

Earth Carers



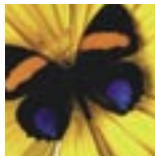
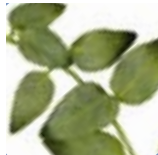
Guide



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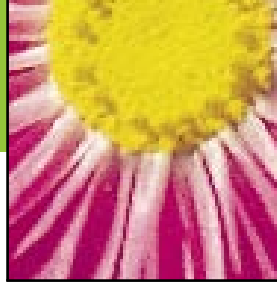


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The Three R's – REDUCE, REUSE, RECYCLE

The Earth Carer program is based upon the belief that an average household could reduce its waste levels by up to 85% by introducing the simple practises listed below.

The most effective way to reduce household waste and overall environmental impact is in the following order:

reduce avoid purchasing unnecessary products and packaging.

re-use product
use products again and again wherever possible.

recycle materials are recovered from a product and re-used as the basis of a new one.

The following pages will provide you with valuable information on how to recycle organic waste at home to provide you with fertile soil for your garden.

For Further information please contact the Earth Carer Coordinator on 9286 5025.

WESTERN METROPOLITAN REGIONAL COUNCIL



Town of Claremont



Town of Cottesloe



Town of Mosman Park



Shire of Peppermint Grove



City of Subiaco



your guide to
re-using green waste...

Contents

Introduction	2
Mulch - What is it?	3
Compost - What is it?	4
Benefits of Composting	5
Essentials of Composting	6
How to Make and Use Hot Compost	8
How to Make and Use Cold Compost	10
Compost Ingredients	11
Composting Problems?	12
Worm Farming	14
Steps to Good Garden Planning	16
Caring for Your Health	17

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If we are to **preserve** our precious **environment** we must **develop** **sustainable** **home gardening** and **recycling** practices.

Greenwaste (lawn clippings, prunings etc.) together with other organic waste (such as kitchen scraps) in landfill sites is an expensive and real environmental problem. It is a major contributor to greenhouse gas production and adds to the contamination of our groundwater.

Almost half of our household refuse consists of food scraps and greenwaste (commonly referred to as organic waste). About one tonne of this organic waste is produced by every Australian family annually. One tonne of organic waste, if composted, can make approximately half a tonne of fertile soil. In Western Australia we send thousands of tonnes of organic waste to landfill each year. **Whata Waste!**

By recycling our garden and kitchen waste we can make our garden soil fertile and therefore reduce the need for artificial fertilisers. Recycling greenwaste back into our soils is simple and not only cuts out the cost of collection and transport but can save on water bills (thus conserving another precious resource).

This booklet contains all the information needed to start and to manage our own greenwaste recycling system in our gardens.



Mulch

What is it?

Organic mulch is shredded material spread in a protective layer approximately 8 centimetres deep over the soil.



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Common organic mulching materials are...

Chipped garden prunings
Hay
Woodchips
Leaves

Mulch is best used over an nurturing compost layer. Always thoroughly wet the soil before applying mulch.

Organic mulch when spread liberally on the soil will...

- Reduce evaporation of water.
- Prevent erosion of soil.
- Add nutrients to the soil.
- Help control weeds.
- Help regulate soil temperature.
- Provide an ideal climate for worms.
- Protect organisms working in compost from the harsh sun.

Green mulch should not be spread over seedlings or placed too close to the stems of plants.



protect





COMPOST

what is it?

Composting occurs in nature and is the natural process of decomposition which regenerates the soil.

This process has been known to man since ancient times. It can be observed in forests where leaves and other vegetation fall to the ground, rot and decay. Their decomposition creates nutrients in the soil that are then taken up by the living roots to feed the forest growth. Using a compost bin mimics and hastens this natural process. Kitchen and garden waste placed in a compost bin is broken down by naturally occurring bacteria and fungi. This forms an earthy smelling, dark coloured soil mixture - compost.

healthy
fertile soil



Benefits of composting

- Helps build healthy soils by providing a nutrient source for plants.
- Encourages and supports living organisms (including earthworms) in the soil.
- Reduces the spread of plant diseases thus reducing need for pesticides.
- Reduces the need for chemical fertilisers due to its slow release of nutrients.
- Increases aeration of soil due to increased 'sponge' like soil structure.
- Helps maintain even soil temperature by insulating the soil & retaining water.
- Reduces water loss through evaporation by increasing water holding capacity of the soil.
- Reduces soil salinity by providing a healthy environment to support plant life.
- Reduces cost of maintaining a healthy garden.



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Essentials of composting

To provide and maintain the right environmental conditions in your compost bin, ensure these four basic essentials are present...

1 air

Microorganisms needed to break down organic matter are aerobic, ie. they require air to work. This is why it is important to create air pockets by introducing some coarse material such as straw and dry vegetation into the compost pile. 'Turning' compost occasionally (about every two weeks) adds oxygen allowing the bacteria to function and speeds up the composting process, however this is not essential.



2 water

Just like plants and animals, microorganisms need moisture to sustain life. As a rule of thumb, compost should be as moist as a wrung out sponge.



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3 food

There are two kinds of food that the microorganisms need to make good compost -the 'Brown' group, (high Carbon), and the 'Green' group, (high Nitrogen). Make sure your compost contains both groups, such as:

'Brown' Food

- dry garden prunings
- leaves and bark
- sawdust
- egg cartons
- paper & cardboard
- straw

'Green' Food

- grass clippings
- weeds
- fruit & vegetable scraps
- tea leaves/coffee grounds
- hair



feed...

4 temperature

Hot compost is best. Heat is due to the presence of a greater number of microorganisms and will decompose faster than a cooler compost heap with less organisms. Follow the steps in 'How to Make and Use Compost' on pages 8 and 9 to achieve this optimal temperature range.



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How to make & use **HOT** compost



4 Add a thin layer of animal manure (poultry, cows or sheep) or organic garden fertiliser. This is not essential but speeds up the composting process and greatly 'enriches' the end product.

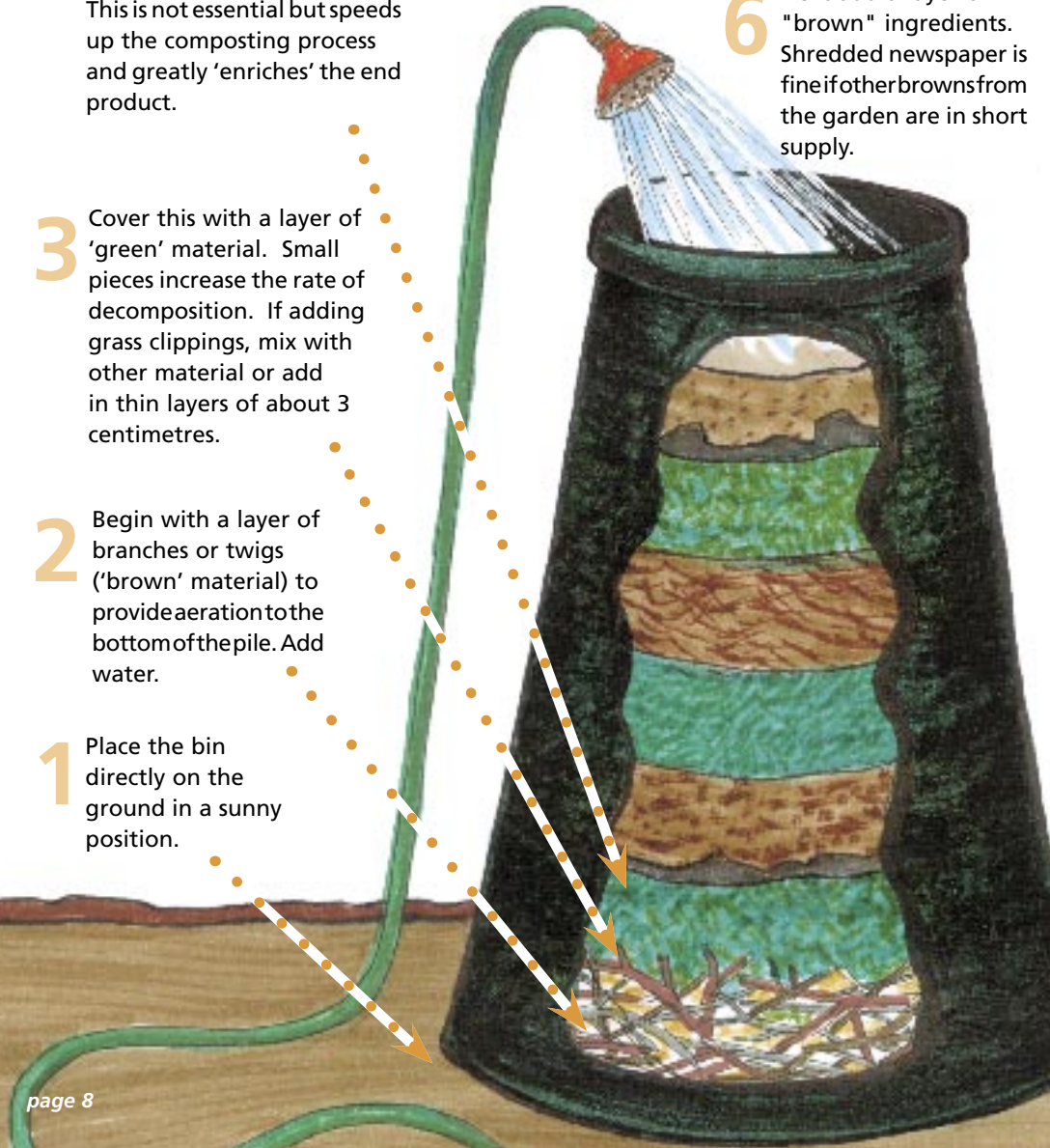
5 Lightly water dry layers as they are added.

6 Next add a layer of "brown" ingredients. Shredded newspaper is fine if other browns from the garden are in short supply.

3 Cover this with a layer of 'green' material. Small pieces increase the rate of decomposition. If adding grass clippings, mix with other material or add in thin layers of about 3 centimetres.

2 Begin with a layer of branches or twigs ('brown' material) to provide aeration to the bottom of the pile. Add water.

1 Place the bin directly on the ground in a sunny position.



The following simple recipe may be used for any aerobic compost system and is excellent for when you have enough waste to fill the compost bin all at once. Compost will be ready in approximately 3 months. This is called "hot" composting, as the volume allows the heap to reach high temperatures which accelerate the composting process.

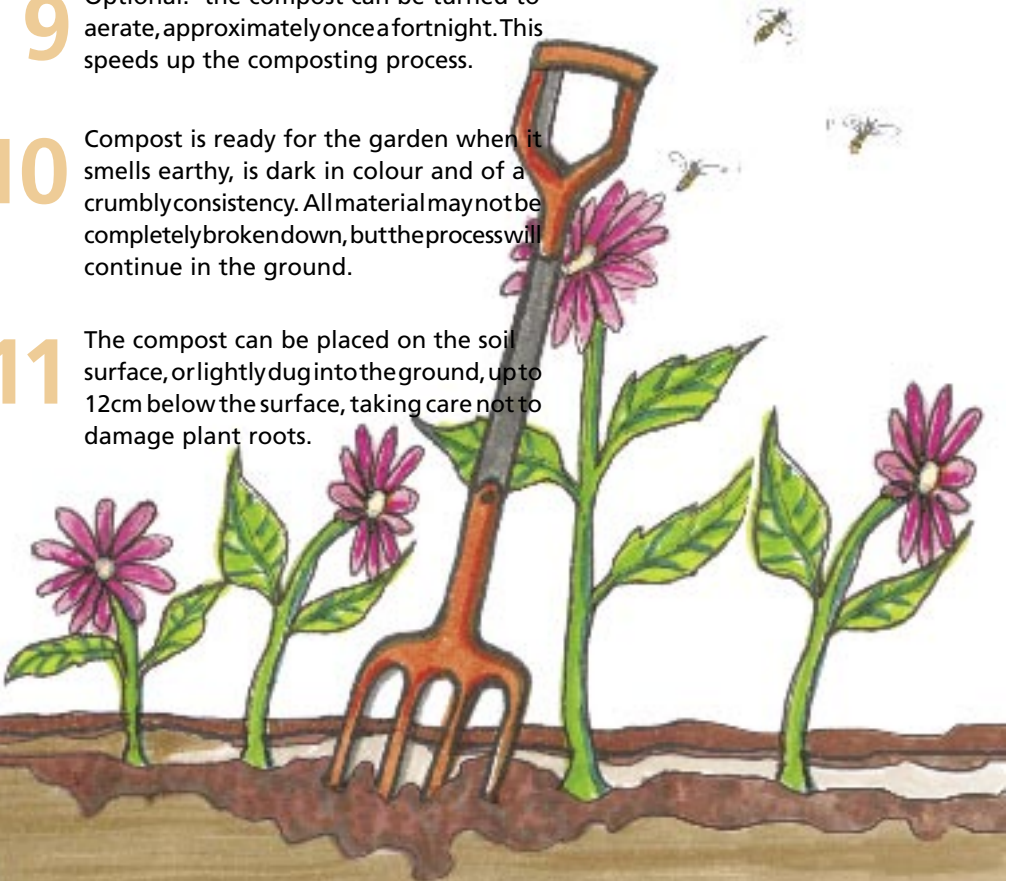
7 Continue with alternating layers of "green" and "brown" matter (no thicker than 8cm) until the bin is full. Make sure they are moist layers.

8 Every few layers a few handfuls of manure, rock dust or herbs such as comfrey, yarrow or tansy can be added to enrich the mix and aid decomposition. The compost will still work without these additions.

9 Optional: the compost can be turned to aerate, approximately once a fortnight. This speeds up the composting process.

10 Compost is ready for the garden when it smells earthy, is dark in colour and of a crumbly consistency. All material may not be completely broken down, but the process will continue in the ground.

11 The compost can be placed on the soil surface, or lightly dug into the ground, up to 12cm below the surface, taking care not to damage plant roots.





How to Make and Use a COLD Compost

Much of the time you won't have enough organic matter to fill the compost bin all at once. Most days you will probably just be adding the daily kitchen scraps. This still works, but the process is just a bit slower.

Start with the layer of coarse material as for hot composting (see pages 8 and 9), then each time you add kitchen scraps, also put in an equal amount of "browns". It helps if you have some "browns" stored close to your compost bin.

Occasionally add some wood ash, lime, manures or rock dust to assist decomposition. This process will take much longer to create useable compost, as not only is there less initial material, but the process is more like a worm farm than a "hot" composting batch.

It is still, however, a great way to deal with organic household waste without polluting the environment.



re-use

Secrets of Good Compost

- Vary the layers and use diverse materials.
- Keep the layers thin (5-8 centimetres or less).
- Moisten any dry layers as they are added.
- Consider using an accelerator.*
- Turn the heap regularly.

*Specially produced commercial accelerators are available. Yarrow or comfrey are also excellent accelerators. Talk to your garden or permaculture centre for more information.

compost ingredients



WHAT NOT TO COMPOST

- fats and oils
- meat and dairy products
- diseased plants
- chemically treated wood
- glossy magazines
- human waste (faeces)
- pet waste (dog and cat faeces)
- weeds with seeds
- nut grass, couch etc.



WHAT TO COMPOST

- dry tree prunings
- paper and cardboard
- chipped green prunings
- grass clippings
- leaves and bark
- weeds (no seeds)
- fruit and vegetable scrap
- egg cartons (cardboard)
- tea leaves and tea bags
- straw
- hair
- wood ash
- egg shells
- sawdust
- herbs
- vacuum cleaner waste
- old flowers
- old potting mix
- coffee grounds



recycle

reduce waste...

composting problems

plant

problem	cause
Compost takes too long to break down.	Too dry. Not right mix of 'greens' and 'browns'. Insufficient air.
Smells.	Too wet. Too acidic. Insufficient air.
Flies. (Most of the flies in and around a compost heap are small vinegar flies which are quite harmless.)	Blowflies may be attracted by meat or dairy foods.
Too wet.	Too much water added. Organic waste is moist. Inadequate drainage.
Slaters or ants in heap.	Too dry.
<i>Rats, mice, dogs and cats.</i>	Attracted by uncovered food or warmth of heap.
Cockroaches.	Attracted to acidic and anaerobic heaps.



re-use



ms?



1 solution

Add water.

Add equal amounts of 'greens' (eg, vegetable scraps or fresh lawn clippings) and 'browns' (eg, fallen leaves or straw) in thin, alternating layers.

Turn more frequently.

If bin ventilated, ensure vents are not blocked.

Place a length of slotted agricultural pipe in the heap.

Turn more frequently.

Rebuild heap and add more dry materials.

Add some wood ash, dolomite or lime to neutralise the heap.

See above.

Cover organic waste with a thin layer of soil, grass or leaves. Avoid adding meat or dairy products.

Reduce water.

Rebuild heap and add more dry materials.

Add water or moist organic material.

Add lime.

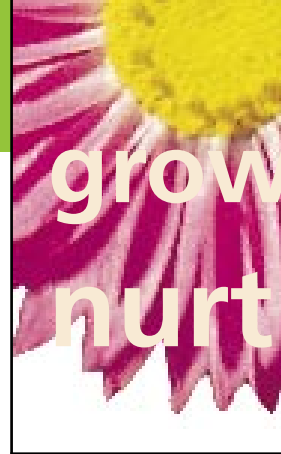
Cover layer of food waste with layer of soil. Place the compost bin on a layer of fine mesh. Bait or set traps for rodents.

Turn more frequently.

Add some wood ash, dolomite or lime to neutralise the heap.

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Worm Farming



A worm farm is a simple way to turn non-fatty kitchen waste into high quality nutrients for your household plants, vegetable seedlings, lawns and gardens.

Worms will digest most of your organic kitchen waste producing a nutritious soil conditioner (castings). Worm farms are ideally suited for small families or houses with small yards.

- Commercial worm farms come in sizes to suit the needs of various households. Standard units are available at garden centres/hardware, variety stores
- You can make your own worm farm using self draining containers, eg., polystyrene boxes or wooden crates (put a tray underneath to catch the liquid run-off). This makes an excellent fertiliser for your lawn or garden.
- Red or Tiger composting worms can be purchased at hardware stores and commercial suppliers or obtained from fellow farmers.
- On a 10cm bed of moistened, shredded paper and finished compost or coconut fibre, add 1000 - 2000 worms.
- Cover the bed with felt, cardboard, paper or cloth.
- Store away from extreme temperatures for a week to let the worms acclimatise.
- After a week spread kitchen scraps and a hand full of sand to the top of the bed.
- Finely chopped food will be eaten quickly.
- Add food as it is eaten.



Picture supplied by ReIn Plastics



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FOOD FOR WORMS...

- If food smells reduce supply and add wood ash or dolomite and aerate with a fork.
- Harvest a commercial farm by removing the lowest tray. In other worm farms expose the worms to light and scrape the castings off the surface.
- Worm castings can be used as plant food, potting mix or liquid fertiliser.
- Worms live for up to 15 years and breed prolifically in good conditions. They can be used to start new worm farms.
- Commercial composting worms are not suited to garden soil environments.
- Native garden earthworms will benefit from the castings produced by the worm farm.

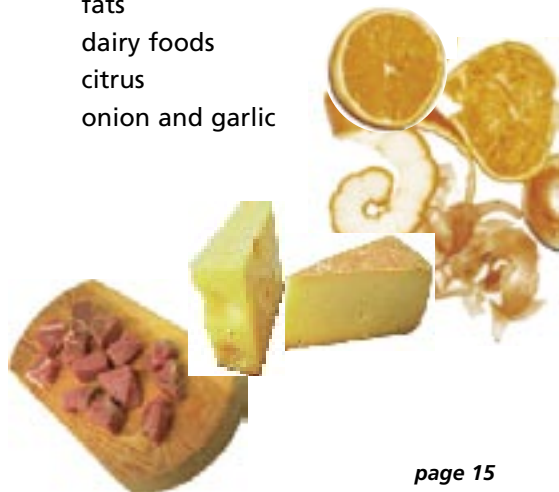
Favourite Foods (finely chopped)

- vegetable and fruit scraps
- crushed egg shells
- rice/cooked
- tea bags
- paper and cardboard
- juicer pulp



Least Favoured Foods

- meat
- fish
- fats
- dairy foods
- citrus
- onion and garlic



STEPS TO GOOD GARDEN PLANNING

1. Plan the focus of your garden.

Is it to be a recreation area, will it provide shade or privacy, or is it to provide a floral display and to attract native fauna.

2. Understand climatic conditions.

Know the wind direction and the average rainfall and temperature and where the winter and summer shade areas will be in the garden.

3. Improve soil quality.

Add organic materials such as compost and mulch to the soil to improve the soil's ability to support plant growth.

4. Select plants carefully.

Vegetation suited to the region will reduce watering and maintenance (pruning) needs. Limit the use of deciduous trees, which require a lot of water.

5. Minimise water use.

Group plants with similar needs, water thoroughly at well spaced intervals and in the cooler parts of the day, use drip irrigation where possible and add mulch and compost to aid water retention.

6. Minimise lawn areas.

Lawns require a lot of water and fertiliser. Leave lawn clippings on the lawn as mulch after mowing and investigate alternatives such as ground covers.

7. USE MULCH AND COMPOST FREELY!

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Dear Reader,

In the average Western Australian household, organic garden and kitchen waste make up approximately 50% of the total waste produced and most of this goes to landfill. As this waste breaks down in landfill it produces greenhouse gases and toxic liquids, posing a significant environmental problem.

To combat this problem and reduce the overall amount of waste being directed to landfill. The Western Metropolitan Regional Council (WMRC) and the West Australian Waste Management & Recycling Fund have initiated a new program called Earth Carers. This community education program aims to provide residents with knowledge and skills in waste minimization practices, which they can utilize to reduce the amount of general and organic waste.

The WMRC is the major waste management body in the Western Suburbs and consists of the member councils, Subiaco, Cottesloe, Claremont, Peppermint Grove and Mosman Park. There are Earth Carer volunteer groups conducting education outreach in waste minimization, in all of these municipalities

The Earth Carer Volunteer groups have produced this booklet to provide community members with information on how they can reduce the amount of organic materials in our waste stream by composting, mulching and worm farming at home. However, this is not the only area in which you can direct your efforts in waste reduction. There are also the 3R's of waste minimization – Reduce, Re-Use and Recycle. On behalf of the WMRC I would like to encourage you to try and implement some of these practices in your household, to help benefit OUR environment.

I hope you enjoy this booklet and that it assists you to minimize waste in your household.

Ron Norris
Chairman
Western Metropolitan Regional Council

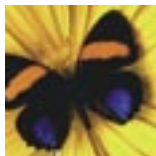




reduce

re-use

recycle



create a
richer
environment

