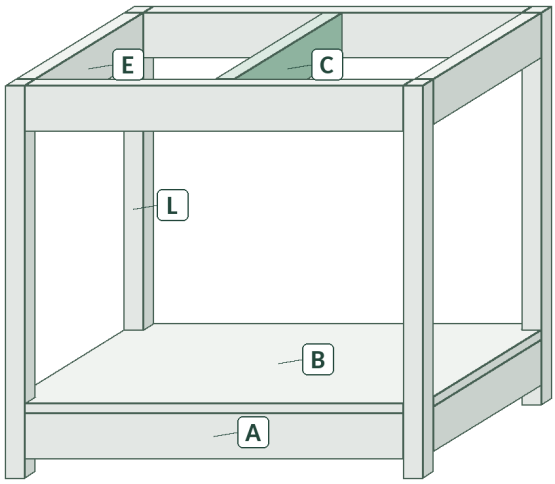


GREEN: added in this step | GREY: already in place

STEP 8

Fit the centre rail and test the bins

Fit C between the upper front and back A rails, with its pocket entries facing the left bin bay. Set its left face 15-1/4 in from the outside left frame edge; its top is flush at 30 in. The resulting clear bay widths are 13-3/4 in each. Clamp, glue and drive 2 pocket screws at each end of C, 4 total. Slide both empty bins in from the front and test their rims, handles and removal path. Confirm each bin fits freely before applying the final finish.



GREEN: added in this step | GREY: already in place

03 / BUILD, CONTINUED

STEP 9

Finish and anchor the station

Sand, ease the edges and seal every face, floor notch and leg end. After the finish cures, fit the anti-tip strap from a back upper rail to a wall stud or suitable support, following the kit manufacturer's instructions. Use its specified wall fixings; the panel screws supplied for this plan are not wall anchors. Keep the strap fitted before loading bins, check the frame is level and repeat the bin fit/removal check.



CARE

For dry recycling only. Keep the anti-tip strap fitted, keep heavy contents low and empty the bins rather than lifting a loaded frame. Do not climb or sit on it.

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Dimensions, part quantities, stock yields, rail bearing, panel clearances and assembly sequence were checked digitally. This design has not been physically built or load-tested.