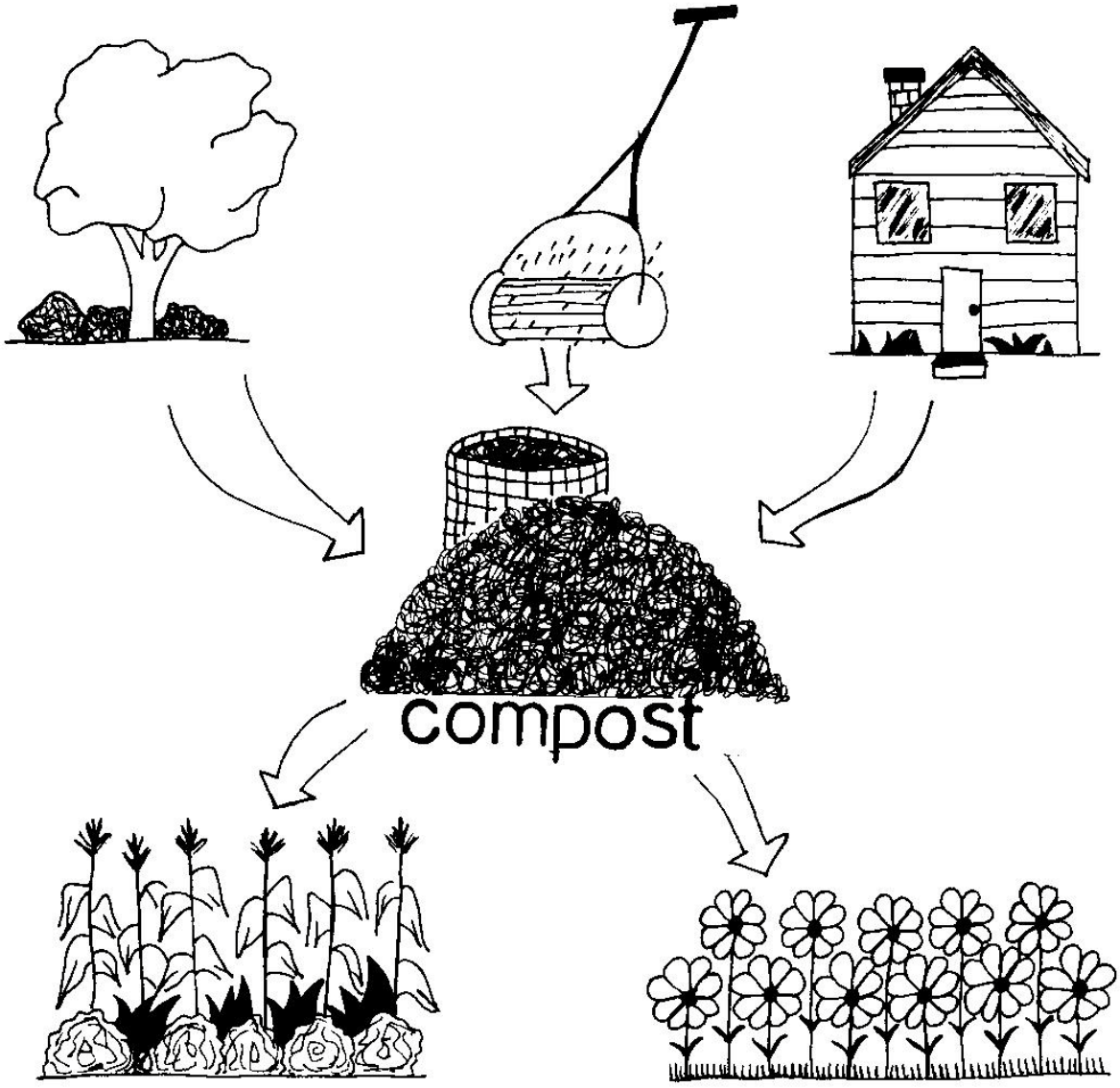
KEEP IT AT HOME: COMPOST



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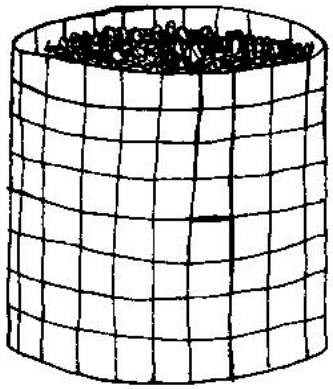
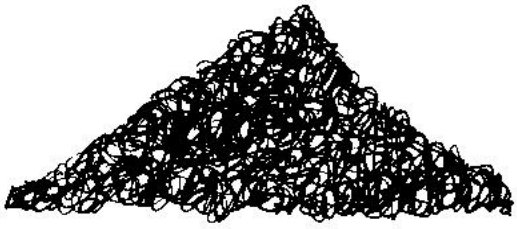
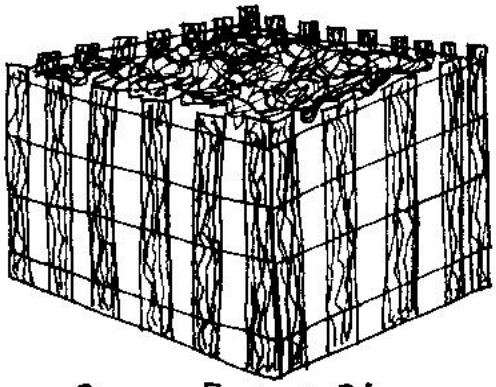
COMPOST BINS



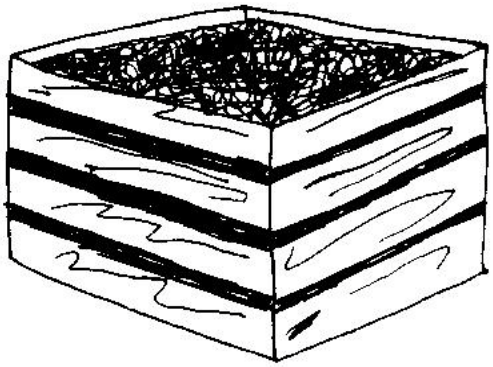
Wire Mesh Bin



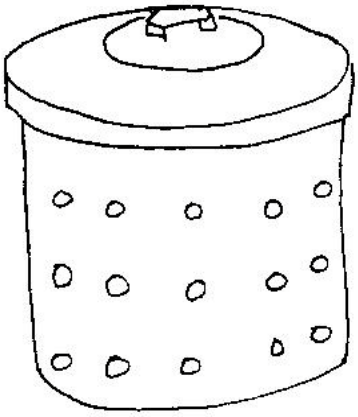
Compost Mound



Snow Fence Bin



Wooden Box Bin



Garbage Can Composter

Worm Composting Bin

WHY SHOULD I COMPOST?

Yard wastes are recyclable and are a valuable resource. In nature, organic materials fall to the ground and decay over a period of up to two years resulting in humus. In composting, it's simply called compost. Composting is the procedure by which people can dramatically speed up the natural process of decay. The process is sped up by maintaining moisture, having the right mixture of materials, and providing oxygen. Microorganisms, such as bacteria and fungi, break down the materials. By providing them an ideal environment, they work efficiently to quickly break the materials down into compost. Other microorganisms like sow bugs and centipedes will also find their way into the compost pile and help in the composting process.

Organic materials such as leaves, grass clippings, and garden wastes make up as much as 20% of the material buried in landfills, but they are perfect for composting. Landfilling or burning these materials wastes a resource that is easily reused without the negative effects of filling our landfills or creating more air pollution.

In the end, you will create less garbage to be landfilled, and you will have created a natural fertilizer for your garden and shrubs.

TOP REASONS TO COMPOST

1. Returns nutrients and organic matter to the soil.
2. Replaces the need for other fertilizers. Compost replaces some nutrients to the soil so that you do not have to use as much fertilizer. It is not a complete fertilizer in itself.
3. Reduces rainfall runoff. Compost cuts down on soil erosion and protects the important top layer. The compost also allows plants time to absorb the moisture by holding it for a longer period of time.
4. Helps to build a sound root system. Compost produces a loose soil to make growth easier.
5. Attracts and feeds earthworms. Earthworms help in aerating the soil and improving quality.
6. Keeps soil easier to cultivate.
7. Makes clay soils porous so that they can drain properly.
8. Gives sandy soils body to hold moisture.
9. Balances pH of the soil.
10. Helps control weeds.
11. Attractive surface to cover the soil.
12. Prevents soil spattering and keeps fruit and flowers clean.
13. Extends growing season. The compost provides a thermal buffer that protects young plants and gardens against an early frost, fall or spring.
14. Keeps soils cooler in summer and warmer in winter.

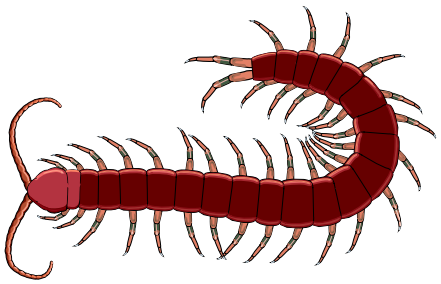
15. Reduces waste going to the landfill.
16. Saves you and your municipality money.
17. It keeps compulsive recyclers busy by opening a whole new realm of things that can be recycled.

BROWN AND GREEN MATERIALS

There is no wrong way to compost. No matter what you do, things will eventually decay. There are, however, ways to speed this process and make it more efficient. By having the correct ratio of brown to green materials within the pile, ratio meaning the amount of brown materials versus the amount of green materials, it will achieve the needed temperatures to allow for composting and decay. Browns are materials with high carbon content. Greens are materials with high concentrations of nitrogen. Nitrogen is needed for the rapid decay of the composting material. The more nitrogen that you have within your pile, the faster it will decompose. Some common greens are things such as: grass clippings, food scraps, and manures. Examples of brown materials would be dry leaves and woody materials. Using too many browns in the pile will slow the process and will not generate enough heat. If too many greens were to be used, the moisture may be too high and odors will be produced. The ideal ratio for brown and green materials is 3:1. That is 3 parts brown to 1 part green. Following is a more complete listing of some browns and greens.

COMMON BROWN AND GREEN MATERIALS

GREEN MATERIALS	BROWN MATERIALS
Grass clippings	Leaves
Vegetable wastes	Bark
Manure	Wood chips/sawdust
Coffee grounds	Straw
Pumpkin shells	Pine needles
Alfalfa	Twigs
Seaweed/pond algae	Feathers
	News print/shredded paper
	Paper towel/ toilet paper tubes



THE COMPOSTING WAY

Compost happens. The composting procedures listed below are simple and do not require any special equipment or supplies. The only equipment that will be needed is a shovel or pitchfork to turn the pile, and a container to transfer water to the pile if it becomes too dry. All of these will provide the same end result: a rich addition that will enhance the quality of any soil. The different methods that can be used depend on the amount of time and materials that a person wishes to devote to the procedure. By following any one of the following procedures, you will effectively produce compost. There is no wrong way to compost. If you forget to turn the pile or forget to maintain moisture, you will still end up with compost. After all, compost happens.

Composting procedures:

A. **Choose location for your pile**

Choose a partly shaded location that is convenient for your needs. For example, place the pile near your garden and/or a water supply. This location will make it easier for you to transport water to the pile if it needs moisture, and when it comes time for you to transport the readied compost to your garden, the distance and the effort will be reduced.

In addition, the location should be large enough for the amount of materials that you intend to compost. Do not place a pile against wooden buildings or the trunks of trees. They will eventually decay along with the compost.

B. **Choose bin**- This step is optional.

If you decide to use a bin, commercially produced or home-made versions can be used. There are a number of factors that go into choosing a compost bin. One is the amount of yard waste that is available to you for composting. In general, your pile should be no smaller than 27 cubic feet by volume (3' x 3' x 3'). Piles smaller than this do not hold heat well, slowing the process. It should not exceed 125 cubic feet by volume (5' x 5' x 5'). If the pile was any larger, it would get too hot and would kill the microbes responsible for the decomposition, again slowing the process.

Home-made bins are usually less expensive and can be custom made to suit your specific composting needs. Commercial bins can range in price from $50 to more than $100. Despite the cost, the appearance of such a bin is pleasing to the eye. Also, the manufacturers construct some of these bins in a way that will allow them to be turned much easier than some home-made versions.

C. **Add materials**

1. Standard composting method- yields compost in about 6-7 weeks

Begin by making sure that you have the correct 3:1 ratio of brown to green materials to make the pile. The correct mixture creates an ideal environment for the decay of the yard waste into compost. First place a 4-6 inch layer of brown materials into your bin. Next, add your green material. On top

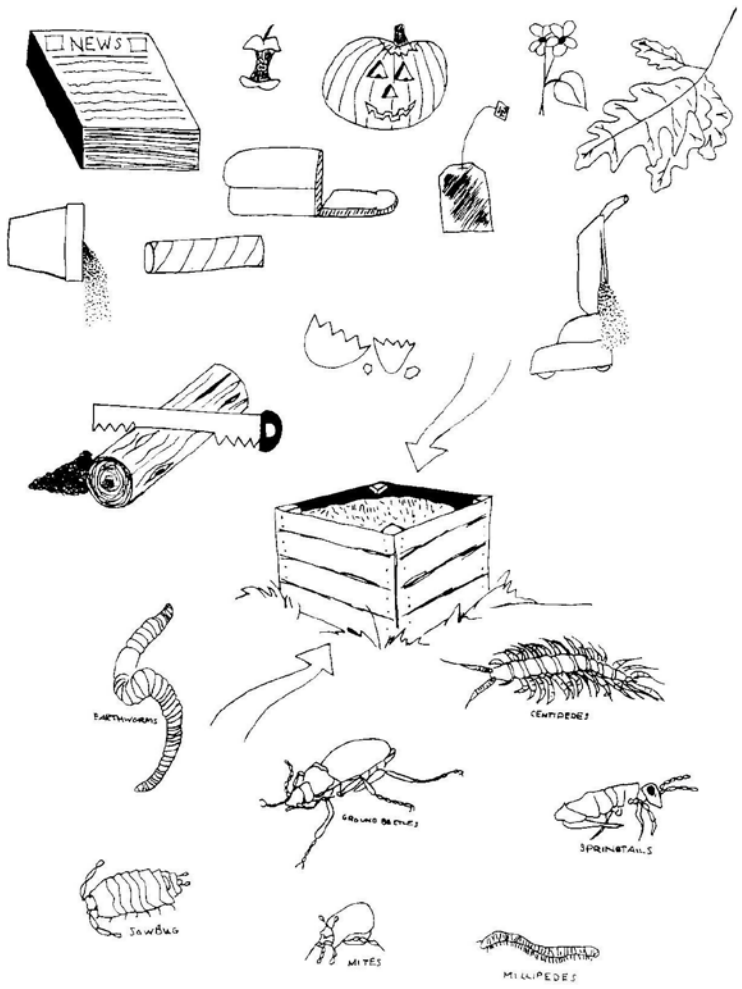
of the green layer, sprinkle some soil or compost. This will introduce the organisms that break the materials down. Repeat the layering until you run out of materials.

If green materials are scarce, a high nitrogen substitute can be used to replace it. Use approximately 2 ounces for every bushel of brown materials to be composted.

The next step is to ensure the appropriate moisture level has been attained. Take a handful of the yard waste and squeeze. It should produce a couple drops of water. If it does not, add water. If it produces more than a couple drops, add dry material to the pile.

Wait approximately one week after the completion of the pile before the first turning. Turning provides oxygen to the organisms working within the pile. When turning your pile, check the moisture to ensure that it is still at the appropriate level. Continue to turn the pile until you have finished compost.

2. Fast Composting Method-yields compost in about 4-5 weeks
Follow the above steps. Make sure that you have enough green materials in the mixture. Also, make sure that the materials added are shredded. Wait for three days after the completion of the pile to turn for the first time. Once again, make sure the moisture of the pile is at the appropriate level. Continue to turn every three days for the next two weeks. After this two-week period, the temperature within the pile should start to lessen. The compost should be brown and crumbly. This should be aged for about two weeks before being used.



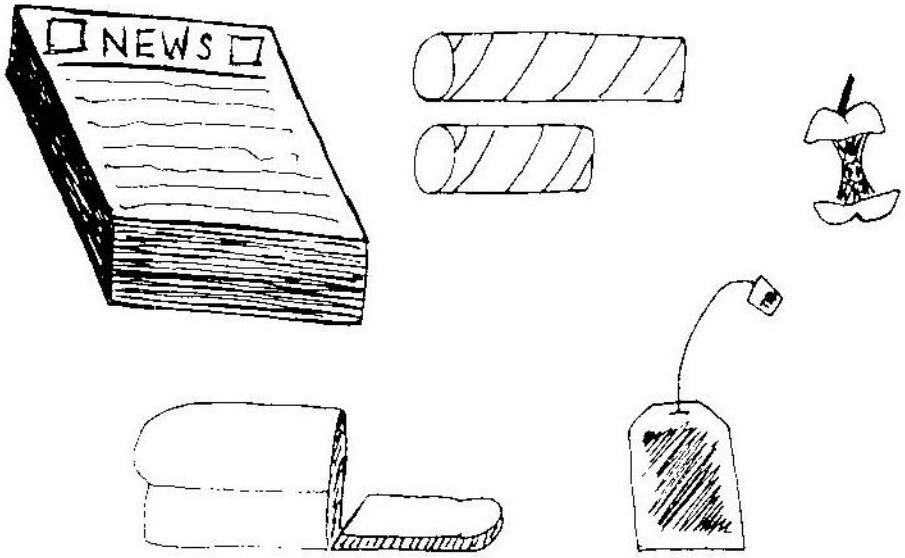
3. Slow Composting Method-yields compost in about one to two years
Build the pile with materials as they become available. The ideal mixture does not need to be followed when using this technique. This method requires no maintenance.

D. **Use the compost**
The compost has many different uses and benefits. These will be described in more detail further into this booklet.

WHAT CAN BE COMPOSTED

Grass clippings	Leaves	Flowers
Evergreen needles	Old plants	Old potting soil
Twigs	Annual weeds	Manure
Hay and straw	Egg shells	Vegetable and fruit scraps
Bread and grain	Coffee filters	Tea bags
Wood ashes	Sawdust	Newsprint
Clothes dryer lint	Vacuum dust	Shredded paper
Paper towel and toilet paper tubes		

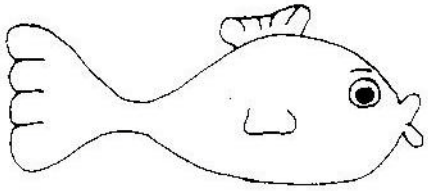
All of these materials may be added to your compost pile. If vegetable and fruit scraps, bread and grain materials, or coffee filters are added to the pile, they should be buried into the pile so they don't attract animals. If newspaper is added to the pile, it should not make up more than 10% of the pile. This would throw off the brown to green ratio described earlier.



NOTE: Plants that have been treated with pesticides can be composted, however, the chemical must be allowed to break down before it can be used. Check with the manufacturer for specific breakdown times.

WHAT *NOT* TO COMPOST

Meat, poultry, or fish	Dairy products	Cooking oil/oily foods
Diseased plants	Pet feces	Invasive weeds
Weeds with seeds		

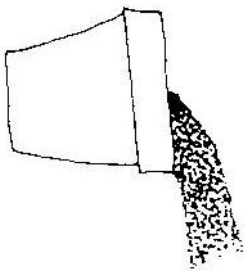


Although most organic materials can be composted, there are some that should be avoided. Meat, poultry, fish, and dairy products should not be added because they will produce unpleasant odors,

attract animals, and take longer to break down. Diseased plants should be avoided because the disease might be spread to your vegetable or flower garden. If weeds with seeds are placed within the pile, the seeds might survive and live to spread throughout your garden. Pet feces produce odors and can carry potentially harmful disease as well.

USES OF COMPOSTED MATERIAL

If the compost is used as a soil amendment, it will break up the consistency of the soil and make it productive. For example, if you are working with a tight clay soil, the compost will break this up and give plants room to grow. Researchers claim that compost suppresses some plant diseases.



Compost can be used as a mulch to replace peat moss, bark nuggets, straw, etc. If you are planting a flower or vegetable garden, you would want to use a 1-2 inch layer throughout its entirety. If, on the other hand, you were using the compost around trees or shrubs, use a layer that was 3-4 inches deep. Do not place thick layers of mulch against trunks or stems of plants.

Compost can also be used as a potting mix. Sift the larger particles out of the compost. A simple screen can be made with 2-inch hardware cloth and a wooden frame. No more than one quarter to one third of the total potting mix should be compost.

SEASONAL USES FOR YOUR COMPOST

Fall: To help add insulation and protection for young plants in preparation for winter, apply as mulch. It may also be worked into the ground to condition the soil in preparation for spring.

Winter: Mature compost may be stored without any worry of odors, ready to be used in the spring. The finest material may be used for indoor plants. There will be little activity in your composter over winter but continue to feed it with your kitchen wastes. By spring, you will have plenty of material to add to it from your spring cleanup in your garden.

Spring: This is the best time to apply your compost as a plant food, when plants need nutrients most. Apply at least 1 inches as a top dressing and if you have more, dig in a few inches to improve soil structure.

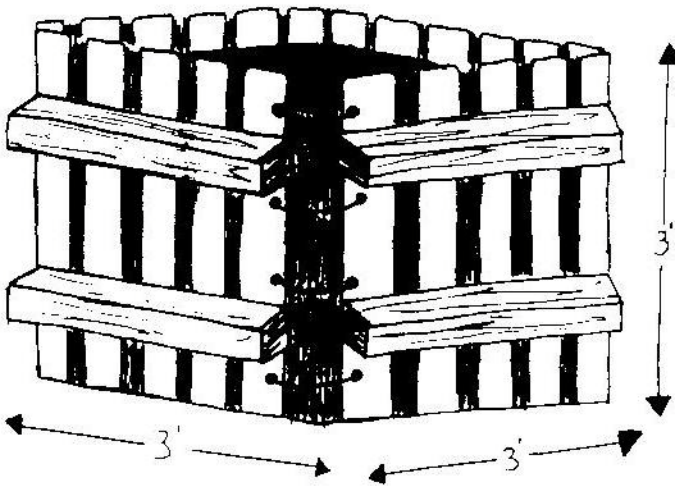
Summer: Used as a mulch, compost prevents drying out by retaining moisture and this cuts down the need to water as frequently. A dressing around the roots stops weed growth, and unlike other mulches, will break down further and continue to give plants nutrients.

BINS

Using a bin will make the upkeep of the composting material easier to handle, and may make the procedure more efficient. There are a number of homemade and commercial bins available. Below is a list of some bins that you can construct at home.

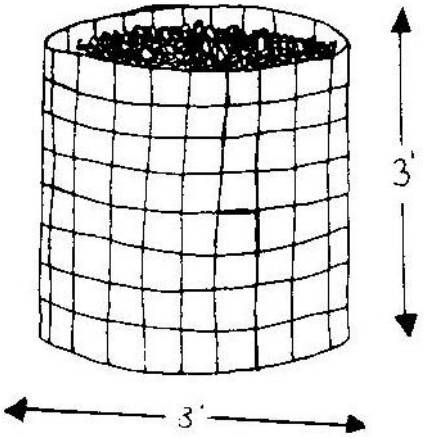
THE PALLET BIN

This is one of the easiest and most cost-effective bins to make. Acquire four used shipping pallets. There are many establishments that simply throw these away. Place the four pallets upright to form a square. Tie the four corners with wire, string, rope, or anything else that will secure them. Make sure that the corners are secure. The air flow and efficiency of your bin can be increased by adding a fifth pallet as a floor. A tarp or used carpet can be placed over the bin to keep out the rain or snow. This will also prevent moisture loss during dry weather. Any type of comparable material can be used in the construction of a bin like this.



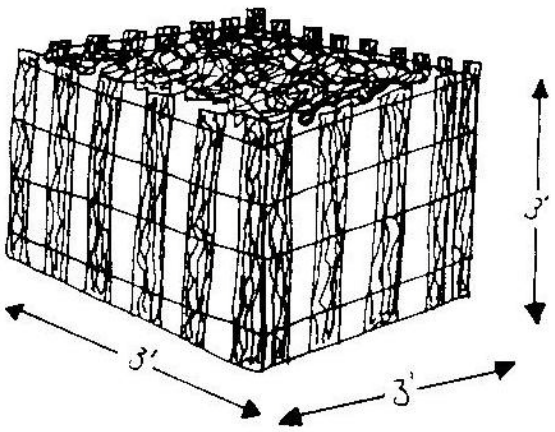
WIRE MESH BIN

This bin requires an 11 foot by 3 foot section of medium-gauge fence wire. Tie the ends together to form a circular hoop. A bin with these dimensions will hold approximately 27 cubic feet of compost. This is a very convenient bin that is inexpensive and collapsible. To break the bin down, simply unfasten the ends and roll up the fencing.



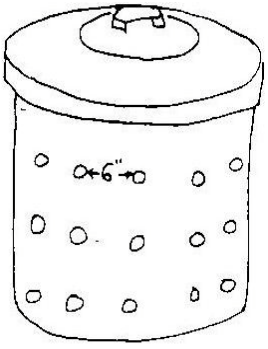
SNOW FENCE BIN

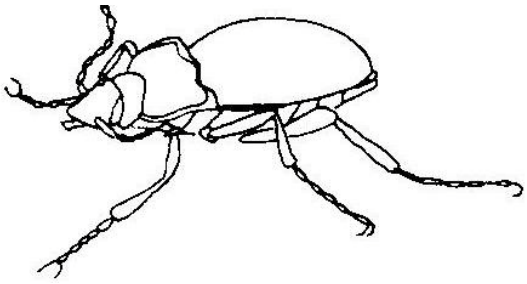
This is another collapsible bin. Obtain 11 feet of snow fencing. Tie the ends together to create the circular design once again. This operates in much the same way as the wire fencing. If either one of these bins (wire or snow fencing) seems too flimsy, you can tie it to a metal stake or pipe that has been driven into the ground. When the pile needs to be turned, untie the bin and set it up beside the pile. Take the material out of the pile and replace it into the transplanted bin. This is a convenient and easy way to turn the pile. A thirteen foot section can be used to make a square bin instead of the circular one described earlier (see diagram).

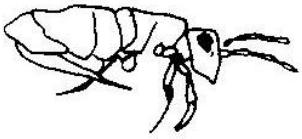


GARBAGE CAN COMPOSTER

Obtain a lidded garbage can. Drill three rows of holes approximately 4-6" apart. These holes should be around 1-2" in diameter. These holes allow air flow and excess moisture to drain out of the bin. Place about 2 to 3 inches of dry sawdust, wood chips, or straw in the bottom of the bin to absorb excess moisture and to allow the bin to drain properly.

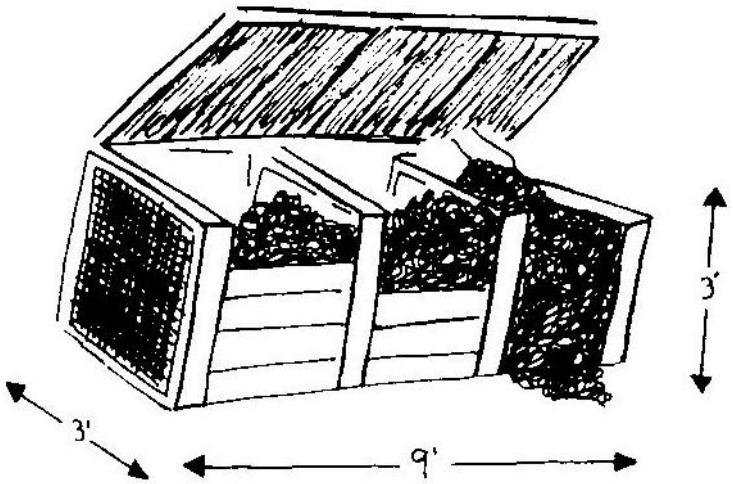


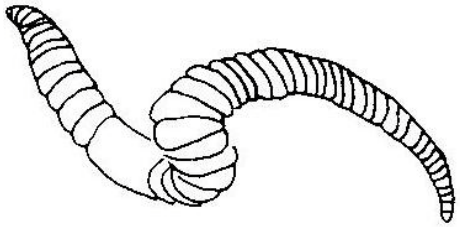


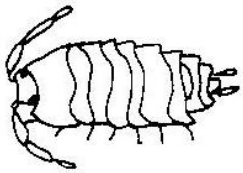


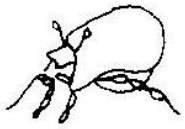
THREE BIN UNIT

This bin system can be made with a number of materials. Make a three sided, rectangular structure. The most popular material to make this out of is used pallets or concrete blocks. This structure should be three (3) feet wide, three (3) feet high and nine feet long. Separate this into three compartments and enclose the front of the structures. This makes them neater but is not essential. This system is nice because every time the pile needs to be turned, the composting material can be transferred from one compartment to the next forming a chain type effect. The first compartment is for new material to be added to the bin. The second compartment is for material that is in the middle stages of decomposition. The third compartment is for material in the final stages. This structure has more support to it, is sturdier, and is also convenient. A lid is optional in this version.









MATERIALS NEEDED TO MAKE YOUR OWN COMPOST BIN

Pallet bin-
- 4 or 5 wooden pallets
- Wire, rope, or any other connecting material

Wire mesh-
- 11'x3' section of medium gauge wire fencing
- Wire, rope, or any other connecting material

Snow fence-
- 11' of snow fencing
- Wire, rope, or any other connecting material

Garbage can-
- Garbage can with a lid
- Drill with medium to large drill bit
- Dry sawdust, straw, or wood chips

Three bin system-
- 10 wooden pallets
- Wire, rope, or any other connecting material

WINTER COMPOSTING

No, you can't compost in winter, but you shouldn't stop saving kitchen waste for composing just because your composter is full of fall garden materials.

Start a second compost bin for winter collection of compostable materials.

1. Place your second bin near your kitchen door.
2. Put about 12 inches of fall leaves in the bottom and moisten to pack down.
3. You can start adding kitchen waste in November (after the first frost) but do not mix it with the leaves at this stage.
4. During the winter the kitchen waste will freeze and there will be no odor.
5. When the warm days of spring arrive, the material will thaw out. Then you should thoroughly mix the leaves and kitchen scraps together.
6. If you really chop up the kitchen waste, the mixture will break down rapidly, producing a better quality compost with a finer texture.
7. If you notice any odor, the compost needs more oxygen. This can be done by turning the pile. This will also help to dry the pile if it is too wet, which will also cause odors.
8. It's a short trip to your composter in the winter, and it beats carrying your kitchen waste to the curb on garbage days. You are also helping to save the energy used in hauling and disposing of garbage as well as savings valuable material for composting. Remember you can never have enough compost.

Compost Troubleshooting Guide

Problem/Symptom	Cause	Solution
Rotten Odor	Excessive moisture	Turn pile or add dry materials (sawdust, leaves, straw, woodchips, or paper)
Rotten Odor	Compaction	Turn pile to aerate
Ammonia Odor	Too Much Nitrogen	Add carbon source (sawdust, leaves, woodchips, or straw)
Pile Center Dry	Not enough water	Moisten pile while turning **(Do not make soggy)**
Pile damp and warm in the middle only	Pile is too small	Collect more materials and make the pile larger
Pile damp, sweet smelling, but not heating up	Lack of Nitrogen	Add nitrogen sources (grass, manure, blood meal, or fertilizer)
Very dry weather	Not enough water	Add water every few days
Very wet weather	Too much water	Cover pile with tarp or bag. Add dry materials.
Pests – raccoons, rats, skunks, or insects	Presence of meat scraps or fatty food wastes	Remove meat or fatty foods or cover with a layer of soil or sawdust. Build an animal proof bin or turn pile to speed breakdown.
Can squeeze a large amount of water	Too much water	Turn and add more dry materials and cover the pile.
Pile cold to the touch (except during winter)	Not enough Nitrogen	Turn and add high Nitrogen (green) materials
Pile extremely hot to the touch	Too much Nitrogen	Turn and add soil or brown materials, also water as needed

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Recycling/Solid Waste Department

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