

How to: Make your own compost



A fine heap of compost steaming on a cold morning

Photo: Andrew Dunn, via Wikimedia Commons

By compost we mean the soil conditioner and all-round magic gardener's helper we make from garden and kitchen waste. Potting and seed compost can be made from garden compost but is a different material – see How To: [grow plants in containers](#).

Why make compost?

Compost is an organic material made from the controlled decay of plant material by tiny invertebrates, fungi and bacteria. Dead plant matter is transformed into a crumbly brown carbon-rich material, in which ideally only a few woody sticks are recognisable. Not only is compost a brilliant mulch, soil improver and fertiliser for your garden, composting is an easy way to dispose of large quantities of waste material from the garden and kitchen into a manageable amount of useful stuff with minimal generation of greenhouse gases.

How to do it

- Start by reading the “What the science tells us” points below. Understanding how compost “works” is a great help to getting it right.
- It's very easy! You need a supply of green and dead leafy and thin twiggy material from the garden, plus fruit and vegetable peelings from the kitchen. You should add a similar volume of scrunched-up waste paper and kitchen towels, straw, torn-up cardboard and other dry carbon rich material – see the Science section below.

- Although you can just make a heap, it's better to put compost into a container to keep it together. This can be a bought plastic composter for a small garden, but for a bigger garden you can make a good compost bin using four old pallets held together with cable ties. You can buy wooden compost bins, or you could make a simple container out of four stout stakes hammered into the ground and surrounded by wire mesh.



Left: plastic bin ideal for a small garden

Photo: SeppVei, via Wikimedia Commons

Right: home-made bin made from four surplus pallets.

Photo: James Dun
<https://compostmagazine.com/>, via Wikimedia Commons

- Turn over the material with a garden fork periodically to mix it in and make sure air can penetrate.
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- It takes a minimum of 6 months to make mature compost ready for the garden, often longer, especially in small heaps. It should be crumbly and brown and smell pleasantly of damp woodland soil.

A handful of finished compost Photo: Steve Head

- Ideally, people with larger gardens have three compost bins in operation. You have one which is being filled, one that is full and maturing, and one that is being emptied to use in the garden. These cycle through, so the filling bin becomes the maturing bin, and the maturing bin becomes the one to empty.



Three-bin compost operation in the scruffy end of my garden.

Photo: Steve Head

- You can compost woody material if you can break it up. Bashing tough stems with a hammer helps and putting woody material through an electric shredder is ideal. Since very woody shreds compost slowly, it is worth having a separate bin or bag for them, mix in plenty of lawn clippings to get them going, and give it a year or so.
- The best compost I ever made used whole growing long woody stems of elder complete with lush leaves. Put through a shredder, this was the perfect mix of carbon and nitrogen.
- Autumn brings a glut of dead leaves to dispose of, and you can add soft green, red or yellow leaves to a general compost bin replacing some of the paper.



If you have lots of dry brown or tough leaves like magnolia, beech or oak, these are better treated separately. Spread them over the lawn and pick them up with a mower, which shreds them and mixes them with nitrogen-rich grass cuttings. Then put the leafy mix into tied-off tough plastic bags and put them out of the way. After a year you should have excellent leaf mould which can be mixed with soil to make potting compost.

Photo: Steve Head

- If your finished compost is very twiggy, you can put it through a sieve if you want to use it in potting compost, but the twigs don't matter at all when used as a mulch.

Golden rules – what the science tells us

- The major part of finished compost is relatively indigestible carbon-rich material, after the micro-organisms and fungi have consumed the more digestible components. To do this they need other nutrients – nitrogen and phosphorus – to make proteins for their cells. Since enough phosphorus is supplied with nitrogen-rich material, we just talk about nitrogen and carbon as the two basic components of compost.
- The mix of materials you put into your compost should contain enough nitrogen rich material as well as carbon-rich materials. The decomposing fungi and bacteria also need plenty of oxygen from circulating air.
- Too much carbon (eg only straw, wood shavings and paper) and the mix is too dry and, lacking nutrients, the compost takes ages to make. Too much nitrogen (eg only kitchen waste and grass cuttings) and most will rapidly disappear and without enough air circulation make a slimy smelly mess.
- Ideally, the ratio of carbon to nitrogen should be 30:1. Kitchen waste is about 15:1, grass cuttings 20:1, tree leaves about 50:1 and paper over 100:1. So in the winter when most of the material going into the compost is kitchen waste, mix it with plenty of dead leaves or waste paper to bring up the ratio. Likewise, during the mowing season, mix in twiggy prunings, crumpled waste paper and cardboard, egg boxes and toilet roll centres with the grass.
- Composting organisms prefer constant conditions, so it is best to put your bin in a shady spot where it won't heat up from the sun during the day.
- Although big compost heaps can get very hot from bacterial action, ordinary garden compost doesn't heat up enough to kill pathogens from diseased plants. You should avoid putting diseased material in

compost heaps, instead this can go to council waste collections which are professionally composted and will kill the spores.

How easy is it to do?

Once you have set up your compost bin(s), it is easy, just empty your waste into it regularly, keeping the balance of green and carbon-rich material right while sources change through the year, and turning it over to keep it aerated. Every spring you can empty the bin onto a vegetable patch – which is reasonably hard work – and over the years your soil will be magically improved.

How much will it cost?

The only cost is for the container you make it in. Bins made from recycled plastic can cost under £30- or a lot more if you want. FSC certified wooden bins cost £45 upwards, but you can make your own from discarded pallets for nothing.

How effective is it?

Really effective! Compost as a mulch suppresses weeds, helps retain water, feeds the natural ecosystem in the soil, and helps aeration. As it breaks down it becomes a source of nitrogen and phosphorus (and trace element) nutrients to help your plants grow strongly.

What to look for

Well-made compost is brown, crumbly, moist but not wet and smells pleasant. If you look in the heap while it is composting, you will find hosts of small invertebrates like nematodes, worms, mites, springtails, beetles, centipedes and millipedes. Slow worms and amphibians may hide away in it over winter. Watch birds pick over the compost when you spread it, they find lots of tiny creatures to eat.

Things to be aware of

- Long composting generally kills off most weed seeds, but it is still good practice to remove and compost weeds before they have set seed.
- If you have masses of lawn clippings – more than your heap can handle, you can use them directly as a mulch on flower and vegetable beds – ideal for covering potatoes that might form near the surface and turn green and bitter.
- Avoid using evergreen leaves - such as conifers, holly, and ivy in general compost as they take so long to break down. If you do have lots, you can mix them with green material such as grass clippings and compost them separately for ages. They make useful acidic compost for lime-hating azaleas and heathers.
- It's a very good sign if you find lots of small red earthworms in your heap – these help process the material and to keep the heap aerated.
- Open-bottom compost bins that allow creatures to get in and out form a useful extra habitat for your garden, this isn't so good with sealed plastic bins.
- You can buy "compost accelerators" which contain a lot of nitrogen. These could be useful for carbon-rich waste like dry leaves if you haven't got enough green waste, but definitely not needed in a well-balanced mix.
- Thick woody material isn't good in compost, so why not use it to make a habitat or log pile. See our [How To guide](#) for ideas.

Further information

How To: [grow plants in containers](http://www.wlgf.org/ht_containers.pdf) www.wlgf.org/ht_containers.pdf

How To: Create [habitat piles](http://www.wlgf.org/ht_habitat_piles.pdf) www.wlgf.org/ht_habitat_piles.pdf

How To: [Garden sustainably](http://www.wlgf.org/ht_save_planet.pdf) to help the planet http://www.wlgf.org/ht_save_planet.pdf

Websites

Garden Organic's [advice](http://www.gardenorganic.org.uk/compost) www.gardenorganic.org.uk/compost

RHS [compost advice](http://www.rhs.org.uk/soil-composts-mulches/composting) www.rhs.org.uk/soil-composts-mulches/composting

Our [webpage](http://www.wlgf.org/Gardening_peat.html) Gardening without peat www.wlgf.org/Gardening_peat.html

Book

Ken Thompson (2007) Compost: The natural way to make food for your garden. Dorling Kindersley