

Intro to Composting

ELEA COOPER

CLERMONT SOIL & WATER



CLERMONT EST 1943
SOIL & WATER
Conservation from the Ground Up



Outline

Why Compost?
Composting Chemistry
Hot and Cold Composting
Vermicomposting
Troubleshooting
Alternatives

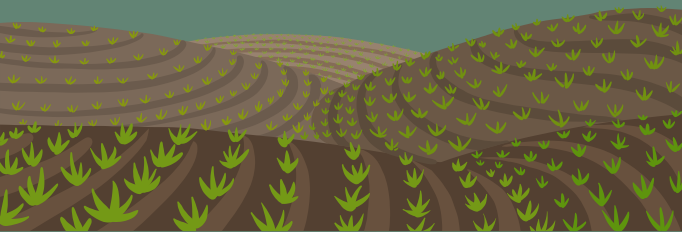
Quick Facts

1/3 of food produced globally is never eaten (between 30-40% in America)

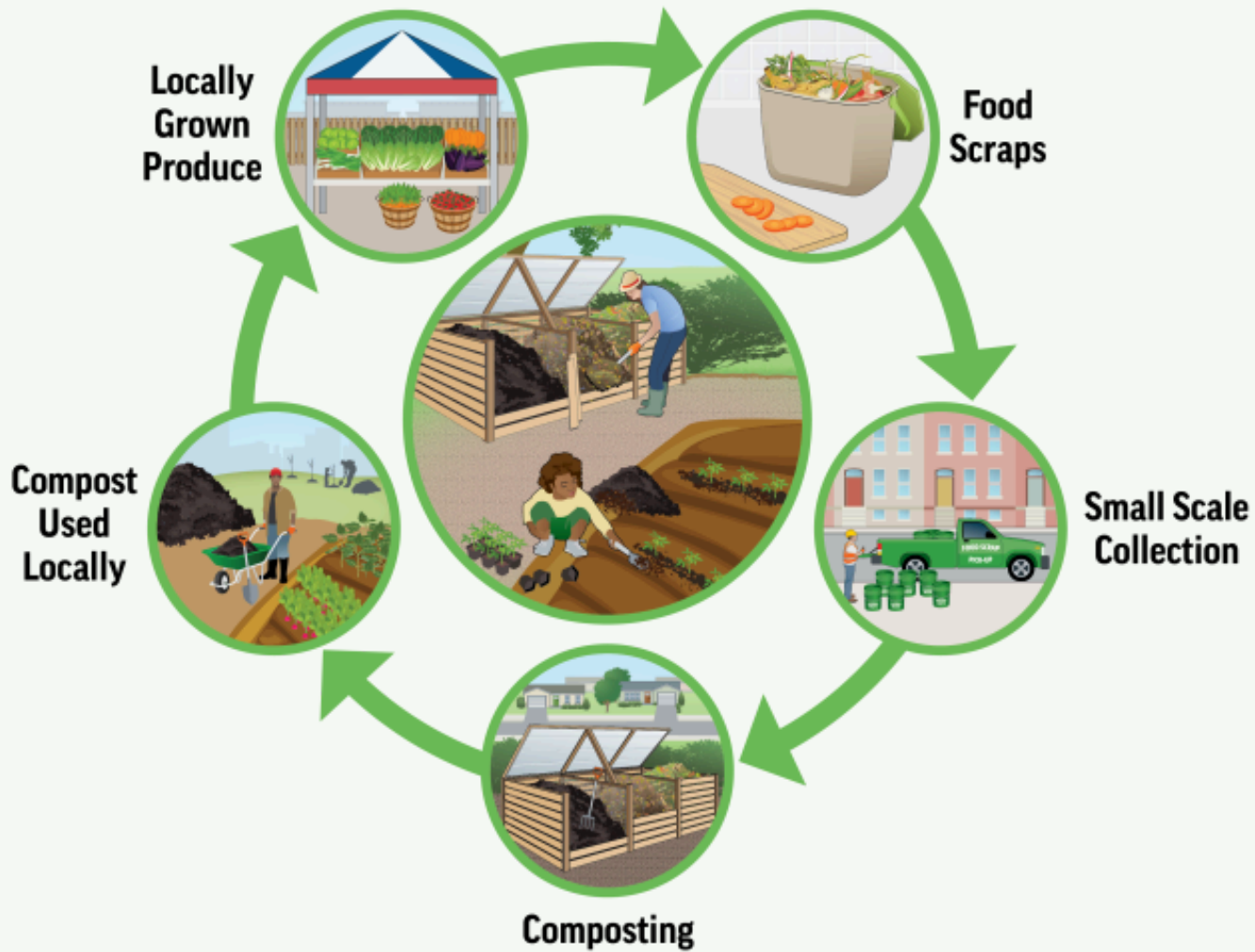
The equivalent of 149 billion meals go to waste in America every year

Food is the single largest category of material placed in municipal landfills

Food can take up to decades to break down in a landfill, and will produce methane (28x worse than carbon dioxide)



Closed System vs Open Loop





Why Compost?

- Environmentally friendly
- Supplement fertilizer
- Loosens clay heavy soils
- Improves moisture retention in sandy soils
- Aerates rooting areas
- Attracts good microbes and invertebrates

Composting Chemistry

Four Main Ingredients

1. Green Material (nitrogen)
2. Brown Material (carbon)
3. Water
4. Air

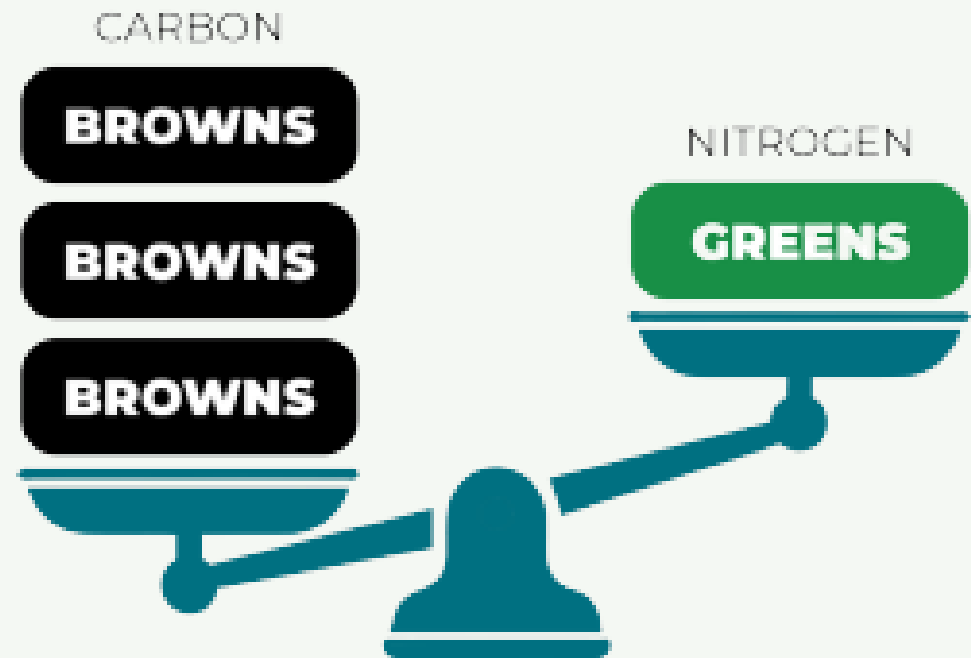


Image from Hamilton County R3sources Compost Guide

Greens

- » Fruit Scraps
- » Vegetable Scraps
- » Coffee Grounds & Tea Bags
- » Bread, Pasta, Rice
- » Pizza Crusts
- » Green Grass & Green Plants
- » Manure From Farm Animals



Browns

- » Brown Leaves & Dry Grass
 - » Dead Plants & Flowers
 - » Corn Stalks
 - » Straw & Pine Needles
 - » Shredded Newspaper
- » Old Brush, Shrub, Trimmings, & Prunings
- » Sawdust & Wood Chips



- » Butter or Dairy Products
- » Meat
- » Bones
- » Diseased Plants
- » Weed Seeds
- » Oil and Fats
- » Grease
- » Salad Dressing
- » Dog or Cat Manure
- » Briquettes Charcoal Ash

Can Compost

- » Egg Shells
- » Paper Egg Cartons
- » Paper Bags & Paper Plates
- » Stale Crackers
- » Stale Baked Goods
- » Old Beer & Wine
- » Spoiled Tofu
- » Corks & Toothpicks
- » Tissues
- » Hair & Nail Clippings



Backyard Composting

Hot Composting

- Add materials in 3:1 Brown:Green Ratio
- Some effort
- A few months to see finished compost

Cold Composting “Set and Forget”

- Add materials as you want
- Minimal effort
- 1-2 years to see finished compost

STEPS TO COMPOST

1

Pick your bin and find a spot

2

Build Your Pile

- **Hot: Carefully combine Browns and Greens in 3:1 Ratio**
- **Cold: Throw Greens and Browns in at any time, ratio does not have to be perfect**

3

Wait

4

Harvest!

1 Selecting a Bin



Types of Bins

No bin

Woven Wire

Block or Brick

Wooden

Plastic Bin

Turning
Contained Plastic



Picking a spot

Look for:

- Near garden
- Near hose
- Level and well-drained

Near or far from the house?

- Near: potential pest issues
- Far: accessibility

Sun vs shade?

- Avoid full shade
- Sun speeds up but dries out



3 Wait

You can continue adding new food scraps, but make sure to bury them under browns

Monitor moisture levels, and accelerate by covering or mixing

Covering: Cover with lid or tarp. Pile needs an air pocket



Mixing: Use a composter turner or shovel/pitchfork. Mix more frequently at first and then less frequent as the pile matures



Troubleshooting

SYMPTOM	SITUATION	SOLUTION
Pile has a bad odor	Not enough air	Turn it more frequently
	Material too wet	Add dry material or leave off lid
	Too much nitrogen	Add carbon (leaves, newspaper, etc.)
Pile isn't decomposting quickly enough or isn't producing enough heat	Too small	Mix new ingredients into the pile (min. volume is 3 ft. x 3 ft. x 3 ft.)
	Material too dry	Moisten and turn the pile
	Lack of nitrogen	Add nitrogen source (fresh grass clippings or food scraps)
	Lack of oxygen	Turn the pile more frequently

Pests? Try:

- Covering your pile
- Burying food scraps deeper
- Ensure no oils/dairy/ cooked food is being added
- Heating pile up with mixing and covering
- Placing bricks on the lid
- Pause adding more scraps for a few days



4

Harvesting Your Compost

Compost is ready to use when the finished product is a rich dark brown color, smells like earth, and crumbles in your hand.

Finished compost can be used as a soil amendment or mulch

Soil Amendment

Mix in two to four inches of compost to the top six to nine inches of your soil

Mulch

Loosen the top two to three inches of soil and add three inches of compost on the surface, a few inches away from plant stems

Harvesting tips

Consider multiple piles, or use a bin with a harvest door



Vermicomposting

“Vermi” = Worms

Using worms to speed up compost process

Compost ready in 3-6 months

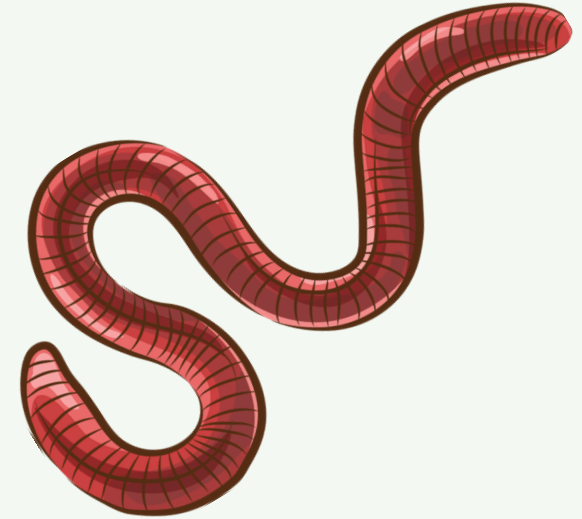
Selecting a Bin:

- 18 x 24 x 18 is typical, but can go smaller
- Dark container to keep out light
- Air holes
- Inside or outside in shade



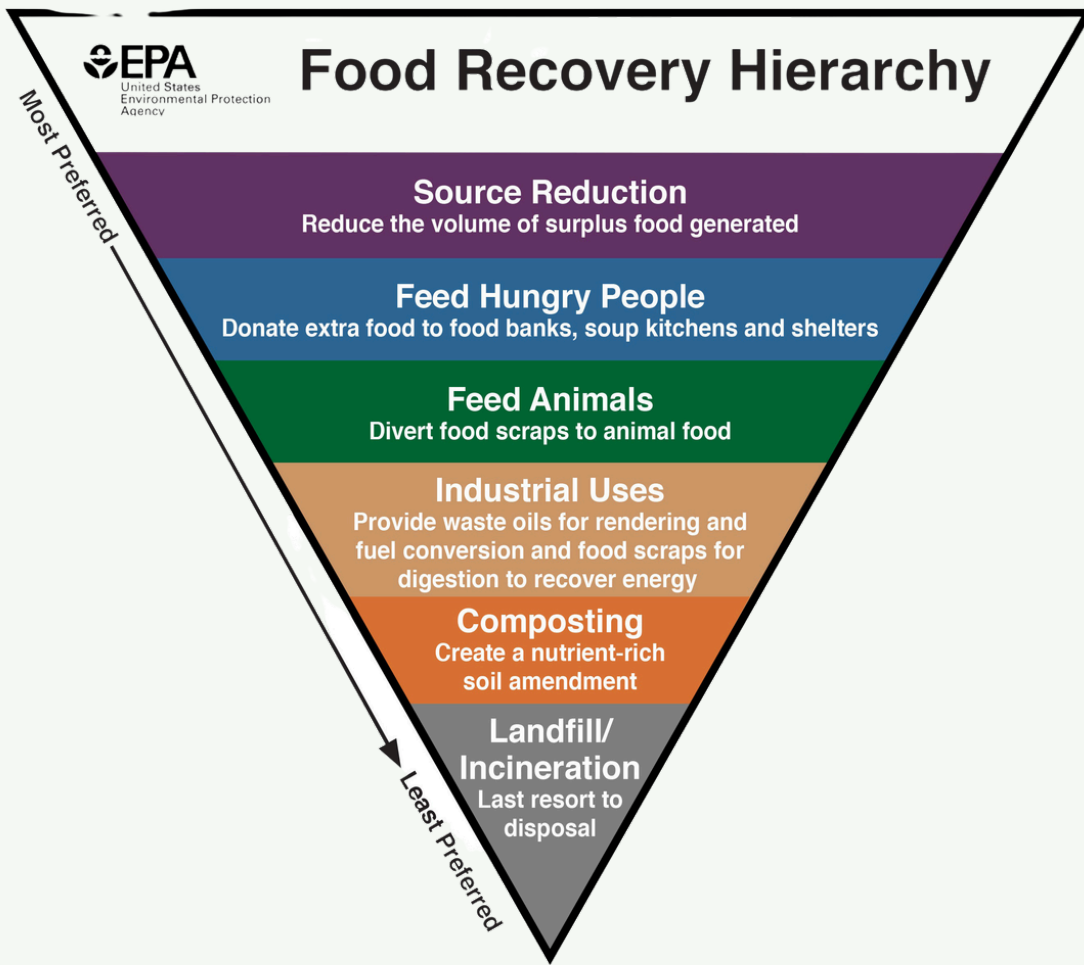
Setting up the bin:

- 3-4" Moist bedding on the bottom
- Worms (NOT just any worms)
- Food Scraps
- 1-2" inches of bedding



Worm compost will finish in 3-6 months
Use light method or screens to collect





Alternatives



Can't Compost?

- Use a Composting Service
- Leave grass clippings on lawn
- Community Composting
- Consider Food Recovery Hierarchy



Questions?

CLERMONT SOIL & WATER

1000 Locust St.
Clermont County Fairgrounds
Owensville, OH 45160

PHONE

(513) 732-7075

EMAIL ADDRESS

ecooper@clermontcountyohio.gov

Reference: Hamilton County R3sources Compost Guide
<https://www.hcdoes.org/246/Composting>

