Cheap and Easy Worm Bin!

http://whatcom.wsu.edu/ag/compost/Easywormbin.htm

Composting with redworms is great for apartment dwellers who don't have yard space, or for those who don't want to hike to a backyard compost bin with their food scraps. Some kids like to keep worms for pets! By letting worms eat your food wastes, you'll end up with one of the best soil amendments available—worm castings. This is the cheapest and easiest to manage worm bin system that I've seen:

Materials Needed to Make an Easy Harvester Worm Bin:

- Two 8-10 gallon plastic storage boxes (dark, not see through!) as shown in pictures Cost: about $5 each
- Drill (with 1/4" and 1/16" bits) for making drainage & ventilation holes
- Newspaper
- About one pound of redworms

Step 1

Drill about twenty evenly spaced 1/4 inch holes in the bottom of each bin. These holes will provide drainage and allow the worms to crawl into the second bin when you are ready to harvest the castings.

Step 2

Drill ventilation holes about 1 – 1 ½ inches apart on each side of the bin near the top edge using the 1/16 inch bit. Also drill about 30 small holes in the top of **one** of the lids.

Step 3

Prepare bedding for the worms by shredding Newspaper into 1 inch strips. Worms need bedding that is moist but not soggy. Moisten the newspaper by soaking it in water and then squeezing out the excess water. Cover the bottom of the bin with 3-4 inches of moist newspaper, fluffed up. If you have any old leaves or leaf litter, that can be added also. Throw in a handful of dirt for "grit" to help the worms digest their food.

Step 4

Add your worms to the bedding. One way to gather redworms, is to put out a large piece of wet cardboard on your lawn or garden at night. The redworms live in the top 3 inches of organic material, and like to come up and feast on the wet cardboard! Lift up cardboard to gather the redworms. Or, if you wish to purchase worms, the Cooperative Extension office can give you names of suppliers in Whatcom County. An earthworm can consume about 1/2 of its weight each day. For example, if your food waste averages 1/2 lb. per day, you will need 1 lb. of worms or a 2:1 ratio. There are roughly 500 worms in one pound. If you start out with less than one pound, don't worry they multiply very quickly. Just adjust the amount that you feed them for your worm population.

Step 5

Cut a piece of cardboard to fit over the bedding, and get it wet. Then cover the bedding with the cardboard. (Worms love cardboard, and it breaks down within months.)

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Step 6

Place your bin in a well-ventilated area such as a laundry room, garage, balcony, under the kitchen sink, or outside in the shade. Place the bin on top of blocks or bricks or upside down plastic containers to allow for drainage. You c can use the lid of the second bin as a tray to catch any moisture that may drain from the bin. This "worm tea" is a great liquid fertilizer.

Step 7

Feed your worms slowly at first. As the worms multiply, you can begin to add more food. Gently bury the food in a different section of the bin each week, under the cardboard. The worms will follow the food scraps around the bin. Burying the food scraps will help to keep fruit flys away. What do worms like to eat? Feed your worms a vegetarian diet. Most things that would normally go down the garbage disposal can go into your worm bin (see the list below). You will notice that some foods will be eaten faster than others. Worms have their preferences just like us.

Feeding your worms:

Worms LOVE		Worms HATE	
Breads & Grains	Fruits	Dairy	Meat
Cereal	Tea bags	Products	Feces
Coffee grounds & filter	Vegetables	Fats	Oils

When the first bin is full and there are no recognizable food scraps, place new bedding material in the second bin and place the bin directly on the compost surface of the first bin. Bury your food scraps to the bedding of the second bin. In one to two months, most of the worms will have moved to the second bin in search of food. Now the first bin will contain (almost) worm free vermicompost. (You can gently lift out any worms that might remain, and place them in the new bin, or put them into your garden!)

Troubleshooting

Problem	Probable Cause	Solution
Worms are dying or trying to escape	Too wet Too dry Bedding is used up	Add more bedding Moisten bedding Harvest your bin
Bin stinks!	Not enough air Too much food Too wet	Drill more ventilation holes Do not feed for 1-2 weeks Add more bedding
Fruit Flys	Exposed food	Bury food in bedding

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WORM BIN BOX INSTRUCTIONS

(holds 1 or 2 worm bins & 1 liquid fertilizer collection bin)

Prepared by April Waltz, AWF Conservation Education Specialist

Tools: Cordless Power Drill, Circular OR Jig Saw, & Phillips Head Screwdriver

Materials for Worm Bin Box:

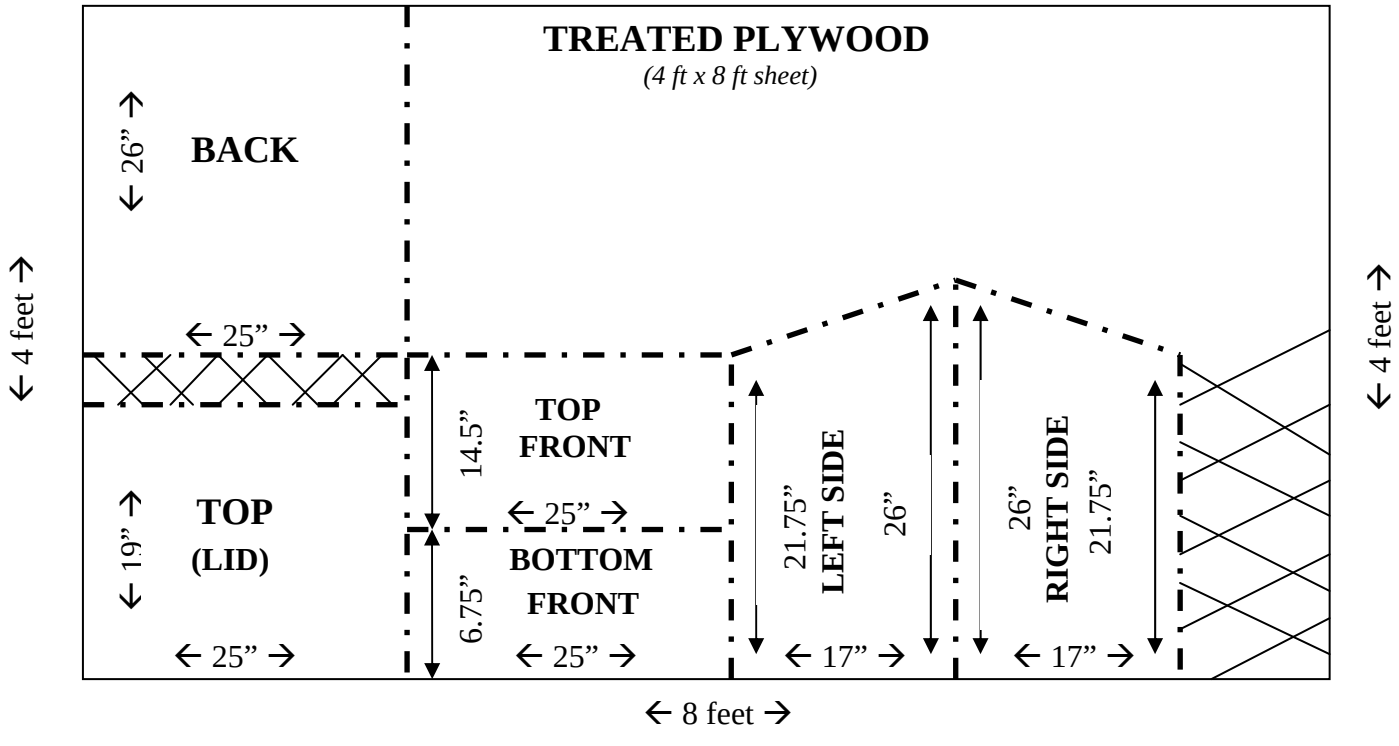
- (1) Sheet of ½" inch thick piece of Treated Plywood (4' ft x 8' ft): ~$20
- (1) 2" x 4" that is at least 4 ft long: ~$4
- (2) 3" Outdoor/Weatherproof Hinges *(screws not needed)* for Top of Box: ~$2.50 ea or ~$5.00 total
- (1) Packet of (2) 2" Outdoor/Weatherproof H-Hinges *(screws not needed)* for Front of Box: ~$2.50 per packet
- (8) L-Brackets (GA2 3 1/4" x 1 1/4" Gusset Angle): ~$1 ea or ~$8 total
- (1) Box of 75 ½" inch Wood Screws *(for hinges & L-brackets)*: ~$5 per box
- (1) 8-pack of 2.5" Wood Screws *(for attaching 2x4's to sides of box to create shelf inside box)*: ~$2
- (1) Small 1"-1.5" Wooden Cabinet Knob for opening the bottom front door of box: ~$1 ea
- (1 or 2) Dark 10 Gallon Plastic Storage Boxes (24" long x 16" wide x 8.8" deep): ~$7 ea
- (1) Clear 5-7 Gallon Plastic Storage Box (22-24" long, 15-16" wide, & 5-6" deep): ~$6 ea

Step 1

- Cut the 2" x 4" into (2) pieces that are 24" long each to create a shelf for the dark storage box(es) inside the box that will hold the worm farm(s).

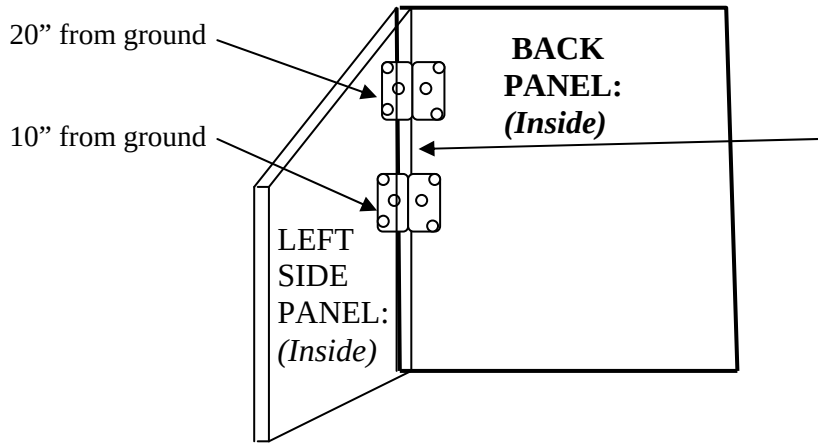
Step 2

- Cut the sheet of ½" Treated Plywood *(see diagram below & photo on page 4)* into the following:
  - Back of Box: ½ inch Treated Plywood cut into a 26" High x 25" Wide rectangle
  - Top of Box: ½ inch Treated Plywood cut into 19" High x 25" Wide rectangle
  - Front of Boxes (piece #1): ½ inch Treated Plywood cut into 14.5" High x 25" Wide rectangle
  - Front of Boxes (piece #2): ½ inch Treated Plywood cut into 6.75" High x 25" Wide rectangle
  - Left Side of Boxes: ½ inch Treated Plywood cut into trapezoids that are 26" x 17" x 21.5"
  - Right Side of Boxes: ½ inch Treated Plywood cut into trapezoids that are 21.5" x 17" x 26"



Step 3

Use (12) ½" Wood Screws to attach the Left Side (1/2" plywood) to the Back (1/2" plywood) using (2) L-Brackets (*such as (2) GA2 3 1/4" x 1 1/4" Gusset Angles*) on the inside of the box.

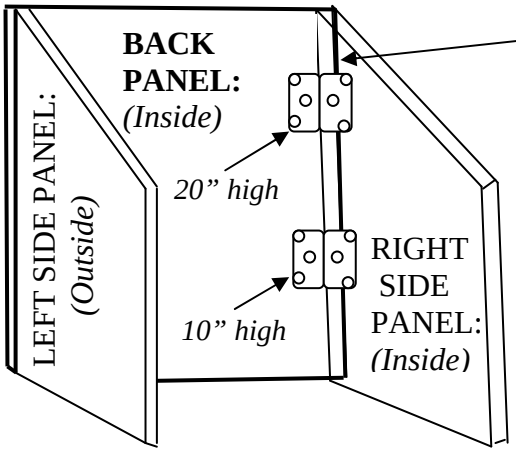


The back of the Left Side Panel should line up on the **left INSIDE ½" of the Back Panel**, so that Back Panel and two Front Panels form a "cap" for the two Side Panels.

Step 4

Use (12) ½" Wood Screws to attach the Right Side (1/2" plywood) to the Back (1/2" plywood) using (2) L-Brackets (*such as (2) GA2 3 1/4" x 1 1/4" Gusset Angles*) on the inside of the box.

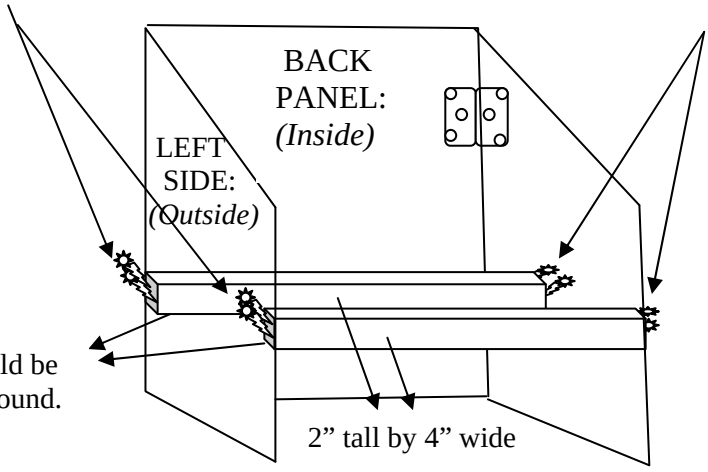
The back of the Back Panel provides a "cap" for the Side Panels.



The back of the Right Side Panel should line up on the **right INSIDE ½" of the Back Panel**, so that Back Panel and two Front Panels form a "cap" for the two Side Panels.

Step 5 *(see the photo on page 4)*

Attach the (2) 24" long 2x4s to the Right & Left Sides (7" from the ground) by screwing (2) 2.5" Wood Screws through the OUTSIDE of the ½" plywood and into the end of each 2x4s *(using all 8 of the 2.5" screws)*.



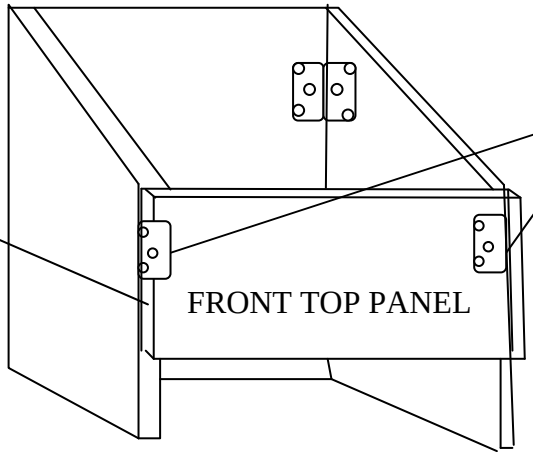
The 2x4s should be 7" from the ground.

Place the 1st 2x4 **INSIDE** the box with the back 2" side pressed up against the Inside Back Panel, and then attach it to the Side panels by screwing the 2.5" Wood Screws through the **OUTSIDE** of the plywood and into the end of 2x4s. Place the 2nd 2x4 parallel to the 1st with the front 2" side of the 2x4 flush with the front end of the two side panels.

Step 6

Use (12) ½" Wood Screws to attach the Front Top Panel (1/2" plywood) to the Left & Right Sides (1/2" plywood) using (2) L-Brackets (*such as (2) GA2 3 1/4" x 1 1/4" Gusset Angles*) on the inside of the box.

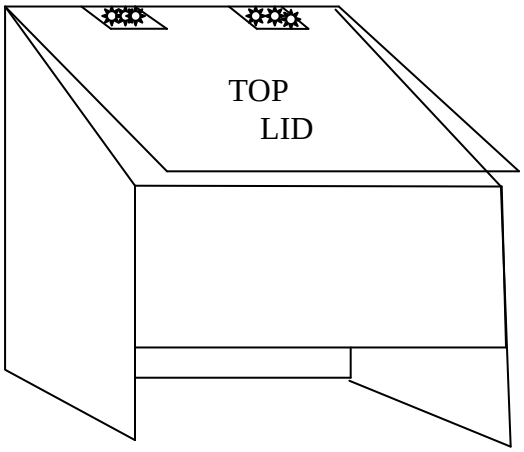
The Front Panels provide a "cap" for the Side Panels.



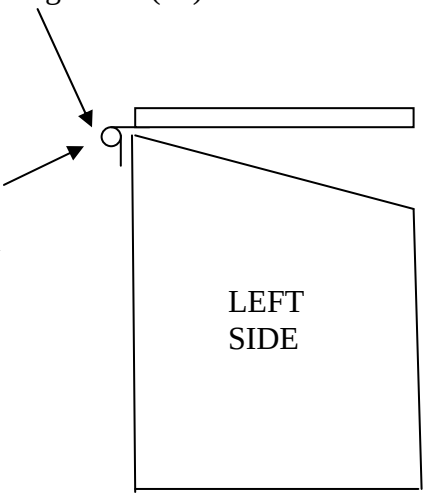
The L-Brackets should be attached (10" from the ground) to the Sides and Front Top Panel of plywood on the **INSIDE** of the box.

Step 7

Attach the Top Lid to the Back of the worm bin box using the (2) 3-inch hinges and (12) ½" wood screws.

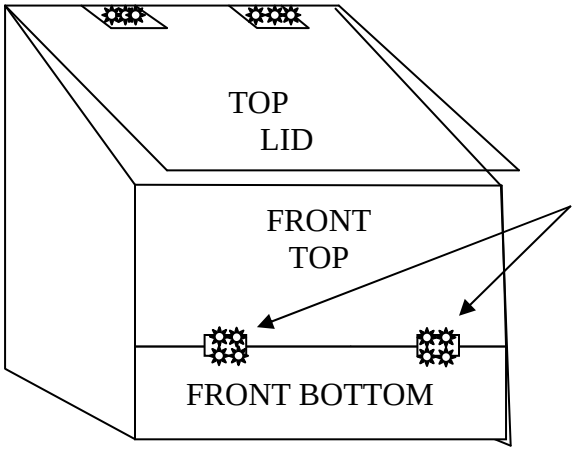


The Hinges should be attached to the OUTSIDE of the Back piece and on the INSIDE of the Top Lid **IF** you don't want to see the hinge. If you don't mind seeing the hinge, then you can attach it to the OUTSIDE of both the Back Piece & the Top Lid.



Step 8

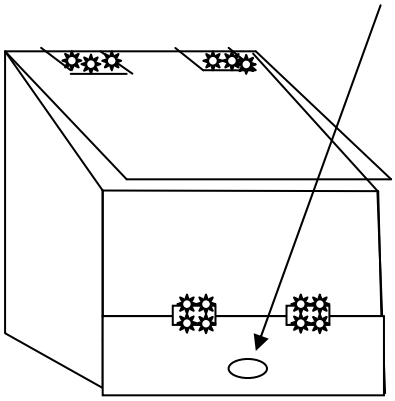
Attach the Front Top piece to the Front Bottom piece using the (2) 2-inch H-hinges and (8) wood screws.



The 2" Hinges should be attached to the OUTSIDE of the FRONT TOP and FRONT BOTTOM so that the FRONT BOTTOM becomes a door that can be opened to pull out the clear plastic storage bin that holds the "liquid fertilizer" that drips into it from the worm bin(s) above.

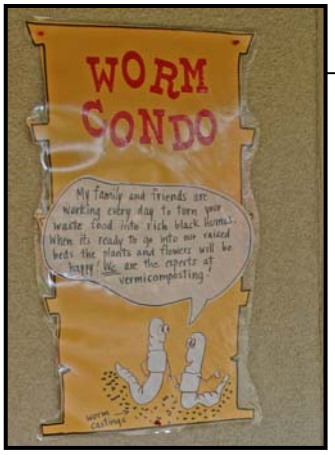
Step 9

Attach the Small Wooden Knob to the front of the Front Bottom piece so that you can lift the door open easily.



Step 10 (optional)

Paint & Decorate the Worm Bin Box, and add a Sign to it explaining the purpose of a Worm Farm.



EXAMPLE SIGN for your WORM BIN BOX:

My family and friends are working every day to turn your waste food into rich black humus. When it's ready to go into our raised beds the plants and flowers will be so happy! We are the experts at Vermicomposting!

EXTRA PHOTOS TO HELP YOU VISUALIZE THE CONSTRUCTION

Worm Bin Box Lumber: Laid Out & Labeled

Worm Bin Box with (1) Worm Bin: How it should look after Step #5