New York City outdoor composting guide

What you need to know to start outdoor composting right now, right here in New York City.

table of contents

New Yorkers
compost more, waste less!

Through the **NYC Compost Project**, the Department of Sanitation's **Bureau of Waste Prevention, Reuse and Recycling** encourages residents to compost yard trimmings and food scraps in their own backyards and community gardens. This kind of composting is not only the least expensive way to manage organic waste, it also recycles nutrients close to where they can best be used.

Although New York City backyards and gardens are often smaller than their suburban counterparts, they provide plenty of room for a compost bin!

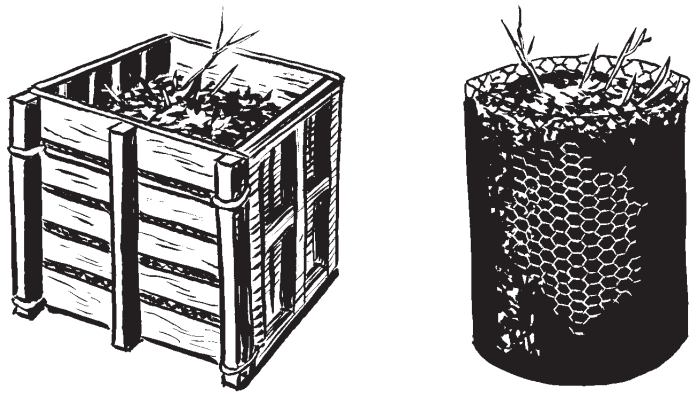
This booklet is your guide to the six steps to begin composting, right here in New York City—no matter how small your outdoor space.

Step 1...set up your bin

Compost bins are really just containers for your compost pile that serve to keep warmth and moisture in, and keep pets, rodents, and other pests out. They also help keep your pile sightly, tidy, and compact, which can be especially important in small yards. People set up compost bins on terraces, roof gardens, patios, next to outdoor garbage cans, in courtyards, side alleys, and community gardens.

Choose a compost bin based on the space you have available for composting, the materials you want to compost, your budget, and the amount of time you want to spend tending your pile. Visit **www.nyc.gov/wasteless/compost** to find out about NYC Compost Project demonstration sites or to obtain more information about buying or building a compost bin.

Holding units are the simplest types of bins but shouldn't be used for food scraps because they lack adequate protection against rodents. Therefore, holding units should only be used for composting leaves and garden trimmings. You can construct your own using inexpensive or recycled wood, chicken wire, or cinder blocks. Simply add the appropriate organic materials to your holding bin and let the material decompose. This method requires little work, but can take from six months to a year to make finished compost. If you want to regularly add additional leaves and garden trimmings, you will need to either speed up the decomposition process or add more than one holding unit.



Two kinds of homemade holding units: wooden slats, and chicken wire rolled into a cylinder.

Enclosed bins are suited to handle both yard trimmings and kitchen scraps. They are most appropriate for small yards or any small space, such as a side alley, roof garden, or terrace.

If you live in a multi-unit building and are placing your compost bin near outdoor garbage and recycling cans, make sure you visibly label your compost bin so that other residents do not accidentally place refuse or recyclables in it. Other options used in New York City include installing a combination lock for the compost bin.

You can construct an enclosed bin by drilling ventilation and drainage holes in the lid, sides, and bottom of a 20- or 30-gallon garbage can or barrel.

The **NYC Compost Project** sells commercially available compost bins. Visit **www.nyc.gov/wasteless/compost** to find out more.

Frequently asked questions...setting up your bin

Q: Should I set up my compost bin in a sunny or shady spot?
A: It does not make a difference to the composting process whether you set up your bin in the sun or in the shade.

Q: Should I set up my compost bin on pavement or soil?
A: You can set up your bin on either concrete or soil. However, soil is preferable if you don't want to stain the concrete surface.

Rodent-proofing should not be necessary if your compost bin is enclosed. However, if rats are a problem in your area, you can take additional steps to make your bin more rodent resistant:

- Add screens to areas where rats and other burrowing animals can get through.
- If your bin is placed on the soil, lay a piece of screen between the soil and the bottom of the bin.
- Turn material regularly to prevent nesting.
- In especially tough cases, add a vertical screen (6 to 8 inches into the ground) around the perimeter of the bin.

Step 2...add organic materials (food and yard waste)

To know what to add to your compost bin, it is helpful to classify organic materials into "greens" and "browns" (see next page for more info).

If possible, keep some fall leaves on hand year-round to add to your compost bin.

Greens are fresh, moist, nitrogen-rich plant materials that still have some life in them (fruit and vegetable scraps, coffee grounds, tea bags, fresh leaves, yard prunings, grass clippings, etc.).

Browns are dry, carbon-rich plant materials with no life in them (fall leaves, shredded paper, straw, wood chips, twigs, etc.).

If you are primarily composting "browns," shredding items such as leaves into smaller pieces and keeping the pile moist will speed up the decomposition process.

When composting "greens," such as food waste or green garden trimmings, be sure to start with a layer of browns. Maintain equal amounts of greens and browns throughout the bin for successful composting. Always cover food scraps with a layer of browns to deter pests and flies. If you have space for bagged leaves, keep a supply near your compost bin throughout the year to cover food scraps. A convenient way to store kitchen scraps (before adding them to your compost pile) is to keep them in the refrigerator or freezer inside a resealable container or large zip-lock bag.

FAQ...adding organic materials

Q: Do I need to add worms to my compost bin?
A: Worms aren't crucial to the composting process—many other organisms will take care of the decomposition in the absence of worms. In an outdoor compost bin, worms will usually find their own way into the bin.

Q: Do I need to add a *bioactivator*?
A: While some gardening companies promote various products to "jump start" your compost bin, these additives are not necessary for successful composting—the microorganisms responsible for decomposition are already present on the materials you add to the pile.

What to compost...

Here are materials that are excellent for composting (aim to add equal amounts of "greens" and "browns"). Two other ingredients—water (Step 3) and oxygen (Step 4)—are also needed to transform your compost into black gold.

Greens

(fresh, moist, nitrogen-rich materials)

FROM YOUR GARDEN

- green plants and garden trimmings
- fresh leaves and flowers
- grass clippings (or recycle by leaving on the lawn)

FROM YOUR KITCHEN/HOME

- fruit and vegetable scraps
- coffee grounds and tea bags
- manure and bedding from animals that ONLY eat plants
- cornstarch and other organic packing materials

Browns

(dead, dry, carbon-rich materials)

FROM YOUR GARDEN

- fall leaves, small twigs, and woody prunings
- dry plant material
- straw and hay
- pine needles
- potting soil

FROM YOUR KITCHEN/HOME

- bread and grains
- egg shells
- nutshells
- corncobs
- food-soiled paper towels and napkins
- shredded newspaper
- sawdust and wood shavings (from untreated wood)
- stale beans, flour, and spices
- wood ashes
- brewery waste, hops, and pomice

...and what to avoid

FROM YOUR GARDEN

- pesticide-treated plants or pesticide-treated grass clippings
- diseased or pest-infested plants
- poison ivy
- invasive weeds
- weeds with seeds
- large branches (call 311 to schedule a special removal)
- non-compostable materials such as sand or construction debris

FROM YOUR KITCHEN/HOME

- meat or fish scraps
- cheese or dairy products
- fats, grease, or oil
- cat or dog feces; kitty litter
- colored or glossy paper
- sawdust made from pressure-treated plywood or lumber
- coal or charcoal ashes
- non-compostable materials such as plastics, metals, or glass

FAQ...composting year round

Q: Can I compost year round?
A: Yes! Even though decomposition will slow down over the winter, you can continue to add food and yard waste to your compost pile. Once the weather warms, decomposition will speed up.

Step 3...check moisture

The ideal moisture level for your compost bin is like a wrung-out sponge: moist, but not soggy.

If composting food waste, the "greens" will provide the needed moisture, and the "browns" will soak up some of this moisture and distribute it evenly throughout the bin.

If you are mainly composting yard waste (and therefore you have an abundance of "browns"), you may need to add water. When adding water, make sure to turn the pile as you spray to evenly coat and soak the material. Leaves should glisten with moisture. Shredded paper should be wet, but not "mushy." During the hot summer months, you may need to add extra water.

It is essential to monitor moisture levels so that your compost pile remains moist and never dries out.

FAQ...dealing with soggy compost

Q: What should I do if my compost bin becomes soggy?
A: Make sure you are adding enough dry, brown materials. Mix in "browns" such as shredded paper or leaves to soak up the moisture.

Step 4...turn the compost pile

In order for the microorganisms in your pile to do their work, they need just the right combination of greens, browns, moisture, and air. Steps 2 & 3 address the first three components, so let's look at how you can get air into your compost pile.

From time to time, you should **turn or aerate your compost**. Take a long-handled rake, pitchfork, compost crank, or even a long stick and push it down into different parts of the pile to mix and "fluff" up the compost. Try moving the inside of the pile outward and the outer areas to the inside.

FAQ...turning compost

Q: How often should I turn my compost pile?
A: For the best results, turn your pile about once every two weeks. Turning the pile less frequently is not a problem. In composting, like cooking, you learn as you go along. Find a turning schedule that works best for you.

Step 5...check the compost

As you continue to add and mix organic materials, check on the compost to make sure there is adequate moisture, and periodically turn the pile.

Compost science

At a microscopic level, **bacteria** and **fungi** eat and digest decaying organic matter. Other important decomposers in the compost pile are larger creatures, such as **beetles, centipedes,** and **worms**. These macroorganisms work alongside the microscopic decomposers to consume the organic material in the compost pile.

The **carbon** (browns) and **nitrogen** (greens) in the compost pile provide these bacteria and decomposer organisms with necessary energy and cell-building ability.

As the microorganisms digest the material in a compost pile, they produce heat, carbon dioxide, and excrement. This is why some compost piles will heat up. The microorganisms convert organic materials into a stable **humus**, which has an earthy odor and provides texture and nutrients to improve soil quality.

The organisms responsible for decomposition are naturally present in the environment and will readily establish themselves in a compost pile. Left on its own, all organic matter will eventually decompose. However, moisture, oxygen, particle size, and the mix of materials you include in your compost pile will affect how rapidly your pile will decompose. Following the tips in this brochure should help you produce compost, while minimizing odor or pest problems.

Troubleshooting

Symptom: Rotten-egg odor

Problem: Excess moisture and not enough air (anaerobic conditions).

Solution: Turn pile frequently; add dry material such as fall leaves, woodchips, or shredded newspaper. Make sure bin has drainage; leave lid off to allow more air to flow.

Symptom: Ammonia odor

Problem: Too much green, high-nitrogen material (such as food scraps, grass clippings).

Solution: Add brown, high-carbon material (such as fall leaves, woodchips, or straw).

Symptom: Slow decomposition

Problem: Lack of moisture, or lack of nitrogen.

Solution: Add water as needed; add material high in nitrogen, such as food scraps.

Symptom: Unwanted pests, flies

Problem: Wrong materials in the pile; food scraps are exposed.

Solution: Don't add animal or dairy products, grains, or fatty foods. Make sure food is well covered. Make bins more rodent resistant by adding screens to areas where animals could get through.

FAQ...finished compost

Q: How long will it take to make finished compost?

A: That all depends on you! Some people want to make finished compost quickly and take extra steps to speed up the process, such as cutting up large pieces of material and more frequently turning and watering their piles. This more intensive method should produce finished compost in about three months. Other people take a more relaxed approach by simply adding materials and letting nature do the rest, which should produce finished compost in a year or more.

Step 6...use your compost

Finished compost resembles dark, crumbly topsoil and should bear no resemblance to the original materials. Compost should have a pleasant, earthy smell to it.

A quick test to see if your compost is finished: Place some of the compost in a sealed plastic bag. Wait a few days. If you open the bag and it does not smell, your compost is done. If it smells rotten, put it back—it's not finished. For a list of ways to use your finished compost, see below.

FAQ...using your compost

Q: Can I use compost for potting soil?
A: Yes, but not by itself. Different plants thrive in different potting mixes, but a good rule to follow is to add one part compost to two parts of potting soil.

How to use compost

If you have ever bought and used peat moss, wood chips, manure, or topsoil, then you already know how to use compost. Mix compost into flower and vegetable beds; blend it with potting soil to revitalize indoor plants; or spread it on your lawn as a fertilizer. Use coarser compost as a mulch around trees and shrubs. If you prefer finer compost, you can screen it to sift out the bigger pieces. Do not place compost as mulch directly against tree trunks, as this will damage the tree.

Give tomato plants half an inch of compost each month for great produce.

Using “unfinished” or immature compost that contains food scraps can attract rodents or other vermin, so make sure this type of compost has fully decomposed before adding to your garden beds. Unfinished *leaf* compost can be mixed directly into flower or vegetable beds in late fall; the material will mature over the winter and be ready for spring plantings.

How much compost to use

Follow these guidelines to determine how much compost you need:

For amending soils...

The specific amount of compost that soils need is a function of the nutrients that are lacking; the condition and the texture of the soil; and the types of plants you plan to grow. Testing your soil can help determine its condition and needs. However, in general, work 1 or 2 inches of compost into the top 3 to 5 inches of soil.

For flowers...

In the spring, loosen the top few inches of annual and perennial beds and mix in a one-inch layer of compost. Or apply a one-inch layer of compost as a mulch to control weeds and conserve moisture.

For vegetables...

Give your vegetable garden plenty of compost in the fall. Place several inches of compost on top of the existing bed and you can till it in come springtime. Put a handful of compost in each hole when you're planting.

Once plants begin to grow quickly, you can add a 50-50 mixture of soil and compost. Provide "heavy feeder" plants such as tomatoes, broccoli, corn, and squash with half an inch of compost monthly—this will result in great produce! **Note: If you make compost with plant cuttings or grass clippings that have been sprayed with pesticides, do not use the compost on edible crops.**

Potted plants and window boxes...

Even the best potting soil gets depleted of its nutrients as plants grow in it. To add nutrients back, add an inch of compost to potted plants and window boxes twice a year. Work it into the top layer of the existing soil, removing some of the existing soil to accommodate the additions if necessary.

For lawn/turf...

- **Establishing new turf.** Lay down one to 3 inches of compost. If possible, till to a depth of 5 to 8 inches before seeding. Otherwise seed directly over the compost.
- **Existing turf.** Treat bald spots by spreading an inch of compost over them. Work into the soil before reseeding. This will fight compaction and help keep soil diseases down.

You can also topdress existing turf with a quarter- to half-inch layer of finely screened compost. This is easiest with a spreader, but you can use a shovel for small areas. The compost will sift down into the soil, improving its structure and providing nutrients. Over the long haul, this will mean less compaction, fewer bald spots, and a reduced need for fertilizer.

Planting trees...

When planting a tree, the goal is to have the soil of the root ball be as close a match as possible to the native soil. Compost can be used to amend the soil that is back-filled into the hole, but do not overdo it. If too much compost is added to the back-filled soil, the tree roots will not grow past this gold mine of organic matter, depriving the tree of the

stability of a deep root system. If in doubt, do not add any kind of amendment to the hole.

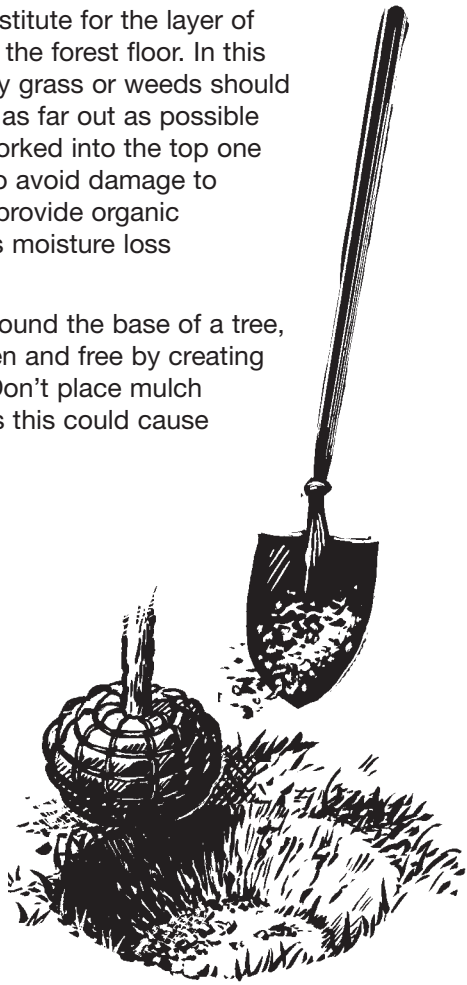
A simple test is to feel the soil texture. If the root ball is a sandy soil and the native soil is clay based, the tree will be fighting to survive. Applying compost to the back-filled soil will help by easing the transition between soil types, but it still does not create an ideal situation.

Once the root ball is planted and back-filled, you can use compost as a mulch for existing trees.

Tree and shrub maintenance...

For an existing tree, compost is a substitute for the layer of organic matter that naturally exists on the forest floor. In this case compost is used as a mulch. Any grass or weeds should be removed from underneath the tree as far out as possible from the trunk. Compost should be worked into the top one to 2 inches of the soil. Be careful as to avoid damage to the roots. Compost not only helps to provide organic nutrients for the tree, but also reduces moisture loss and keeps the soil cool.

When spreading mulch or compost around the base of a tree, keep the area closest to the trunk open and free by creating a doughnut shape around the trunk. Don't place mulch directly against the base of the tree as this could cause the bark to rot and become diseased.



What IS composting?

Composting is the process of creating the ideal conditions for the rapid decomposition of organic materials. You can think of composting as speeding up the way nature recycles. In nature, when a leaf falls to the forest floor, it is consumed and digested by a host of creatures, from worms and insects to microorganisms such as bacteria and fungi.

When we make a compost pile out of our organic materials, we are creating the conditions (heat and moisture) that decomposer organisms need to thrive. Only organic materials can be composted—and to prevent disease and odors, certain organic materials, such as animal products, shouldn't be included in home compost bins (see inside for a complete list of what to compost).

When the decomposer organisms have done their job, what starts out as fruit and vegetable scraps—which would have wound up in your garbage can—becomes a nutrient-rich material called compost, a dark, crumbly material that looks and feels like soil.

Adding compost to soil is an excellent way to improve soil texture: it loosens heavy clay soils, making them better for root growth, and it helps light, sandy soils retain water and nutrients. **Compost suppresses diseases, provides vital aeration to plant roots, and is a source of minerals and nutrients that are essential to plant growth and health.**

Yard trimmings and food residuals together constitute 24 percent of the U.S. municipal solid waste stream. That's a lot of waste to send to landfills when it could become useful and environmentally beneficial compost instead!

The DSNY Bureau of Waste Prevention, Reuse and Recycling provides compost outreach and education programs in all five boroughs through the NYC Compost Project.
www.nyc.gov/wasteless/compost

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