11 Composting and Wormeries

Most of the rubbish we produce can be recycled, and that message can be vividly illustrated by actively encouraging pupils to recycle at school, especially by building their own compost heap. Composting is an excellent way to recycle organic waste which would otherwise be put in the bin and subsequently dumped in a landfill site. In addition, a well-maintained compost heap and wormery can provide enough good-quality compost and liquid fertiliser to keep all the schools' plants healthy - at no cost whatsoever.

CURRICULUM LINKS

Foundation Stage
1,2, 4

Design & Technology
KS1 – 1abcde, 2abcdef, 3ab, 4ab, 5abc
KS2 – 1abcd, 2abcdef, 3abc, 4ab, 5abc
KS3 – 1abcdefgh, 2abcde, 3abc, 4bc, 6ab, 7b

Science
KS1 – SC1, SC2
KS2 – SC1, SC2, SC3
KS3 – SC1, SC2

PSHE & Citizenship
KS1 – 2abcegh, 3a, 5acd
KS2 – 1c, 2ahj, 3a, 4a, 5ade

HOW TO MAKE a Wooden Compost Bin

To make good compost you need a well-designed compost bin. The ideal bin measures one cubic metre in size, is well ventilated, and kept moist at all times, otherwise it won't generate or retain enough heat to do the job properly. If the compost bin is too small, poorly insulated or lacking in moisture then it will take the detritivores (tiny insects that eat dead plants) and microbes (bacteria and fungi) much longer to break the compost down.

Compost bins can be purchased at garden centres and DIY superstores, but many local authorities have schemes to provide compost bins at a discount. However it is more interesting to make your own and can be even cheaper if you use second-hand or scrap materials. For example, four old timber pallets from a builder's merchant wired together will make a perfectly good compost bin.

Cardinal Wiseman RC Secondary School from Coventry made a more sophisticated version – a wooden compost bin with a 1.1m long section of pipe 10cm - 12cm in diameter running through the middle so pupils could feel the heat being generated inside the compost heap without disturbing the heap.

First, make four one metre square frames using sixteen treated timber posts 7.5cm x 7.5cm x 1m. Then fix six treated timber planks 10cm x 1.5cm x 1m to each frame, leaving a 5cm gap between the planks to allow air in.

Next take two pieces of marine plywood, at least 7cm wider than the pipe's diameter. Cut a circle out of the centre of each piece, just wide enough to slot the pipe through, by drilling a hole in the centre and then using a jigsaw to cut the circle out. Nail or glue the plywood to the centre of two of the panels you have constructed, cutting away the planks where they block the hole.

Screw the sides together to make a wooden box . The two sides with holes should be opposite each other. Slot the pipe through the two holes and glue in place, leaving 5cm protruding from each end.

Sit the compost bin directly on top of the earth to allow the organisms living in the soil to penetrate the compost and breaking it down. Insulate the compost with a lid made of a square of old carpet, and protect this from the rain with a sheet of polythene over the top.

Once it is full of compost, pupils can put their hands inside the pipe and feel the difference in temperature inside and outside the compost heap – if the compost is decomposing properly it should be very warm inside. You can measure this precisely using two thermometers arranged so that one is measuring the temperature of the air, and the other is pushed into the bin. These are available from educational suppliers with large print scales that are easy to read.

The following are all good materials to put in a compost bin:
Grass clippings
Autumn leaves
Farmyard and stable manure
Fruit and vegetable waste like potato peelings
Soft prunings, chopped or shredded
Most weeds - but not seed heads or roots
Garden plant remains
Torn-up paper, cardboard and newspaper
Natural fibres like old cotton or linen rags

Don't put in any meat, fish, fat or left-over cooked food to avoid problems with rats. Avoid perennial weed roots, weed seedheads or diseased plants, or any dog or cat droppings. Thorny and woody prunings should also be excluded as they will take too long to break down. Man-made fibres, plastic or metal will never break down, so keep these out too.

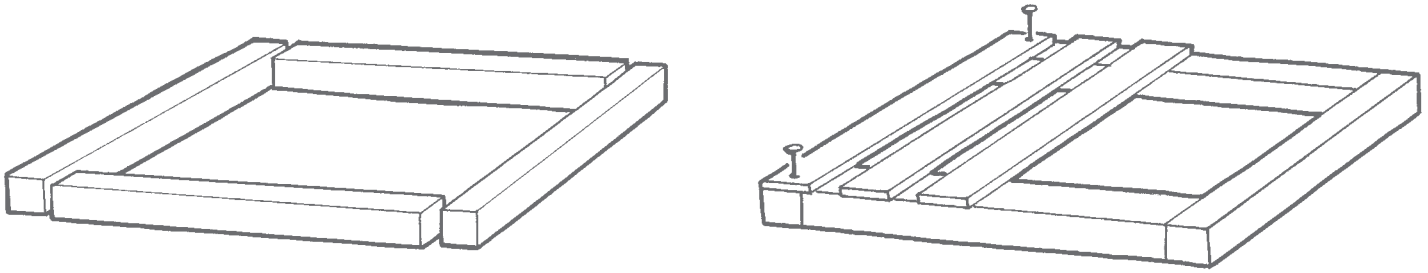
HOW TO USE a wormery

Wormeries are an interesting alternative to compost bins, especially if you only have small amounts of waste. You can make your own, but it is generally more practical to buy one. They vary in design, and generally come as a self-assembly kit with instructions. The wormery in the Show Garden was a 'Can-O-Worms' from Wiggly Wigglers consisting of four trays:

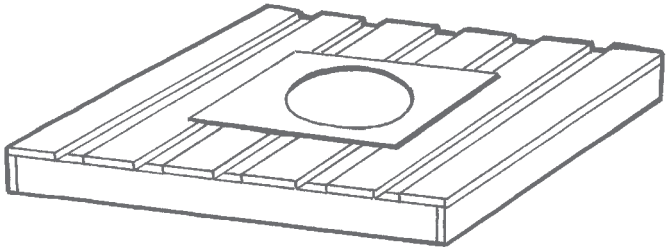
A top working tray – into which scraps are added
A middle working tray – where the worms live
A bottom working tray – where the worms live
A collector tray (or sump) – in which liquid fertiliser is collected

The working trays are interchangeable and allow recycling to continue indefinitely. The benefit of a wormery is that it is compact, taking up minimal space and as it has a lid, there are fewer unpleasant smells lingering around. Pupils can learn about worms and the habitats different species live in – the stripey brandling worms that live in compost heaps are the same ones sold for fishing and are raised commercially in worm farms.

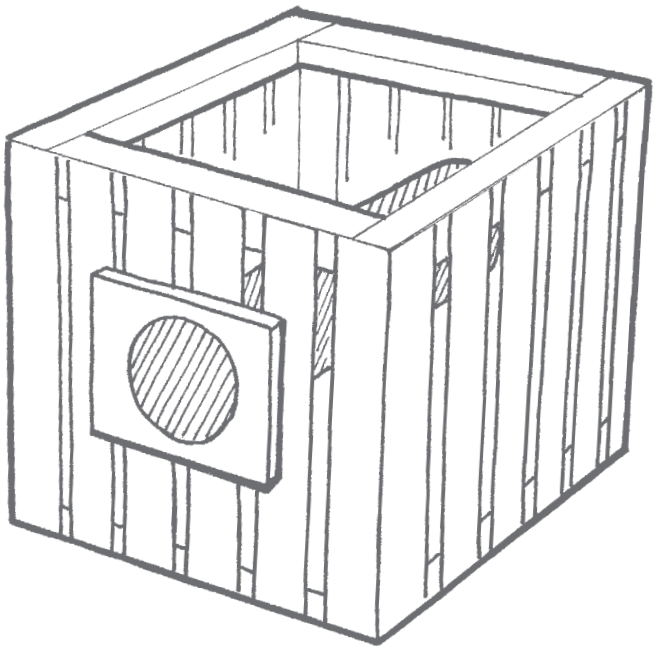
1 Assemble the side panels of your compost bin



2 Cut a hole in two of the four sides



3 The completed compost bin with a pipe to let pupils feel the heat generated once it is fully functional



ADDITIONAL INFORMATION

Wormeries are available from: **WIGGLY WIGGLERS** ☎ 0800 216 9900 or 01981 500391 www.wigglywigglers.co.uk

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