

# Down To Earth Your Guide to Composting



It grows such sweet things out of such corruptions,  
It turns harmless and stainless on its axis,  
with such endless successions of diseases'd corpses,  
It distills such exquisite winds out of such infused fetor,  
It renews with such unwitting looks its prodigal, annual sumptuous crops,  
It gives such divine materials to men, and accepts such leavings  
from them at last.

Excerpt from Walt Whitman's *On Compost*

Prepared By  
Jefferson County Environmental Health Department  
615 Sheridan Street  
Port Townsend, WA 98368  
(360) 379-4458 (360) 379-4491  
mpearson@co.jefferson.wa.us  
mbower@co.jefferson.wa.us

**With each of us doing our part to reduce, reuse,  
and recycle we can meet the need to divert our  
State’s solid waste from our landfills.**

Home composters are helping to solve our garbage disposal problems by reducing the volume of solid waste needing to be landfilled. Good compost can be purchased at local markets, or through Port Townsend’s Biosolids Composting Facility, but is free for the making! This brochure explains composting and includes simple directions for constructing your home composting center. This brochure also describes the composting at Port Townsend’s Biosolids Composting Facility and answers some frequently asked questions about the city’s operation.

**Help Washington meet its waste reduction goals. . .  
COMPOST!**

**What Goes Around Comes Around**

**Port Townsend’s Program Makes Dollars and Sense:**

At the City’s Biosolids Composting Facility, Biosolids (solids from the wastewater treatment facility) are mixed with yard waste, plus dewatered septage from septic systems throughout the county. This mixture is aerated and aged for approximately six months—a process called “composting”. High temperatures and helpful microorganisms break down any harmful components in this mix. The compost formed by the process is a rich organic material that dramatically enhances soil quality and provides nutrients to help your foliage grow better and faster. It retains moisture in sandy dirt, helping to reduce water use and breaks up soil that contains too much clay. The Composting Facility generates income for the City through fees charged for waste disposal and from compost sales. The income helps offset the cost of operating the Facility, which, in turn, helps keep our utility bills down. The City saves additional money by not having to haul usable Biosolids to another disposal site. Yard waste can be brought to the Composting Facility at the Jefferson County Transfer Station. This reduces the amount of material that must be hauled away to landfills.

**What to bring to the Biosolids Facility:**

- Christmas trees
- Grass clippings and weeds
- Leaves
- Shrub and tree trimmings
- Tree branches under 8-feet long  
and 10-inches in diameter

**The Facility DOES NOT accept:**

- Dirt and sod
- Garbage
- Kitchen scraps and food waste
- Plastic bags
- Rocks, gravel and stumps

**Some things NOT to flush down the toilet:**

- Cigarette butts
- Diapers
- Paper towels
- Tampons and pads...even “biodegradable” ones!
- Towels and rags

**Dispose of these products at Jefferson County’s  
MODERATE RISK WASTE FACILITY—NOT down  
the drain:**

- Contaminated motor oil
- Cleaners with noxious chemicals
- Paint, paint thinner, solvents
- Pesticides

**Why won’t the Treatment Facility handle everything I flush?**

Garbage can block pipes and it can disrupt the treatment process. It also costs the City of Port Townsend to dispose of solids that don’t belong in the treatment process. Never pour toxic chemicals or solvents down the drain, because they can kill the microorganisms that help decompose the waste. They don’t break down easily and may wind up in the compost or in our recreational waters. Contaminants can also harm pipes, equipment or workers at the Treatment Facility.

### **Does wastewater flow into North Lagoon?**

No. Even though the Treatment Facility was built right next to North Lagoon (Chinese Gardens), extra care was taken to make sure no construction materials went into the water or on the adjacent meadow. No effluent is allowed to go into the pond. Treated waste-water is discharged offshore of North Beach

### **Should I use fertilizers and weed-killers on my trees, lawn and garden?**

Consider carefully whatever chemicals you use. They could wind up in surface water, groundwater and our compost. Choose products that are not toxic to fish or other aquatic life. Apply fertilizer only when plants show a need, and follow label directions.

### **What about heavy metals? Is Port Townsend Compost safe in my vegetable garden?**

Trace amounts of heavy metals, well below the United States Environmental Protection Agency standards, have been detected in Port Townsend Compost. The levels have been so low that the compost has been designated "Class A", which means it's approved for use on vegetable gardens.

### **Why conserve water?**

The City has a limited supply of water from the Quilcene River system. Conserving water saves you money, keeps the City from having to find new sources of supply, extends the life of the wastewater plant and protects salmon and other regional resources.

## **Why Compost?**

### **Throwing Away Yard Waste Creates Problems.**

We are running out of space to throw our garbage. Existing landfills are approaching capacity, and siting new landfills has become increasingly difficult; we must make changes in our habits to reduce the amount of waste we landfill. Most of us are now familiar with recycling newspapers, aluminum, plastics, magazines, glass and tin. This helps reduce the amount we throw away. But many of us have not carried the thought forward—to yard waste. By composting yard waste we can recycle a disposal problem into a valuable resource for our soil.

For years gardeners have enjoyed the benefits of composting. Organic material improves soil structure and provides increased water holding capacity. Your growing areas will be better prepared to endure extended periods of dry weather by adding compost to your soil. Some studies have discovered that adding compost can increase your plants' resistance to pests and disease. Composting is the natural way to enhance your growing efforts.

Composting does not need to be complex, expensive, or time-consuming. This publication explains simple and easy ways to compost at home. Most composting is low maintenance and requires only periodic turning. We have included designs for compost bins you can build yourself. If construction projects aren't your thing, most home and garden retailers stock well-designed composting bins at a reasonable cost.

Composting is an important element in solving the solid waste puzzle. Composting saves landfill space and provides a valuable additive to improve soil tilth. You wouldn't put money in your garbage would you?

## **Mulches from Yard Waste**

Mulch is organic material such as wood chips, leaves or compost that is spread over the soil surface. Using mulch is a simple way to recycle yard wastes and improve your garden. Mulch reduces evaporation from the soil surface, keeps down weeds and keeps soil temperatures from becoming too hot or too cold. Mulch also protects sloping ground from soil erosion and it stops soil compaction caused by driving rain on any soil surface. In addition, mulch provides ideal conditions for earthworms and other soil organisms that are necessary for a healthy soil. When mulch breaks down it becomes compost that feeds the soil.

### **Some General Rules For Mulching**

**Annuals and Perennials** (both flowers and vegetables) should be mulched with a material that breaks down in a relatively short time, such as grass clippings and leaves. This allows tender plants to break through the mulch surface and it allows you to turn under the mulch on annual beds when the soil is dug.

**Shrubs or Trees** can be mulched with a thick layer of shredded or chipped wood that enhances the appearance of the landscape and requires little maintenance.

**Paths** can also be covered with shredded or chipped wood. Apply the mulch as thick as is practical to wear longer and to keep down weeds. To keep paths weed-free even longer, put down layers of cardboard or newspaper before spreading the mulch.

### **Mulch Materials and Their Uses**

**Grass clippings** can be spread regularly in thin layers over vegetable and flowerbeds or mixed with leaves and spread in a thicker layer. Spread grass clippings no more than 1-inch thick so that they don't mat and stop water from penetrating into the soil. If herbicide has been applied, it is better to first compost the grass in a hot compost pile.

**Leaves** of deciduous trees can be spread as mulch in the fall. Evergreen leaves can also be used, but they take longer to turn a dark color and decay.

**Chipped or shredded woody waste**, if spread 3-6 inches deep, makes an attractive, long lasting mulch or path material.

**Cardboard** can be layered under the path area making the path last longer.

**Organic by-products** such as sawdust can sometimes be obtained from local businesses free of charge.

Sawdust and other finely ground woody materials can be used on the surface, but don't mix them into the soil.

Materials such as these that have not yet been composted can tie up nitrogen in your soil, causing your plantings to become yellow and stunted.

### **Applying Mulch**

Weed the area prior to mulching. Mulch can be spread around any plant as far as its drip line (the perimeter of its outermost branching), or it can cover an entire garden bed. Mulch can be spread thickly if water is able to penetrate and if it does not smother the roots of the plant being mulched. Three inches of mulch is safe for any woody plant, and up to 8-inches can be used for large trees. Most nurseries recommend against mulching rhododendrons and azaleas. For woody plants, mulch may be applied very thinly directly around the trunk to prevent mice from eating the bark.

### **Where Can Mulching Materials be Found?**

The best place to look for mulch materials is in your own yard. Every yard has grass, leaves, other green materials, or woody materials that can be made into mulch. If you need chipped or shredded woody wastes, try contacting tree services listed in the Yellow Pages. If they are working in your area they are often happy to deliver woody wastes and avoid extra travel and dumping expenses. Some wood shops and food-related businesses make their organic by-products available to customers and the general public. Call ahead to check on supply and try not to make any additional work for the business.

### **Tools for Mulch-Making**

A rotary mower run across dry leaves will make a fine-textured mulch for annuals and smaller plants. A small electric chipper will make a fine-textured mulch of semi-woody stalks and woody-wastes up to 1-inch in thickness. Gas-powered shredders of 5 to 8 horsepower that process materials up to 3-inches in thickness can be rented or purchased. Large gas-powered chippers that can handle woody wastes up to 6-inches in diameter are also available at rental shops. In general, the larger the machine, the faster the mulch making.

### **Where Can You Get Mulch-Making Tools?**

Look under "Rental Service Stores and Yards" in the Yellow Pages and find the tool rental locations nearest you. Call ahead because not all tool rental stores carry chippers and shredders. Let them know the type of material you want to make into mulch and make sure their machine can do the job.

## How do I Compost?

Dry leaves, straw and woody waste makes the carbon (or brown) layer. Fresh grass clippings, vegetable trimmings and pulled weeds make the nitrogen (or green) layer. The layers of green and brown should each be about 6-inches deep. Manure should be 2 to 3-inches deep. Chicken and rabbit manure are rich in nitrogen, horse and cow manure less so. Add garden soil or aged compost to provide microorganisms needed to start the composting process, along with calcium provided by eggshells. Repeat layering until bin is full. Keep compost moist but not wet. The pile should heat up, hastening the decomposing process. In 3 to 5-weeks compost can be transferred to a second bin. Turn outside material to the inside; when fully composted the material can be used in gardens as mulch and soil conditioners. Special areas of concern for composters are highlighted below.

### Do's and Don'ts of Composting

| <b>DO COMPOST</b> | <b>DON'T COMPOST</b> |
|-------------------|----------------------|
| Garden wastes     | Cooked foods         |
| Yard wastes       | Fatty Foods          |
| Raw vegetables    | Dairy products       |
|                   | Meat and fish        |

#### **Moisture**

In dry weather, or when incorporating dry materials like fall leaves, you may need to water the heap. If using an uncovered compost unit, a plastic tarp works well to retain moisture while the pile is heating up. The compost pile should be consistently damp, but not wet. The material should feel like a well wrung out sponge—not too dry but not soggy. Decay organisms function best in an aerobic (air-filled) environment. Too much moisture will force out air and suffocate beneficial organisms. Allow a soaking compost pile to dry out for a couple days before covering with a tarp to keep excessive moisture out.

#### **Air**

Aerobic composting requires a lot of oxygen. A fast-acting pile will run out of oxygen in about 3 days. Turning or mixing the compost not only aerates the material but also encourages temperatures to lower and then rise at a fast rate to hasten the decomposition process. If speed is not important, the pile will need little manipulation, but turning it even once will cut decomposition time in half. The more you turn, the quicker the compost will be finished, the sooner you will be able to begin another batch.

#### **Heat**

If you have added some carbon to nitrogen materials, the pile should heat up to about 110°F within 24 hours after it is put together. At this point, the pile should be turned. There will be few visible changes in the material, but after turning, the temperature will rise further. In a few days the pile should be turned or aerated again. At this point the material will be evenly moist and gray fungus growth should be evident. The temperature should continue to rise. Turn the pile a third time after a few more days have passed. Material in the pile should now be even textured and after turning, the temperature should reach 150-160°F. At this temperature the organic material will be pasteurized, killing most weed seeds and pathogens. If the pile does not get hot enough you will need to add more nitrogen such as blood meal or manure. If there is a strong ammonia smell, there's an excess of nitrogen (which will eventually dissipate). Once the temperature has reached the 150°F range, it will drop to approximately 110°F. Decomposition occurs more slowly at lower temperatures. Eventually, the heat is stabilized and the compost is ready for the garden. The carbon to nitrogen ratio will be approximately 10 to 1, about the same as naturally occurring humus. Once the compost is ready it may be spread over the entire garden, used as a side dressing, or mixed with soil and placed in planting holes as a plant starter.

#### **Size and Containers**

A pile 3' x 3' x 3' is the minimum size for good composting action. The organic material needs to be piled on top of itself to generate and retain heat. The location of the compost pile, its size, and the amount of material you're adding will determine the type of compost bin you use. There are many different design, but all have the same objectives to retain heat, moisture, to provide good bottom drainage, to make aeration easy, and to keep animals out. The most important message we have to give you is not to be flustered by complicated instructions and advice about composting. Just begin, do what you can, and watch closely. Compost making is a simple, natural process because decay is an inevitable law of nature. Even if you do nothing at all a pile of organic matter will eventually decompose. By composting, you are just improving upon and speeding up this natural process. Whatever you do, nature is with you—you can't go wrong!

| Compost Trouble Shooting                              |                  |   |
|---|------------------|---|
| Symptom   | Problem          | Solution  |
| Compost has a bad odor                                | Not enough air   | Turn the pile   |
| Center of pile is dry                                 | Not enough water | Moisten materials while turning the pile  |
| Pile is damp and warm in the middle, but nowhere else | Too small        | Collect more material and turn the ingredients into a new pile                    |
| Pile is damp and sweet smelling, but won't heat up    | Lack of nitrogen | Mix nitrogen source: grass clippings, fresh manure, bloodmeal or ammonium sulfate |

## Worm Composting

Worm composting is a simple, efficient way to recycle food wastes into high-quality compost for your garden. Worm bins also help reduce household garbage volume and produce worms for fishing bait. Red worms, also known as red wigglers or manure worms, are the best worms for composting because they thrive on organic materials such as food scraps. Red worms are not the same as “earthworms” or “night-crawlers,” which need mineral soils to survive. One to two pounds of worms are needed to start a home worm bin. Get your worms from a friend’s bin, or contact your local solid waste department for information. Bait shops also sell red worms, but their prices can be high for the amount of worms needed to start composting. Worms certainly reproduce quickly! By one estimate, 8 worms can multiply to 1,500 in six months. Once your system is established, there will be plenty of worms around to help your friends start composting, too.

### The Bin

A worm bin should be a sturdy wooden box with a tight-fitting lid. It can be made from an old cupboard or packing crate, or constructed with plywood and two-by-fours. The tight lid keeps pets and rodents out, and protects the worms. A shallow box about one foot deep is best because worms must live near the surface to breathe. Drill holes in the bottom for drainage. **The bin should be sized to provide one square foot of surface area for each pound of food wastes added per week.** For example, a 2 ft. by 4 ft. box will handle 8 pounds of kitchen scraps a week—the amount typically produced by two or three adults. Weigh your food scraps for a few weeks before designing and building your bin.

**The Bedding** Worm bins are filled with bedding to provide the worms with a balanced diet as well as a damp, aerated place in which to live. Common bedding materials include newspaper, corrugated cardboard, coarse sawdust, peat moss and leaves. Composting food wastes without bedding will produce a slimy, smelly mess. Tear newspaper and cardboard into 1 to 2 inch wide strips before using as bedding. Bedding materials should be thoroughly moistened by soaking them in water for several minutes. Squeeze out excess water before adding the bedding material to the worm bin. Always cover food wastes with a few inches of bedding to prevent flies and odors from becoming a problem. Rotate burial places throughout the bin to provide worms with a balanced diet of kitchen scraps and bedding.

### The Harvest

Harvesting worm compost for garden use is easy. Simply push the nearly finished compost to one side of the bin and put fresh bedding in the empty side. For the next 6 weeks, bury food wastes in the newly bedded side only. The worms will migrate over to the fresh food in the re bedded side of the bin as the food on the other side finishes decomposing. When the old bedding and food scraps are completely composted, they become a dark and crumbly soil-like material which can be harvested and replaced with fresh bedding—starting another cycle. To harvest worms for fishing, just open the bin and pick a handful out of the bedding. To harvest more worms, remove a few shovelfuls of compost from the bin and make small piles on a piece of plastic out in the sun or under a bright light. Let the piles sit for 10 minutes, then pull away the outer inch or two of compost until you see worms. Let the piles sit for another 10 minutes and remove another layer of compost. Repeating the procedure will concentrate worms at the bottom of the piles for easy harvesting.

#### Dos and Don'ts of Worm Feeding

##### **Do feed your worms:**

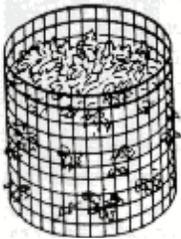
Vegetable scraps, grains, fruit rinds and peels, breads, coffee grounds, filters and tea bags

##### **Don't feed them:**

Meat, fish, cheese, oily foods, butter or animal products.

## How to Build Wire Mesh Composting Bins

Composting is the most practical way to turn your yard waste and other organic material into healthy usable soil. By using your yard waste for compost, you're not only ensuring a healthy, bountiful garden, you're easing the load on our overflowing landfills. Although you can compost without building a bin, bins have several advantages. A compost bin is a simple, effective way to manage food waste. Furthermore, compost bins help control heat and moisture content, which in turn speeds up the composting process. Listed below are step-by-step instructions for building and selecting the appropriate bin for your home. Wire mesh bins are the quickest and least expensive bins to construct. They can be used as holding and turning bins, or in combination with one of the larger bins as temporary storage. Simply adding yard waste as it is cleaned up is appropriate for these bins. With as little effort as occasional moistening, compost will be ready in 6 months to 2 years.



### Circle Bin Materials

(13 feet) of 36 inch wide 1 inch poultry wire or ½-inch hardware cloth or 18 gauge plastic coated wire mesh

(4) metal or plastic clips, or copper wire ties

(3 or 4) 4-foot wooden or metal posts to support poultry wire bins

*Cost: approximately \$10 or less*

### Five Panel Bin

(15 feet) of 24 inch wide 12 to 16 gauge plastic coated wire mesh, or ½ inch hardware cloth  
(20) metal or plastic clips or plastic coated copper wire ties

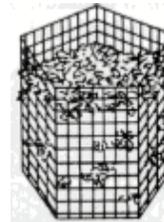
*Cost: less than \$5*

### Tools Required

Eye protection, heavy-duty wire or tin snips, pliers, hammer or metal file, work gloves

### Constructing a Circle Bin

Roll out and cut 13 feet of poultry wire, hardware cloth or plastic coated wire mesh. If using poultry wire, roll back 3- to 4-inches at each end of cut piece to provide a strong, clean edge to work with. Set wire circle in place for compost pile and secure ends with clips or wire ties. Space wood or metal posts around perimeter inside wire circle. Pound posts firmly into the ground while tensing them against the wire to provide support.



If using hardware cloth, trim ends flush with a cross wire to eliminate sharp edges. Apply file to wire along each cut edge to ensure safer handling. Bend hardware cloth into circle and attach ends with clips or ties. Set bin in place for composting. Bins made with hardware cloth should be strong enough to stand without posts. Plastic coated mesh bins are made in the same manner, taking extra effort to bend into circular shape. Also filing the wire ends may cause the plastic coating to tear. Striking the end of each wire with a hammer will knock down any jagged edges.

### Constructing a Five Panel Bin

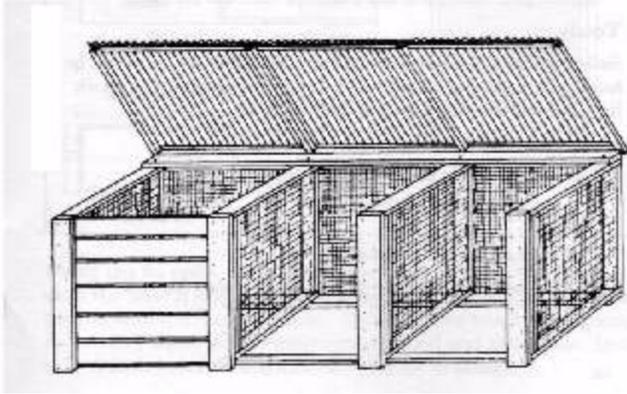
Cut five 3-foot long sections of 24-inch wide wire mesh. Make cuts at the top of the next row of squares to leave 1-inch long wires sticking out along one cut edge of each panel. This edge will be the top of the bin. Use a pair of pliers to bend over and tightly clamp each wire on this edge. Attach panels using clips or wire ties.

### Some Helpful Tips

Bend, file or break off all exposed wire ends for protection. The Five Panel Bin can be enlarged or reduced depending on amount of compost. Simply add or remove panels. Garden waste, yard waste and raw vegetable trimmings are appropriate for composting. See the section on worm bins for more on composting food waste.

## How to build Wood & Wire 3 Bin Systems

This bin system is designed as a turning unit to compost large amounts of yard wastes in the shortest period of time. It also works well for storage until enough material is collected for an entire bin. Gardeners benefit the most from this system because the fresh compost is generated so rapidly.



### 3 Bin System Materials

(250) wire staples or staple gun

(1) 12 foot sheet clear corrugated fiberglass

(1) 8 foot sheet clear corrugated fiberglass

(22 ft.) of 26 inch wide hardware cloth

(3) 8 foot lengths of wiggle molding

(8) flat 4 inch corner braces with screws

(4) flat 3 inch T-braces with screws

(2) 3 inch zinc plated hinges for lid

(2) 18 foot 2x4s

(8) 12 foot 2x4s

(1) 16 foot cedar 2x6

(3) pounds of 16d galvanized nails

(9) 6 foot cedar 1x6s

(12) • inch carriage bolts 4 inches long

(40) gasketed aluminum nails for corrugated fiberglass roofing

(12) nuts and washers for bolts

(1/2) pound of 8d galvanized casement nails

*Cost: Approximately \$150. Less if recycled materials are used.*

### Tools

Safety glasses and ear protection, hand or circular saw, drill with 1/2 inch and 1/8 inch bits, screwdriver, hammer, tin snips, tape measure, pencil, 3/4 inch socket wrench and a carpenter's square. As an option you can use a power stapler with 1-inch long galvanized staples

### Construction

#### Build dividers

Cut (2) 32 inch and (2) 36 inch pieces from each 12 foot 2x4. Butt end nail the four pieces into a 35x36 inch rectangle. Repeat for the other three sections. Cut (4) 38 inch long sections of hardware cloth and bend back edges (1) inch for strength. Staple hardware cloth onto the frame tightly every 4 inches around edge.

#### Set up the dividers

Set up the dividers parallel to one another, 3 feet apart. Cut (4) 9 foot pieces out of the (2) 18 foot 2x4s. Place (2) 9 foot baseboards on top of dividers. Measure, mark and centerlines for the positions of the two inside dividers. Place the two outside dividers flush against the outer edge of the 9-foot 2x4s. Drill a 1/2 inch hole down the center of each junction centered 1 inch in from the outside edge. Secure baseboards with the carriage bolts, but do not tighten yet. Turn the unit right side up and repeat the process for the top 9-foot 2x4. Make sure the bin is square, then tighten all bolts securely. Fasten a 9 foot long piece of hardware cloth securely to the backside of the bin (again, bend back 1 inch for strength) and staple every 4 inches around the frame.

#### Slat guides and runners.

Cut the 16-foot 2x6 into (4) 36 inch long pieces for front slat guides. Rip cut two of these boards to 4-3/4 inches wide. Nail them flush against the edges of the two front outside dividers and baseboard. Save the two remaining 1-1/4 inch of the rip cut boards for use as back guides. Center the remaining 36-inch 2x6 cedar boards on the front of the two inside dividers, flush with the top edge, and nail them securely.

To create back guides, cut the remaining 2x6 into a 34 inch long piece and then rip cut into 4 equal pieces, 1-1/4 x 2 inches. Nail the six back guides parallel to front slat guides on each side of divider, leaving a 1-inch gap for the slat runners. Cut all the 1x6 cedar boards into runners, 31 inches long. Slide the runners in between the front and back guides.

### Build the lid

Use the last 9-foot 2x4 for the frame of the back lid. Cut four 32-inch 2x2s and one 9-foot 2x2. Lay out into position on ground and check for squareness. Screw in corner braces and T-braces on the bottom side of the frame. Center lid frame, brace side down on bin structure and attach with hinges. Cut wobble board with 1/8-inch drill bit and nail onto frame with 8d casement nails. Cut fiberglass to fit flush with front and back edges. Overlay pieces at least one channel wide. Pre-drill fiberglass and wobble board for each hole. Nail on top of every third hump with gasketed nails.

## How to Build a Worm Composting Bin

Although worms are not commonly considered man's best friend, they most certainly can be a partner in recycling food wastes. Worms can turn your kitchen scraps into a high-quality compost in an easy-to-build worm bin. This bin can be used year round to recycle most food wastes. Optimum temperatures for worm bin composting are below 84°F and above freezing.

### Worm Bin Materials

- (1) 1/2 inch treated sheet of plywood
- (2) pounds 6d galvanized nails
- (1) pound 16d galvanized nails
- (2) galvanized door hinges with screws
- (1) 12 foot long 2x4
- (1) 16 foot long 2x4

Cost: Approximately \$50, less if recycled materials are used

### Tools

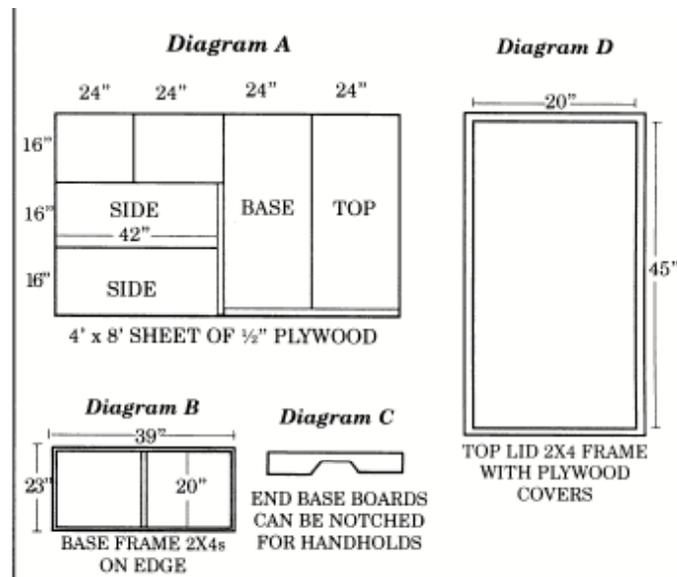
Safety glasses and ear protection, tape measure, skill or rip hand saw, hammer, saw horses, long straight edge or chalk line, screwdriver and drill with 1/2 inch bit.

### Construction

#### Cut plywood as indicated in Diagram A

- (2) 24 x 16 inch ends
- (2) 16 x 42 inch sides
- (2) 23 x 42 inch base and top

Most lumber stores will be happy to cut these for you.



#### Build base as shown in Diagram B

Measure and cut the 12-foot 2x4 into five pieces: (2) 39 inch, (2) 23 inch and (1) 20 inches long. Following the diagram, nail the 2x4s together on edge using (2) 16d nails per joint. Nail the plywood base piece onto the 2x4 base frame.

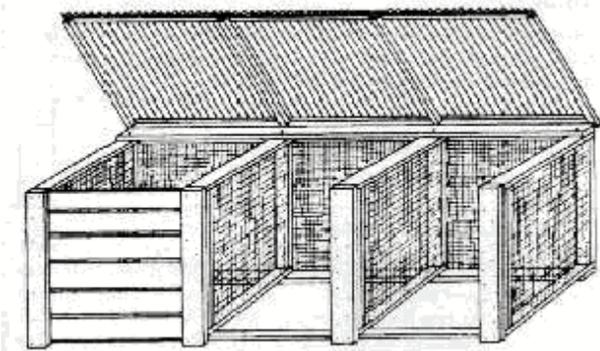
#### Build sides as shown in Diagram C

Cut (4) 1-foot lengths out of the 16-foot 2x4. Take each plywood side piece and place a 1 foot 2x4 under each of its ends so that the 2x4 is flush with the top and side edges of the plywood.

Using the 6d nails, nail the 2x4s into place. Then nail the sides onto the base frame. To complete the box, nail the plywood end boards onto the base and sides. Reinforce the box by staggering nails every three inches wherever plywood and 2x4s meet. Drill (12) ½ inch holes through the bottom for drainage.

**Top it all off as shown in Diagram D**

To build the lid, take the remaining 12-foot 2x4 and cut it into (2) 45 inch pieces and (2) 20 inch pieces. Lay these pieces flat, shorter pieces on the inside, on top of the plywood piece as shown in Diagram D. Leave a 1-½ inch inset all around the perimeter edge of the plywood. Nail the plywood onto the 2x4s securely with the 6d nails. Fasten a door hinge 2 inch by 2 inch from each end of one 45-inch piece. Finish attaching hinges by securing each hinge end onto the top of the side supports. When finished, the lid will stand upright when opened, and overlap slightly.



*We would like to thank the following for their assistance in preparing this publication:*

*Gardener's Supply, Burlington, Vermont  
Pierce County Utilities—Solid Waste Division  
Seattle Solid Waste Utility  
Seattle Tilth Association  
Washington Department of Ecology  
Jefferson County Department of Public Works  
Jefferson County Environmental Health Department*

**Jefferson County Environmental Health**

615 Sheridan Street  
Port Townsend, WA 98368  
(360) 379-4458 (360) 379-4491  
mpearson@co.jefferson.wa.us  
mbower@jefferson.wa.us

**FOR MORE INFORMATION**

Call the **Recycling Hotline at 1-800-RECYCLE** or **(360) 379- 4458** if you would like more information about these or related topics:

- Group presentation about recycling and waste reduction at
- Work or at home • Commercial waste consultation
- Recycled paper
- Home recycling systems
- Local drop-off recycling centers