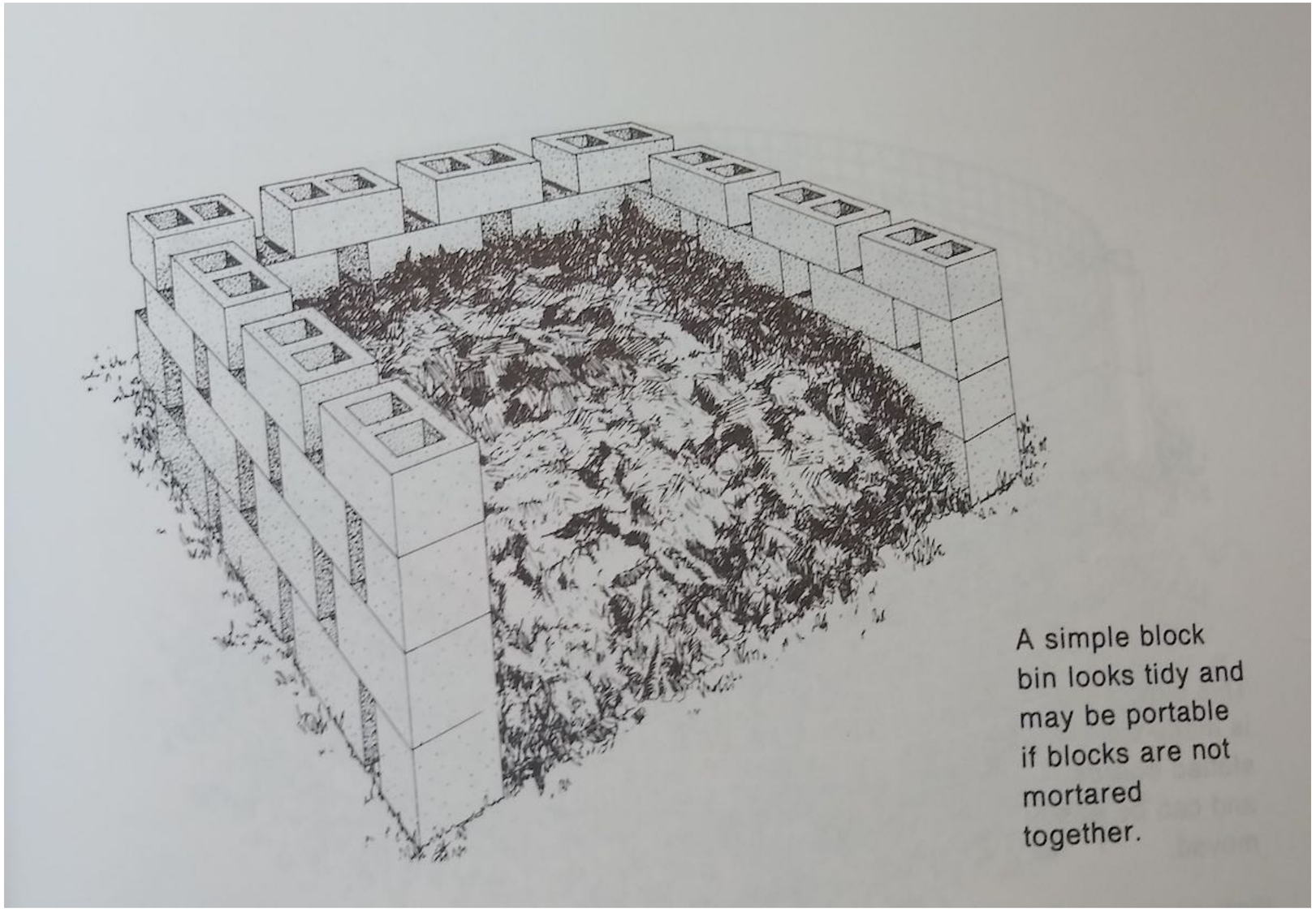
Composting

Warners Hub

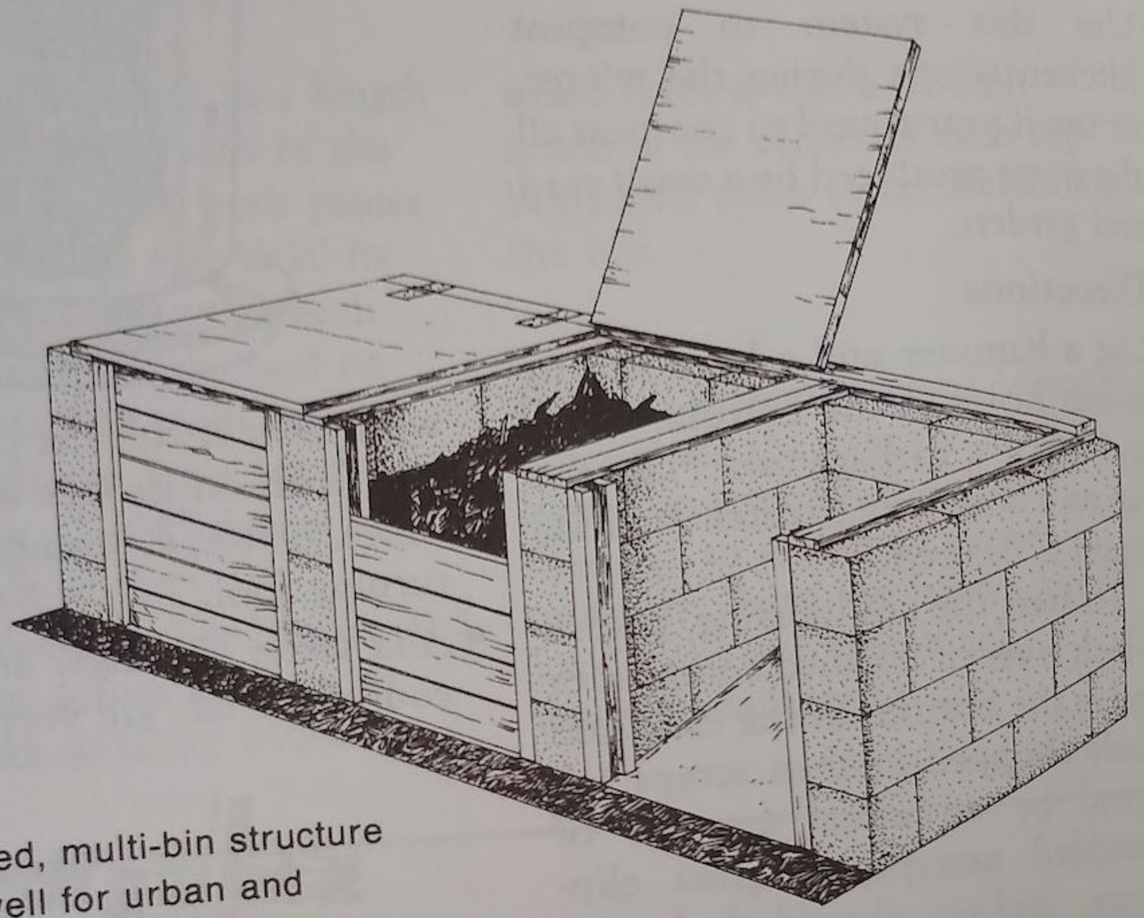
There are many different types of composting ways.

So many options, in fact that the whole deal is about making the choice that works for you.

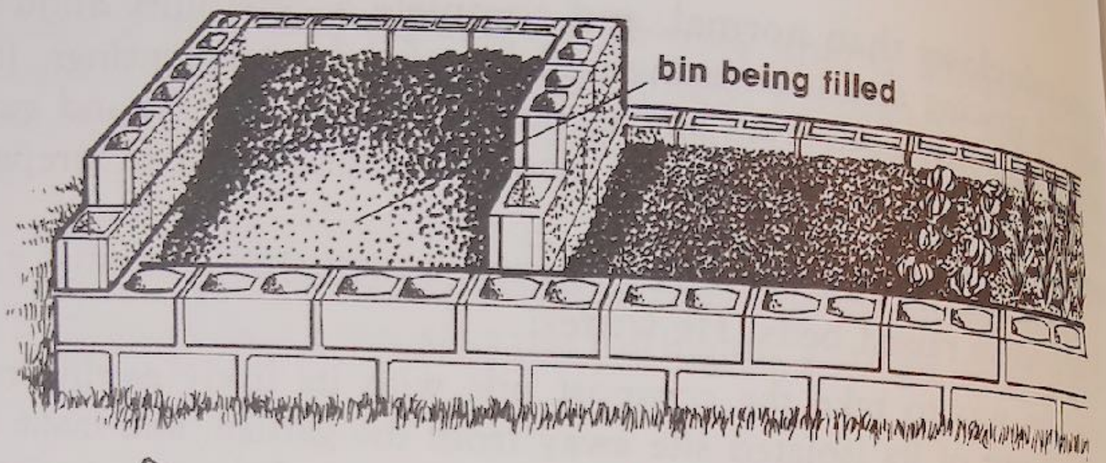
Your food intake, your desire for exercise, your backyard climate.

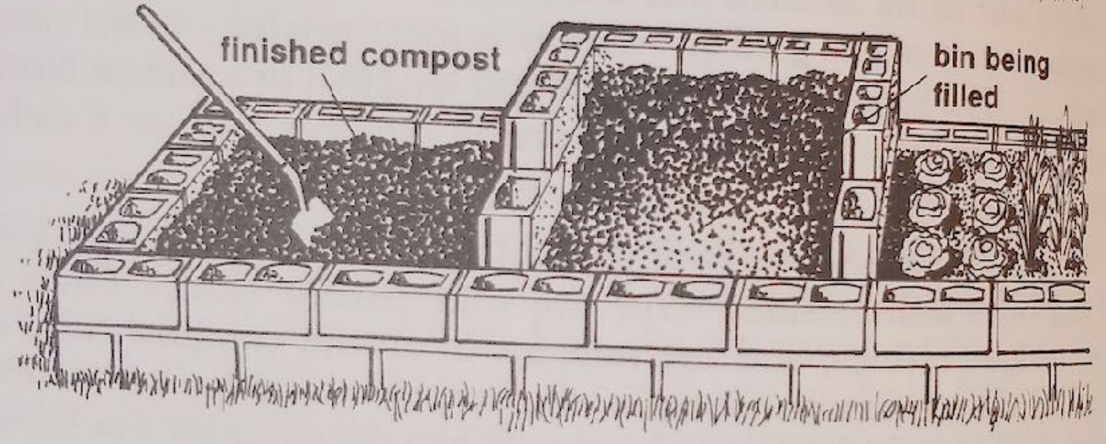


A simple block bin looks tidy and may be portable if blocks are not mortared together.

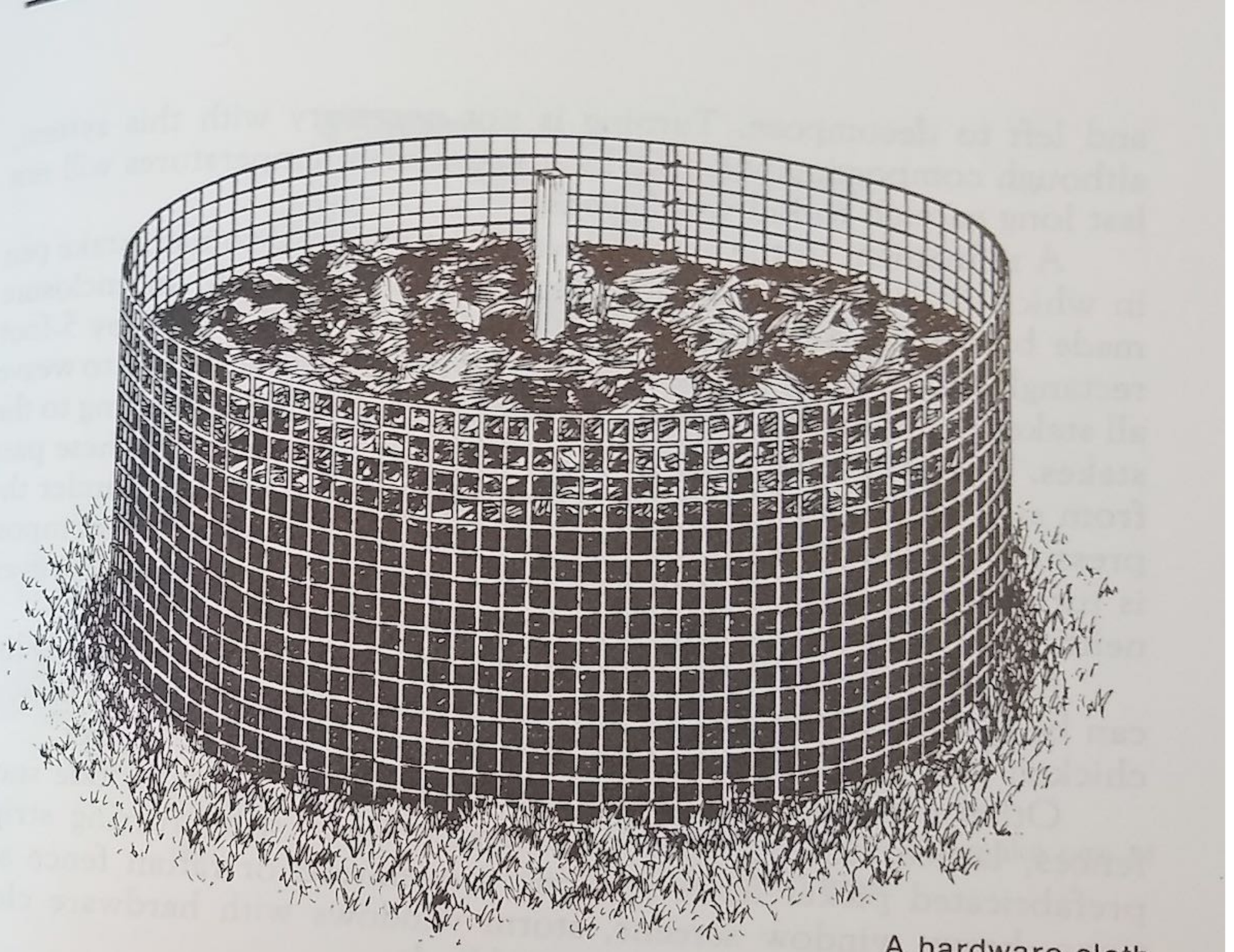


A covered, multi-bin structure works well for urban and suburban composting.

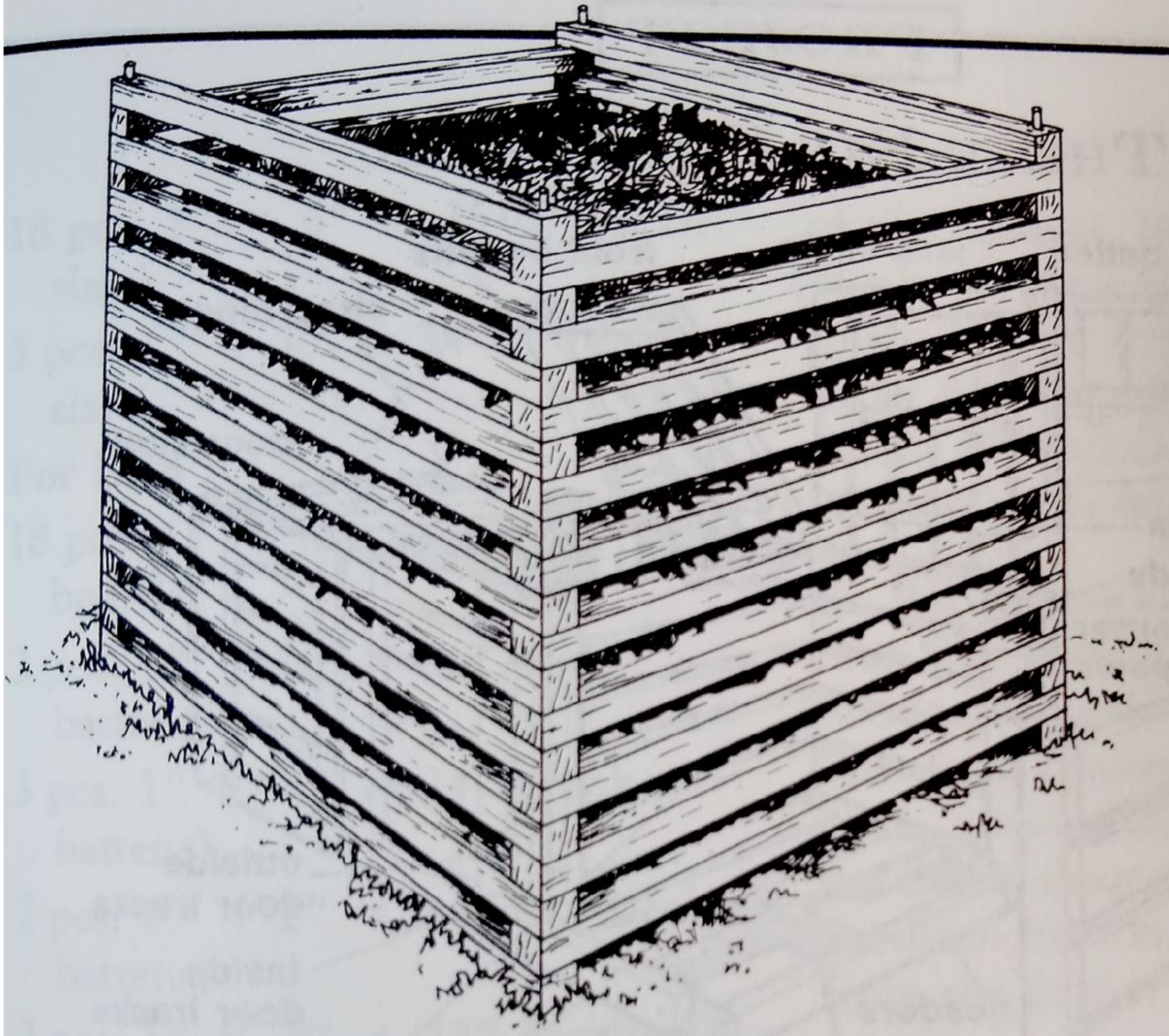




Combining a compost

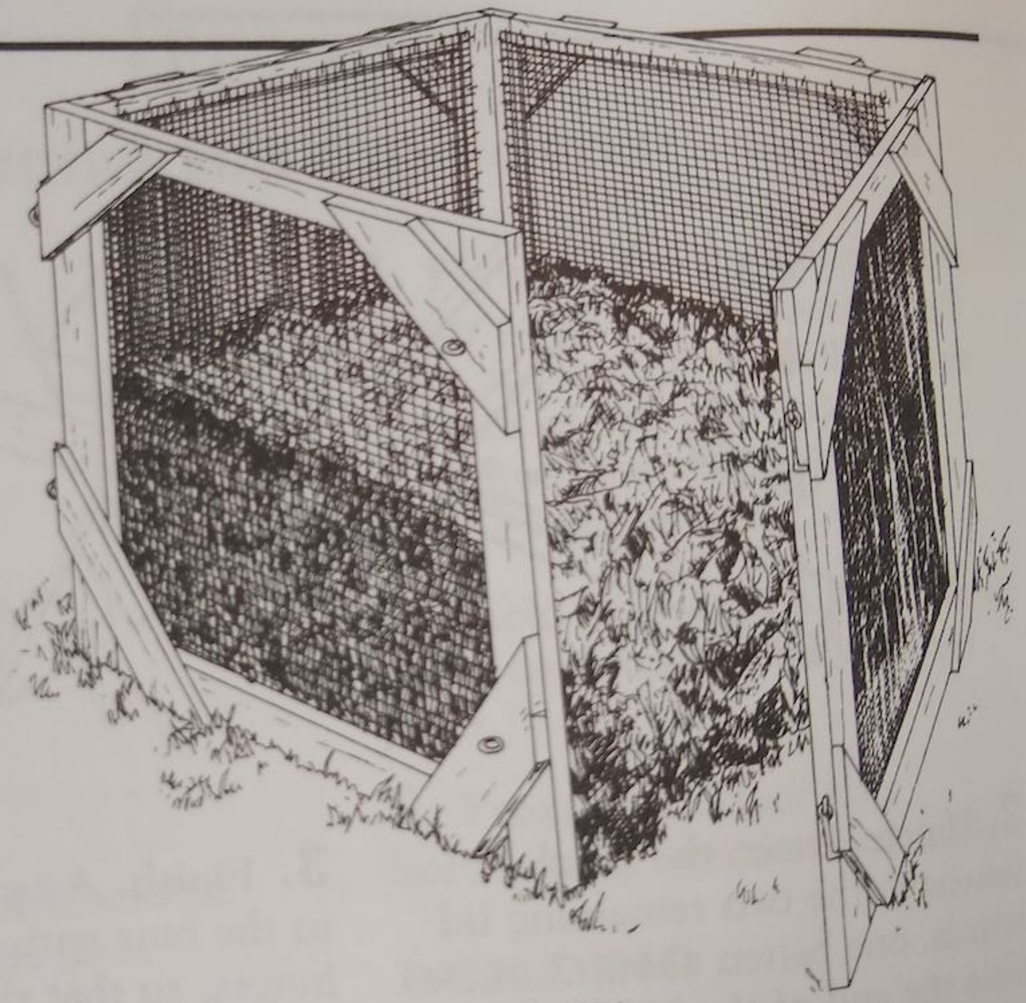


A hardware cloth cylinder forms a very simple, movable pen.



The Lehigh bin uses alternating 2 × 4s held together with 3/8-inch rods.

The wire-and-wood cage-type bin is inexpensive and portable.



The New Zealand Bin

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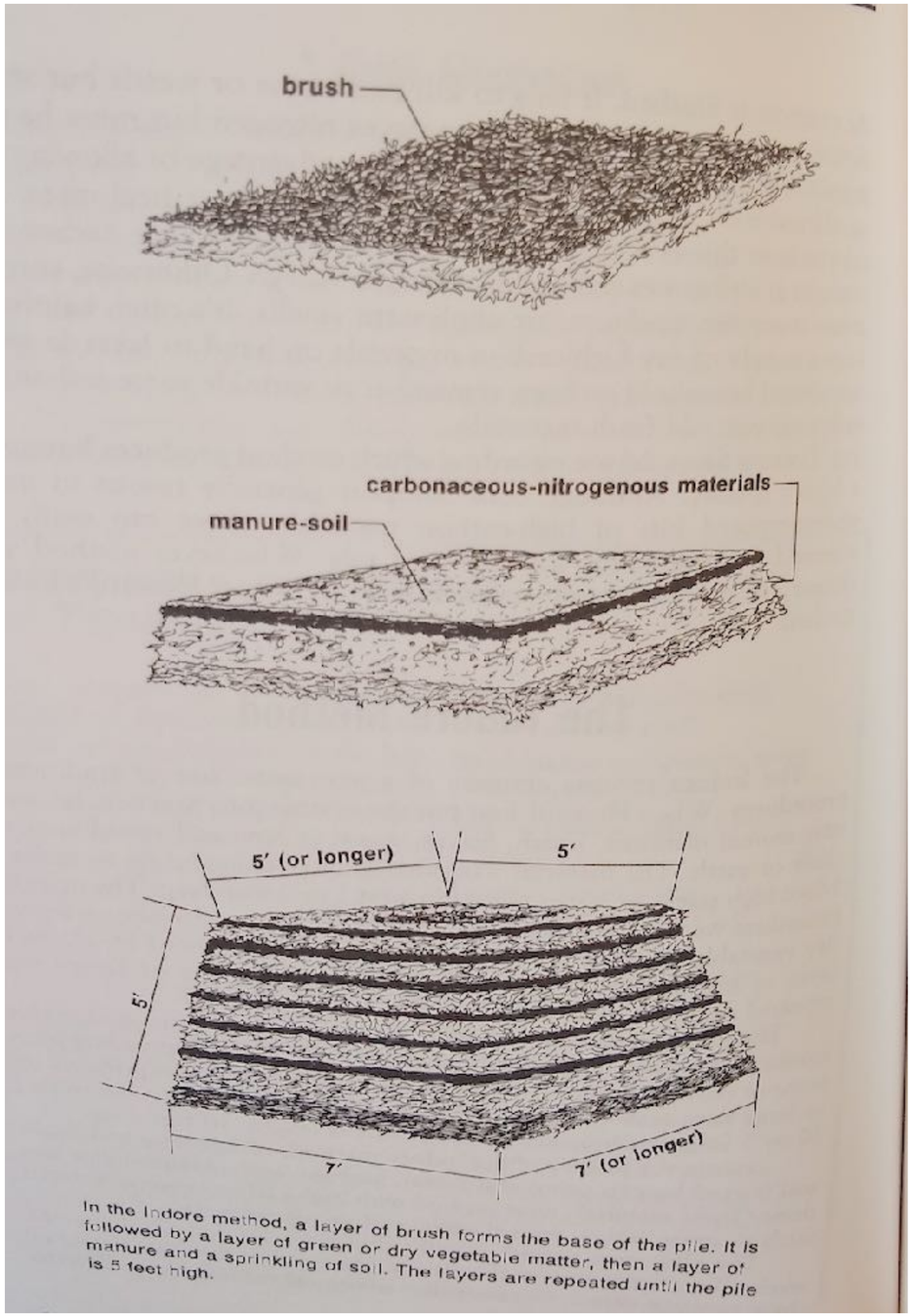


In the Indore method, a layer of brush forms the base of the pile. It is followed by a layer of green or dry vegetable matter, then a layer of manure and a sprinkling of soil. The layers are repeated until the pile is 5 feet high.

This one has no bin. It’s layers are important. When the temp is right, like in a few weeks, it all gets turned.

If you do this in long row its called a Windrow and these can be turned with a tractor. By hand is very vigorous.

Garbage Can Composting

Use this system to compost kitchen scraps during the winter, or use it year-round to compost all the waste produced by a small yard and garden.

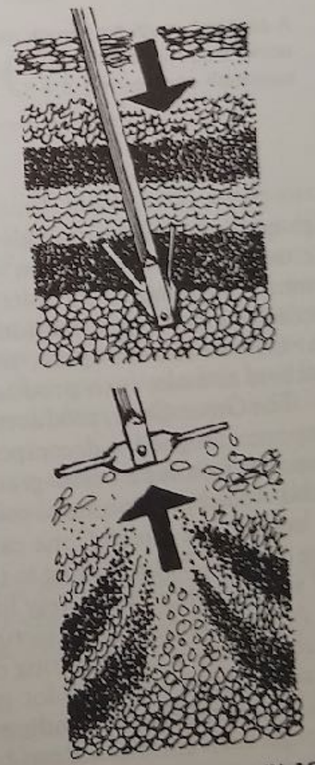
Directions

Use a hammer and a large nail to punch holes in the bottom, sides, and lid of a garbage can. Place the can on a large tray to catch draining liquid if desired.

To start the composting, place a 3-inch layer of finished compost or soil in the bottom of the can. Add finely chopped kitchen scraps followed by an equal amount of shredded newspaper, grass clippings, and/or shredded leaves. Add more material as available until the can is full, then layer new materials into another can and allow the first to finish composting—about 3 to 4 months.

Tips to Make Your Composter Work Its Best

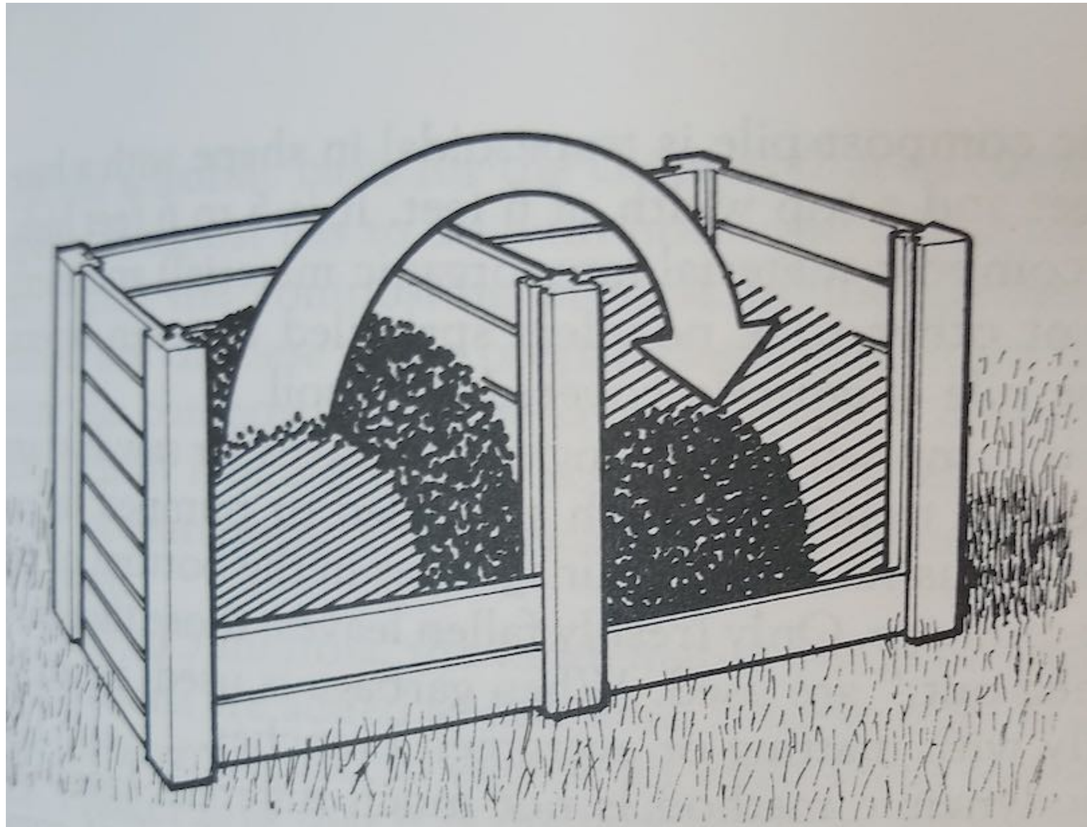
- Protect the composter from freezing temperatures—put it in a garage or cellar.
- Start with soil or finished compost, and add a little more on top of each addition.
- Chop, shred, or even blend all additions as finely as possible.
- Add kitchen scraps before they start to smell.
- Mix the composting material after each addition and every few days. If you don't, it may produce unpleasant odors. Stir with a stick, roll the can back and forth on its side a few times, or use a "compost-turning tool."
- Add water sparingly and only if your materials are very dry.



COMPOST-TURNING TOOL IN ACTION

It’s important to have drainage and air.

Note the tool that comes down and then opens to turn the pile, thus adding air.



Turning the compost properly is essential to the California method. Transfer the materials from one bin to the next, so that the outer layers are moved to the middle of the heap after turning.

This one is made of pallets

Trendy, beautiful,

Caution they may have fire resistant chemicals and pesticides.

Bokashi

The Bokashi method is used for composting all organic food waste, including meat, dairy and fats. It was developed in Japan and used in Asia to ferment food prior to composting. The process uses lactobacillus bacteria to predigest waste matter, which eliminates odors and decreases composting time.

Anaerobic and uses a special grain starter to ferment.

Dorothy Willis will go into details of this process. There is a hand-out too!

Vermiculture

Tumbler

Britni just got us one!

It has two bins.

One that starts with fresh materials

And one to ‘Finish’ for 2 weeks.

It takes active tumbling, but not digging.

Lets go and look at it!

Now what?

What do you personally have?

Slope, shade, space, physical endurance, food choices.

What is your outcome?

Potted plants on the patio. Or a 1/4 acre field

We need organisms like bacteria, specializing in breaking down organic compounds.

Actinomycetes, earthy smelling soil.

Protozoa, simplest form of animal organism.

Fungi, single celled plants.

Mycorrhiza is my favorite thing to find on a walk and add to my bins.

Physical decomposers

Mites, millipedes, Centipedes, Sow bugs, Spiders, Beetles

Nematodes, Ants, Flys and the beloved Earthworms

What we don’t want is the wrong poop.

No cat poop
No dog poop
No bird droppings

Sometimes humans is okay

This is more complicated, so lets talk about it.

Odd things to put in compost

Yes, that’s hair

Fingernails

T-shirts

Junk mail

There is a great long list in the Rodale book. Specialty things for large operations, yet fun to read.

Manure that is good.

Rabbit, chicken, sheep, horse, steer, cattle, duck pig

Urine is nicely stable. Even human. Collect it!!

High in nitrogen. Use Rock phosphate to stabilize and prevent it volatilizing as ammonia.

Manure is often full of weed seeds that can be killed by the high temperature of composting.

Its very important to balance the brown and green

Every book says so.
Do I?
Not so much. By accident mostly, but I’m not in a hurry.

Here is what I do.

I have dug a pit kind of close to the back door. I put in all the vegetable kitchen scraps. Manure when I can get it. I use the gopher holes as a method of air ventilation. I throw a perforated mesh on top mostly to keep the dog out. Sometimes I use cardboard. Each time I bring some scraps out, I did a hole and empty a stainless steel container I keep on the countertop. I cover that with soil.

I put in leaf mold, small branches, the end of cycle greens from the garden. Hair of all kinds and citrus (which most folks don’t do). No meat, no dairy.

I have a cardboard divider and put the ‘done’ stuff in there to wait until I need it in the garden.

There are worms naturally in there. If there are grubs, I squeeze them with my fingers. Some pill bugs are good. Mostly I kill what I see as they eat my plants.

I add water in the summer. The bin is below a cottonwood tree.

Here is what Ralf does.

His focus is about worms!

He keeps a pile of sticks separately and takes from the underside when its ‘ready’.

He uses no meat, no citrus and no metal, for example from tea bags.

He covers the bin with Hardy board and under that is a ‘worm blanket’ of straw left over from archery practice. Worms love straw and that keeps the pile warmer in winter and cooler in summer. This set up allows the right sogginess. Did I say they love it?

We will talk about Vermiculture in more detail. And fill the bin we made.

When we are near the coast we have two ways.

We put yard clippings in a tumbler until they break down a bit. Then put them in the outdoor bin with worms.

When the compost is ‘done’ it shovels directly into the slightly raised beds.

We use a three tier plastic purchased bin that lives in the garage in the winter and the covered patio in the summer. Coffee grounds and half egg shells are their favorites. The trays get stacked in different layers and the worms move through the holes to get to fresh foods.

If you cut a worm in half you have two, right? No, please don’t try it.

How do they multiply?

Red wiggler worms, scientifically known as Eisenia fetida

Mating: Red wigglers are hermaphrodites, meaning they possess both male and female reproductive organs. When two worms come into close proximity, they align ventral surfaces (undersides) and exchange sperm. This transfer usually occurs in a mucus tube secreted by the clitellum, a band-like structure near the head of the worm.

Remember that fire in WS?

- Keep your compost the moisture consistency of a sponge
- Turn pile regularly
- Nothing combustible like oil rags, or even dense clumps of dry leaves.
- Keep the pile well ventilated.
- Monitor temperature
- Avoid large introductions of green materials as they generate heat.
- 300 to 400 degrees is the temp for combustion

Temperatures to know

110 - 140 Degrees in a compost pile is normal.

Bacteria die at 130 degrees

Weed Seeds kill at 140-160.

Worms die above 90

300 is too very high

All temperatures are in Fahrenheit.

Diagram for Hugelkulture made for California Center for the Arts in Escondido. The pile was made in the form of a tree.

Large wood on the bottom. This is a long term process and needs lots of water. The idea is from Germany, a wetter climate.

Three ingredients are needed for composting: organic matter, air, and moisture.
"greens" and "browns." High **carbon** (C) ingredients are commonly called "browns" Browns include fallen leaves, straw, and corn stalks.
High **nitrogen** (N) ingredients are called "greens" even though they may be any color They include green leaves such as grass clippings, kitchen scraps, and animal by-products such as manure.

The microbes that cause the most rapid, "hot" composting flourish when the carbon to nitrogen ratio of the organic materials they're digesting is about 30 parts carbon to 1 part nitrogen.. Just try to layer approximately one part "green" material rich in nitrogen with two to three parts "brown" material rich in carbon to get your pile cooking actively. For example, combining one part high N grass clippings with two to three parts high C dead leaves makes a pile that decomposes quickly.
If you have the ratio as above the pile will heat up to 140 to 150 degrees F. and provide finished compost in a few weeks. This process also kills many weed seeds and pathogens. If you don't follow this ratio, you'll still get compost. If you have a higher proportion of browns, the material will break down, just more slowly, and weed seeds and pathogens may survive. If you use this slower method it is especially important to avoid using any materials from diseased plants or from weeds that are about to seed. If your pile starts to smell like ammonia, you've got too high a proportion of greens. Simply mix in some high carbon browns to take care of the problem.

Easier, but less scientific.

Our new tumbler at the Hub!

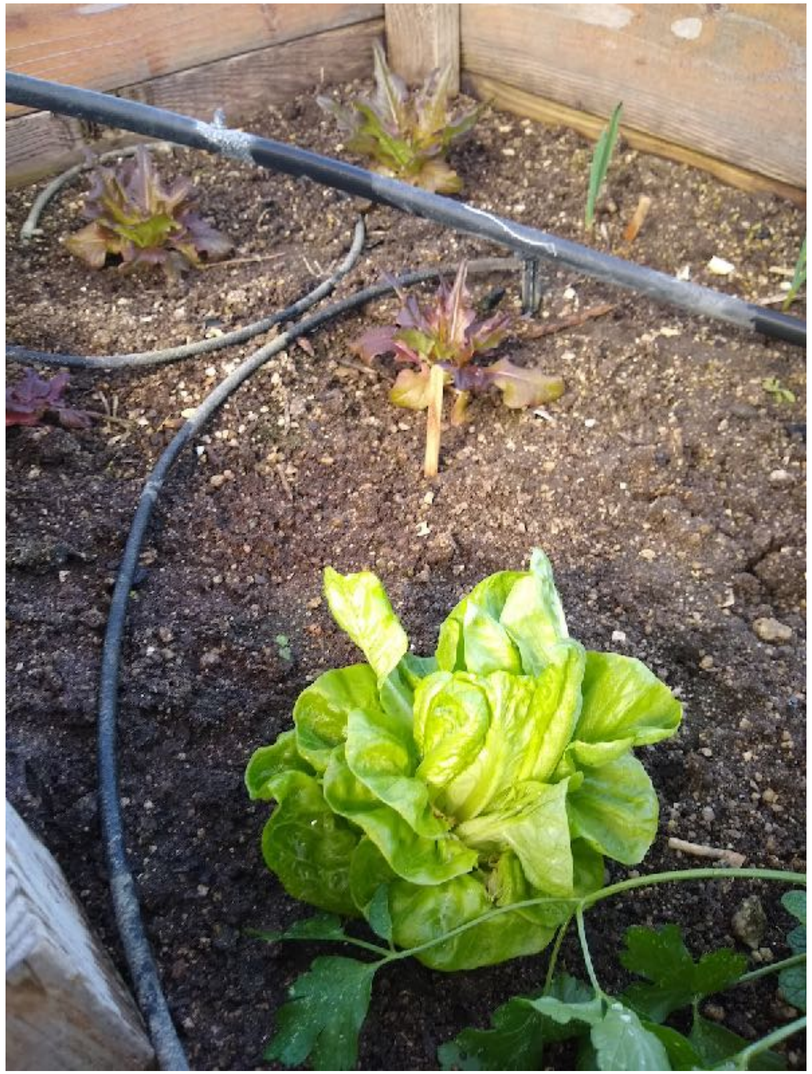
This is important info for Stone Ridge and interesting to see a large scale commercial project for composting.

No plastic bags, No pet waste, No gravel, No trash, No hazardous materials

Next month is a Field Trip

- We will be visiting the home and garden of Kathryn Fletcher in Los Tules.
- March 26th. 2:00 to 4:00 Only adults, sorry kids! It is too hard to bus the school kids.
- Pick up flyer with address info

2 closing tips



Thank you.

Any questions?