

# COMPOST

"Green" gardening starts with healthy soil. Learn to make compost for healthy soil and a greener Chicago.



**CHICAGO HOME  
COMPOSTING PROGRAM**

# WHY COMPOST?

Composting is nature's way of recycling. It is a satisfying way to turn your fruit, vegetable and yard trimmings into a dark, crumbly, sweet-smelling soil conditioner. And it is the key to healthy soil and a healthy environment.



## Composting:

- Saves you money by replacing store-bought soil conditioners.
- Helps garden and house plants grow by improving the fertility of your soil.
- Saves water by helping the soil hold moisture and reducing water runoff.
- Benefits the environment by recycling valuable organic resources, reducing air and water pollution from refuse trucks and runoff, and extending the life of our landfills.

## The 4 "R's" of the Green Garden

**Reduce** the amount of yard trimmings you make by planting slow growing, drought tolerant plants. Reduce pruning by giving plants room to grow their full size. Consider reducing lawn size.

**Reuse** yard trimmings by grasscycling (mowing more often and leaving the clippings on the lawn). Mulch paths and around trees and shrubs with fallen leaves and prunings. You can also reuse rain water with rain barrels, rain gardens and native plantings.



**Recycle** remaining yard trimmings by composting.

**Restore** the environment with thriving gardens. It all starts at home!

## Compost Works for You

Composting helps the environment, and it can help your garden, yard and house plants too! When compost looks like soil and smells sweet and earthy, it is ready to use.

### In the Garden

Before planting, mix a 4" to 8" layer of compost into newly reclaimed or poor soils. Mix a 1" to 3" layer of compost into annual garden beds at least once a year.



### Around the Yard

Spread a 1" to 3" layer of coarse compost on soil as a mulch any time during the growing season to improve soil fertility and reduce watering needs. Do not pile mulch on the trunk or stem of plants.



### On House Plants

Sprinkle a thin layer of sifted compost on top of the soil to provide nutrients



## Choose a System

### Basic Composting

- For yard trimmings by themselves, or for a mixture of fruit, vegetable and yard trimmings
- Low to moderate effort level
- For outdoor composting
- Requires about 3x3 feet of space or more; in sun or shade; on soil or cement

### Worm Composting

- For fruit and vegetable trimmings mainly
- Moderate effort level
- For outdoor or indoor composting
- Requires less space, can be stacked and stored in a basement, closet or garage.



# FOLLOW THE BASIC COMPOST 1-2-3

Composting is as easy as “1-2-3,” thanks to the friendly bugs and worms that do the composting work for you!

1. **Chop** materials if you want them to break down more quickly.



2. **Mix Browns & Greens** (dry, woody materials with moist, green materials).



3. **Maintain Air & Water Balance** by keeping compost as moist as a wrung-out sponge.



**Browns, Greens, Air and Water** are the “Big Four” that will keep every compost pile healthy



## Do Compost

## Don't Compost

Browns

Fallen leaves  
Woody prunings  
Untreated wood  
sawdust  
Black & white  
newspaper  
Fruit & vegetable  
trimmings  
Young weeds  
Coffee grounds &  
filters  
Egg shells  
Citrus rinds  
Tea bags  
Barnyard manures

Greens

Meat, bones  
or fish  
  
Dairy products  
or grease  
  
Grains, breads  
or beans  
  
Dog, cat  
or bird feces  
  
Plywood or  
treated wood  
sawdust  
  
Diseased plants  
(in cold piles)

**Hot Compost Happens** when you follow the basic "1-2-3" carefully, the pile is about a cubic yard (3'x3'x3'), and you use the "Batch Composting" recipe (see below). Heat can accelerate composting and kill weed seeds and plant diseases, but is not necessary. Cold, slower piles are just as good. If your pile is not heating up and it is large enough, moist and well chopped, you can turn it and mix in some greens like grass clippings or an organic nitrogen fertilizer. For faster hot composting and better weed-seed kill, turn or mix your hot pile once a week or more.

### Keep Rodents Out of Your Compost

The Chicago City Code requires the use of a rodent-resistant composting system. Use a bin with a lid, floor, and no holes or gaps larger than 1/4 inch. Also be sure to follow the "do's and don'ts" carefully—never add meat, dairy, pet waste or other rodent-attracting materials to your outdoor compost or worm bin.



## BASIC COMPOST RECIPES

### Feed-as-You-Go Compost

This is the easiest recipe for yard trimmings by themselves or for fruit, vegetable and yard trimmings together.

#### **Ingredients:**

Yard trimmings by themselves or for fruit, vegetable and yard trimmings together (about half browns and half greens), water as needed

#### **Directions:**

**Feed** yard trimmings to your bin as you generate them by chopping them first into pieces 6" or smaller. Food scraps and grass clippings need to be buried or mixed into the center of the pile (never "dump and run" or else you will have animals and flies attracted to the smells in your bin). Be sure to mix enough browns to balance your greens.

**Maintain** compost by turning it or mixing it each time you add material, or about once a week. As it gets full you only need to turn or mix the top layers. Keep it moist as a wrung out sponge.

**Harvest** the rich, brown, finished compost after 4-12 months. It can be found at the bottom and center of the pile. Use the harvest door if your bin has one, or remove the top layers of the pile to access the bottom layers. If you need a fine textured compost, sift out coarse, unfinished materials and return these to the pile.

## Batch Compost

This is the best recipe for hot composting of yard trimmings by themselves or for fruit, vegetable and yard trimmings together. It works best if you have two compost bins so you can have one for Batch Composting and another to add to while you are making your batch compost.

### Ingredients:

Yard trimmings by themselves or for fruit, vegetable and yard trimmings together (about half browns and half greens), water as needed

### Directions:

**Feed** the bin by filling it with alternating 2- or 3-inch layers of well-chopped browns and greens, watering as you go (if necessary) so it is moist as a wrung out sponge. Mix each layer as you go and fill the whole bin all at once. If the volume of material reduces greatly in the first week, add more material by repeating the layering process to fill the bin.

**Maintain** compost by turning it or mixing it about once a week. Keep it moist as a wrung out sponge. If it gets too wet, add additional dry browns, and/or turn the pile. Water if it needs moisture. Do not add additional material to the pile after the first week or so.

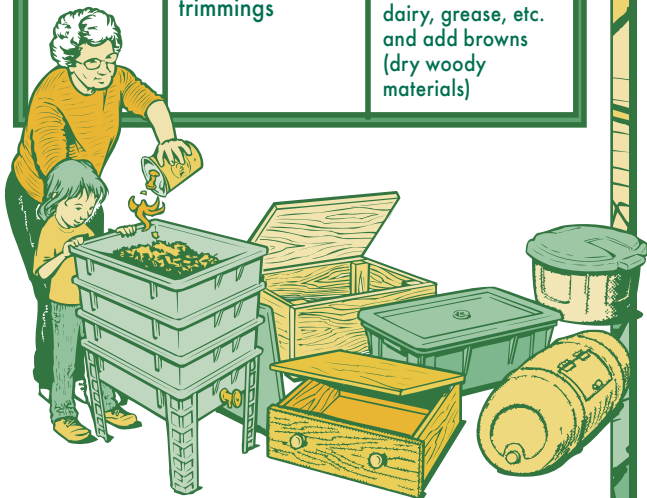
**Harvest** the whole pile after 3-6 months or when the material looks like soil. If there is twiggy, unfinished material, you can use the compost as is for mulch, or sift the compost for use as an amendment and throw the twigs back into the bin.



# BASIC COMPOST TROUBLESHOOTING

## Symptom Problem Solution

|                                    |   |   |
|------------------------------------|---|---|
| Pile not composting                | Too dry   | Add water until slightly moist and turn (mix)   |
|                                    | Too much brown matter   | Add fresh green matter or organic nitrogen fertilizer and turn (mix)  |
| Pile smells rotten/ attracts flies | Too wet; too many food scraps or lawn clippings                                     | Turn (mix) and add browns (dry woody materials) or dry soil   |
|                                    | Food scraps or lawn clippings exposed   | Bury and mix food scraps and lawn clippings in pile   |
|                                    | Problem materials   | Remove meat, dairy, grease, etc. and turn (mix)   |
| Rodents in bin                     | Bin not rodent resistant; problem materials; too many fruit and vegetable trimmings | Use traps or baits and a rodent-resistant bin (no holes or gaps larger than ¼ inch. Remove meat, dairy, grease, etc. and add browns (dry woody materials) |



## WORM COMPOSTING

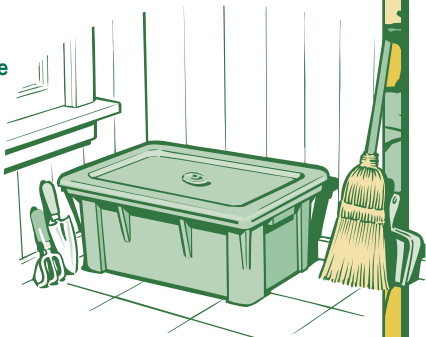
Worm composting is a fun way to make fertilizer from food scraps! It is excellent for small spaces and kids love it. It is easy to do, but takes a little more effort than basic composting. Here are the keys to success:

## Choose a Bin

**Buy a bin or build one** out of wood, plastic, an old dresser drawer, shipping crate, or barrel. Your bin needs to be 10 to 16 inches deep, have holes in the bottom or sides for ventilation, and have a snug-fitting lid. To keep rodents out, the holes need to be  $\frac{1}{4}$  inch or smaller. The rule of thumb for bin size is two square feet of surface area per person. An average two-person house would need a bin about 4 square feet, or two bins that are each 1 foot by 2 feet.

## Pick a Place

Locate your bin where it will not freeze or overheat—in a pantry, laundry room or basement. Or you can keep your bin in your garden, garage or porch area, and move it inside or insulate it during the winter (see Winter Worm Care).



## Make a Worm Bed

Worms like to live under lots of moist paper or leaves. This helps keep them cool and moist, gives them fiber to eat, and prevents fruit flies from getting to their food. To make your worm bed, tear black and white newspapers into one-inch strips, fluff them up, then moisten them with a spray bottle so they are completely moist but not dripping. Fill your bin three-quarters full with this moist bedding. Shredded cardboard, leaves, compost, sawdust, and straw can also be added in as bedding. Do not use glossy paper or magazines. Sprinkle bedding with a few handfuls of soil.

## Adopt Some Worms

Compost worms are often called “red worms” or “red wigglers.” Their scientific name is *Eisenia fetida*. They are different from earthworms and nightcrawlers, which live underground. You can find red wigglers in an old compost pile, get them from a friend’s worm bin, or buy them from a worm farm (call the Rotline for a list of sources). Start with one half to one pound of worms, or two nice big handfuls.



## Feed Your Worms

Give your worms about a quart (one pound) of fruit and vegetable trimmings, then leave them alone for a couple of weeks while they get used to their new home. After that, feed your worms about a quart of food scraps per square foot of surface area in your bin per week. To avoid fruit flies and odors, bury food under the bedding.



## Maintain Your Worm Bin

Always keep a 4 to 6 inch layer of fresh bedding over the worms and food in your bin. Add fresh bedding at least once every couple months. Keep bedding as moist as a wrung-out sponge. In a plastic bin, add dry bedding to absorb excess moisture. Wooden bins may require adding water occasionally.



## Harvest and Use Your Worm Compost

You can start harvesting worm compost 2 to 3 months after you set up your bin. Simply reach in and scoop out the brown crumbly compost, worms and all. You can also move the contents of the bin to one side, place fresh bedding and a handful of soil in the empty space and bury food there for a month or two. Harvest the compost

after the worms have migrated to the new food and bedding. To keep your worms healthy, harvest at least once a year.

By adding nutrients and humus to the soil, worm compost will help your plants thrive. Sprinkle a ¼ inch to 1 inch layer of worm compost at the base of indoor or outdoor plants, or blend no more than 20 percent worm compost into potting mix or garden soil.

## Winter Worm Care

You can continue worm composting all winter long if your bin is in an area that does not freeze (a pantry, laundry room, basement, or heated garage or porch). Or, you can let your worms rest through the winter outside by burying the bottom half of your bin in the ground and piling straw or leaves around and on your bin for insulation. You do run the risk of losing your worms outdoors during an uncommonly cold winter. See Resources section for sources of more ideas.

## WORM BIN TROUBLESHOOTING

| Symptom                       | Problem   | Solution  |
|-------------------------------|---|---|
| Worms are dying               | Food/bedding all eaten  | Harvest compost, add fresh bedding and food   |
|                               | Too dry   | Add water until slightly damp; add moist bedding if needed  |
|                               | Extreme temperatures  | Move bin so temp is between 55° and 77° F; make sure bedding is adequate  |
| Bin smells bad/attracts flies | Too wet; food scraps exposed  | Add a 4 to 6 inch layer of dry bedding and stop feeding for 2 to 3 weeks  |
|                               | Problem materials   | Remove meat, dairy, grease, etc.  |
| Rodents in bin                | Bin not rodent resistant; problem materials; too many fruit and vegetable trimmings | Use traps or baits and a rodent-resistant bin (no holes or gaps larger than ¼ inch); remove meat, dairy, grease, etc.; add a 4 to 6 inch layer of bedding and stop feeding for 2 to 3 weeks |
| Sowbugs, beetles in bin       | These are good for your worm compost!   |   |

## BUY A BIN

For information on buying a bin, please refer to later resource page.



## BUILD YOUR OWN BIN

Building a bin of your own can be fun and gives you more control over how it looks and what it is made of.

### Use Green Building Materials

- **Salvaged materials.** Remember to adjust measurements on older lumber as it is sometimes larger than modern planed lumber.
- **Recycled plastic.** You may need to use thicker plastic lumber than wood as it is usually more flexible. Adjust measurements accordingly.
- **Non-toxic wood sealants and treatments.** Avoid pressure treated lumber as these can leach poisons into the compost. See Resources section for sources of alternative sealants, or use linseed oil with mineral spirits.

### Basic Bin

- For Basic "Add as You Go" or "Batch" Composting
- Produces small to medium amounts of compost
- Very simple to build
- \$10 - \$35 for new materials

### Materials

Plastic or metal garbage can with tight fitting lid (min. 32 gallons for best results)

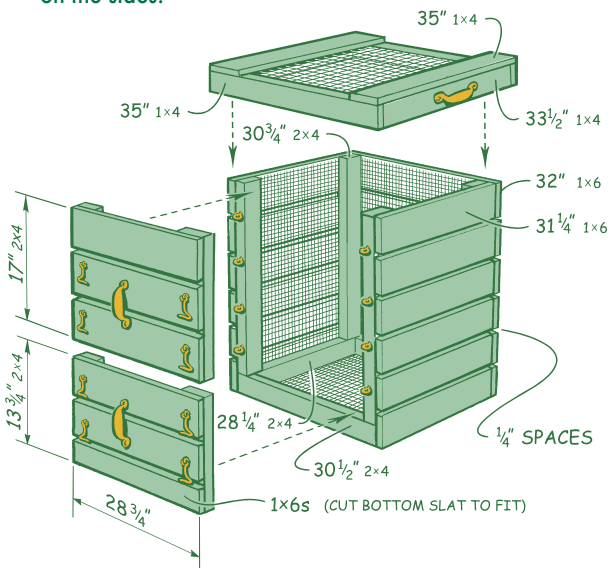


## Tools

Power drill with 1/4" drill bit

## Assembly

Drill 1/4" holes in bottom and sides for drainage and aeration. Put at least 24 holes on the bottom and 40 on the sides.



## Urban All-Wood Bin

- For Basic "Add as You Go" or "Batch" Composting
- Has 2 front doors for easy harvesting and turning, a top that doubles as a sifter, and a full wire mesh lining
- Produces small to large amounts of compost
- Carpentry skills needed for construction
- \$150 - \$200 for new materials

## Materials

- (8) 8' 1x6" wood
- (2) 8' 2x4" wood
- (1) 10' 2x4" wood
- (3) 6' 1x4" wood
- 15' 1/4" wire mesh hardware cloth
- (4) 5" drawer handles
- (8) 1-1/2" hooks and eyes
- (8) 4" corner brackets with 1/2" wood screws
- Polyurethane glue
- (20+) 8 penny galvanized nails
- (125+) 6 penny galvanized nails or screws
- (250+) 3/4" poultry wire staples

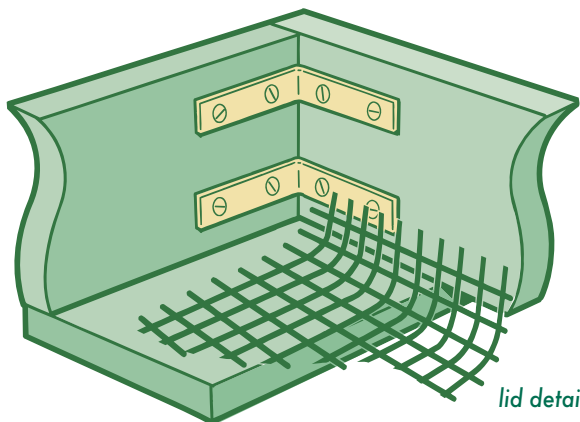
## Tools

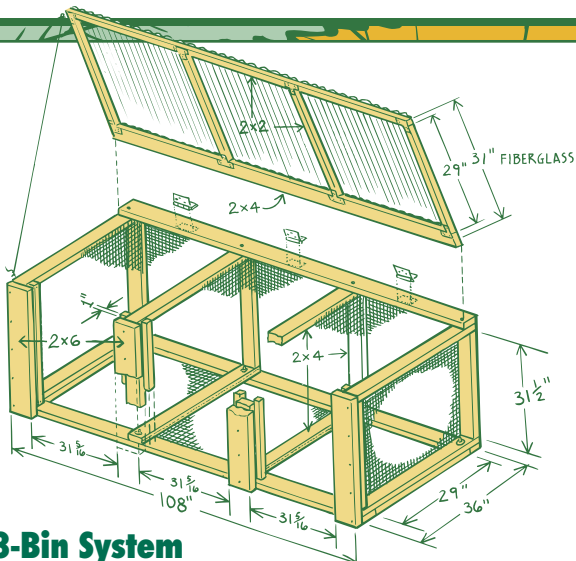
Power saw (or handsaw), screwdriver, hammer, measuring tape, pencil, square, drill with 1/16" bit, sandpaper

## Assembly

(Glue all wood pieces before nailing)

1. Nail 2x4 bottom frame together with the larger nails. Be sure the finish dimension is 30- $\frac{1}{2}$ "x31- $\frac{1}{4}$ ".
2. Build sides by nailing bottom and top 31- $\frac{1}{4}$ " 1x6s to the 2x4s (use smaller nails). Be sure bottom 1x6s hang down 3- $\frac{1}{2}$ " below 2x4 uprights. Fill in the remaining 1x6s equally spaced, with no gaps larger than  $\frac{1}{4}$ ".
3. Attach sides to base by nailing 3- $\frac{1}{2}$ " overhang to base as drawn (with smaller nails). Toenail 2x4 uprights into bottom frame with larger nails.
4. Nail the six 32" 1x6s to back by first attaching the top and bottom pieces, then filling in the remaining four, spaced equally.
5. Before cutting pieces for the front doors, measure the actual opening at the front of the bin, and make sure to cut the 1x6s just  $\frac{1}{8}$ " to  $\frac{1}{4}$ " smaller than the opening. Build top door by nailing three 1x6s to the two 17" 2x4s with  $\frac{1}{4}$ " between each board as shown. Build bottom door by first nailing on the top two 1x6s ( $\frac{1}{4}$ " apart), then measuring the remaining space, and cutting the last 1x6 lengthwise to fit.
6. Attach eyes to front 2x4 uprights, and hooks to front doors as drawn.
7. Build lid by pre drilling and tacking together as drawn (using smaller nails), making sure the finished dimension is 35x35" and square. Then pre drill and screw the corner brackets to the inside corners, and the top 1x4s into place. Cut a 33x36" piece of wire screen and staple it in as shown in detail drawing.
8. Cut remaining screen to fit—staple side, back and door pieces inside bin on 1x6s (not over 2x4s). Staple bottom piece onto the underside of bin.





## 3-Bin System

- For Basic "Add as You Go" or "Batch" Composting
- Requires minimum 3'x 9' of yard space
- Excellent for hot composting—has removable front slats for easy turning, and separate bins for turning and aging compost, and/or storing compostables
- Can produce large amounts of compost
- Carpentry skills needed for construction
- \$250 - \$300 for new materials

### Materials

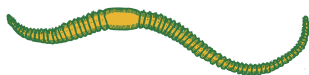
- 2x4" wood: (8) 31-1/2", (8) 36", (4) 9', and (4) 29" pieces
- 2x6" wood: (4) 36" pieces
- 2x2" wood: (6) 34-1/2", (1) 9', and (4) 29" pieces
- 1x6" wood: (19) 31" pieces
- 1/4" mesh hardware cloth: 30'x3'
- Carriage bolts (12) 3-1/2"x 3/8", with washers and nuts
- 12 penny galvanized nails (2 pounds)
- 8 penny galvanized nails (1 pound)
- Poultry wire staples (1 pound)
- Corrugated fiberglass, 4 oz.: (2) 8'x26" pieces
- Gasketed roofing nails: (40)
- Wiggle molding (18 feet)
- 3" hinges, zinc plated, galvanized or brass (3)
- 4" flat corner braces (4) with 1" wood screws
- 4" flat "T" braces: (4), with 1" wood screws
- (4) hook eyes, and 8' of light cable or chain

### Tools

Power saw (use eye protection) or hand saw, drill with 3/8" and 1/16" bits, screwdriver, hammer, tin snips, tape measure, pencil, socket or wrench, carpenter's square.

## Assembly

- 1. Main Structure** Butt nail two 31- $\frac{1}{2}$ " and two 36" 2x4s together with 12 penny nails to form each of four screen dividers. Cut four 36x33- $\frac{1}{2}$ " wire mesh pieces, and staple (every 4") to frames after checking frames for squareness. Bolt dividers to three 9' 2x4s as shown (inside measurement between dividers should be 31- $\frac{5}{16}$ "). Tack in 29" 2x4s as shown. Staple one 9'x3' piece of wire mesh (every 4") to back of structure, and one 9'x3' piece to the bottom.
- 2. Slats and Slat Tracks** Nail 2x6s to front of dividers. Nail 34- $\frac{1}{2}$ " 2x2" onto frames as shown. Leave at least 1" for the slats to slide in. The last slat of each bin section may need to be cut lengthwise to fit.
- 3. Lid** Assemble lid frame as shown, with flat corner and "T" braces on the bottom side. Pre drill nail holes every couple of feet into wiggle molding humps, and attach molding to 9' 2x2 and 9' 2x4 with 8 penny nails. Cut fiberglass into five 32" pieces with tin snips. Pre-drill fiberglass and wiggle molding on top of every third hump, and nail together with gasketed nails. Be sure to overlay fiberglass pieces at least one channel wide, and before attaching the last piece, trim off excess fiberglass. Attach lid to frame with hinges. Attach heavy duty cable or chain to lid and main frame with hook eyes as shown (to prevent lid from falling all the way back).



## Plastic Worm Bin

- Mainly for fruit and vegetable trimmings
- Very easy to build; tidy for indoor use
- Plastic bins keep compost moist; will require regular additions of dry bedding
- \$6 - \$20 for new materials

### Materials

Plastic storage container with a tight fitting lid: 12" to 18" tall; min. 10-gallon

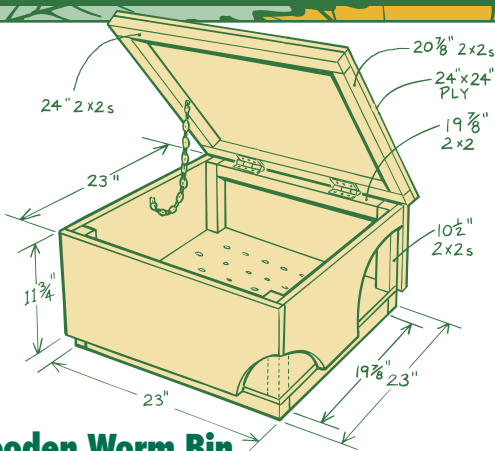
### Tools

Power drill with  $\frac{1}{4}$ " bit

### Assembly

For indoor use, within the top  $\frac{1}{3}$  of the bin sides, drill about 4 to 6 holes per side for ventilation. For additional security, use window mesh and duct tape to cover holes from the inside. This helps with reducing unwanted flies.





## Wooden Worm Bin

- Mainly for fruit and vegetable trimmings
- Basic carpentry skills needed for construction
- Doubles as a seat!
- Breathes well—will need occasional watering
- \$30 - \$50 for materials new

### Materials

- (1 ) 4'x4' piece  $\frac{1}{2}$ " exterior grade plywood
- (3) 6' pieces 2x2" wood
- (1) 4' piece 2x4" wood
- 4 penny galvanized nails (1 pound)
- (16") light chain with (2)  $\frac{1}{2}$ " wood screws
- (2) 2" hinges, with  $\frac{3}{4}$ " wood screws
- Polyurethane glue

### Tools

Power saw (or hand saw), hammer, measuring tape, pencil, square, drill with  $\frac{1}{4}$ " and  $\frac{3}{32}$ " bits, sandpaper

### Assembly

(Glue all wood pieces before nailing)

- 1. Base:** Nail two 23" 2x4s and two 19- $\frac{7}{8}$ " 2x2s to bottom of 23x23" plywood as drawn. Drill several  $\frac{1}{4}$ " holes for drainage.
- 2. Side, Front and Back Walls:** Nail the four 2x2 uprights to the two side walls along the 11- $\frac{3}{4}$ " edge, with one end of each 2x2 flush with the top edge of the walls. Nail a 19- $\frac{7}{8}$ " 2x2 hinge support to the top edge of the back wall piece, leaving 1- $\frac{1}{2}$ " on each side for 2x2 uprights. Assemble box by nailing the 1- $\frac{1}{4}$ " overhang of the side walls to the 2x2s on the base as drawn. Then nail the front and back walls to the 2x2 uprights and to the 2x4s on the base as drawn. Be sure the hinge support is at the top of the bin.
- 3. Lid:** Nail lid together as drawn. Attach to box with hinges, making sure to pre drill screw holes into the 2x2s. Attach chain with  $\frac{1}{2}$ " wood screws so lid can rest in an opened position.

# RESOURCES

## **City of Chicago's Discount Compost Bins:**

312-743-9283

General City of Chicago Information: call 311,  
[www.cityofchicago.org](http://www.cityofchicago.org)

## **Compost Ambassador Program**

Offered every spring by University of Illinois (U of I)  
Extension, Contact: Sarah Batka, 217-300-8636,  
[sbatka@illinois.edu](mailto:sbatka@illinois.edu)

## **Compost Education Centers**

- **Garfield Park Conservatory**, 300 N Central Park Ave.,  
773-638-1766, [garfieldconservatory.org](http://garfieldconservatory.org)
- **Green Era Campus Community Education Center**  
650 West 83rd St., Chicago, 60620  
[greenerachicago.org/campus/community-education-center](http://greenerachicago.org/campus/community-education-center)
- **North Park Village Nature Center**, 5801 N Pulaski Road,  
312-744-5472, [www.chicagoparkdistrict.com](http://www.chicagoparkdistrict.com)
- **Eden Place Nature Center**, 4417 S Stewart Ave.,  
773-624-8686, [www.fullerpark.com](http://www.fullerpark.com),  
[www.edenplacenaturecenter.com](http://www.edenplacenaturecenter.com)
- Learn how to make your own bin, visit  
[www.urbanext.uiuc.edu/worms/](http://www.urbanext.uiuc.edu/worms/)
- Compost drop-off: [www.chicago.gov/city/en/sites/chicago-recycles/home/food-scrap-drop-off.html](http://www.chicago.gov/city/en/sites/chicago-recycles/home/food-scrap-drop-off.html)
- Additional City of Chicago Composting Information:  
[www.chicago.gov/city/en/sites/chicago-recycles/home/compost.html](http://www.chicago.gov/city/en/sites/chicago-recycles/home/compost.html)

## **Lead Testing and Information\***

- **A&L Laboratories**, 260-483-4759,  
<http://algreatlakes.com/>
- **Stat Analysis Corp.**, 312-733-0551,  
<http://statanalysis.com/>

\*Note: this list is not all-inclusive. The City of Chicago and Home Composting Program partners do not officially endorse these facilities, and are not legally liable for the quality or price of their services.



The original composting booklet was created in the early 2000's in partnership of the Home Composting Program partners including the City of Chicago's Department of Environment (now Streets & Sanitation), University of Illinois Extension and Garfield Park Conservatory Alliance. In 2025, updates were made by GPCA to the resources page to reflect current sources, City of Chicago composting ordinances, and compost drop-off program.

The Chicago Home Composting Program is managed by the Garfield Park Conservatory Alliance in partnership with the Chicago Department of Streets and Sanitation, University of Illinois Extension, Chicago Park District, Chicago Department of Environment, Chicago Public Schools, and is funded in part by a Mayor Daley Neighborhood Recycling Grant.

Many thanks to StopWaste.org and San Francisco League of Urban Gardeners for use of text and images.



City of Chicago  
Richard M. Daley, Mayor