

Composting at school



Compost is an ideal soil additive for growing fruits and vegetables.

Compost:

- supplies essential nutrients for plant growth
- builds soil structure
- improves water holding capacity of sandy soils
- helps prevent disease in plants
- reduces pest infestation
- builds soil fertility.

What is compost?

Compost is produced by the decomposition of organic material under ideal conditions. Mature or finished compost is moist, sweet smelling, dark in appearance with exceptional water and nutrient holding capacity.

Organic material refers to anything that once lived or is a product of something that once lived such as garden clippings, fruit and vegetable scraps, newspaper, manure and more.

Compost systems

There is a variety of compost systems available. They include the **compost bin**, the **compost tumbler** and the **compost bay**. The system you choose for your school garden will depend on what you want to use the system for and how quickly you want the compost to mature. Irrespective of the system you choose, micro-organism activity will be responsible for the initial decomposition of the organic matter. Different systems attract a different suite of micro and macro-organisms.

All compost systems require air, food and water for micro-organism activity to flourish.

For more information about the Waste Wise Schools Program visit www.wasteauthority.wa.gov.au/programs/wws/





Compost bins

A compost bin is made from plastic, is bottomless and has a tight fitting lid. It should be placed close to where the final compost product is going to be used and directly on the soil so that organisms can access the bin. A compost bin can be left alone to mature anaerobically (without oxygen) or aerated for faster decomposition. To do this, simply lift the bin off the compost and move it a short distance. Fork the compost back into the bin and sprinkle with lime or dolomite. Alternatively, use a compost 'corkscrew' implement to aerate the mix (available from garden centres).



Pseudo scorpion found living in a compost bin.

Pros and Cons

- ✓ **Inexpensive**
- ✓ **Fruit and vegetable scraps can be added daily (cold composting)**
- ✓ **Bin is easy to move around the garden and attracts a range of soil organisms**
- ✗ **Duration to maturity is relatively slow, 3-6 months if cold composting. Quicker results if turned/forked regularly**
- ✗ **Not enough heat generated to kill pathogens and weeds**

Compost tumblers

Compost tumblers are available in a variety of sizes and styles. Be mindful when choosing the appropriate system for your school as some are more student friendly than others. Tumblers that turn vertically (end over end) for example are awkward to use as they are heavy to turn. Students would find it easier to use a tumbler that rotates horizontally (like a toilet roll).



Pros and Cons

- ✓ **Regular turning aerates contents well**
- ✓ **Duration to maturity is fast (4-6 weeks)**
- ✓ **Fully enclosed and less likely to attract flies and rodents**
- ✗ **Can be expensive**
- ✗ **Tumblers can be heavy and difficult for students to turn**
- ✗ **Doesn't kill pathogens or weeds**

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Compost bays

Compost bays are a serious workout and should only be attempted at school if muscle power is readily available. A bay system is an open faced enclosure made from iron, timber or any suitable recycled material. Ideally, they should be built at least one square metre in size with two or three bays next to each other allowing compost to be turned more easily.

Add compost materials to the bay in layers until the space is completely full. This mass of organic material should be turned after one month then once a fortnight until mature (and cooled). The compost should reach maturity within about three months.

Pros and Cons



A 'hot' composting system kills weeds, seeds and pathogens



Large amount of compost produced



Inexpensive to build



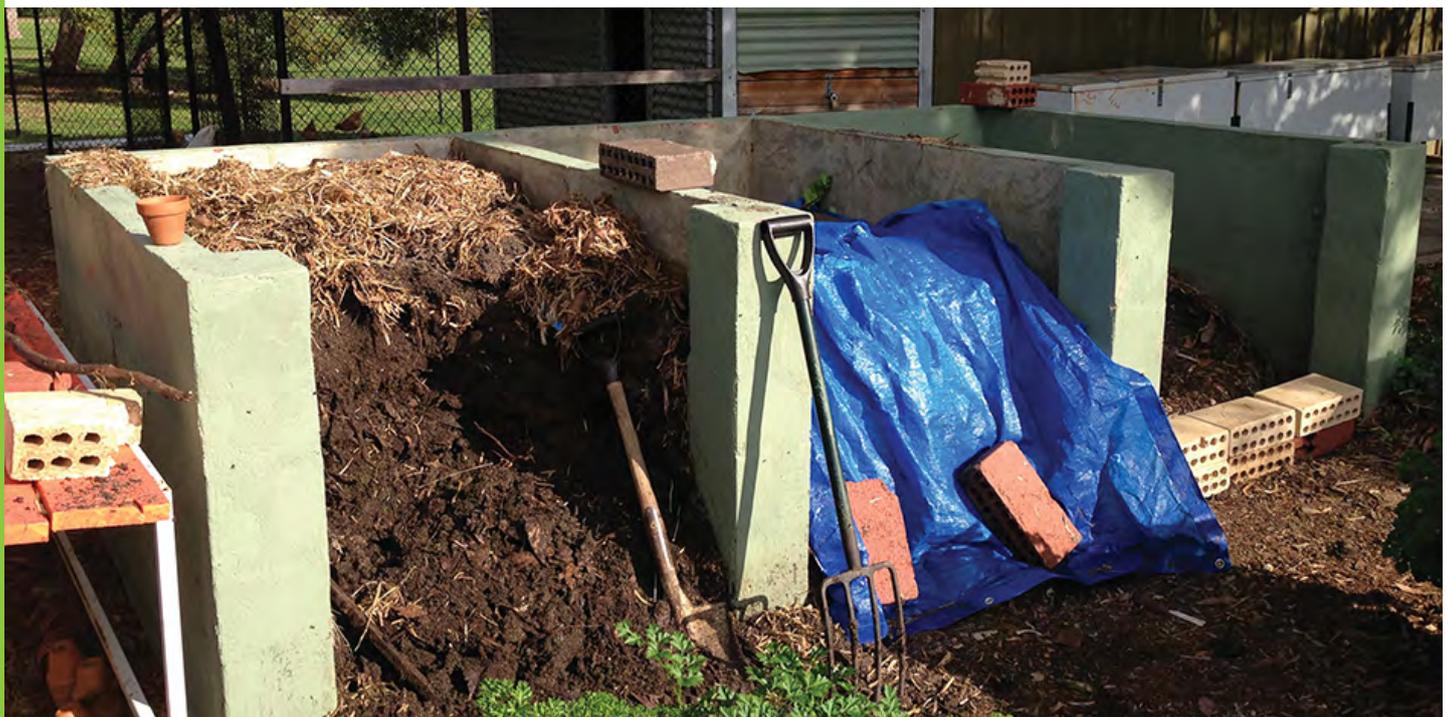
Best for garden waste and lawn clippings (fruit and vegetables in a bay may attract vermin)



Labour intensive (to turn the heap and keep aerated)



Large amount of compost ingredients needed



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Compost ingredients

No matter what compost system you choose, the ingredients will be the same; dry woody material rich in carbon (browns) and fresh nitrogen rich material (greens).

As a general guide, a ratio of about 50 per cent green and 50 per cent brown organic materials will produce good compost. Use your own judgement to decide if your compost has a good consistency. If it looks too dry add some green material. If it appears too wet, simply add some brown ingredients.

COMPOST MATERIALS EASILY SOURCED AT SCHOOL

Carbon rich (browns)	Nitrogen rich (greens)
Small dry twigs, straw, Lucerne, hay, newspaper, cardboard and dry leaves.	Fruit and vegetable scraps, tea bags, coffee grounds, grass clippings and garden prunings.

Layering the compost

Brown and green materials should be added to your bin or bay in alternating layers – much like preparing a lasagne. Start with a layer of woody materials at the bottom (provides aeration). Then add a layer of greens (fruit and vegetable scraps, grass clippings). Continue alternating layers and add a handful of rockdust to each layer as you go in order to enrich the mineral content of the final product. It is advisable to mix the grass clippings with other garden materials to prevent them from becoming compacted and restricting airflow through the heap or bin. Not quite as much care is needed when filling a tumbler as the daily tumbling process is continuously aerating the ingredients. For an insightful video clip on how to set up a compost bay, visit www.abc.net.au/gardening/stories/s4210405.htm

The principles Costa uses when setting up the bay system can be applied to both the bin and tumbler systems. Your school system may have large amounts of fruit and vegetable scraps (high in moisture) so you will need to add additional dry (brown) materials to your compost bin or tumbler in order to maintain the correct balance of wet and dry ingredients.

Troubleshooting

Contents of the bin are too dry

Your compost ingredients should feel as wet as a damp sponge.

Remedy:

- add water and/or
- add green ingredients (fruit / veggie scraps, grass clippings) and turn the compost well to mix.

Contents of the bin are smelly and slimy

Your compost should not smell bad. This is probably due to the addition of excess nitrogen rich materials such as fruit and vegetable scraps.

Remedy:

- add more brown woody material
- add 1 cup of lime for every 300mm of compost
- turn the compost
- add zeolite (its porous structure absorbs smells).

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