

Blue Heron Park 3-Bin Compost System (shared with us by Michael Rieser)

Lumber was purchased from Rosenzweig Lumber in the Bronx. On the advice of a master carpenter, common cedar reduced the cost. Purchase 20% more lumber than required to accommodate for variations in the grade.

Place for Purchase	Quantity	Item #	Description	UM (Linear Feet)	Unit Price	Total
Rosenzweig Lumber (Bronx)	10	24CC	70 2x4 Common Cedar	160	1.14	182.4
Rosenzweig Lumber (Bronx)	1	26CC	70 2x6 Common Cedar	12	2.02	24.24
Rosenzweig Lumber (Bronx)	6	16CC	1x6 Common Cedar	72	1.37	98.64
Lowes/Home Depot	2	Poultry/Fence Staples	1/2 inch		2.98	5.96
Lowes/Home Depot	12	1/2" Carriage Bolts			1.94	23.28
Lowes/Home Depot	12	Washers			0.33	3.96
Lowes/Home Depot	12	Nuts			0.36	4.32
Lowes/Home Depot	1	Galvanized Screws (lb)	3 3/4"		8.69	8.69
Lowes/Home Depot	1	Galvanized Screws (lb)	1 3/4"		8.69	8.69
Lowes/Home Depot	1	Hardware Cloth (1/2")	25'		39.78	39.78
						399.96

Design Modifications:

The following modifications were made to the design to correct errors identified by a master cabinet maker:

- The 32" measurement on the rear vertical in the diagram is incorrect. The rear vertical is 31½". The height of the frame is 35" With the bottom rail attached, the height of the bin and thus the length of the front 2x6s is 36¾"
- Three 31¼" 2x4s were added to the underside of the upper rear rail to allow attachment of the 36" hardware cloth across the back.
- 1¾" wood screws were necessary at many connection points.
- 2x2 common cedar was not available, so we ripped 2x4's into 2x2's for the back runners
- Hardware cloth was laid out, cut and stapled to the frames piece by piece rather than pre cut.
- Hardware cloth was not attached to the bottom of the bin.

Cut list:

2x4:

3 at 31 ¼" (attached to the underside of the top support)

8 at 31 ½" (frame verticals)

8 at 36" (frame uprights)

3 at 9' (bottom baseboards and top support)

1x2:

If 1x2 is not available, you can rip 3 at 34" 2x4s to create 6 1x2s at 34" (back runners)

2x6:

4 at 36" (front runners)

1x6:

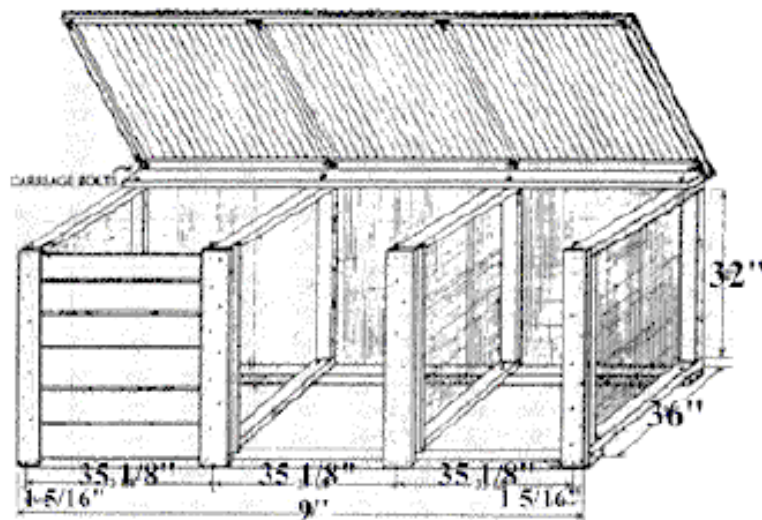
Measure length of the slats before cutting, reducing their length by ½" to allow enough clearance to slide more easily.

The lumber was cut with the radial arm saw. The four frames were assembled, assuring that they were square. The hardware cloth was laid over each frame to assure a perfect fit and cut with tin snips. It was then stapled with a pneumatic stapler. The bin was preassembled in the shop, and holes were drilled in the frames, baseboards and rear supports for the ¼" bolts. The front and rear runners that would hold the slats in place were attached. Each side of each joint was labeled with a corresponding letter AA, BB, CC, DD... so that when the bin was reassembled after transport, the letters could be matched, and the bin correctly reassembled.

Onsite assembly was greatly simplified by the work that was done in the shop. The hardware cloth on each frame was reinforced with ½" galvanized staples. The four frames were stood upside down in the correct order and placement. The corresponding letter (A, B, C, D...) on bottom supports were matched to the letters on the frames. The bottom supports were bolted to the frames with a ½" ratchet. Turning the bin on its side, the rear support was bolted to the frames. The hardware cloth was stretched across the back, then cut and stapled in place. With the three linear supports attached to the four frames, the bin became a solid unit and could be carried by four students and set in place.



WOOD AND WIRE 3-BIN SYSTEM



MATERIALS

7 – 12' cedar 2x4s
3 – 8' cedar 2x2s
1 – 12' cedar 2x6
5 – 12' cedar 1x6s
31' of 36" wide 1/2" hardware cloth
12 – 1/2" carriage bolts, 4" long
12 washers and 12 nuts for bolts
2 lbs of 3 1/2" galvanized screws
200 poultry wire staples

TOOLS

Handsaw or circular power saw
Drill/driver with 1/2" and 1/8" bits
Hammer
Tin snips
Tape Measure
Pencil
3/4" socket or open ended wrench
Carpenter's square
Safety glasses, ear protection and dust mask

CONSTRUCTION INSTRUCTIONS

Build Frames (Use 2x4s)

- From the 2x4s, cut eight 31 1/2" pieces for the vertical uprights.
- From the 2x4s, cut eight 36" pieces for the horizontal connectors.
(2 vertical uprights will be butted between 2 horizontal connectors to form a frame.)
- Mark the 36" pieces and pre-drill the holes for the screws. Use screws to secure. Check frame for squareness.
- Make a total of four frames.

- Cut four 35" long sections of hardware cloth, clipping extra wire off ends to create a smooth edge.
- Stretch the hardware cloth across each frame. Attach the screen tightly into place with poultry staples hammered in every 4" around the edge. (36" width of cloth is attached to 36" horizontal connectors)

Set Up Frames and Attach Bottom Baseboards and Top Support (Use three 2x4s)

- From the 2 x4s, cut three 9' lengths to create 2 baseboards and a top support.
- On the side of the boards, mark 36" in from each end.
- On each frame, measure and mark centers on both ends of the 36" pieces (top and bottom horizontal connectors.)

- Stand the frames parallel to one another and 36" apart.
- Place one 9' baseboard on top of the dividers.
- Position the baseboard flush against the outer edges of the frames that will be the end of the bin.
- Line up center lines of middle frames with marks on the baseboard.
- Use a screw to temporarily hold the baseboard to each frame.
- Drill a 1/2" hole through each junction centered 1" in from the inside edge of baseboard and 1" from inside edge of frame upright.
- Insert carriage bolts from the baseboard side through the frame. Secure with washers and nuts but do not tighten yet.

WOOD AND WIRE 3-BIN SYSTEM

Set Up Frames and Attach Bottom Baseboards and Top Support (continued)

- Place second 9' baseboard on top of the frames and repeat process for attaching it.
- Turn the unit right side up and attach 9' top support in the same manner as baseboards (the board will be at the back of the bin).

- Use the carpenter's square or measure between opposite corners to make sure the bin is square.
- Check that the frames are at a 90° angle to the top board. Tighten all top support bolts securely.
- Turn bin over and check to make sure bin is square and frames are positioned properly. Tighten all baseboard bolts securely.

Hardware Cloth

- Using scrap from 2x4s cut two 28 1/2" pieces to insert in gap between the baseboards along the end sections of bin. (Measure gap before cutting scraps).
- Insert scraps and screw into place on the bottom of the bin.

- Fasten a 9' long piece of hardware cloth securely to the bottom of the bin with poultry staples every 4" around the frame.
- Attach a 9' long piece of hardware cloth the back of the bin.

Front and Back Runners for Slats (use 2x6s and 2x2s)

- From 2x6s, cut four 36" pieces for front runners.
- Center the boards on the front of the dividers, flush with the top edge, and screw in securely.

- From 2x2s, cut six 34" pieces for back runners.
- Attach the back runners on insides of divider. Back runners should be parallel to front runners and set back 1" (the gap will hold the slats).

Make Slats (use 1x6s)

- From 1x6s, cut eighteen 31" pieces for front slats. (Measure clearance before cutting and test 1st slat in each section before cutting the rest.)
- Insert slats between runners.

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