

Outline for a Home Composting Presentation

These are the essential points your presentation should include. The format and style you use to convey them should be whatever you feel most comfortable with - feel free to use your creativity (there are probably a million ways to compost). If you are comfortable giving your presentation, your audience will be supportive. If you feel nervous, just imagine you are explaining the benefits and ins-and-outs of composting to a group of friends in your living room.

What composting is:

- Managing the natural recycling system of decomposition, which converts organic material into humus.

Why compost:

- Produce valuable soil supplement;
- Reduce amount of waste needing disposal by landfill or incineration;
- Save on disposal costs;
- Save on garbage bags and leaf bags;
- Reduce pollution created by waste collection vehicles;
- Other (add your own).

Who does the majority of the work:

- Microorganisms (bacteria, molds, fungi), earthworms, insects, other soil organisms.

Requirements of the decomposers:

1. **Food.** Organic material, ideally in a carbon:nitrogen ratio of 30:1. A “recipe” of three parts “browns” to one part “greens” is best because it approximates a 30:1 carbon to nitrogen ratio and prevents odors from developing. Maximize surface area by shredding or chopping.

Yes	No
<p><u>Brown</u></p> <p>Fall leaves</p> <p>Straw</p> <p>Brown hay</p> <p>Paper</p> <p>Coffee filters</p> <p>Sawdust</p> <p>Wood chips</p> <p>Wood ash (thin layers)</p>	<p><u>Green</u></p> <p>Grass clippings</p> <p>Weeds (without seeds)</p> <p>Fruit and vegetable scraps</p> <p>Manure (not dog or cat)</p> <p>Coffee grounds, tea bags</p> <p>Egg shells</p> <p>Bread and grains (if bin is rodent resistant)</p> <p>Seaweed</p>
	<p>Meat, bones, fat, grease</p> <p>Peanut butter, oils</p> <p>Dairy products</p> <p>Cooked foods w/butter or sauce</p> <p>Dog and cat manure</p> <p>Branches</p> <p>Diseased plants</p> <p>Weeds gone to seed</p> <p>Weeds that spread by roots and runners</p>

2. **Air.** Oxygen is needed by aerobic organisms. Anaerobic organisms produce gases that smell like rotten eggs.

3. **Moisture.** The organisms need a thin film of moisture to live in. Compost should be

about 50% moisture, about as moist as a wrung out sponge. If leaves rustle, they're too dry.

4. **Volume.** Pile should be large enough to maintain heat, minimum of 3'x3'x3'.

Bins

- Help pile hold in heat and moisture;
- Look neater than loose piles;
- In urban areas, a rodent-proof bin must be used;
- Wide variety of styles to choose from .

How to make compost:

- Choose a shady location; if in sun, cover pile to prevent drying;
- Use a bin - select a style appropriate for your situation;
- Layer the materials in the bin in 2"-8" layers or as available, striving for 3 parts "brown" ingredients to one part "green" ingredients;
- Sprinkle soil or finished compost between the layers;
- Wet leaves and other material if it is not moist (should feel like a damp sponge) as you add them;
- Try to build pile so air can penetrate inside, this reduces the need for turning;
- If composting vegetable scraps, bury them in the center of the pile;
- Turn or mix the pile occasionally to introduce a fresh oxygen supply.

How and when to use compost:

- Compost should be ready in 6 months to a year;
- Should look like dark brown, crumbly soil, can't recognize original ingredients;
- Apply about 3" deep to soil and mix in with top 4" of soil, about a month before planting time;
- Or mix equal parts compost, soil and sand for a potting soil mix;
- Or till under in fall, will break down over winter. Soil will be ready to grow great crops.

Free brochures on home composting are available from Massachusetts Department of Environmental Protection, 617-292-5834, or on-line at www.mass.gov/dep/recycle/reduce/composti.htm.

A 17 minute how-to video entitled "Home Composting; Turning Your Spoils to Soil" should be available at your local library. If it is not, the librarian may call the DEP Waste Reduction Coordinator at (617)292-5834 to request one.

Alternative: If no yard, try composting indoors using a worm bin. Worm composting information is available at www.mass.gov/dep/recycle/reduce/composti.htm.

Sample Script for Home Composting Presentation
By Ann McGovern, DEP Composting Program

Backyard Composting:
Harvest Your Yard Wastes, Don't Throw Them Away!

Intro

Nature has provided a natural recycling system that converts all organic material into humus. Controlling that process is called composting and it enables us to turn this (a pile of leaves and grass clippings) into this (a pile of finished compost). The end product is called compost, a valuable material to anyone with gardens, shrubs, lawns, houseplants, even planter boxes. Compost added to the soil results in healthier plant growth because it improves soil structure, adds nutrients, helps retain moisture and provides a good environment for earthworms and other beneficial soil organisms.

An especially nice thing about composting is that anybody can do it. It's very simple, really, and can be adapted to almost any situation or lifestyle.

In addition to improving our soil, composting provides each of us with a way to help solve Massachusetts' solid waste problem. Organic materials such as leaves, grass clippings, brush, food scraps and soiled paper make up almost 50% of our solid waste, and by composting that material at home, you divert it from landfills and incinerators. Not only are you doing your part for the environment, but by composting, you also save on disposal costs and produce a valuable material for your own use.

The Composting Process

Composting is not difficult because most of the work is done by organisms that live in the soil and on the surface of organic material. The smallest and most numerous of these decomposers are naturally occurring bacteria. They are assisted by molds and fungi, mites, beetles, centipedes, millipedes and perhaps most popular among gardeners, earthworms. All these creatures play important roles in the food web of the compost heap.

What composting boils down to is providing the conditions in which these organisms flourish. Just like you, they need food, air, water and a habitable temperature. If you keep these requirements in mind, you will be a successful composter.

Food

What you add to your compost pile is the food for the decomposers. All organic material contains carbon and nitrogen in varying amounts. The microorganisms need carbon for energy and nitrogen to reproduce, and they are most productive when the ratio of carbon to nitrogen is about 30:1. Any good book on composting will list the carbon to nitrogen ratios of different materials, but the main thing to keep in mind as you build your pile is that dry, woody materials, like dried leaves, straw and cornstalks, are high in carbon and should be layered with materials like green weeds, grass clippings, or animal manure, which are high in nitrogen. Kitchen scraps are also high in nitrogen and must be composted with care so as not to attract unwanted animals

to the compost. **Do not add** meat, bones, fat, and greasy or oily foods. Keeping cooked foods out of the compost pile is a good rule of thumb for keeping out ingredients which could attract pests. Other materials which should **not be added** to the compost pile include cat and dog manure, diseased plants, weeds that have gone to seed, and weeds that spread by rhizomes, such as morning glory, ivy and quack grass (they may not be killed during composting and could take root wherever the compost is used.)

Since the bacteria and other microorganisms live and work on the **surface** of organic material, the more surface area they have to work on, the faster the material will break down. To increase the surface area of the material, chop or shred it first. This is especially helpful with tough, woody materials such as dry oak leaves or shrub prunings. Running over leaves with a lawnmower before adding them to the compost pile will speed up the composting process. If you have a bag attachment, you don't have to rake, just mow your lawn with the leaves on it and empty the bag into your bin.

Air

In order to keep your compost pile from developing unpleasant smells, oxygen must be available so that aerobic organisms will thrive. If the pile is too wet or too compact, anaerobic organisms will take over, creating odors of ammonia or rotten eggs. Oxygen is supplied to the inside of the pile by turning, and air passages should be built in while forming the pile.

Water

The soil organisms need a moist environment. The material should be damp, like a wrung out sponge, but not dripping wet. A good way to check for moisture is with the squeeze test. Squeeze a handful of material from your compost pile - it should feel damp, but no more than a drop of water should come out. Rain may keep your compost damp enough, but if we have a dry fall, you should wet the leaves well before putting them in the compost pile.

Volume

As the organisms go to work, they produce heat, which causes the temperature in the pile to rise. This creates a good environment for other heat-loving organisms to multiply, increasing the population of decomposers. To help the compost maintain its heat throughout the year, the pile must be large enough. 3' x 3' x 3' is the minimum volume found to maintain the heat of composting. If you don't have enough material to make a pile that large, don't worry. The material will still break down, it just won't happen as quickly. As the saying goes, there are no errors in composting, only long cuts.

Bins

Compost bins are preferable to open compost piles for several reasons. They look neater, keep out pests, and help the pile hold in heat. If you live in an urban area, the Massachusetts Dept. of Public Health requires the use of rodent-resistant compost bins.

Bins can be made of a variety of materials, including wood, wire, concrete blocks,

plastic, or a combination. There are unlimited styles of bins, and many can be made with little expense and labor.

There are two main categories of bins, holding bins and turning bins. Holding bins do not require turning, but they should be designed so that oxygen can penetrate the material. Turning bins enable you to turn the material on a regular schedule, producing finished compost in a shorter time.

The composting process can take from 6 weeks to over a year, depending on the method and materials used. Leaves may take over a year to break down if composted by themselves in a holding bin, but if they are mixed with grass clippings or manure and turned once a month or so, the compost could be ready in 6-8 months. And weeds from the garden can break down in 6 weeks. So the time to produce compost varies quite a bit, but you should end up with a nice organic soil supplement no matter how long it takes. You can determine your composting schedule based on your needs and your lifestyle.

How to Make Compost:

1. Choose a convenient, shady location for your pile.
2. Decide on which bin is best for you. Build or purchase it.
3. Gather the materials to be composted, keeping diversity and a good carbon to nitrogen ratio in mind.
4. Start with a layer of woody, bulky material such as cornstalks or small sticks to allow air passages in the base of the pile. If you are using a compost bin with a floor, start with a 1-3" layer of soil or compost on the bottom.
5. Alternate layers of high nitrogen materials with high carbon materials, with a sprinkling of soil in between. The thickness of the layers is not critical, but shouldn't be more than about 6" each.
6. Add water after you add each layer, if necessary.
7. If composting kitchen scraps, bury them in the center layers of the pile.
8. The temperature should go up to about 130 degrees F in a few days. It should feel warm inside. If it starts to cool down, turn it to introduce a fresh supply of oxygen.
9. Additional turning accelerates the process, but is optional.

Using Compost

You'll know your compost is ready to use when it is dark brown, crumbly and earthy-smelling and you can no longer recognize the original material. Apply a 3" layer of compost to the soil you want to improve and mix it in. It is best to incorporate the compost about a month before planting seeds. When transplanting seedlings or established plants, add a few handfuls of

compost to the hole and mix with soil when backfilling. During the summer, compost can be used as a side-dressing (by mixing it into the soil next to plants). In the fall, partially composted material can be tilled under, where it will break down over the winter.

So you see, composting is not difficult, and it's a great way to rejuvenate your soil while reducing the amount of solid waste needing disposal.

Harvest your yard wastes, don't throw them away!

Indoor Composting with Worms

If you don't have a backyard but wish to compost your kitchen scraps, try **vermicomposting**. This is a method of composting using red worms, also called manure worms. It can be done indoors, in a basement, heated garage or other convenient location that doesn't freeze. Red worms eat approximately their own weight each day; a pound of worms will eat a pound of organic material. That's a tough ratio to beat for efficiency, and luckily, maintaining a worm bin is relatively easy. It's a compact, convenient and odorless method of composting, and the end-product is a very fertile form of compost called worm castings. To find out how to set up a worm bin, see the fact sheet on vermicomposting distributed by DEP, or read Mary Appelhof's book entitled Worms Eat My Garbage, Flower Press, Michigan, 1982.