

A Beginner's Guide to Composting: 4 Steps to Reduce Waste and Fertilize Your Garden

When organic matter such as leaves, grass clippings and food scraps break down, you get compost: a dark, dirt-like "soil" that is rich in nutrients. Compost happens even without human involvement; for example, the leaves that fall on the forest floor (or even in your own backyard) will compost and return much-needed nutrients to the soil, like a slow-release fertilizer. How quickly natural matter turns to compost depends on many factors, from the size of the organic matter to the temperature and oxygen availability. It can take anywhere from a few weeks to several years for organic matter to turn into compost.

Many people, from gardeners to farmers to environmentalists, choose to compost for a variety of reasons. Although nature does all of the work, human involvement can help speed up the composting process to ensure the best possible conditions for nature to do its work. Composting is easy, and it has many benefits for the environment and your own backyard.

Why compost?

Food and lawn waste makes up 25 percent of all waste in landfills. Although these natural materials are biodegradable, they do not break down properly in landfills, which are so densely packed that oxygen isn't readily available. When oxygen is withheld during the decomposition process, the organic matter may emit methane gas, which is 20 times more toxic than carbon dioxide. All this methane is bad for the environment, and the inhospitable conditions of landfills make it difficult if not impossible for natural materials to break down properly. Each ton of organic matter we can divert from a landfill can save 1/3 of a ton of greenhouse gases from being emitted into the environment. Plus, composting can provide you with your very own "black gold" for free, allowing you to condition and enrich your soil.

When we think of recycling, plastic, paper and glass may come to mind, but the most basic method of recycling is the timeless act of breaking down decaying organic matter and returning it back to the soil to once again be used for other living organisms to thrive upon. Let's stop thinking of yard waste and kitchen scraps as garbage and start reducing the waste we produce so we can save it from heading to the landfills to recycle and reuse it in our own backyards.

Composting is the most natural and beneficial thing we can do for our gardens, flowers, vegetable plants and trees to replenish nutrients, improve drainage and water retention, and protect plant roots when used as mulch.

Anyone can compost, whether you live on a 500-acre farm or in a 500 square foot apartment. At the most basic level, you can collect your kitchen and yard scraps in a pile outside, in a store-bought compost bin on your back porch, or in a plastic bin under the kitchen sink and then wait for Mother Nature to do her work.

Step #1: Set up your bin

There are many types of containers for composting, but you don't need a container to compost. Containers can help speed the decomposition process (by controlling temperature and moisture) and keep your compost scraps out of sight. The needs of an urban gardener vary greatly from that of the country dweller, so consider the size and needs of your garden before starting to compost. All compost heaps, contained or not, should be approximately 3 x 3 feet to really be most effective. So let's break down the various composting bins.

Binless "heap" or "pile" method: This is like a "freestyle" method of composting. You simply choose an area in your yard or garden and start layering your organic materials in a pile. This requires no financial investment on your part, but many cities and suburbs prohibit the use of open compost heaps because they can be unsightly and might attract animals (from birds to squirrels and raccoons) seeking the edible food scraps. In reality, a compost heap should be full of worms and other creepy crawlies—not pests! This can be greatly minimized or eliminated altogether by burying your scraps under other organic materials (like grass).

Binless "trenching" method: An alternative to a binless compost heap is trenching, in which you bury the organic matter and scraps at least 8 inches in the ground—directly in your garden beds. Let nature do its thing beneath the soil, then plant a garden over it. This should be done at least two months before you wish to use the particular area as a fruit, vegetable or flower garden.

DIY garbage can: One of the easiest and most affordable bins is an inexpensive garbage can that you make into a compost bin. This is great for small gardens. Purchase a large plastic or rubber trashcan with a secure-fitting lid. Use a drill to bore five or six holes each in the lid, the sides, and bottom of the can to provide airflow that will be essential to breaking down the organic materials placed inside it. You can use a small, medium or large size can, depending on your needs and space available.

DIY wire compost bin: A wire compost bin provides structure to an otherwise open compost pile while maximizing oxygen circulation. If you're handy, you can make your own wire compost bin, which is ideal for small gardens and households that produce a small amount of food scraps and yard waste. To construct the bin, find an open spot for your compost. Place three or four stakes into the ground in a circular or rectangular shape. Purchase about 10 feet of 36-inch wide wire or plastic mesh. Stretch the mesh fence around the stakes and tie it in place (to each stake) with zip ties or staples.

DIY compost pallets: Pick an accessible, level site in your yard before constructing this type of structure. In essence, you are building a three-sided box secured with heavy-duty wire to a pallet on the bottom. The open top and front allows for easy aerating and turning of the pile and can provide ample compost for a medium to large garden. You could easily build additional adjacent bins that can house multiple piles of compost in various stages of completion (more info below). Alternative materials for this method include bales of hay, cinder blocks or untreated wood.

Commercial bins: If you're not a do-it-yourselfer, or you are looking for other features in a compost bin, many commercially made bins are available at nurseries, home improvement stores and online retailers. Compared to the DIY method above, store-bought bins can be very expensive, costing up to several hundred dollars. Some commercially made bins are tumblers, which can dramatically speed up the decomposition of your organic waste. Be on the lookout for bins made of recycled plastic, which are more eco-friendly.

Worm bin: This method, known as vermicomposting, is ideal for urban gardeners or people who don't have the outdoor space for the compost bins mentioned above. However, it is not for the faint of heart! You can create a worm bin from a 10-gallon plastic tub (a long, rectangular shape works best, but any size or shape that fits your space, such as under a kitchen sink will do). You'll need a steady supply of shredded newspaper, food scraps, and 10-15 dozen worms to eat your food garbage. Be sure to use only red worms (*Lumbricus rubellus*) or manure worms (*Eisenia foetida*), as night crawlers or earthworms need large amounts of soil and will not survive in a worm-composting bin. Worm castings (feces) contain more nutrients than traditional compost and thus are the perfect fertilizer for any soil. When a worm digests food scraps, it breaks down minerals and other substances into a more soluble form for plants. Your reward will be the finest, most perfect fertilizer available, but this method requires more attention (the worm's habitat must not be exposed to extreme heat or cold) and involves harvesting the castings of course, which might not be everybody's cup of tea. As you can see, bins can be simple or complex, homemade or store-bought. There is a composting method for every budget, space and garden.

Step #2: Gather your gear

All you really need to successfully compost is a place to put your yard and kitchen waste. Depending on your garden size and its proximity to your compost pile, you might also need the following tools, all of which you can purchase at a garden center or home improvement store:

Gloves: A good pair is thick and tear-resistant. These will protect your hands while handling debris and working in the garden.

Aerator: An aerator is a long-handled tool that you can force into the compost heap. When you pull it back out, it helps mix the heap around, aiding in decomposition. You can also use a pitchfork to help aerate and turn your heap, but an aerator makes the job much easier.

Pitchfork: While no substitute for an actual aerating tool, the pitchfork is essential in that it can poke holes deep down into the pile to improve air circulation or turn a heap. It's also helpful for transporting materials to the compost bin.

Screens: Think of these as you would a flour sifter in the kitchen. It separates the larger chunks of compost that are still decomposing from the loamy, dark soil that is ready to be added to your garden. Whatever makes it through the screen is garden-ready; whatever sits on top needs more time in the compost bin.

Shovels: The ideal shovels for this project are flat-headed shovels or tapered spades. With these, you can transfer compost from the compost pile to the garden or onto screens, or add organic materials to the heap itself.

Wheelbarrow: For larger gardens, these are ideal for transporting large amounts of organic materials to and from the compost heap.

Step #3: Add to your heap

Now that you have your bin and your tools, it's time to compost! The most important thing is to add the right materials and avoid the wrong ones. Even if all you do is throw your kitchen scraps into your compost bin, you're still doing okay—your scraps will break down eventually, even if you never turn it, water it, aerate it or "balance" its contents. As a general guide, if it came from a plant, you can compost it.

What to Compost	What NOT to Compost
Grass and lawn clippings Hay Fruit and vegetable peels, rinds and scraps Tea bags Coffee grounds Eggshells Leaves Straw Garden waste Weeds that have not seeded Wood chips and sawdust (from untreated wood) Dryer lint Shredded paper	Chemically treated wood Diseased plants Human waste Pet waste Pernicious weeds Meat Dairy products Animal food products Animal bones Fats and oils Cooked food Peanut butter Lime Glossy paper Paper with colored ink Large chunks of compostable materials

If you want to help your compost break down faster, you can put more time and thought into it to achieve the ideal conditions for decomposition. Compost, while easy enough, is an exercise in balance. To best "balance" your compost pile, include one part nitrogen-rich "greens" for every 15-30 parts of a carbon-rich "browns" in your compost heap.

"Browns" (carbon-rich materials) include: Fresh leaves, coffee grounds, newspaper strips, peanut shells, sawdust, straw, fruit scraps, bark, pine needles, tea bags, dryer lint, eggshells

"Greens" (nitrogen-rich materials) include: Food waste, vegetable peels, hay, grass clippings, garden waste, alfalfa, oats

Think of a compost pile like a sandwich with alternating layers. The first step is to build a foundation with a four-inch layer of bulky twigs and small branches. This allows for air to flow upward through it

and also keep it off the ground. Water this layer liberally before doing alternating two-inch layers of greens and browns, watering every so often. Do this until your heap is three to five feet tall, making sure no layer is packed too firmly. You want air to be able to reach the inner parts of the pile as much as possible. Finally, sprinkle the top of the heap with a few handfuls of soil from your garden. This soil, while not totally necessary, speeds up the process by using the hundreds of millions of bacteria found in it to your advantage. You will know the process is working when the pile generates heat as it decomposes.

Step #4: Now you wait

If you do nothing from this point, you will probably have finished compost in approximately one year. Most people try to nudge Mother Nature into a speedier delivery on their black gold, though, by keeping a healthy amount of moisture (water) and air flowing within the pile. As the heat increases in the pile, moisture is lost, so it is important to regularly water your compost to keep it damp, not dripping wet. Using an aerator or pitchfork to turn your pile, anywhere from once a week to a couple times per month, will help reintroduce oxygen. The more often you turn, the quicker it will break down. Weekly aerating and watering should produce a finished compost heap in several months.

Compost shouldn't look or smell gross. When done properly, it should not attract animals (although the ones that make it into your backyard may help themselves to the food scraps on occasion). If you notice a foul, rotten-egg smell, you've put something from the "do NOT compost" list into your pile, it's not receiving enough oxygen or it's getting too wet. To correct this, work in some dry "browns" such as straw, peanut shells or sawdust. If your pile smells like ammonia, you have added too many nitrogen-rich "green" materials, so work in more browns.

Finished compost smells earthy, even sweet, is moist like a wrung-out sponge, and is dark like coffee grounds. Work at least two to four inches of this material into your garden, use as needed in potted plants, or spread around trees and garden beds as mulch. It is among the best substances nature can provide to a gardener.

Composting involves patience, but the reward is absolutely worth it. You can skip on synthetic fertilizers and soil amenders, which cost money and may hurt the environment. Compost also balances your soil's texture, restores nutrients and diverts countless pounds of useable organic waste from our landfills.

Source: https://www.sparkpeople.com/resource/nutrition_articles.asp?id=1323