



Beginners Home Composting and Worm Farming

Presenter: Ellen Regos

Presenter Bio: Ellen Regos



- Team Leader for the School Food Gardens Program at Cultivating Community with almost 30 years' experience as a teacher and educator in sustainability
- My love affair with food gardening began as a small child harvesting hot figs off the tin roof of my grandfather's garage and climbing apricot trees in my grandmother's garden
- Areas of expertise include project management, multi stakeholder engagement, creative facilitation and engagement processes around food gardening projects and facilitating outdoor learning experiences.

Cultivating Community

We envision joyful, connected communities who care for each other and our earth.

Our purpose is to inspire a healthy and just world by providing nourishing and informative food and gardening experiences.

We work with diverse and low-income communities in Victoria to create a fair, secure and resilient food systems by improving access to healthy, affordable and culturally appropriate food.

Our three program areas are:

- I. Food Systems
- II. Public Housing Community Gardens
- III. School Food Gardens Program

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Webinar outline

- A-Z of organic recycling
- Beginners quiz
- Home composting
- Digesters
- Worm farms
- Troubleshooting
- Questions





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Introduction

- Welcome
- Why am I here?



Why recycle food waste at home?

Personal motivation to recycle food waste



A-Z of food waste recycling

Ace at composting and worm farming
Build your soil from food waste
Connect with other people
Discover the differences in systems
Examine products and tools to help
Feel confident composting
Garden waste and how to use it
Hold a worm (I wish!)
Issues that may come up
Join a growing movement
Know which system to choose & why
Learn about decomposition
Move around a bit

New information about 'how to'
Observe and respond to your system
Practical solutions to issues
Questions and quizzes
Reduce your eco-footprint
Recycle organic waste at home
Share your waste
Troubleshoot problems
Understand where food waste goes
Vermicast, vermicomposting
Worms are cool!
Xeric compost bins
Year cycle of your system
Zero food waste to landfill

Beginners quiz

- 10 quick questions
- True – tummy (T)
- False – forehead (F)
- I don't know

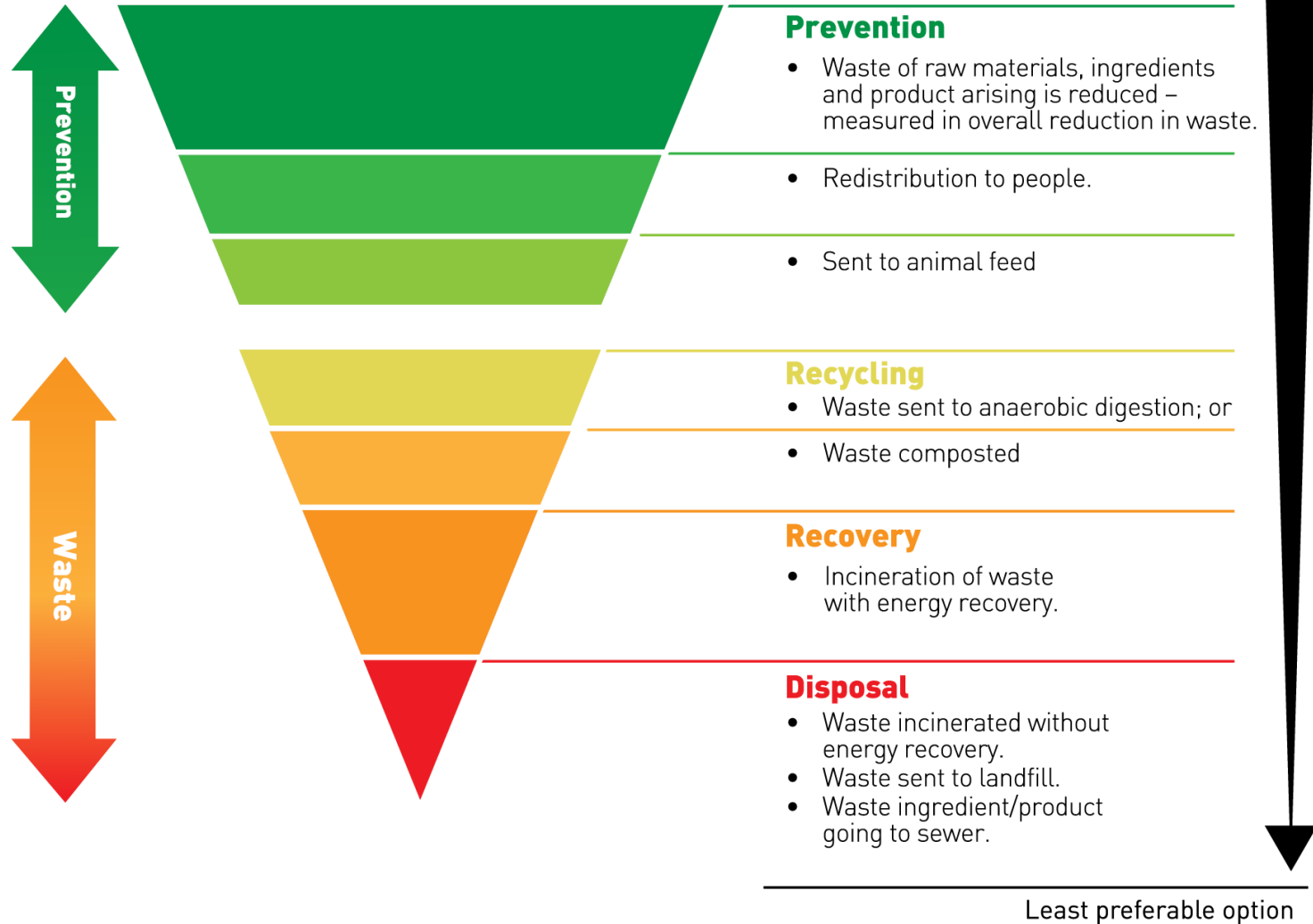


Why recycle our food waste?

- Reduces waste to landfill by up to 50%
- Remarkably easy to do
- Once a system is set up the cost is low
- Provides valuable nutrients for the garden



Food and drink material hierarchy



“THERE IS NO SUCH
THING AS ‘AWAY’.
WHEN WE THROW
ANYTHING AWAY IT
MUST GO SOMEWHERE.”

Annie Leonard



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Food waste recycling





Decomposition

Aerobic decomposition – with air

Anaerobic decomposition – without air

Food waste is high in minerals and water

Water



Heat



Gas



Microorganisms such as bacteria, fungi and microbes assist food waste to decompose

Macro-organisms such as earthworms



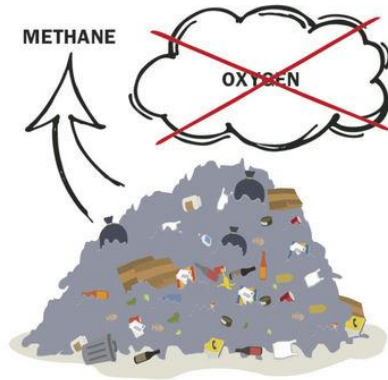
What is methane?

HOW FOOD WASTE BREAKS DOWN

In a landfill versus composting

LANDFILL

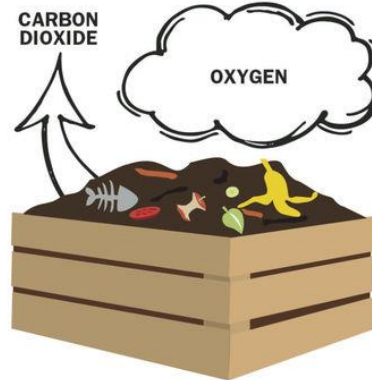
When food waste is thrown out in the trash it heads to the landfill. It gets buried and does not have access to oxygen — it undergoes anaerobic decomposition. Because of that the organic materials release methane gas, which is much more potent than carbon dioxide.



Source: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

COMPOST

A compost pile undergoes aerobic decomposition. Because it is exposed to oxygen, either by turning it or through the use of living organisms, it produces carbon dioxide instead of methane. The food waste decomposes faster and can be reused as fertilizer.



KATHRYN HOLLOWAY / NEWS&GUIDE

WHAT ARE THE ENVIRONMENTAL EFFECTS?

WHEN FOOD ROTTS WITH OTHER ORGANICS IN LANDFILL, IT GIVES OFF A GREENHOUSE GAS CALLED

METHANE

WHICH IS 25 TIMES MORE POTENT THAN THE CARBON POLLUTION THAT COMES OUT OF YOUR CAR EXHAUST.

THE HIDDEN IMPACT?

WHEN YOU THROW OUT FOOD, YOU ALSO WASTE THE WATER, FUEL AND RESOURCES IT TOOK TO GET THE FOOD FROM THE PADDOCK TO YOUR PLATE.

The infographic features illustrations of food waste (meat, vegetables, dairy) falling into a landfill, a large green skull and crossbones, and a blue background with a chicken drumstick and broccoli.

Student activity 1: decomposition



Apple in a jar



Four jars:

1. One with lid on
2. One without a lid
3. One with just soil
4. One with soil and composting worms

Set these up start of term and observe changes each week, what changes do you observe over time?



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From garbage to soil



Systems

- Compost bin
- Digestor
- Worm farm



What do I need?

What do we currently use?	<input type="checkbox"/> Compost bin	<input type="checkbox"/> Digester	<input type="checkbox"/> Worm farm	<input type="checkbox"/> Worm tower	<input type="checkbox"/> None or other
How much food waste does our household create each week?	<input type="checkbox"/> 6 kg	<input type="checkbox"/> 5 kg	<input type="checkbox"/> 14 kg	<input type="checkbox"/> 2 kg	<input type="checkbox"/> 15kg + <input type="checkbox"/> No idea
Do we have meat and dairy scraps in our food waste?	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Small amounts <input type="checkbox"/> Large amounts
Do I need to recycle garden material?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Occasionally
What location do I have in mind?	<input type="checkbox"/> Full sun	<input type="checkbox"/> Full sun	<input type="checkbox"/> Full shade	<input type="checkbox"/> Veggie garden or fruit tree	<input type="checkbox"/> Space challenged <input type="checkbox"/> Unsure
<u>Total number of ticks</u>					
Does what you have match your needs?	A compost bin would suit our home best	We need a digester	I'll look into a worm farm	A worm tower is perfect for me	We will need to think about this very creatively
Cultivating Community © 2020					

Food waste caddy

For collecting food waste in your kitchen

- Can be an upcycled container
- Purchased kitchen caddy
- Easy to clean
- Best if no air holes



Full sun
Fruit and vegetable scraps
Organic waste
Good for gardeners



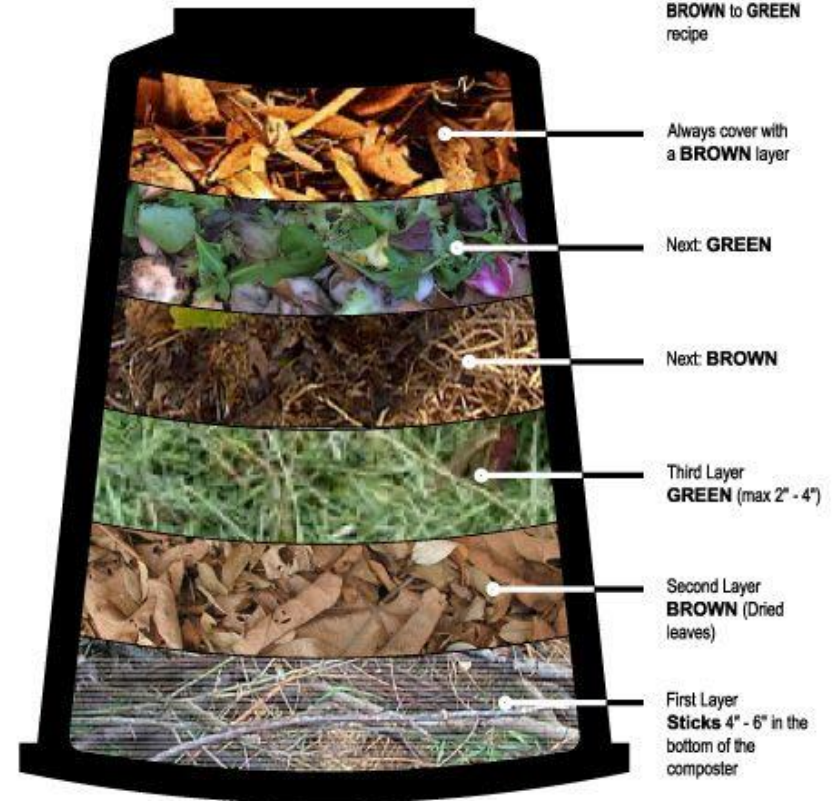
Compost bin

- Aerate
- Keep covered
- Keep moist



A COMPOST RECIPE TO FEED YOUR SOIL.

Mix up all the ingredients maintaining the **BROWN to GREEN** recipe



KEEP MOIST: As wet as a wrung out sponge.

AERATE: Air helps to speed up decomposition. Aeration should be done throughout the entire composting process.

KEEP COVERED: Use a compost lid, cardboard or canvas over top of your pile.



GREENS
bring **nitrogen**
to the mix



BROWNS
add **carbon**
to the mix



MOISTURE
supplies **water**
to the
microorganisms



AERATION
provides **oxygen**
to the
microorganisms

Compost Stew

An A to Z Recipe for the Earth



by Mary McKenna Siddals
Illustrated by Ashley Wolff



Carbon and nitrogen

- Carbon (brown) to nitrogen (green) ratio is **30:1**

Carbon:

Animal hair
Cardboard
Dry leaves
Hay
Paper towels
Sawdust
Shredded paper
Small twigs
Straw
Wood ash
Woodchips

Nitrogen:

Aged manures
Food waste (coffee grounds, tea bags)
Grass clippings
Green leaves
Soft pruning
Weeds (no seeds/soaked)

Carbon & Nitrogen

Sources for Compost

Carbon Materials



Nitrogen Materials



A bucket for a bucket



What does compost look like when it's ready?

- It's the colour of 70% dark chocolate
- It's fluffy and has good 'crumb' structure
- When you squeeze a handful of it in your fist, one drop of water will come out of it
- It smells sweet and earthy



Using compost

Put on the garden



Test pH



Compost Troubleshooting

Problem	Symptom	Solution	To Avoid in Future
Lack of moisture	Feels, looks dry.	Add water	Water pile as it's being built, after every 10 cm of new material.
Lack of oxygen	Matted ingredients; large quantities of leaves, sawdust or grass added in clumps.	Add oxygen: Turn pile, or fluff.	Mix ingredients well when building, esp. those that tend to mat.
Lack of nitrogen	Pile doesn't heat up; slow decay.	Add high-nitrogen material: blood meal, organic cottonseed meal, corn gluten meal.	Sprinkle high-nitrogen material over every 10 cm of new material as pile accumulates.
Lack of micro-organisms	None of the other factors apply; pile still doesn't heat up.	Add micro-organisms directly (inoculant) or indirectly (fresh compost, soil).	Don't build piles on plastic sheets; don't isolate piles from the ground; save some fresh compost from finished pile to incorporate into new pile; add micro-organisms to new piles.
Rodents	You see them.	Add thick nitrogen and carbon layer to increase heat in bin .	Dig the base in, start with a good layer of soil, add wire to the base to prevent them burrowing in.

Other systems



Indoor
Food waste only
Accepts all meat and
dairy
Bran is an ongoing cost
Bury product in garden



Digestor

- Add micro bran weekly
- Drain frequently
- Wash after each use
- Will need two caddies



1. ADD



2. SPRINKLE

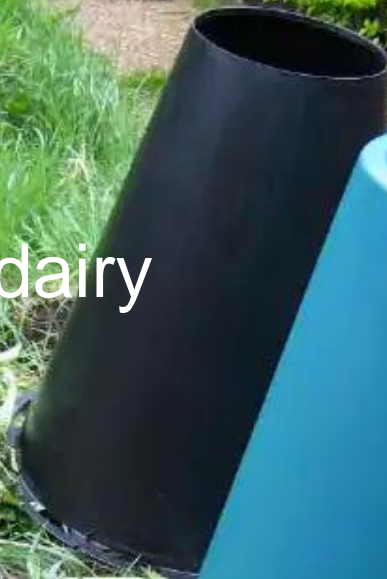


3. BURY



4. GROW

Outdoor
Food waste only
Accepts all meat and dairy
Bran for set up only





Green Cone Food Waste Digester

Green Cone is an unique and environmentally-friendly solution for disposing of household food waste. The unit accepts all cooked and uncooked food waste including vegetable scraps, meat, fish, bones, dairy products and other surplus organic kitchen material. Nature does the rest, reducing the Cone's contents to its natural components of water and carbon dioxide. Designed for a sunny position in a well drained garden, a Green Cone is suitable for use by an average family of four people. The Cone may need emptying every few years.

Sunlight provides energy source

Removable top section for easy access into the cone

Accelerator powder enhances breakdown of food

Double-walled solar cone creates a heat trap of circulating air to encourage bacterial growth. Also insulates waste in winter.

Soil filters out smells and prevents access by flies.

Natural Micro-organisms and Worms migrate freely in and out of basket and break down the waste.



The Cone allows air to get to the food waste reducing the production of methane gas – **better for the environment**

Rich Soil Conditioner seeps into surrounding ground.

Over 90% of the waste material in your Green Cone will be absorbed as water by the soil.

YES!

Add these to your cones:

Fish ~ Meat ~ Poultry

All bones

Bread

Fruit (including peelings)

Vegetables (including peelings)

Dairy products

Raw and cooked food scraps

Crushed egg shells

Tea bags

Coffee grounds (but not coffee filters)

Small amounts of animal excrement

NO!

Keep these out:

Metal ~ Wood

Plastic ~ Glass

Paper ~ Straw

Bulk oil

Disinfectant ~ Bleaches

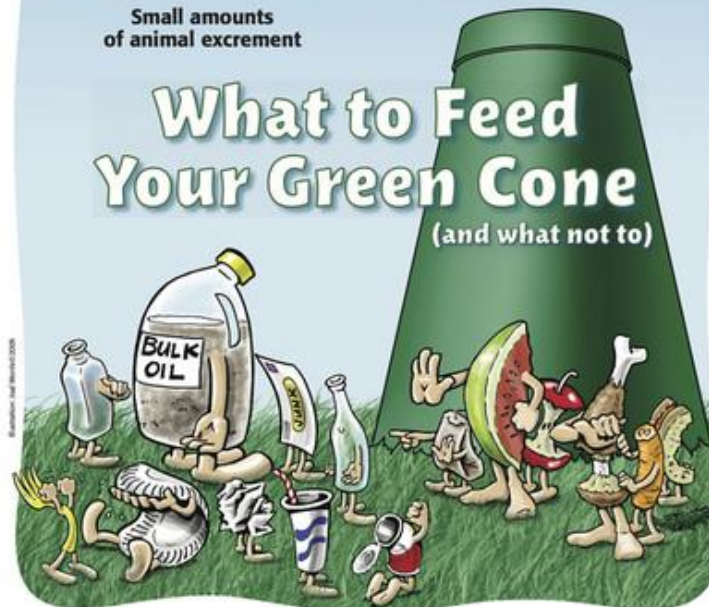
Grass cuttings ~ Hedge clippings


Large amounts of coarse vegetable matter

(corn husks, pea shells, etc.)

(While digestible, large quantities fill a cone – compost it instead!)

What to Feed Your Green Cone (and what not to)





Indoor or outdoor
Full shade
Food waste only
Fruit and vegetable scraps
Composting worms for set up

Worm farm

- Food waste added at the top
- Worm castings and tea collected at the bottom
- Worm activity slows over winter
- Care needed on very hot days





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Variations

- Apartment blocks



- Worm tower

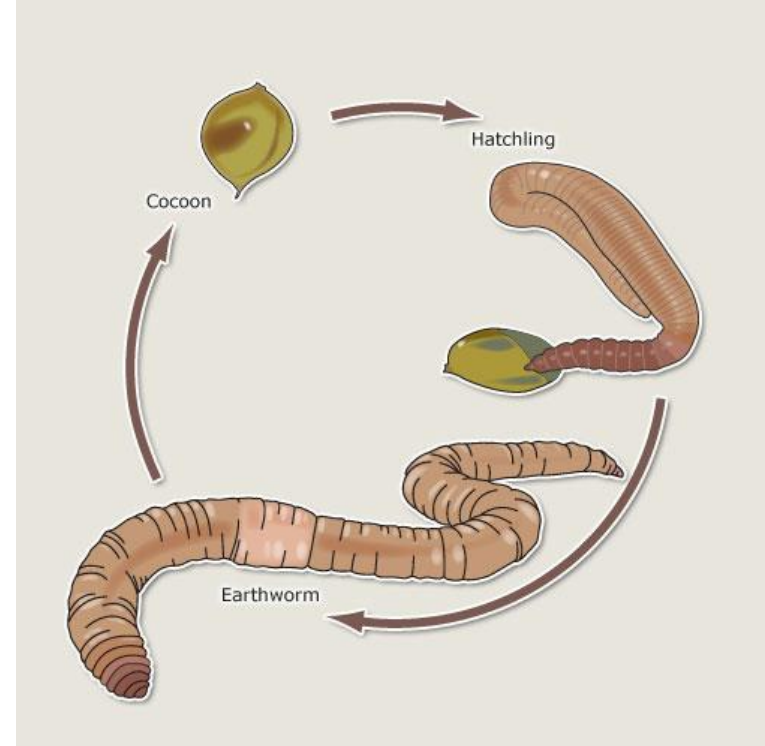




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Worm Juice

- Dilute like cordial 1:10 (worm juice: water)
- Use within 24 hours on garden or pot plants







Subpod.com.au



Go Underground

Going underground means we're composting with worms and microbes in their natural habitat.

Subpod's unique design means there's no smells and no pests, and your worms can roam freely in and out of the Subpod, feasting, then feeding the soil at the plant root level - right where your plant's mouths are!



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Making the choice

Options	Gedye Compost bin	Green cone Digester	Hungry bin Worm farm	Tumbleweed Worm tower
Look				
Cost	\$82 per bin	\$229 per cone	\$399 per farm	\$30 pet tower
Set up cost	No	Accelerator powder \$30	Initial worms (2,000) \$50	Initial worms (2,000) \$50
Amount of food waste recycled	Medium capacity 6 kg	Medium capacity 4kg per week	High capacity 14 kg per week	Low capacity 2 kg
Meat and dairy acceptable	No	Yes	No	No
Add garden material	Yes (needs carbon added regularly)	No	No	No
Location	Full sun	Full sun	Full shade	Veggie garden or fruit tree
Product	Compost	Liquid fertiliser and organic matter go directly into ground	Worm castings and worm tea	Worm castings and liquid fertiliser go directly into the ground

Pet waste including organic cat litter

‘There are over 4 million dogs in Australia each producing up to 100kg of waste annually. If left uncollected it pollutes public areas and rain washes it into our waterways.’

- Select a spot in your garden away from edible plants and phosphorus sensitive native plants.



Suppliers

- Bunnings - <https://www.bunnings.com.au/our-range/garden/gardening/composting/compost-bins>
- Compost revolution - <https://compostrevolution.com.au/about/>
- Worms - <https://www.kookaburrawormfarms.com.au>
<https://www.wormlovers.com.au/> and
<http://wormz.com.au/>

ShareWaste



Connect people who wish to recycle their kitchen scraps with their neighbours who are already composting, worm-farming or keep chickens. Divert waste from landfill while getting to know the people around you!

<https://sharewaste.com/>



Business recycling



<https://www2.health.vic.gov.au/hospitals-and-health-services/planning-infrastructure/sustainability/waste/organic-waste>



*To forget how to dig the earth and to tend the soil
is to forget ourselves.*

~Mahatma Gandhi



Links

- Sustainability Victoria
<https://www.sustainability.vic.gov.au/You-and-Your-Home/Waste-and-recycling/Food-and-garden-waste/Compost>

Our services – how we can help you



Community gardens and urban agriculture

- Consultation, governance and design



Food growing at home

- Workshops on garden design, getting started in the veggie garden, growing native edibles, growing vegetables in small spaces, interesting edible plants to grow at home, improving soil, keeping chickens



Food waste avoidance and food waste recycling

- Advanced home composting, beginner composting and worm farming, food waste recycling, love food hate waste, school food waste recycling



Project that builds community through engagement

- Setting up a community garden and compost hub



Making the most of your outdoor classroom

- Food gardening with children, nature play in early childhood, setting up a school food garden, sustainability

Thank you!

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Questions

