



GUIDE TO



COMPOSTING

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## WHAT IS COMPOSTING?

Composting is nature's way of recycling organic materials into a nutrient-rich soil. When you compost in your backyard, you're speeding up this process and making an all-natural fertilizer for your lawn, garden, and houseplants.

Anything that was once living can be used for compost. When it comes to starting your own compost project, you have lots of choices, from grass and leaves to eggshells and coffee grounds. It's up to you!

A typical compost project is a backyard bin, but there are a lot of options, including indoor composting and composting with worms. No matter which one you choose, composting is low-cost and low maintenance. Get started now, and before you know it, your pile of waste will turn into an all-natural food for your lawn and garden.





## WHY SHOULD YOU COMPOST?

Composting is a low-cost way to improve the health and appearance of your yard and garden. But it's more than a cheap fertilizer. Plants grown in healthy soil look better, produce better fruits and flowers, and have a better ability to fight off diseases and pests.

Adding compost to soil also improves moisture retention, which means less watering. And because the soil holds nutrients longer, it releases food to your plants slowly over time. When your plants eat well, you do, too! Your fruits and vegetables will have more nutrients than food grown in depleted soil.

Composting your kitchen and yard trimmings also keeps waste from ending up in landfills. Yard and food wastes make up 30% of the waste stream, so recycling them as compost reduces the burdens on our sanitation and water treatment systems, and that's good for everyone!



# BROWN + GREEN + WATER

Composting produces two essential elements to nourish plants: carbon and nitrogen. Green materials, such as fresh grass clippings and food scraps, provide nitrogen. About one-third of your compost pile should be greens.

Brown materials, such as cardboard, dry leaves, and sawdust, provide carbon. About two-thirds of your compost pile should be browns.

The final ingredient in compost is water. Some of the microorganisms in compost use water to move around, so if your compost pile dries out, it will stop decomposing.

## BROWNS



Browns can come from inside your home (e.g., shredded newspaper, eggshells, dryer lint) or from outside your home (e.g., leaves, plant trimmings).

- Dry leaves
- Wood chips
- Sawdust
- Cardboard rolls
- Nut shells
- Cotton or wool rags
- Fireplace ashes (from wood burning)
- Houseplants
- Straw & hay
- Yard trimmings (leaves, branches, twigs, etc.)
- Used potting soil
- Dryer & vacuum cleaner lint
- Clean paper
- Eggshells

## GREENS

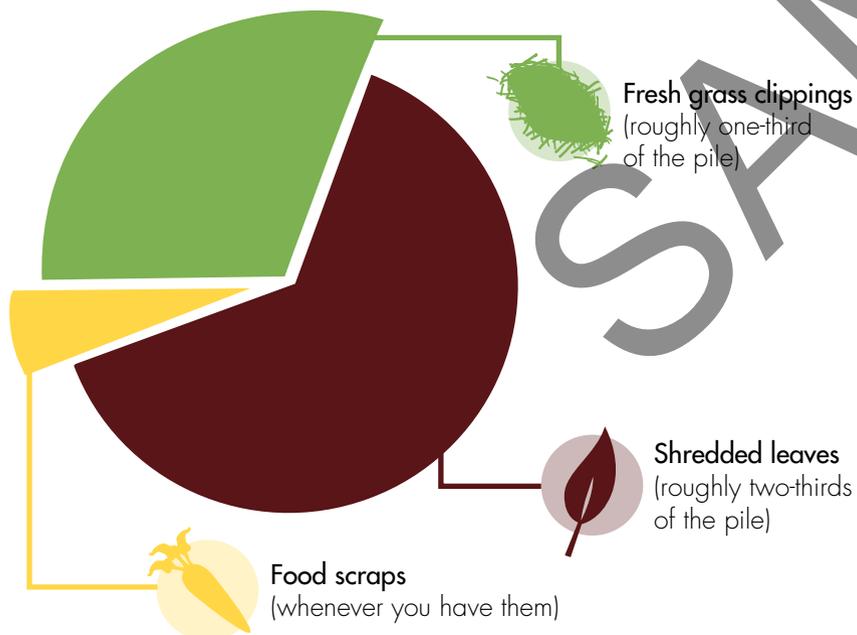


Greens can come from inside your home (e.g., food scraps, animal fur) or from outside (e.g., fresh grass clippings).

- Raw or cooked fruits & vegetables
- Coffee grounds & filters
- Paper tea bags with the staple removed
- Chicken, rabbit, cow, or horse manure (animals that eat only plants)
- Bread & grains
- Grass clippings



## WHAT'S IN A TYPICAL COMPOST PILE?



## 6 STEPS TO A PERFECT COMPOST PILE

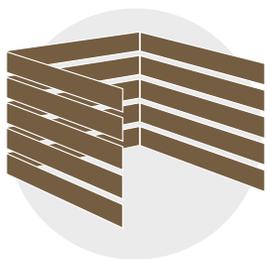
1. Select a dry, shady spot near a source of water for your compost pile or bin.
2. Set up your compost bin or enclosure (see next section for types of composting enclosures).
3. Lay down a 4-inch bed of leaves, then add a 2-inch layer of grass clippings. Repeat the layers until the pile is about 4 feet high. Top it off with the food scraps.
4. With a pitchfork, chop through the pile and mix up the materials. Add enough water to just moisten the pile all the way through.
5. Turn the pile once every two weeks. Use a pitchfork, long rake, or even a long stick to move the inside of the pile outward and vice versa. More frequent turning and watering can help speed up the process.
6. Depending on how active you are, your compost will be ready in three months to a year or more. Finished compost is similar to dark, crumbly topsoil and should have an earthy smell.



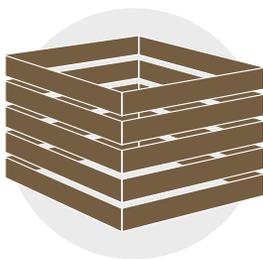
# TYPES OF COMPOST ENCLOSURES

Any of these enclosures will help you build and manage your compost pile. Choose the one that best fits your needs and budget.

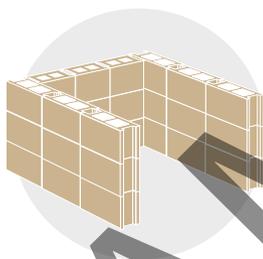
## HOMEMADE



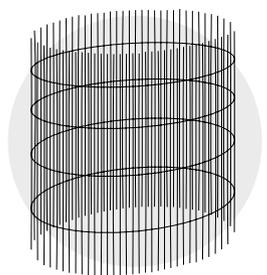
3-sided pallet\*



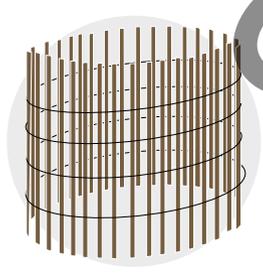
4-sided pallet



Cinder block\*



Chicken wire



Snow fence



Trash can with holes

\* Do not add food scraps to open (3-sided) enclosures, because they're not protected from pests.



## PREFABRICATED



Bin



Kitchen composter



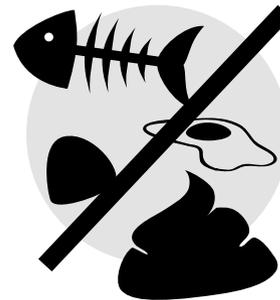
Tumbler



# MATERIALS THAT CAN'T BE COMPOSTED

There are many items you shouldn't compost. Some of them, such as metal and plastic, don't decompose and should be recycled. Others, such as dairy products and grease, can create odor problems and attract pests. Still others, such as pet waste, charcoal ash, and yard trimmings treated with chemical pesticides, might contain chemicals that are harmful to humans or plants.

## DO NOT COMPOST



- Aluminum, tin, or other metal
- Glass
- Dairy products (e.g., butter, milk, sour cream, yogurt)
- Eggs (but eggshells are okay)
- Fats, grease, lard, or oils
- Greasy or oily foods
- Meat or seafood scraps
- Pet wastes (e.g., dog or cat feces, soiled cat litter)
- Soiled diapers
- Stickers from fruits or vegetables
- Plastic
- Black walnut tree leaves or twigs
- Yard trimmings treated with chemical pesticides
- Roots of perennial weeds
- Coal or charcoal ash
- Firestarter logs
- Treated or painted wood
- Diseased or insect-ridden plants



# COMMON PROBLEMS & HOW TO FIX THEM

For the most part, composting happens all by itself. From time to time, however, you may experience problems, such as bad smells or pests, which are generally easy to fix.

## NOTHING'S HAPPENING

There are a few reasons why your pile might not be turning into rich, earthy compost. As organic material decomposes, it also heats up, which means your compost pile will get pretty warm. Some people even say it's "cooking." The ideal temperature is between 110°F and 160°F.

If your pile isn't heating up, or it's decomposing slowly, check for one of these common problems.



### Pile is too small.

Increase pile size by adding more material.



### Pile is too wet.

Turn pile and add more browns.



### Pile is too dry.

Turn pile and add water.

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#### Too many browns.

Incorporate food waste, grass clippings, or manure (chicken, rabbit, cow, horse—but **not** from house pets).



#### Not enough oxygen.

Turn pile.



#### Pile is too cold.

Increase pile size or (if the weather is cold) cover with tarp or straw.

## IT SMELLS BAD

If your pile smells like rotten eggs, it's either not getting enough air or it's too wet. Turn the pile and incorporate coarse browns like sawdust or leaves to soak up the excess moisture.

If your pile smells like ammonia, it probably has too much green, nitrogen-rich material. To restore balance, add coarse browns like sawdust and dry leaves.

## IT'S ATTRACTING FLIES AND RODENTS

If there are flies buzzing around your pile, bury food scraps at least three inches below the surface.

If rodents or other animals are attracted to the bin, bury food scraps—or stop adding food altogether—and consider surrounding the bin with an animal-resistant barrier. (A half-inch steel mesh hardware cloth should do the trick.)



## The Squeeze Test

The squeeze test is an easy way to determine if your compost pile is too wet or too dry. Grab a handful of compost (it should feel damp to the touch) and squeeze it tightly. Only a few drops of water should be released.

If the pile is too dry, add some water. After watering, check the center of the pile to make sure it's moist.

If your pile is too wet, turn it over and fluff it up as much as you can, then mix in some dry leaves, paper, or sawdust to soak up some moisture. If excessive rain is the problem, put a loose-fitting tarp over the pile.

## Troubleshooting

PROBLEM	SOLUTION
Too small	→ Add material until at least 4 feet deep
Too wet	→ Turn pile and add sawdust
Too dry	→ Turn pile and add water
Too cold	→ Cover with tarp or straw
Smells like rotten eggs	→ Turn pile and add coarse browns
Smells like ammonia	→ Add coarse browns
Attracting flies	→ Bury food scraps
Attracting pests	→ Bury food scraps and add an animal barrier



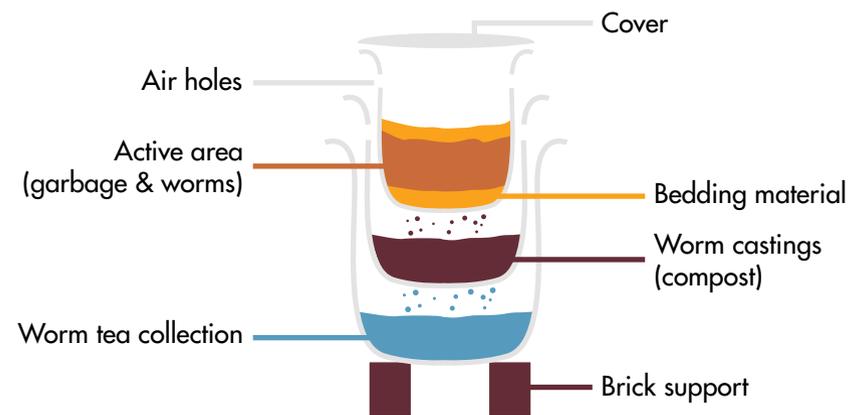
## OTHER FORMS OF COMPOSTING

If building a compost pile in your backyard isn't an option, don't fret. Apartment dwellers can compost indoors and turn food scraps into plant food in a very short amount of time. Another option, vermicomposting, uses worms to produce a rich, organic fertilizer. Vermicomposting can be done indoors or out, takes up less space, and is a great way to get kids involved.

## VERMICOMPOSTING

Vermicomposting is a form of composting that gets earthworms to do the work. The worms, usually red wigglers or red earthworms, eat their own weight in organic matter every day, replacing it with worm droppings, a rich brown substance that's an excellent plant food.

Vermicomposting doesn't require as much space as normal composting methods, so it's great for people who live in apartments. To get started, lay down a bedding of dirt, newspaper, or leaves in a covered container and introduce the worms. Over time, add fruit and vegetable scraps to feed the worms.



Managed properly, your indoor bin won't smell bad or attract pests.



## INDOOR COMPOSTING

If you don't have space for an outdoor compost pile, indoor composting (with or without worms) is a great option. The process is the same as outdoor composting but usually requires less time—about two to five weeks. You'll also need a special type of bin, which you can buy from a hardware or garden store, or build yourself.

### How to Make an Indoor Composting Bin

1. Start with two plastic trashcans. One of them should be small enough to fit entirely inside the larger one. (Choose a size based on how much space you have and how much compost you'd like to make.)
2. Drill several half-inch-diameter holes in the bottom and sides of the smaller can.
3. Place a brick in the bottom of the larger can, then add wood chips or soil around the brick.
4. Place the smaller can inside the larger can, on top of the brick.
5. Wrap insulation around the outer can.
6. Add composting material and cover with a lid.

## INDOOR COMPOSTING WITH WORMS

Indoor vermicomposting is a great way to reduce waste around your home or apartment. Just like outdoor vermicomposting, you'll need red wiggler or red earthworms. They'll eat your food scraps, junk mail, bank statements, receipts, and newspapers and turn them into nutrient-rich soil. Keep a ratio of 70% brown matter (paper, wood, dead plants) to 30% green matter (food scraps).

You can buy a ready-made indoor composting bin or make your own. To make your own, get a plastic storage bin with a lid (long and wide is better than tall and narrow). Drill plenty of air holes in the lid top, add your composting material and worms, and put the lid back on. Once a week, move the material around to keep it aerated.

## NEIGHBORHOOD COMPOSTING

Cities and towns across the country have started neighborhood composting sites. Residents are encouraged to drop off their food scraps for composting, which is used in parks and community gardens.



# USING YOUR COMPOST

When your compost is done, it's time to put it to work! Not only is it a great fertilizer, compost may also help suppress soil-borne diseases that can harm your plants. Once you start spreading compost around and see the results, you'll probably wish you had a lot more! Here are some tips to get started.

## VEGETABLE GARDENS

Before planting, spread a 3-inch layer of compost over the surface and work it into the soil to a depth of 3 to 6 inches.

## FLOWER BEDS

Prepare a planting bed for perennials with a 1- to 2-inch layer of compost and work it into the soil to a depth of 6 to 8 inches.

## LAWNS

Before seeding a new lawn, spread a 1- to 2-inch layer of compost over the entire area. Work it into the topsoil to a depth of 5 to 7 inches, aiming for a mixture that's 30% compost.

Compost can also be sprinkled on top of established lawns. Use finely screened compost and apply with a spreader. You want a very thin layer; more than a quarter inch of compost could smother your lawn.

## POTTED PLANTS

Every few months, give your plants a meal. Add an inch of compost to potted plants and work it into the soil with your fingers.

## MULCH

Use compost the same way you would peat moss, manure, or other mulch. Spread it around trees and shrubs and work it in to a depth of about 2 inches, taking care to not damage the roots. Don't place compost or mulch directly against a tree, as it could cause the bark to rot.



# SOURCES



For more information on composting, visit the U.S. Environmental Protection Agency website at [www.epa.gov/compost](http://www.epa.gov/compost).

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