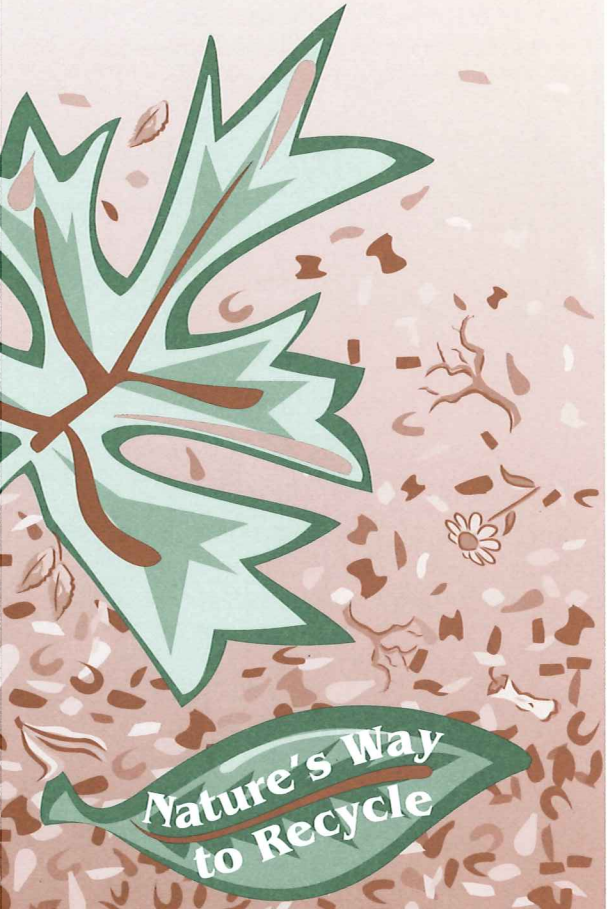
Guide to Backyard Composting



Brochure design courtesy of the City of San Diego

What is composting and why do it?

Composting is nature's way to recycle. It is the controlled natural decomposition of organic material, such as leaves, grass clippings, prunings, and fruit and vegetable scraps. Microorganisms break down these materials into compost, or humus, the nutrient rich soil product that results from proper composting.

Composting has many benefits for the homeowner and the environment:

Saves you money by conserving water and reducing the need to purchase commercial fertilizers and soil amendments.

Benefits your yard and garden by improving soil health and fertility and preventing erosion.

Conserves water by helping the soil hold more water and reducing the need for frequent watering.

Helps the environment by recycling valuable organic materials and extending the life of the landfill.

Getting started

Composting can be practiced almost anywhere...in your backyard, at work or school, even if you live in an apartment! All you need to get started composting is a little bit of space, a bin, and a basic understanding of the composting process.

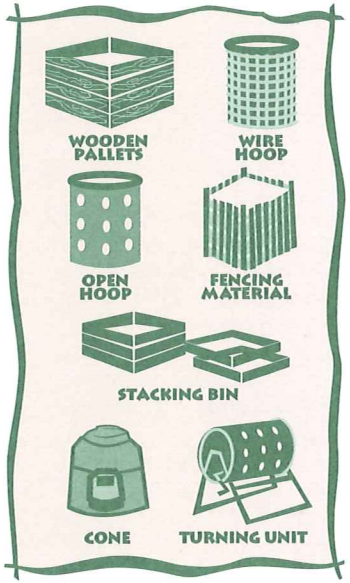
Space

Your compost pile will need an area about 3 foot square. Vermicomposting uses less space, and is better suited for apartment residents and small yards. The pile should be located in a partially shady spot, so that the sun doesn't dry out your compost too quickly. You may want to plan for extra space around your pile to make turning and harvesting your compost easier.

Compost Bins

A compost bin will help to keep your compost pile neat and tidy, deter rodents from digging in your pile, and help your pile retain heat and moisture during composting. Compost bins can either be homemade or purchased from a bin manufacturer. Ideally, your compost bin should be at least 3 feet wide x 3 feet deep x 3 feet tall. Even if your bin is not this large, it will work just fine if managed properly. Take the time to consider your options and the style of composting that is most convenient for you.

Homemade bins can be easily constructed out of wood, wire mesh, scrap pallets, or other materials commonly found in your home. Call the Rotline at (760) 436-7986 or visit solanacenter.org to get a set of plans for building your own bin.



Manufactured bins include turning units, cone-shaped bins, and bins with stacking tiers. These bins can be purchased at nurseries and garden centers, or mail-ordered directly from the manufacturer. To see examples of the different types of composting bins available, visit one of the Composting Demonstration Gardens at the San Diego Zoo, the Water Conservation Garden, or the Environmental Services Department Ridgehaven building. Call the Rotline for directions or to register for a free Saturday composting workshop at the gardens.

GETTING STARTED

Composting Basics

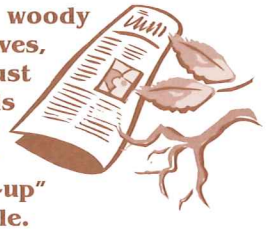
Making compost is a lot like cooking a meal. You take some basic ingredients, add water, mix well and let it "cook" over a given period of time. In as little as 12 weeks, you can have finished compost ready to use in your garden.

Ingredients

Four basic ingredients are required for composting: **GREENS, BROWNS, WATER, & AIR.** Mixing the proper amounts of these ingredients together will provide the composting organisms (microbes and insects) with enough nitrogen, carbon, moisture and oxygen to break down the material efficiently.

GREENS include grass clippings, green leaves, fresh prunings, and fruit and vegetable scraps. Be sure not to add any meat or dairy products to your pile.

BROWNS consist of dry, woody materials such as dead leaves, wood chips, twigs, sawdust and paper. These materials are best added to the pile after being shredded or chopped, and help to "bulk-up" and aerate the compost pile.



WATER is important in our climate. Your compost pile should be kept as moist as a wrung out sponge. Too little moisture will inhibit the composting process, and too much water can cause your pile to smell.

AIR is essential for a sweet smelling compost pile. Turning your compost pile once or twice a week will inhibit the growth of odor-causing anaerobic bacteria, and result in faster composting.

What Goes In the Compost Pile?

50% Greens: Fresh grass clippings, yard trimmings, horse or cow manure, fruit and vegetable scraps, coffee grounds & filters, tea bags, egg shells, breads.

50% Browns: Woody materials, dried leaves, ground-up branches and twigs, bark, straw, hay, sawdust, shredded paper or cardboard, wood ashes.

What Stays Out of the Compost Pile?

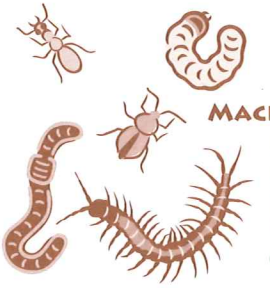
Meat, fish, poultry & bones.
Dairy products, oils, grease & lard.
Fresh weeds with mature seeds.
Dog and cat manure.
Charcoal or Duraflame ashes.
Treated wood products.

If in Doubt, Leave it Out!

Compost Critters

A handful of compost contains more decomposer organisms than there are people on the planet. These amazing little critters are responsible for making the whole composting process happen.

Microorganisms (bacteria and fungi) are the main workers of the compost pile. Although too small to see, they are on everything you throw into the compost pile.

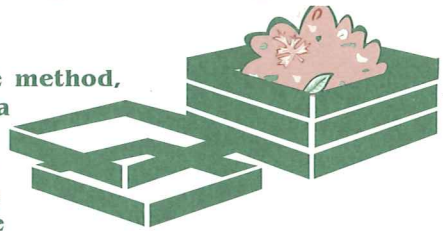


Macroorganisms (insects, worms, and grubs) are big enough to see. They usually enter the compost pile from the surrounding landscape in the later stages of decomposition.

Composting in Style

There are several different styles of composting. Some require more time and effort, but yield quicker results. Make composting convenient for you by choosing the style that best fits your needs and schedule.

Active Composting involves turning the pile on a regular basis and maintaining proper moisture and temperature levels. Some bins, such as stacking tiers and turning units, are designed to make turning and maintaining the pile easier.

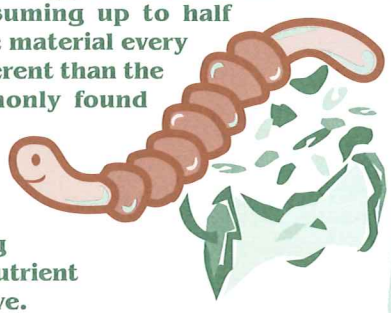


When using the active method, it is best to start with a full compost bin. This provides enough organic material to insulate the pile and keep the microbes working hard. You may want to stockpile some materials until you have enough to build a full pile. As you build the pile, layer your greens and browns and add water. Turn your pile at least once a week and add water if needed. Your compost should be kept moist, but not soggy. If your pile is too wet, add shredded newspaper or leave the lid off your bin until excess moisture is dried up.

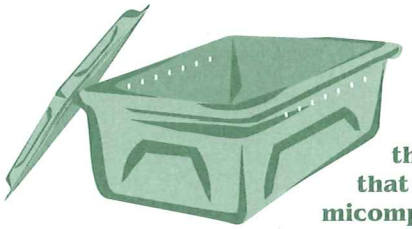
During the first few weeks of the composting process, the pile will heat up to temperatures of 120 to 150 degrees, helping to speed decomposition and kill any plant diseases and weed seeds. Your compost will be almost ready when it fails to heat up after turning. At this point, you should stop turning it and let it "cure" for two or three weeks. Finished compost can be ready to harvest in as little as 12 weeks.

Passive Composting is less labor intensive than active composting, but it takes longer. Generally, passive composting is done by adding green and brown materials as they're generated, rather than starting with a full bin. You also turn and add water to the pile less frequently, about once a month. The pile won't get as hot and it may dry out at times, so it won't decompose as quickly and may not kill any weed seeds. But compost will "happen" in about 6 to 18 months. Bins with doors near the bottom are designed to make harvesting the finished compost easier.

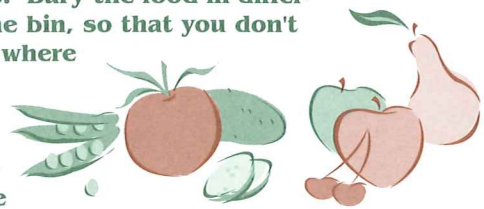
Vermicomposting, or composting with earthworms, is a fun and easy way to recycle your food scraps. It takes up less space than regular composting, and can work in an apartment setting. Red wiggler earthworms are voracious eaters, consuming up to half their body weight in organic material every day. These worms are different than the large night-crawlers commonly found burrowing in San Diego backyards. Red worms are smaller and process organic materials at the surface of the soil, excreting it in the form of castings, a nutrient rich fertilizer that plants love.



To get started, you need to purchase or make a bin specifically designed for vermicomposting. These bins generally are 10" to 15" deep, have a tight-fitting lid and holes drilled in the bottom for drainage and ventilation. Some designs come with catch basins for collecting "worm tea," the natural liquid fertilizer that is a by-product of the vermicomposting process.



Next, make a "bed" for your worms. Worms like to live under lots of moist paper or leaves. You can create a moist bedding for your worms by tearing strips of newspaper and soaking them in water, wringing them out and placing them in the bin. Add your worms and a handful of food scraps to the bedding, burying them underneath the newspaper. Feed your worms slowly at first, about a handful of fruit and vegetable food scraps each day. **No meat, oils, or dairy products, should be placed in your worm bin**. Gradually increase the amount of food scraps you give to your worms. Bury the food in different areas around the bin, so that you don't disturb the worms where they're feeding.



Your vermicompost will be ready to harvest in about three to four months. To separate your worms from the castings, place food in one half of the bin only. Most of the worms will migrate toward the food, leaving the other half of the bin full of worm-free castings. Start the process over by adding fresh bedding to the side of the bin that was just harvested.

More on back →

GRASSCYCLING

GRASSCYCLING is a quick and easy way to recycle your grass clippings and fertilize your lawn at the same time! It saves time and money, reduces the need for frequent watering and chemical fertilizers, and promotes healthy lawn growth. Grasscycling is simple: just take the bag off your mower and leave the grass clippings on the lawn. The nitrogen rich clippings decompose quickly, adding nutrients to the soil and helping your lawn retain water.

MOW YOUR LAWN ON A REGULAR BASIS AND WHEN THE GRASS IS DRY, keep the clippings short and make sure they don't form clumps. Mowing once a week during the summer and every 10 to 14 days during winter should be sufficient. You can also use a mulching mower, whose special blades chop the grass into smaller pieces.

DON'T WORRY, grasscycling does not cause thatch. Clippings are made up of mostly water and nitrogen, and will dissolve quickly into the soil.

MULCHING

MULCH is different from compost in the way that the materials are processed and used. While compost is fully decomposed material that can be used as a soil amendment, mulch is uncomposted material that is spread over the surface of the soil as a ground cover.

USING MULCH HAS MANY BENEFITS: It prevents soil erosion, reduces the evaporation of water from the soil, and inhibits weed growth. It has even been shown to reduce the incidence of certain plant diseases. The best way to apply mulch is to spread a layer approximately 3-inches thick around the base of plants and on bare soil. Take care to keep the mulch from touching the base of plant stems or trunks.

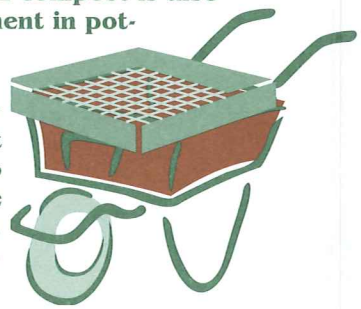
Mulch can be made at home with the use of a power chipper. If you have a large yard, you may want to consider purchasing one, otherwise, chippers can be rented on an as needed basis. Ready-to-use mulch is also available at the City's Miramar Landfill. Call (858) 492-6100 for more information.

Harvesting & Using Your Compost

How to tell when your compost is ready

Your compost is finished when the original materials have been transformed into a dark brown, crumbly soil product with a pleasant, earthy aroma. None of the materials originally placed in the bin should be recognizable. There may be a few chunks of woody material left, as these are generally slower to break down. These can be screened out and used as mulch or placed in the next batch of compost to continue decomposing.

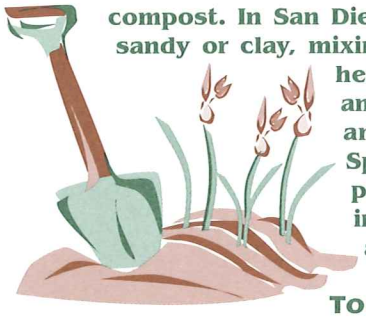
Screening your compost of any large, undecomposed materials before placing it in your garden is a good idea. Screening keeps valuable nitrogen and oxygen from being robbed from the soil as the undecomposed materials continue to break down. Screened compost is also much easier to use as an amendment in potting soil and top dressings.



You can build a simple screen for your compost by nailing a 3-foot square piece of 1/2" wire mesh to a wooden frame. This frame can be set over a wheelbarrow, to catch the screened compost as it falls through the mesh.

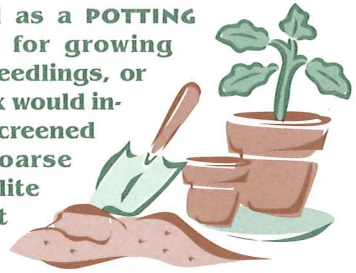
Using your finished compost

Compost can be incorporated into your garden soil, spread like mulch or as a top dressing on your planters and lawn, or used as a potting mix or seed starter.



Soil incorporation is the most common use for compost. In San Diego, where the soil is either sandy or clay, mixing compost in with the soil helps to improve its texture, and increase its nutrient level and water holding capacity. Spread 2 to 4-inches of compost over the soil and turn it in with a shovel to a depth of about 6 inches.

Top dress your planters by spreading compost to a depth of 3-inches around the base of plants and shrubs, much like you would spread a mulch. For lawns, hand cast screened compost over the surface of the lawn, to a depth of 1/2 inch.



Compost can be used as a **potting mix or seed starter** for growing containerized plants, seedlings, or transplants. A good mix would include two parts finely screened compost, one part coarse sand, one part vermiculite or perlite, and one part peat moss.

An **organic liquid fertilizer** can also be made for your plants with compost. Place one or two shovels full of finished compost or vermicompost into an old pillowcase, tie the end with a cord, and soak it overnight in a five-gallon bucket of water. The liquid can be stored for several months. Water your houseplants, transplants, and seedlings with the liquid to give them a good start and keep them healthy.

Troubleshooting

The Problem	The Cause	The Solution
Compost smells like rotten eggs	Not enough air	Turn the pile and add more brown, woody material
Pile doesn't heat up	Pile too small, or too dry, not enough nitrogen	Add more greens to pile, add water while turning
The center of the pile is dry	Not enough moisture	Add water while turning
The pile is attracting ants	Food scraps not buried, pile too dry	Bury all food scraps, add water to pile
Flies buzz around the pile and rodents forage through it at night	Food scraps exposed, wrong ingredients	Bury all food scraps, do not put any meat, oils, or dairy products into pile

Additional Resources

Backyard composting is best learned by doing. With experience, you will learn what works best for you. In the meantime, the following list of resources will help you get started. Contact your community representative below for information in your area!

City of San Diego, City of Encintas and the Unicorporated County of San Diego "Rotline"

(760) 436-7986 ext. 222

www.solanacenter.org

City of Chula Vista

(619) 409-5900

www.chulavistaca.gov/clean

City of La Mesa

(619) 667-1338

www.cityoflamesa.com/composting

City of Imperial Beach

www.cityofib.com

Your Local Nursery

Your local nursery is always a great source of gardening and composting information.

Free Composting Workshops

Sign up for a free two-hour Backyard Composting Workshop held at locations throughout San Diego County. Taught by Master Composters, the hands-on workshops cover composting basics, the benefits and uses of compost, and troubleshooting techniques. Register by calling the Rotline (760) 436-7986 or at www.solanacenter.org. For workshops in Chula Vista, call (619) 409-5900 or at www.chulavistanaturecenter.org/Events/.

Master Composter Program

Learn the art and science of composting! The Master Composter Program is a training course in backyard composting. Participants agree to give back 30 hours of volunteer service teaching composting workshops and other outreach activities. For courses in Chula Vista, contact the Chula Vista Nature Center (619-409-5900). For courses everywhere else, call the Solana Center (760-436-7986) or visit solanacenter.org for more information.

Backyard Composting Demonstration Gardens

Composting Demonstration Gardens exhibit working compost piles of both manufactured and homemade composting bin systems, including vermicomposting.

Ridgehaven Composting Garden
City of San Diego Environmental Services Dept.
9601 Ridgehaven Ct. • San Diego 92123
sandiego.gov/environmental-services

Wig L. Worm Composting Garden
San Diego Children's Zoo
29290 Zoo Drive • San Diego 92103
sandiegozoo.org

Water Conservation Garden
12122 Cuyamaca College Drive West
El Cajon 92019 • thegarden.org

Crestridge Ecological Reserve
1171 Horsemill Road • El Cajon (Crest) 92021
http://www.earthdiscovery.org/

Summer's Past Nursery
15602 Olde Highway 80 • Flinn Springs 92021
http://www.summerspastfarms.com/

Books

Rodale Book of Composting, Martin & Gershuny, Rodale Press, Emmaus, PA, 1992, 278 pp.

Basic Composting: All the Skills and Tools You Need to Get Started, Erich Ebeling, Stackpole Books, Mechanicsburg, PA, 2003, 120 pp.

Worms Eat my Garbage, Mary Appelhof, Flower Press, Kalamazoo, MI, 1982, 100 pp.

Web Sites

CA Integrated Waste Management Board
www.ciwmb.ca.gov/Organics/

Environmental Services Dept. Home Page
www.sandiego.gov/environmental-services/

Compost Resource Page
howtocompost.org

Sources for Red Worms

www.solanacenter.org/CompostSupplies2.pdf

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