What is compost?

Compost is a dark, crumbly, earthy smelling form of decomposed organic matter easily made from garden/yard trimmings and kitchen scraps. It can enrich and serve as a top dressing for soil.

Why compost?

* Almost 30% of all refuse taken to our landfills is some type of organic waste. These materials do not decompose in landfills because air and water are excluded.
* We can create a quality soil conditioner while helping our community in its waste reduction efforts.
* Humus, a component of compost, when mixed with water, becomes Humic Acid which converts nutrients, minerals, and trace elements into a form more available to plants.
* Compost, when added to soil, retains water, adds valuable nutrients, and neutralizes the alkalinity of desert soils.
* The microorganisms found in, and fed by compost provide important nutrients to plants.
* Using home-made compost in our gardens makes the use of store-bought fertilizers unnecessary!

How can I use compost?

* As a soil amendment for flowers and vegetable gardens, trees, and house plants.
* Start each planting season by laying a blanket of compost 1 - 3" thick over your prepared plot.
* As part of a seed-starting mix.
* As a liquid fertilizer by brewing a tea of compost in warm water for a day.
* Larger woody pieces can serve as a mulch. Because it is rich and holds water so well, compost should be used sparingly around native plants.

What can I compost?

Anything that was once a plant can be composted. The key to successful composting is a mix of 4 parts carbon material to 1 part nitrogen material. This can vary up to a 50/50 mix. DO NOT use more than 50% green materials.

Carbon-Rich (brown/ dry)	**Nitrogen-Rich (green/moist)**
Straw	Wet grass trimmings
Pine needles	Fresh plant clippings
Small branches	Vegetables/fruit wastes
Dryer lint	Horse, sheep, goat
Dry grass clippings	manure and beddings
Dried plant materials (trimmings, leaves, vines)	(without dewormer or hormones)
Sawdust	Alfalfa pellets
Shredded newspaper	Tea bags
Hair, fur, feathers	Coffee grounds/filters

Do NOT compost these things!

* Meats, grease, fats and oils
* Dairy products, especially cheese
* Dog or cat feces. Cattle or pig manure
* Diseased or invasive plant material of Bermuda grass, Buffelgrass, Fountain grass
* Oleander, eucalyptus (takes longer and is oily but will compost), tamarisk (salt cedar). These materials can be toxic to handle or do not break down easily in our climate
* Egg shells - the Tucson area native soil has an excess of calcium. Some gardeners use egg shells when their soil/potting mix is mostly compost and not just native soil
* Herbicides/pesticides are neutralized during the composting process. Compost containing these needs to be very well aged. Best avoid.

How do I start? Open Air Composting

First, select a place in the yard, preferably in the shade, out of the wind, within reach of water. **Next**, you'll need to assemble a bin to contain your composting organic matter. For little or no cost, a bin can be made from a ring of heavy mesh wire, old pallets, or concrete blocks, but enclosed bins conserve moisture and exclude more pests.
To ensure successful composting, it is a good idea to make your bin a minimum of 30 inches in each direction. This size insulates itself while allowing air to penetrate and is large enough for the compost heat stage.
Should you choose not to build a bin, commercially made composting bins offer an easy and attractive way to recycle organic matter at home. By reducing the air hole size, you can conserve moisture.

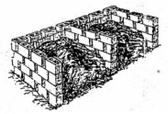
Ten steps to success

1. Gather materials you will be using to build your pile. You'll want about 4 parts brown (carbon) material for every 1-2 parts of green (nitrogen) material. Reserve some browns for later.

2. Shred or chop material into as small a size as possible. This will help the microbes break it down faster. Or sift out larger chunks when finished and use them as an activator for the next batch.

3. Locate your bin or pile in a shaded and sheltered area if possible. Loosen a 2" layer of soil where the bin stands.

4. Starting with brown, add materials alternately in layers no more than 4" thick. Occasionally sprinkle in some manure or activator such as finished compost, native soil, or alfalfa meal.



5. Moisten each layer as you go. Ensure the pile stays only as moist as a wrung out sponge. Add water if pile gets too dry and cover during heavy rains.

6. Cover the pile with a layer of reserved brown material, cardboard. burlap, or light-colored shade cloth to prevent it from drying out too quickly and to reduce pests. If the sides of your bin are too porous, line them with corrugated cardboard.

7. As decomposition takes place, the pile will begin to heat up. Temperature can be monitored using a compost thermometer or by touching the pile.

8. Completely turn pile weekly or if temperature drops. If pile does not heat up, follow troubleshooting methods from this brochure. You can turn your pile less often, but it will take longer to finish. Continue turning and moisten-

9. Your compost is ready when it is soft, dark, and crumbly.

10. Sift material through ½-inch screen and apply liberally to garden. Larger pieces can be added to your next pile.

Troubleshooting

Symptom	Problem	Solution
Bad odors	Too much greens, pile too wet, not enough air	Turn pile completely. Add browns
Not composting	Not chopped enough, pile too dry, not enough greens	Turn and moisten pile, add more greens
Will not heat up	Pile too small, not enough green matter, too dry	Add more greens, moisten pile, add an activator
Flies or ants in pile	Pile is too dry, food waste not covered	Moisten pile, bury or cover food waste completely

TIPS: Check out our website for more info.

* In your kitchen, you can store food waste in a container or bag in your freezer until you are ready to add it to your compost. This has the added benefit of breaking down the cellulose in green plant material.
* Brown plant material can be hard to come by in the desert. After pruning plants like mesquite, you can save the branches until the leaves dry up, then use those. Ask friends to save rakings, rake up under trees when the natural mulch becomes too thick for light rains to soak in.
* In the desert, compost material will often dry out before it can decompose. Sealing up the holes in an outdoor compost bin can help retain moisture during the composting process.
* You can chop up or process your kitchen scraps in a food processor before adding it to the compost pile. Smaller pieces of plant material will compost faster than larger ones.
* Geckos often lay eggs in compost bins so avoid sifting July-November.

Other ways to compost

* **Soil Incorporation/Direct/Trench Composting**: Chop kitchen waste, run through a blender or food processor with lots of water. Bury this "soup" in holes or trenches directly in garden or flower beds around plants. Fill with soil and water well. Seeds or transplants can be planted immediately.
* **Worm Boxes/Vermicomposting**: For use on a shaded balcony or carport, use a wooden or plastic box with small drainage holes in the bottom and a loose fitting lid if possible. As an example, a 2'X2'X12" box will compost the kitchen scraps from 4 people, about 4 pounds a week. The box should be filled with moistened bedding made from a mix of shredded paper, dried leaves or torn pieces of soaked corrugated cardboard, manure, compost, and coconut coir. Add at least 100 red wiggler worms. Dig chopped or blended scraps into a different place each week. A fitted piece of carpet works well as a cover, retains moisture and helps to keep temperatures down – 85 degrees is the upper limit for worms to thrive. Remove the "vermicompost" every 3 months. Refill the box and put the worms back in the bin. A bottomless box can be placed directly on loosened soil. Fill in the same manner. After 3 months, lift the box and use the vermicompost as a fertilizer. Keep shaded and moist during extreme heat.
* **Emo (Effective MicroOrganisms)/Bokashi Composting:** an anaerobic fermentation process that uses inoculated bran to turn kitchen waste into a soil builder and nutrient-rich tea for plants.
* **Cold composting**: just pile it up and wait a few years before sifting.
* **Countertop "Composters"** fyi: These do NOT produce compost. They dehydrate food waste that can then be added to compost as brown material

Take a closer look

Nature has its own composting program using millions of microorganisms (bacteria, fungi, protozoa). Earthworms and grubs assist in reducing material into basic elements such as nitrogen, phosphorus, and potassium. These are the very things contained in commercial fertilizers. By composting at home, we speed up the slower, natural process. In order to live and work in a compost pile, microorganisms must have oxygen, water, nitrogen, carbon and enough mass to build heat. Dry, brown, woody materials are high in carbon, and supply daily energy. Green, moist, materials provide nitrogen and the food the microorganisms need to grow and reproduce. When the food and conditions are right, the microorganisms reproduce so much that heat is produced. The faster these workers eat and reproduce, the hotter the pile gets. A compost bin is a factory where a new product called humus, or compost, is produced. Home composting produces LIVE SOIL that requires less feeding/fertilizing than sterilized commercial products. In fact some commercial fertilizers kill the healthy microorganisms in live soil. Better to use more compost instead.

For more information:

To learn more, please check out these books:
Teaming With Microbes, by Jeff Lowenfels and Wayne Lewis, *Incredible Heap*, by Chris Catton, *Let it Rot*, by Stu Campbell, *Rodale Guide to Composting* by Jerry Minnich, *Worms Eat My Garbage*, by Mary Applehof

Tucson Organic Gardeners offers the following.
Monthly speakers on gardening held the 3rd Tuesday of each month, September—April.
Special plant sales, field trips and opportunities for members.
Workshops, activities, references, videos and recordings of some of our meetings, on organic gardening and composting.
See our website and social media for more info about composting and our club. Email us with any questions:
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The Tucson Organic Gardeners

Home Composting in the Desert

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