COMPOSTING IN SCHOOL

A practical guide to composting food waste



Recycle Devon

Composting in School – a practical guide

This guide is designed to help all the schools in Devon that would like to run, or are already running an initiative connected with composting and food growing. If you are involved with your local school and they are not yet composting perhaps you could share this guide with a member of staff you know.

The composting equipment in this guide was used extensively as part of the Devon Composting in Schools Project that ran between September 2009 and March 2012. This guide was written in 2012 was based on the equipment that was tried and tested successfully in Devon Schools. We have now updated parts of this guide but not all of the equipment used in the original project is still available. There is now a wide range of composting equipment on the market that we have not used or tested, however the advice on how to compost and lessons learnt from the original project remain useful and can be applied to a range of different compost equipment.

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Introduction – exciting times!



Devon has some of the highest recycling and composting rates in England and has pioneered different methods of schools' food waste composting since 2001.

Here there is a wealth of support for schools who want to reduce their rubbish, recycle as much as they can and compost their food waste; both practically and through the curriculum. Waste audits, workshops and practical advice are available from a team of experienced Waste Educators. Technical and practical advice is also available from Devon Community Composting Network – see contacts in Devon on page 46.

School gardens used to be an integral part of school life but then sadly they were seen as less relevant to the modern curriculum and many were abandoned. Now they are coming back as part of a much-needed and more joined up agenda involving growing food, procuring locally grown food and teaching children about where their food comes from and how it reaches their plate. Indeed, cooking healthy meals is now a curriculum requirement. Schools are also developing Climate Action Plans and working to increase the biodiversity of their school grounds; composting is a natural part of this commitment.

The government's fruit scheme, which enables KS1 children to eat fresh fruit every day, has meant that many schools have fruit peelings and cores to dispose of, or compost. Traditionally this fruit waste has either been thrown away or put into plastic 'Dalek' composter. See the resources section on page 43 for videos to help you successfully use a 'Dalek' style composter. These are fine for the amount of food waste produced by a household, but they are rarely up to the task of composting large amounts of school waste efficiently. Some schools have a dalek to show how composting can be done at home, however, experiences of using these in schools have shown that they are quickly filled up and then overwhelmed with dense, oozing, sticky fruit waste, which attracts fruit flies. Children and adults are left with negative experiences of the composting process, and opportunities for using composting as a teaching resource are missed.

However, the good news is that by using the RIGHT composting system fruit waste can be composted efficiently.

Indeed all the school's food waste, both raw and cooked, can easily be converted into compost for the school gardens using specialist equipment. Pupils can be actively involved, learning about natural and scientific processes as they take practical action to reduce their school's waste.

If you want to start composting, or improve your current system, this guide will help you find the best option.

Tops Tips to reduce food waste

Before you start to compost, you should consider how to reduce your food waste.

The following pages provide some top tips and there are further reources on our website: **zone.recycledevon.org/teachers**

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Top tips to reduce food waste



Use the School Food Waste Hierarchy

The School Food Waste Hierarchy can help you create an action plan for tackling food waste. Reducing and reusing are the best possible options as it not only avoids food waste, but also prevents the environmental impacts created by growing, transporting and processing more food than we need.

SCHOOL FOOD WASTE HIERARCHY

Adopt a whole school approach

Encourage a love and understanding of healthy food

REDUCE – AT SCHOOL

Plan meals carefully - involve the children.
Conduct food waste audits.
Educate students and staff on portion sizes.
Promote 'take what you need' policy.
Promote waste free packed lunches.

REUSE – AT SCHOOL

Give surplus meals to students/families to take home.
Get creative with leftovers!
Set up a school community fridge/larder.
Set up a share table for unopened items e.g. fruit and snacks.

COMPOST – AT SCHOOL

Create compost for use in the school garden.

COMPOST – OFF-SITE

Set up a food waste collection for Anaerobic Digestion.



There is a great child friendly video about how an Anaerobic Digestion plant works on the Zone website:

https://zone.recycledevon.org/videos/

Start with a whole school approach

It is vital to have all staff onboard, and in particular the kitchen staff, meal time assistants and cleaning staff. Set up a meeting and remember to listen to any concerns and ask them for their ideas to reduce food waste before trying to make any changes. Make sure you actively listen and take their ideas on board as you will need their help to keep the composting system working day-to-day. Ensure you also get your senior leadership team on board as reducing food waste is just one component of a developing a positive food culture in the school.

Carry out a Waste Audit

Doing this before setting up your composting system will help to identify where waste is coming from and help you to develop an action plan. See page 36 for more details.

Improve pupils' familiarity and appreciation of different foods

Encourage pupils to try unfamiliar foods rather than leave them on the plate. Some suggestions for how to do this include:

- taster sessions with pupils, teachers, catering staff and parents. These could be themed food weeks or days to explore food from different cultures
- gather feedback from pupils on what they do and don't like
- invite local growers/suppliers into schools or organise a school trip to a local farm
- share school meal recipes with parents so they can try cooking the meals at home
- cook recipes of meals served at lunch at school
- visit the school kitchen with pupils and talk to catering staff
- invite school cooks into classrooms to talk about the food they have sourced and are preparing, the importance of provenance and the joy of eating good food.

Improve the dining experience for pupils and staff

Start a School Food Action Group. This is a great way of encouraging the whole school community; parents, teachers, pupils, catering staff to look at issues around food and the dining experience together. Issues to address can include:

- the waiting time in the queue
- ways to encourage staff to eat with pupils
- best use of small space
- changing from canteen trays to plates
- reducing noise in the dining room, or playing calming music
- making the space feel inviting and relaxed.



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Top Tips to Reduce Food Waste

Cook meals to order

Implement a simple system to cook meals to order for pupils. This saves food waste as well as saving money. In order to implement this, the school will need in place a:

- system for pupils/parents to pre-pay for school meals
- way of recording which pupils are having a meal each day
- way to communicate the number of meals ordered to the kitchen each day.

Introduce a snack sharing scheme

Children often throw whole pieces of fruit and unopened snacks in the school bins because they do not like what they have been given. Introducing a ‘share shelf’ can help children to swap what they have with others and reduce waste.



Set up a school community fridge

A community fridge is a space that enables people to share surplus food from supermarkets, local food businesses, producers, gardens and allotments. Fridges are usually run by community groups in shared spaces such as schools, community centres, libraries and local shops. There are 35 community fridges across Devon and over 700 fridges across the UK (and counting). In a school setting it may not be possible to make it available to the public, but it could be used by many families and staff. Surplus school meals could be packaged up and put in the fridge for collection at the end of the school day.

It is important to stress that the surplus food is available to anyone and is about reducing waste to avoid stigma around using the fridge.

You can find out more about how to set up a community fridge on the following websites:

https://cagdevon.org.uk/doing-stuff/how-to-guides/devons-community-fridge-guide/

https://www.hubbub.org.uk/community-fridge-network





Why Compost at School?

All schools produce food waste and many also produce garden waste as part of their grounds maintenance. Whilst garden waste is often managed on site, food waste is often thrown in the bin. In most cases this valuable resource is sent for disposal, costing money and wasting vital nutrients. This guide will tell you how to compost in a school setting written with the benefit of many years of experience of composting in Devon schools.

A legal duty

Since March 2025 schools have a legal duty to comply with the Simpler Recycling Regulations which includes having a separate food waste collection. The food waste can be either collected by a waste collection contractor and sent to an Anaerobic Digestion plant for processing or you could set up a school food composting project. More information about Simpler Recycling can be found on page 41.

Save money

Schools pay a significant amount of money to dispose of their (so called) “waste” and much of this could be reused, recycled or composted. Reducing the amount sent for disposal will save your school money by cutting the number of bins you need, or reducing the frequency of their collection.

Making your own compost will also save your school money as you won’t need to buy it in.





School Climate Action Plans

Reducing food waste and composting on site, or via an anaerobic digestion plant, will make a positive contribution to lowering your schools carbon footprint. Make sure composting is part of your school’s Climate Action Plan. There are links to helpful resources on pages 43-45.



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Why Compost at School?



Bring the curriculum to life – use your school grounds as a learning resource

Teachers know that many children's behaviour improves the moment they go outdoors. They may become very excited if this is a rare occurrence, but once it is normalised children will often behave much better than inside a classroom. Evidence shows children learn better outside and school gardens are a fantastic, often underused resource, for learning.

We have written **'The Compost Curriculum'** a handbook to enable teachers to use the composting process as a teaching resource throughout the school year. For each month it contains a curriculum-linked KS2 lesson plan and an Eco Team activity, plus a wealth of supporting documents to bring composting to life for adults and pupils. It can be downloaded from **zone.recycledevon.org**. There are videos aimed at KS1 and KS2 on this website too.

Give pupils a sense of ownership and responsibility

With appropriate adult supervision, pupils can take on much of the day to day responsibility for composting tasks - collecting caddies of food waste, feeding the composter and of course using the compost to grow more fruit and vegetables. Many schools set up teams of pupils to lead their composting work, often with a mix of ages so that older pupils can pass on their expertise to their younger composting colleagues. The practical tasks involved in composting are enjoyed by all children, whether or not they are high achievers in the classroom.

Support your school's healthy eating and Ofsted review

Under the Ofsted inspection framework, which came into force in November 2025, inspectors will look for a culture of healthy eating as part of 'Personal Development and Wellbeing' during their visit, and will consider the atmosphere in the dining space and the effect this has on pupils behaviour. By seeing fruit and vegetable waste recycled into compost and used to grow more healthy food, the culture and understanding of food, and where it comes from, will be enhanced in the school.





Before you start



Use the matrix below to work out your current strengths and the areas for development in terms of composting at school. Then plan your next steps towards getting your 'compost system and compost curriculum' fully embedded in school life.

	Stage 1	Stage 2	Stage 3	Stage 4
Matrials composted	We do not compost on site.	We compost only garden waste e.g. weeds, hedge clippings, leaves.	We compost raw food and garden waste e.g. fruit and vegetable peelings.	We compost all food and garden waste including cooked food e.g. plate scrappings.
Involvement	Nobody is involved in composting in school.	One school adult does the composting e.g. the caretaker. There is little awareness in the rest of the school.	Some pupils and staff are aware of or involved in composting e.g. garden club, Eco team.	All pupils and staff are aware of, or involved in composting.
Using the finished compost	The finished compost is not used.	A school adult e.g. the caretaker empties the composter.	Some pupils make use of the compost in school e.g. the garden club.	All pupils and staff use the finished compost eg in class raised beds or in science lessons.
Curriculum	Composting does not feature in our curriculum.	Topics such as 'Growing Plants' mention compost but do not make links with our composter.	Some classes occasionally use the composter as part of their class work.	Every teacher uses the composter as part of their class work. We take the composter into consideration during planning.
Community	Nobody outside the school is involved with our composting.	The parents' school grounds group dig out the compost once a year.	Parents or the local allotment society advise and help us with our composting.	We have held open days and celebration events about composting involving the wider school community.



Garden waste

Most school gardens and grounds will produce compostable material, such as hedge and grass cuttings. If you have never composted before, set up a garden waste composting system first and learn the basics of composting. Helpful guidance can be found on the following websites:

https://www.dccn.org.uk/garden-waste/

https://www.rhs.org.uk/education-learning/school-gardening/resources/planet-friendly/composting-for-schools

https://www.gardenorganic.org.uk/expert-advice/garden-management/composting

If you are setting up composting for cooked food waste you should continue to use separate compost bins and leaf-mould containers (depending on the size of school and grounds). Composting equipment for cooked food waste is expensive and it would be a shame to fill it up with leaves, grass and hedge cuttings and then not have space for the food.

Food Waste

You will probably have both raw food, such as fruit and vegetable peelings, and cooked food, such as plate scrapings. There are differences in the composting process between composting raw food and a mixture of raw and cooked food, which are summarised in the table below.

Differences between composting raw food and a mixture of raw and cooked food:

Raw food only (e.g. fruit waste)	**Raw and cooked food** (includes catering waste)
Equipment needed	**Equipment needed**
Raw food can be composted in a static system such as a Hotbox, New Zealand box or pallet bin (see more details of these systems on pages 16-17). However, it will compost faster in a turning system than allowing to mature in a static system.	Must be composted through a turning system, such as a Jora or a Ridan, and then followed by a maturation period in a static system such as a Hotbox, New Zealand box or pallet bin.
Pros	**Pros**
Sometimes starting by composting raw food waste only, can lead to a focus on reducing overall food waste amounts, including cooked food waste.	A system which composts all food waste, has the potential to save money on bin collection costs, and avoids disposal costs.
Cons	**Cons**
There is likely to be some cooked food waste which will need to be dealt with. This will need to be collected and sent to an Anaerobic Digestion plant for processing.	The equipment needed to do the composting is more expensive. There are more potential complications with composting cooked food waste if instructions are not followed carefully. It is not recommended that cooked food alone is composted as the microorganisms needed to break down the food waste can be killed in the cooking process.

Staff time

Cooked food composting is straight forward and does not involve any specialised skills. However, composting tasks need to be carried out daily, so your school will need to give time to a designated adult compost operator for this. In a small school, if some tasks are delegated to pupils (e.g. collecting up caddies from around the school) the compost operator will need about 10-15 minutes per day.

Giving the pupils responsibility is great, but they will need to be adequately supervised when using the composter itself. In larger schools, the compost operator will need up to 25 minutes daily.

Schools in Devon are composting successfully with compost operators who are teachers, teaching assistants, caretakers, school cooks and even a few Head Teachers! Ideally the composting responsibilities should be incorporated into the compost operator's job description and plans should be made for an alternative person to carry out composting tasks when they are not at school.

If your compost operator leaves, it is important to consider who else will take on the composting tasks. It is essential to ensure that everybody using the equipment has had proper training, including new adults/children who are taking over the responsibility or helping out. Contact one of our compost experts (see Contacts in Devon section on page 46) who can visit the school, to help you with this.



Composting catering waste from the school kitchen

Animal By Products legislation (ABPR)

Animal By Products are any material with animal content, including food cooked in animal fat or oil, or dairy products

Which animal by-products you can compost

Small scale composting carried out at a school can only compost animal by-products that come from catering waste. Catering waste is leftover food (cooked and/or uncooked) and cooking oil from any kitchen or canteen (e.g. the school kitchen or from packed lunches).

Keeping animals away from your compost

If you put catering waste in your composting system, you must stop farm animals, including any you keep as pets, from accessing it. Farm animals include sheep, goats, cattle, pigs, chickens and other poultry.

Using your compost

You can only spread the compost on land that farm animals don't have access to. If your school keeps farm animals, you must make sure they do not have access to the compost.

It is best to use the compost on the school grounds. If you want to use your compost at another location visit the following website for further guidance as you may need approval from the Animal and Plant Health Agency (APHA).

https://www.gov.uk/guidance/using-animal-material-in-home-work-or-community-compost-heaps





Before you start
Legislation

Waste Exemption license

Schools composting their own waste on site will need to apply to the Environment Agency for a T23 exemption for small scale composting. Schools do not need to pay for their waste exemption licence as they are classed under charitable purpose 'for the advancement of education'.

To register for free telephone:
03708 506 506

For more information visit:

https://www.gov.uk/guidance/waste-exemption-t23-aerobic-composting-and-associated-prior-treatment

Planning Permission

Schools do not need planning permission to compost their own waste on site as composting is ancillary to the school garden.

If you are planning a bigger composting project, please read the guidance note available on the Devon County Council website:

https://www.devon.gov.uk/planning/document/planning-guidance-note-community-composting-and-planning-permission-march-2022/



Composting fruit waste

Fruit waste which does not come from the kitchen is not affected by the Animal By Products legislation.

Before you start





Waste audit

When looking at waste in schools it is useful to do a waste audit. Here pupils and adults sort through the previous day's school waste and separate it out into its different categories; all the paper in one pile, the card in another etc. These piles are then weighed and the data recorded; perfect for data handling aspects of numeracy and ICT. Devon schools can book a free waste audit with experienced Waste Educators (see resources section from page 43).

For the purpose of composting, we strongly advise that you complete a 5 day food waste audit – see page 43 for template form.
An Excel version of this can be found on **zone.recycledevon.org/compost** which will automatically create tables and graphs for you to use with the children.

Using the information from the 5 day weighing sheet you can decide which composting system would be most appropriate for your school's needs.

Remember to include:

- fruit from the fruit scheme and children's snacks
- unserved canteen food
- vegetable peelings etc. from the kitchens
- plate scrapings
- packed lunch food waste – if your school has not adopted a take-home policy for this

The 5 day food waste audit will give you a more accurate figure that incorporates fluctuations from day to day that are not captured using a one-off waste audit (e.g. due to menu variations, changes in the number of pupils having school meals).

Auditing the food waste is important as you don't want to spend excessive money on a composter that is too large. Conversely, you wouldn't want equipment that is struggling with more food waste than was expected.

When your pupils see the amount of waste the school produces, it can spark off a desire to implement waste reduction schemes within the school. With guidance they can think about ways to 'reduce' the amount of waste the school is producing; how it can be 'reused' and finally set up or improve the existing 'recycling' collections (see your local council in contacts section). Go to: **zone.recycledevon.org/3Rspractical-information** for ideas on how to reduce, reuse and recycle your school's waste.



Different composting systems

Once you have decided whether to compost all your food waste (cooked and raw), just raw food waste, or even just garden waste you can choose the equipment that is best for your situation.

Composting raw food waste

You will need a bay or composting box to contain the materials. Experience has shown that specifically designed Hot Boxes* work well, but there are other options such as a Pallet bin (made from pallets) or a New Zealand box (made from separate planks).

Static systems

HotBox, Pallet bin or New Zealand box

	Hot Box*	Pallet bin or New Zealand box
Cost and materials	More expensive – made from recycled plastic.	Can be made cheaply from reclaimed wood, demonstrating re-use of materials.
Pupil involvement	Pupils can help to put them together.	Pupils can be involved in design and build
Durability	More durable – will last for years if well placed and looked after.	Will usually start to rot and need replacing after 2 – 3 years.
Insulation	The design maintains heat from the composting process so produces compost more quickly	Less insulated so doesn't hold heat from composting, although they can be made larger so the mass of material helps to insulate.
Rodents	Rodent unfriendly if well placed on a solid surface.	Easy for rodents to access.

* Please note that at the time of updating this guide, the Hot Box was not currently in production.









How to use a HotBox*

Description	Insulated bin made from recycled plastic
Size	1000 litres
Dimensions	1m x 1m x 1m
Delivery format	Pre-assembled or flat packed
Where it is made	Designed and manufactured in Devon *
Number of chambers	1
Locating the equipment	To maintain the equipment and reduce the likelihood of rats getting in, place the HotBox on a solid, flat surface
How they work as a raw food waste only composting system	Add raw food waste daily and rake level Whenever food waste is added, add the same volume of carbon source**, then rake level When the HotBox is full, leave it to compost for 6 to 12 months When it is ready to empty, the front planks slide up for easy access to the compost Refer to troubleshooting guide if any issues arise, see page 43
How they work as a maturation stage for raw and cooked food waste composting	Add material from the initial stage daily Rake flat once material has been added When HotBox is full, leave to mature for 6 to 9 months When it is ready to empty, the front planks slide up for easy access to the compost Refer to troubleshooting guide if any issues arise, see page 43 No additional wood source needed
Additional information	The HotBox has a fitted base and lid Monitor moisture levels regularly A full HotBox holds approx 625kg compost or 1000 litres Useful to have more then one so material can be turned from one to another
Website	www.dccn.org.uk

* Please note that at the time of updating this guide, the Hot Box was not currently in production.
** See page 29 for carbon sources



Different composting systems

Wooden bin/boxes:
New Zealand boxes and Pallet bin

Uses

These can compost raw food and garden waste; they are not appropriate to use for cooked food. They can also be used to give compost time to mature once it has been through a turning system.

Size and design

They are generally large, each being around a cubic metre and often bigger; sometimes as single compartments but are more often constructed in series of two or more. This means when the first chamber is full, waste can be added to the next section and so on allowing time for the waste in the first chamber to mature.

They are usually made of wood and can be a solid square in design, have a wooden 'door' or have a front made of planks, which slide up and off to access the compost when needed.

Lids can be made from cardboard sheeting or non-rubber backed carpet, or duvet type covers can be bought to help keep them warm. Due to their size, they can house a large volume of compostable material; this maintains the heat and helps the composting process.

Pros

They can be made at low or no cost, especially if you reuse planks of wood or pallets. Otherwise slatted sided bins can be purchased from £50 upwards for a single chamber to over £200 for a triple bin. They are easily accessible so alternate layers of 'greens and browns' can be added without difficulty. They can be fun to make and offer children a fabulous opportunity to design and build their own composters.

Cons

The downsides are that they are open to rodents* and as they are made of wood, they will eventually rot. If the sides are open slatted, the outsides of the compost tends to dry out too much.

* See page 39 for ways to reduce the risk of rats.





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How to make your own wooden bin/boxes

Remember to use untreated wood to avoid contaminating your compost

Slatted bin

If it has slats that lift up at the front it is known as a New Zealand box.

The website links below give instructions on how to build a New Zealand box:

https://zone.recycledevon.org/wp-content/uploads/Make_a_New_Zealand_compost_box.pdf

https://zone.recycledevon.org/wp-content/uploads/Build_a_compost_box_EastSussexCC.pdf





Pallet bin

These are really easy to make; tie four similar sized pallets together with baler twine/string to make a chamber. Hammer in stakes around the base so the composter keeps its shape – see image. Remember to make 'hinges' down one side on the front pallet to create a door for easy access. More pallets can be added for further sections.



All kinds of things can be used to build a composter:



Stout wire mesh, such as chicken netting, can be made into a cylinder or square supported with posts. These are ideal for making leaf mould.

Old doors, concrete blocks, corrugated iron sheeting and all manner of discarded panels can be used to make simple containers. The simplest compost heap of all is just a pile on the ground covered with a tarpaulin or non-rubber backed carpet.

Text adapted from 'How to Make and Use Compost: The Ultimate Guide' by Nicky Scott published by Green Books



Different composting systems

How to use a HotBox, Pallet bin or New Zealand box



When using a bin/box to compost, there is very little that you need to do other than regularly checking the moisture levels. Squeeze a handful of the compost; if moisture levels are correct, then it should yield a few drops of water; you may well want to wear gloves to do this. Another method to check moisture levels is to stand back and observe when you take the lid off the HotBox. Watch out for any rising mould spores which are a sign that it is too dry. If this happens, wear a face mask, or be careful not to breathe in the spores; soak the contents in water and leave undisturbed for several days. Mixing in freshly cut grass is another easy way to increase moisture levels, as well as boosting the composting process.

When emptying a bin/box, scoop off the top layers of compost and put this and any worms you find to one side, or into another bin/box if you have more than one. The finished compost in the bottom section can be used immediately on the gardens or bagged up until needed. It is advised that you only apply this compost to the surface of the soil. If you dig it into the soil, micro-organisms will use the nitrogen to break down any remaining woody material, which is the slowest to break down, instead of it being used by the plants to help them grow. See 'Using your compost' section on pages 32-33.

If you have two or more bin/boxes, when the first is full, start filling the second and so on. When all of them are full, if enough time has passed and the moisture is sufficient, the first to be filled should be ready to be emptied. HotBoxes are designed to deal with food waste but they work very well with garden waste too.

However, you will quickly run out of space for your food waste if you fill it up with garden waste. Therefore, we recommend that you have a separate composting system in which to compost garden waste.

How many bin/boxes will I need?

Obviously larger schools with larger amounts of waste being composted will need a higher capacity. It makes sense to have at least two bin/boxes, that way when you have filled one you can leave it to continue to compost whilst filling another.

"We are completely filling one HotBox each term. This term we have started using the compost that has matured for the last 9 months, we are thrilled with the quality of the compost we have made!"

Stoke Hill Infant School



Worms

Static composting systems, such as the HotBox, Pallet bin and New Zealand box are really big wormeries! Compost or manure worms (the striped 'tiger worms' are the most obvious) naturally find and colonise compost equipment or heaps. Over several months, firstly bacteria, fungi and other microorganisms and later the worms, break down the materials transforming it into a rich dark humus. You may also see masses of small white worms known as pot worms. These are harmless but can indicate that your compost is getting a bit wet, acid and airless. If this is the case, see trouble shooting guide on page 43. In a thriving heap you may also see little brown worm eggs, known as cocoons; these look like grape pips. It's fascinating to take samples of the different stages of composting; look carefully at it with hand lenses and microscopes to see the incredible diversity of invertebrates and other life living there. You can see a couple of short videos showing these creatures on **https://zone.recycledevon.org/compost/**





Composting raw *and* cooked food waste

Composting cooked food comes in two stages – an 'initial' stage which requires specialist turning equipment, and a 'maturation' stage which can be done in a static system such as a HotBox, Pallet bin or New Zealand box.

Initial stage

This stage is rapid and eventful. If you have added the right mix of materials, then heat will be generated and steam will be visible. Initial stage composters are designed to allow you to tumble or turn the mix every day – this increases airflow which stimulates heat production. Temperatures inside the initial stage composter should reach 50-60°C which is enough to rapidly kill off potentially dangerous pathogens and fly larvae. **It is vital that wood pellets, sawdust or wood chips are added at the same time as the fresh and cooked food waste;** more on this later. After the food waste has been through the initial stage equipment, it still needs time 'to mature' before it can be used on the land – this is where the next stage begins. Equipment for this stage includes the Ridan which comes in three different sizes and the Jora for very small amounts of food waste – see page 23.



Initial stage equipment

These composters are designed to compost food not garden waste, however freshly cut grass is probably the best compost activator around and the odd bucketful will raise the temperature quickly, so can be used to rectify compost that will not heat up! Be careful not to overload it with grass though, as this will be counterproductive.

Maturation stage

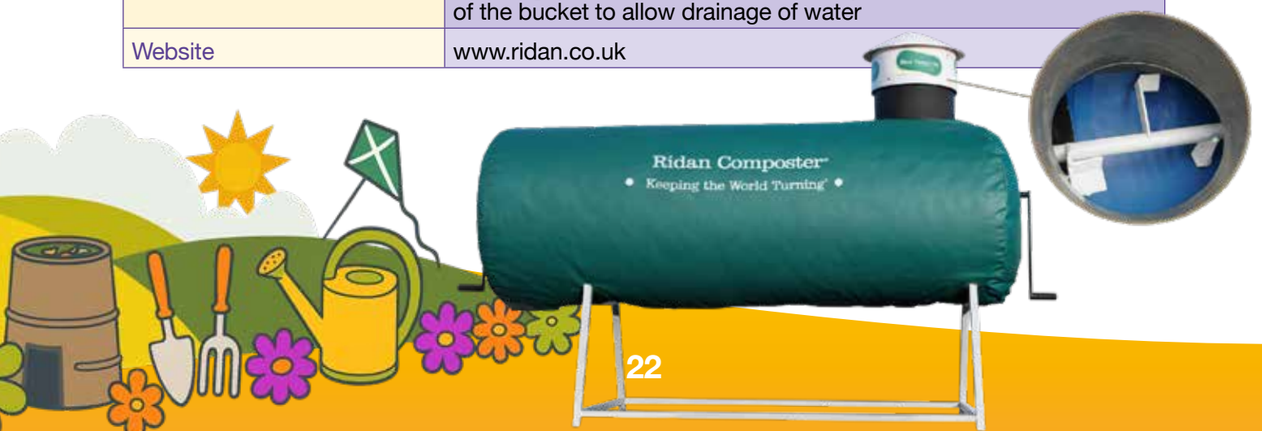
Food from the initial stage composters is not ready to be used on the land and so should be transferred to another composter for the maturation stage. This stage is slower, cooler and will generally take 9 - 12 months or even longer. Equipment for this stage includes HotBoxes, pallet bins or New Zealand boxes.



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For large amounts of food waste the Ridan series is a good option

Description	Insulated turning composter
Size	Two different sizes available
Dimensions	Ridan Pro 200 = L2.4m, H1.5m and D1m (60kg) Ridan Pro 400 = L2.5m, H1.6m and D1m (70kg)
Amount of food waste per week	Standard Ridan = up to 75kg (200 litres/week) Large Ridan = up to 200kg (400 litres/week)
Delivery format	Pre-assembled
Where it is made	Designed and manufactured in Devon
Number of chambers	One – it has a rigid metal pipe running through the whole length with paddles (see image below) which turn and ease the food waste through the system towards the outlet pipe at the far end
Locating the equipment	Ensure Ridan legs are on solid ground, or place a flagstone under each leg, in a clean and clear area, away from hedges
How they work as a raw food waste only composting system	Fill at one end and turn the handle, each time the handle is turned partially composted food waste that has reached the end falls out. This is then emptied into the maturation bin Never fill the Ridan more than three quarters full, as you need a flow of air to pass right along the mass of material inside, and always replace the lid properly. Everytime food waste in inputted add a wood source, as much as it takes until there is a clear airspace visible in the filling chamber – don't worry about weekends Refer to troubleshooting guide if any issues arise – see page 43
Number of turns daily	15-20 times or as much as it takes until there is a clear airspace visible in the filling chamber – don't worry about weekends
Wood source needed?	Yes! Every time food waste is inputted add a wood source
Additional information	The Ridan differs from the Jora in that materials are harvested every time fresh materials are added and the handle is turned Roughly 6 buckets of food waste in = 1 bucket of compost out If leaving a bucket under the Ridan output, drill holes in the bottom of the bucket to allow drainage of water
Website	www.ridan.co.uk



Different composting systems

For smaller amounts of food waste you can use a Jora 270

Description	Turning compost bin with insulating lining
Size	270 litres
Dimensions	L114 x H130 x D76cm overall with stand
Amount of food waste per week	Up to 15kg
Delivery format	Flat packed – ideally needs two people to assemble
Where it is made	Sweden
Number of chambers	Two
Locating the equipment	Ensure Jora's legs are on solid ground in a clean and clear area, away from hedges
How they work	Fill one chamber until three quarters full, then start to fill the second chamber. Turn each day. When the second chamber is three quarters full, empty the first into the maturation system and start to refill. Refer to troubleshooting guide if any issues arise – see page 43
Number of turns daily	6ish - don't worry about weekends
Wood source needed?	Yes! Every time food waste is inputted add a wood source*
Additional information	The Jora comes in two leg lengths. The shorter legs make it easier for children to see inside, however, the longer leg option means that it stands high enough for the contents to be emptied into a wheelbarrow
Website	Available from multiple online retailers

* See pages 28-29 for wood sources



Other compost bins are available and new equipment regularly comes on to the market.

Recycle Devon

Additional equipment

As well as your turning composter and/or HotBox, Pallet bin or New Zealand box, there are other pieces of equipment you will need to ensure your composting runs smoothly:

Food caddies/buckets

You will need collection containers for your food waste situated around the school wherever food waste is generated. These need to be emptied daily, so do not need to be very large. Most schools find that a couple of 23 litre food waste caddies are sufficient for the school dining hall, while classrooms need a 7 litre caddy. Don't forget a caddy for the staffroom! Choose easy to clean containers with lids (to keep out flies if left outside) and handles. Lining them with newspaper will reduce the amount of cleaning needed, and the newspaper can go into the composter. It is helpful to have them clearly labelled (with words and an image for the younger children) so that adults and pupils know what should go into them.



Gloves



When you do your school compost risk assessment (see resources section on page 43 for a template that you can amend for your school's needs) you may decide that your compost operator(s) should wear gloves. Strong waterproof gardening gloves can be sourced from garden centres or online. Remember to get a range of sizes suitable for children and adults.

Probe thermometer



Healthy composting needs warmth, so you will need to monitor the temperature of your initial stage composter on a regular basis. A probe thermometer costs about £10 and is easy to use by adults and pupils (under supervision.) Like all thermometers, they need to be handled and stored with care to avoid damage. A cardboard tube, such as the ones used to store posters, will protect your thermometer and prolong its life. Suitable thermometers can be sourced from online retailers.



Additional equipment

Hand washing facilities

Even if your compost operator(s) are wearing gloves, good hand-washing procedures are essential, so make sure you have a good supply of soap and water. Ensure that any pupils helping with any aspect of the composting process get into the habit of washing their hands afterwards.

Storage bin

Wood chip/pellets need to be kept dry and located near/next to your initial stage composter for daily inputting. A plastic bin with a well-fitting lid is ideal and can be sourced from a garden centre or DIY store for about £15 - £20. Alternatively, you might be able to get an old wheelie bin from your local recycling centre or local council (see resource section from page 43).

Scoop

A simple scoop is useful for transferring wood chip/pellets into your composter. You can make one from a 2 litre plastic milk bottle, demonstrating reuse, or buy one for about £5 – £10 from a wide variety of shops such as those selling dry pet/animal food.





Wheelbarrow

For moving the compost from one system to another, or to the garden.

Bucket

If you are using a Ridan composter you will need to place a bucket, trug or similar container underneath the outlet pipe to collect the compost. It is recommended that you drill a few holes in the base of the bucket so if it is left beneath the Ridan outlet in the rain, the water drains through it.

Spade

A spade is very useful for moving and mixing the compost. Remember to buy some that are an appropriate size for children to use.



Mantra for successful composting

Composting is a living process carried out by countless macro and micro-organisms. To keep them happy and healthy follow the four point composting mantra:

Food
Air
Water
Warmth

Food

The materials you add to any compost system become food for the organisms that create the compost. Getting the right mix of these materials provides air, water and nutrients which are vital for the wellbeing of all the life in the system.



Water

Compost organisms also need water. Raw fruit and vegetables are mostly water so it is rare that you need to add more to a turning composter. The most common problem is lack of water inside a HotBox which gets full of dried out materials and the composting process comes to a standstill. If this happens add water, preferably rain water; see the trouble shooting guide in the resources section from page 43. Pallet bins or New Zealand boxes do not usually have lids and so usually get enough water from rainfall.

Air

Compost organisms need oxygen to thrive. Air gaps are provided by the woody material (wood chip or wood pellets) that are mixed with the food waste.



Warmth

Compost organisms generate heat, but they also need warmth to get going. The composters described in this booklet e.g. HotBox, Jora and Ridan are all insulated to maintain warmth; a full HotBox has sufficient mass of material to keep the centre warm during the coldest conditions.





Food
A balanced compost diet

A healthy compost system needs a balance diet of both nitrogen and carbon. If you get a good balance of browns and greens right from the beginning, great compost will happen naturally. Aim for 50:50 mix every time you put waste into your composter.

Greens
Vegetable peelings
Fruit waste (and other food waste, depending on your composter)
Old flowers and weeds
Grass cuttings / hedge clippings
Fresh leaves

Browns
Straw
Wood shavings / wood pellets (depending on your composter)
Cardboard / scrunched up paper
Small twigs
Dead leaves

Nitrogen

Think 'Water' – green, wet items such as vegetable peelings, fruit waste, grass cuttings, weeds (but avoid tough roots and seed heads) and cooked food.

These add moisture and are an easy source of food for compost organisms to grow and reproduce. If you have decided to compost cooked food you must include equal amounts of raw 'green' materials. If the proportion of cooked food is too high it will lead to a cold and lifeless compost.



Carbon

Think 'Air' – brown, dry items such as wood chip, wood pellets, dry plant stems and small twigs.

These add structure, air gaps and are a longer lasting energy source for the compost organisms. Avoid adding large twigs and garden clippings to your food waste system as these will take longer to break down than other materials.

The most important concept to bear in mind is that both air and water are vital for life and you need equal amounts of both.





Food
A balanced compost diet



Carbon - the magic ingredient!

Dry, carbon rich materials, such as wood chips, wood pellets, sawdust or cardboard, are vital for effective composting; they add structure to the composting process, which allows for the flow of air liquid and must be added at the same time as the soft wet materials. Woody materials are particularly essential to food waste composting as they are solid and maintain air spaces when mixed or layered with the wet food waste. Ideally, the carbon source should be kept dry.

"I am really pleased with using wood pellets instead of wood chip for my composting needs – it is so much easier, less bulky, quicker and still makes lovely compost – a real winner. It is less problematic to deliver wood pellets to schools and store than wood chip due to its smaller bulk."

Okehampton Primary School

Wood pellets

These are ideal for raw food waste composting systems as they can be raked out in the Hotbox. However, keeping large volumes of wood chip dry can be a challenge. Many schools find wood pellets, purchased in convenient bags, an easier option for combined raw and cooked food waste composting.

It is important to store wood pellets in the dry as well because if any moisture gets in it will swell up the pellets and burst the sacks.

When considering the financial implications of buying wood pellets, think about getting together with other local composting schools to put in a bulk order to benefit from economies of scale. Also remember that your school may well save money on rubbish collections once your composting is firmly established. However, if you want to find a FREE carbon source you could consider some of the following options:

Paper and cardboard

Waste paper and cardboard are abundant in schools and maybe added to supply carbon to your bin/box raw food waste composting system. However, do not use this in a turning system as it will quickly ball up and reduce the air flow.

Wood chip

Ask parents/governors/staff if they have any friends or contacts, such as tree surgeons, who can supply either fresh or dry wood chip – or contact local tree surgeons who may be very happy to support your school's composting. It is important to store your wood chip where it will not get wet.

Wood shavings

Uncontaminated (no MDF, tanalised or painted wood etc.) wood shavings are fine on their own or in combination with other wood sources.

Sawdust

Uncontaminated (no MDF, tanalised wood etc.) sawdust will work well in conjunction with wood chip, and maybe available as a 'waste' material from carpenters. It is advisable to wear a face mask when using it as the dust could be a health and safety issue.



Wood chip sieving

The downside of using large, structural materials to aid the composting process is that when you empty the compost from your bin/box, some large woody bits will probably still be present. If you dig them into your garden the micro-organisms will continue to break them down, a process which uses nitrogen from the soil. Nitrogen is vital for plants to grow, so to avoid this you can either adopt a 'no dig' approach or sieve out the large bits before using your compost.

Any really large chunks of wood can be returned to your compost system, adding valuable microbes. However, sieving can be laborious with a small sieve; instead it could be a task that the children can do. Ask them to hold either end of a length of chicken wire so that it forms a U-shape, a foot or so from the ground. One of them holds the chicken wire while the other puts a forkful of compost onto it at a time. Rock the wire from side to side, rolling the compost through leaving the larger pieces on top of the wire, these can be put back into the compost bin to continue breaking down and adding structure and carbon.



Proportions of carbon to food waste

In a raw food only composting system

Suitable carbon sources include wood chips, sawdust and some cardboard. A mixture of different sources of carbon is beneficial as they add different sized air gaps:

The materials should be layered into the bin box in the right proportions of:

1 caddy of raw food waste to 1 caddy of wood chips/sawdust

Or

1 caddy of raw food waste to half a caddy of wood chips/sawdust, and a layer of cardboard

In a raw and cooked food composting system

Using a tumbler, suitable carbon sources include wood chips, sawdust or wood pellets. Wood pellets are compressed sawdust, which absorb moisture and expand when mixed with food waste in a turning system. **Cardboard shouldn't be added to a turning system as it will clump up and become tangled in the mechanism.**

The wood source should be added to the turning composter in the right proportions of:

1 caddy of food waste (mixture of raw and cooked) to 1 caddy of wood chips/sawdust

Or

1 caddy of food waste (mixture of raw and cooked) to one sixth of a caddy of wood pellets

Composting raw food waste only

On day 1, add the following to your bin/box and rake it level:

- **A bucket of dry wood chip/sawdust (a mix of both is fine)**
- **A bucket of fresh 'greens' such as fruit and vegetable peelings.**
- **A bucket of composting material from an active onsite compost heap, if at all possible, as this will kick start the microbial populations.**

On the following days add raw food waste and rake level in the bin/box. Then follow with an equal proportion of your carbon sources, including at least some wood chip/sawdust, and rake level to cover the raw food waste.

Composting cooked and raw food waste

In your turning system, add the three buckets as on pages 30, then tumble well to ensure the materials are thoroughly mixed and plenty of air is incorporated. If you are using a Ridan, turn the handle 15-20 times or as much as it takes until there is a clear airspace visible in the filling chamber. If you have a Jora, then turn it about 6 times.

On the following days, add fresh food waste and wood chips/pellets in the right proportions (see the boxes on page 30), and tumble/mix well. Always add your food waste daily – do not leave it lying around in buckets to go smelly!

Start your composting with just raw food (fresh peelings and fruit waste), with the all-important wood source, and take the temperature of the mix each day. When it reaches around 50°C, start to add cooked food: 1 day the first week, 2 days the second week, 3 days the third week etc. Continue to monitor the temperature – if it drops, have a day or two without adding cooked food waste. Over time, aim for roughly equal volumes of cooked and raw food waste with your carbon source as this mix will provide the best conditions for composting.

If you do not have a production kitchen at your school (where meals are cooked, not just heated up) you may find you have a shortage of fresh peelings to balance your cooked food. In this situation, add small amounts of grass or other leafy garden waste to give your initial stage composter a boost. During the start up phase, for the first few weeks, it's best to make sure that the air supply, in the form of wood chip/wood pellets is more than the advised amounts rather than less.

If you start a system without enough structure, it can easily become airless, start to smell and then it's difficult to get it back on track. Keep adding a balance of wet/green materials (e.g. fresh fruit and vegetable peelings) with dry/brown structural material (e.g. wood chip or wood pellets). See compost mantra on page 26.

TOP TIP! *Avoid putting lots of very wet materials such as gravy, custard, milk or soup in, as this will block up all the air spaces and can make the compost smelly.*

After your compost has matured for 9 -12 months it will be ready to use.

Sieve out any very large chunks of wood chip. It is best to use your finished compost on the garden bed surface and not dig it in. The worms in the soil will soon incorporate the finished compost and the harder bits will remain on the surface slowly breaking down.

Using your compost to create new beds: Lasagne mulching

Digging disrupts the delicate soil ecology and spades slice up and kill earth dwelling worms. With around 50 - 300 earthworms in a square metre of healthy top layer soil, digging can do more harm than good. Of course if you have pernicious perennial weeds such as bindweed, couch grass, ground elder etc. then you will probably have to do some digging, but if your ground is mostly covered with annual grasses and weeds then the easiest way to prepare it is by 'lasagne mulching'. You can do this at any time of year but ideally not when the ground is really dry.



For lasagne mulching you will need:

- Large sheets of cardboard/old cardboard boxes, with the packing tape, plastic and staples removed
- Old newspapers
- A watering can or hose
- Various types of organic material such as:
- Grass clippings
- Compost
- Manure
- Partially rotted wood chip
- Leaf mould

Firstly, scythe or mow off all the top growth vegetation then lay the sheets of cardboard over the area. Cover the sheets of cardboard with newspapers especially where they overlap and use a watering can to mould the newspaper to the cardboard. If you had a lot of top growth you could spread this on top of the newspaper layer. You can add all kinds of bulky organic material in layers, for example, compost (it doesn't have to be fully mature for this job), leaf mould or manure. You can finish off with fresh or partially rotted, wood chip, straw, hay etc. This method will clear most weeds but not all. Some weeds are incredibly tenacious, however any that push through, such as docks, can often be pulled out of the loosened soil with complete roots.

Potatoes are a great crop to plant into this mulch in the spring because it's easy to harvest them and clear up any remaining weeds at the same time. If you make the beds later in the season you could plant pot grown squashes, or, if preparing in the autumn then you could sow broad beans in November. If the lasagne mulch has been down for some time then you can make holes through the layers and plant directly into the soil beneath.

Using your compost



Using your compost on already prepared beds

If you already have lovely well-tended beds, then use your matured compost on the soil surface, or during the growing season apply around growing crops. After harvesting, clean up the beds, rake and apply a top dressing after sowing or planting out the next crop. Think of your compost as adding a dose of life-giving beneficial micro-organisms. A little goes a long way so even if you only have enough for a thin covering, it is all food for the soil and will help boost the life in your garden. Always plan the next crop to go in and try not to leave the soil bare, as this will lose its fertility and life.

Using your compost as a potting medium

Your fully mature compost will form a great basis as a growing medium for plants in pots or tubs etc. Firstly you will need to sieve it (see page 30), then add sharp sand, available from garden centres, not builders sand, pearlite or vermiculite to introduce air gaps and improve drainage. Pure compost tends to be too sticky and holds water, so just as you had to add wood pellets or chippings to allow air and water through the active compost, now you need to add a mineral amendment, such as sand, to allow the same process in the finished compost. How much depends on the plants you are growing and how long they are going to be in the container. Leaf mould, mixed with sharp sand, is good to grow seeds in; for more information see the resource section from page 43.



Top tips for successful composting



General tips

1. Add fresh materials daily to your initial stage composter – do not leave waste hanging around in buckets/caddies getting smelly and attracting flies.
2. Ask if any parents or governors have a tree surgery business and could supply and deliver DRY wood chips or sawdust to you on a regular basis.
3. Store your wood source in an old plastic dalek composter or dustbin to keep it dry. You may be able to get one of these from your local recycling centre. Place your storage container next to your composter for easy access.
4. Line buckets/caddies with newspaper to soak up liquids and make cleaning them easier.
5. Always make sure you have the right mix of wet/green/nitrogen and dry/brown/carbon materials.



Top tips for successful composting

Composting 'raw food waste only' and the 'maturation stage' of raw and cooked food composting

1. Small amounts of cardboard and shredded paper can be added to the box/bin.
2. Check the moisture levels in your box/bin regularly. If moisture levels are correct, then the compost should yield a few drops of water; you may well want to wear gloves to do this.
3. Another method to check moisture levels is to stand back and observe when you take the lid off the composter. Watch out for any rising mould spores which are a sign that it is too dry. If this happens, wear a face mask, or be careful not to breathe in the spores; soak the contents in water and leave undisturbed for several days. This can also enable the heap to become active again and continue composting.



Raw and cooked food waste composted together in a turning system

1. Start using wood pellets until you are confident in using your composter, later you could consider changing to wood chip which you might be able to source free of charge. At first, err on the side of too many rather than too few pellets and make sure that you turn the handle plenty of times after adding.
2. Avoid overfilling your turning system as you need to leave space for air flow and for turning.
3. It is rare for the compost to be too dry in turning composters, but if it does seem dry, it's better to add fresh greens such as grass cuttings, fruit or vegetable peelings than water.
4. Avoid adding lots of wet, sloppy materials like soup, gravy or custard etc.
5. Tumble and mix every time you add fresh materials.
6. Observe what is going on and take steps to rectify any problems as soon as possible. If things have gone wrong it's best to empty the contents of the turning composter into the box/bin and start again. However, if things have gone 'drastically' wrong, then, you could instead, empty the turning composter and seek advice (see contacts section) and then start again.
7. Cardboard and paper should not be added to a turning composter as it tends to ball up; balls of soggy cardboard offer no structure or air pockets.
8. Chain the turning handle to the leg of the Ridan if appropriate to stop misuse.

Support

Make sure you have the support of the whole school community, especially the Head Teacher/Governors/Kitchen staff/Meal Time Assistants and Caretaker. Without this support, you will struggle to compost effectively.

Food Waste Audit

Schools should collect and weigh all their food waste for 5 days, this should be separated out into raw food (fruit and kitchen peelings) and, if you wish to compost this, cooked food (plate scrapings and left over servings). This not only gives you a baseline on which to compare when food waste reduction systems have been put in place, but also will inform you what type of composting system will be most appropriate for your school. The 5 day food waste audit sheet can be found on page 43. An excel version of this can be found on: **zone.recycledevon.org/compost** which will automatically create tables and graphs for you to use with the children. After completing this, if you would like advice on which composting system is appropriate for you then email the completed form to **recycle@devon.gov.uk**



Communications

Talk to everyone involved at the school before you purchase the composting equipment to iron out any concerns before you start. This will include the Head Teacher, Caretaker, Kitchen Staff, Meal Time Assistants, Bursar and other Teachers.

Composter location

The turning composter should be located away from hedges and fences, reasonably near the kitchen area and where the food is eaten for ease of daily emptying. The bin/box can either be here or in the garden where the compost is to be used. Try to locate any composters away from school building windows, so that if they do start to smell then it won't affect anyone. If this happens see the trouble shooting guide on page 43 to rectify the situation.

Caddy location

Put caddies in all the areas where fruit and snacks are eaten. A large caddy, or two depending on the size of the school, should go into the kitchen for food preparations. A large open bucket or caddy should go into the area where food is eaten for plate scrapings (if you decide to compost this). You may also need collection caddies in the playgrounds. All buckets and caddies should be monitored to avoid contamination and emptied regularly.



Make it happen within the school

Combat contamination

Clearly label all the food waste collection caddies using pictures and text to help younger children. You could consider involving pupils in designing the labels to increase their sense of ownership. Make sure all school adults know what should, and shouldn't, go in the caddies so that they can guide the children. It is worth doing termly assemblies as a general reminder to everyone.

Team effort

Use pupils from your gardening/eco/green team, or perhaps start a special 'Little Rotters' group. They can collect the caddies and put them next to the composter for when you empty the food waste into it. The caddies then need to be cleaned and replaced in their locations ready for the next day. If the work is popular enough with the children, make a rota of responsible children involving all the year groups to increase the feeling of ownership of the composter throughout the school.





Spread the word

Encourage your composting group to create a dedicated 'Eco' notice board and hold an assembly to tell the rest of the school about the great work you are doing. Let parents know by inviting them to the assembly, putting an article in the school newsletter and on the website. Connect with a local gardening group/allotment users/keen gardener to talk to and work with the children. Use the compost you have made to grow flowers, fruit and vegetables in the school grounds – thus completing the nutrient cycle. Even better for the children's learning would be to harvest, cook and eat the vegetables within the school day.

Collecting and using data

You can weigh the different types of food waste and wood that you are inputting into the composter and take the temperatures inside and outside. These will enable you to learn what the composter needs to keep it running well. The records can also be used as part of numeracy or IT lessons. For more ideas see the Compost Curriculum Handbook on page 42.

Q Can I sell or give away the compost we make?

A If you only compost garden waste and fruit waste then yes. If you compost any catering waste then it is best to use the compost on the school grounds as you must not let farm animals access the compost. If you want to use your compost at another location visit the following website for further guidance as you may need approval from the Animal and Plant Health Agency (APHA).
https://www.gov.uk/guidance/using-animal-material-in-home-work-or-community-compost-heaps

Q Paper towels – can they be composted?

A It is best to leave paper towels out altogether as they do not add structure or air to a heap, they merely absorb some of the moisture. They will compost, but the volumes generated by schools mean that realistically you will not be able to compost more than a handful at a time.

Q Can cardboard and shredded be composted?

A Cardboard and shredded paper can be used as part of the carbon source in a bin/box only composting system alongside plenty of wood chip or sawdust to add air gaps. It should not be added to a turning composter, although it can be used to line caddies, and added in very small quantities.



Frequently asked questions

Q Can I put leaves in the HotBox/ Pallet bin/New Zealand box?

A It is best to keep leaves out as they take a long time to break down and take up a lot of space that could be composting your food waste. You could make your own leaf mould container instead see...
https://zone.recycledevon.org/wp-content/uploads/Leaf_mould_-_Garden_Organic_leaflet.pdf

Q Do I need to add worms to the HotBox/Pallet bin/New Zealand box?

A Worms should find their own way into these composters, but there is no harm in adding some yourself from a compost heap nearby, although do not add worms which you have dug up, as they are different species and will not thrive in the compost heap.

Q Will the composter smell? Will it attract flies?

A A healthy composter which has a good balance of materials should only have a very mild smell and should not attract flies. If your raw food waste composter is smelling or attracting flies you need to add layers of dry materials, to cover the food waste. If your turning system is smelling or attracting flies you will need to add more wood chip/pellets/sawdust and decrease the proportion of cooked food going in. You can do this by either putting it somewhere else for a while, or adding more 'raw' materials such as grass clippings. Hygiene is also important; the caddies, composting equipment and its surrounding area should be kept clean.

Q Will the compost bin attract rodents?

A A well managed compost system should not attract rodents. Below are some ways to help prevent them:

1. Rodents are looking for a quiet and undisturbed place to raise their families – it's tempting to hide the compost bins away in a quiet corner of the garden, but instead locate them in the open away from fences and hedges; near a path or in a busy part of the school will be ideal. You can even give the compost bins a whack on the side with a stick when you are passing!
2. Keep compost away from a water source.
3. Build your compost bins on a hard standing e.g. patio slabs to prevent rodents from burrowing underneath. Remember to have a slight slope to make sure water doesn't collect at the base.
4. Use heavy duty stainless steel wire mesh, with a hole size no bigger than 6.5 x 6.5mm, to the bottom of the compost bin. Make sure you wrap it up round the sides of the compost bin to avoid there being any gaps.
5. Remove potential nesting sites and 'rat runs' by keeping your site tidy and removing piles of old pots, wood, debris, and overgrown vegetation.
6. Good compost needs to be periodically turned. The more often you turn it, the more likely you are to discourage rodents.
7. Keep the compost moist as rodents are looking for somewhere warm and dry.
8. Don't add any precooked foods, meat, dairy or fish as this will attract rodents. Make sure cooked food is composted in a turning system, such as a Jora or a Ridan as this makes the food less attractive.
9. Try planting strong smelling plants such as mint around your compost bins.

There is a good video on how to deter rats on the following website:
https://simplifygardening.com/do-compost-bins-attract-rats/



Frequently asked questions

Q Where can I get wood chip/wood pellets?

A Wood chip can be sourced locally through tree surgeons or saw mills – look online. You could also ask your pupils' parents if they know of a source. Wood pellets have to be paid for but are easier to use and store.

Q Where can I get a container in which to store the wood chip/ wood pellets?

A You can buy old dustbins with a lid/plastic dalek composters in which to store wood chip and wood pellets cheaply from your local recycling centre. Visit the Devon County Council website for a map of their locations **https://www.devon.gov.uk/wasteandrecycling/centre/**

Q How long will the food waste be inside the turning composter?

A It is estimated that food waste is inside the Ridans for approximately two weeks before coming out the other end. The Jora needs to be emptied before it gets overfull, whatever the contents may look like. Depending on the volumes you are putting through the system (and this will change from school to school and even week to week) the material coming out will vary in its degree of decomposition, but as long as most of the material has started to break down it's fine to transfer to the maturation bin. You could add a tennis ball to your Ridan; note the date and wait for it to come out the other end!



Q Can we put biodegradable or compostable 'plastic' in our composter

A Avoid putting any plastic into any composting system as it will not compost, even if it says 'degradable' on it. Degradable just means that it breaks down into lots and lots of tiny pieces of plastic which you would then spread onto the school gardens. There are some fully biodegradable, compostable plastics which are commonly made from potato and/or maize starch, however they seem to take an awfully long time to break down, they also need sunlight to help them disintegrate. Generally our advice would be to avoid putting these in your composting systems.

Q What should we do about our composter over the school holidays?

A Ideally, it is best to empty your turning composter before the longer school holidays, if you cannot do this then it's not the end of the world. Your composter will be fine, however if anyone is around it will appreciate an occasional turn; without turning the composters temperature will cool down. However, as soon as you start inputting and turning the system, the microorganisms will get to work and the temperature will increase very quickly.

If your Jora has been left for a long period the contents will reduce in volume and density and it's tempting to add more fresh materials without emptying, however you can end up with an extremely heavy mass of material to turn and you can even bend the legs of the Jora, so do empty it regularly!

HotBoxes, New Zealand Boxes and pallet bins can be left over the holidays.

Simpler Recycling



What is Simpler Recycling?

Simpler Recycling is the name of the legislation that requires all organisations and businesses to separate their recyclable materials and food waste from their general waste.

From the 31st March 2025, schools, along with businesses, hospitals and other non-household municipal premises are required to separate dry recyclable waste such as paper, card, glass, metals & plastic, from food waste and black bin waste.

Many schools in Devon already have recycling and food waste collections in place, but if your school hasn't, then you will need to contact your waste collection provider to discuss your options. Ideally waste will be separated into the following groups of recyclable materials:

- **Glass, metal and plastic**
- **Cardboard and paper**
- **Food waste as a dedicated collection**

You will need to separate paper and card from other dry recyclables (plastic, metal and glass), unless your waste collector has made arrangements to collect them together. Waste collectors may also choose to collect other dry recyclable materials separately, like glass.

The waste collector can be a private waste collector or your local authority may also provide services. If your current waste collector does not offer the full range of collection services, you will need to arrange these services from other providers.

You must make sure that the company is registered on the Public Register of Waste Carriers, Brokers and Dealers.
You can check on this website:
https://environment.data.gov.uk/public-register/view/index

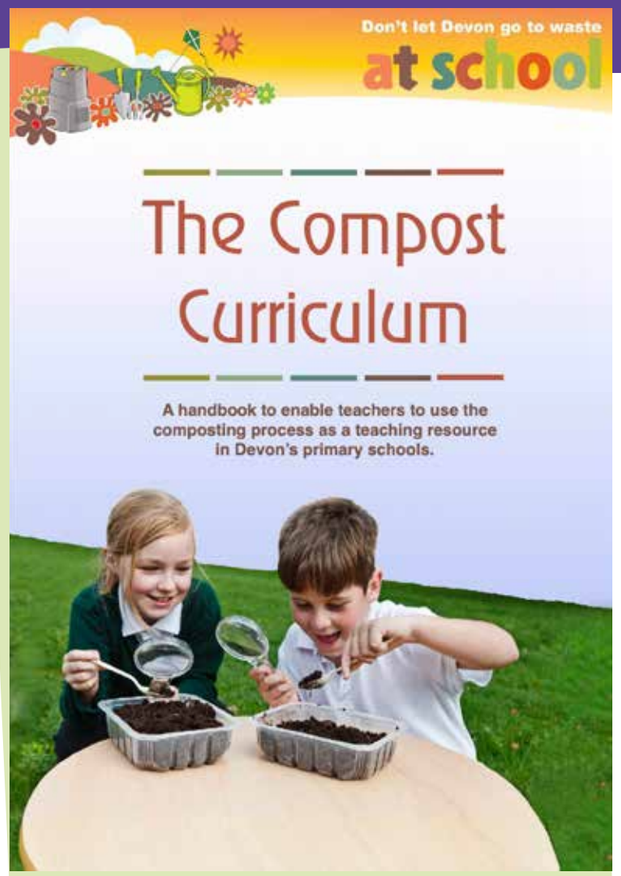
Even if you do have a recycling system in place, it would be a good idea to review your collection arrangements and make sure you comply with the new legislation.

More guidance can be found on the following websites:

https://www.gov.uk/guidance/simpler-recycling-workplace-recycling-in-england

https://businessofrecycling.wrap.ngo/recycling-guide/education

If your school needs help getting staff and pupils to use recycling bins correctly then visit the Devon Waste Education Team's Zone website **https://zone.recycledevon.org/** where you will find a wide range of activities, lesson plans, videos and details of how to book free educational workshops.



We have created the Compost Curriculum Handbook. It doesn't matter if you are a complete beginner, or a seasoned rotter; whether you have a 'state of the art' composter, or a neglected plastic 'Dalek' in the corner of the playground.

This handbook supports teachers to use composting as an inspiring teaching resource throughout the school year. For each month it contains a curriculum-linked KS2 lesson plan and an Eco Team activity, plus a wealth of supporting documents to bring composting to life for adults and pupils.

Downloaded for free here:
zone.recycledevon.org/composting

There are videos aimed at KS1 and KS2 on this website.

By using your composters as a learning resource you will bring the curriculum to life for pupils AND ensure that the composter becomes an integral part of the school. Involving pupils in the practical side of composting can make the curriculum accessible to those pupils who prefer learning outside, in less formal situations and by doing practical tasks.

The composting process can be used to address primary curriculum requirements. The obvious links are with the science curriculum, but there are also plentiful opportunities to use data from the composting process in maths and IT work. Of course with a little bit of imagination you could incorporate composting into every subject! With time you should be able to ensure that every year group uses the composters as a resource for at least one classroom topic a year.



Useful websites, books & videos

The Learning Zone
A comprehensive range of teaching resources, videos and other information about waste and recycling: **https://zone.recycledevon.org/** and more on composting in Devon on the following webpages:

https://zone.recycledevon.org/composting/

https://zone.recycledevon.org/compost/

Recycling Centres
Devon map showing locations of recycling centres
https://www.devon.gov.uk/wasteandrecycling/centre

Devon Community Compost Network – school and community composting
https://www.dccn.org.uk/at-school/

Food for Life
Transform food culture within your school.
www.foodforlife.org.uk

The Countryside Classroom
Connecting schools with food, farming and the natural environment
www.countrysideclassroom.org.uk

Twinkl
Search for composting activities
www.twinkl.co.uk/

RHS campaign for school gardening
The RHS provide a wide range of resources including a new eLearning course for beginner school gardeners. These free courses will help you to understand the key benefits of gardening in your school and give you the skills to get growing. **https://schoolgardening.rhs.org.uk/home**

Garden Organic
From growing pots of herbs and food for the school canteen to opening a farmers' market in your playground, gardening offers exciting new ways for children of all ages to learn and grow. Visit: **www.gardenorganic.org.uk/expert-advice/growing-in-your-space/schools**



Recycle Devon





National Education Nature Park

The National Education Nature Park programme empowers children and young people to make a positive difference to both their own and nature's future.

Go on a journey to get to know your outdoor space and use creative decision-making to improve your grounds for both people and nature. These free programmes provide all educators with the resources, support and guidance to embed climate and nature into learning in a way that suits your setting and learners.

Add your school to the map and register now:
Home | Education Nature Park
https://www.educationnaturepark.org.uk/

Network of Environmental Educators in Devon (NEED)

Environmental education has a long heritage in Devon with the establishment of a Devon Education for Sustainability Working Group (DESWG) over 25 years ago. More recently this has evolved into the Network of Environmental Educators in Devon (NEED) which continues this work through a large and diverse network of practitioners including local government, schools, further and higher education institutions, NGOs and local communities. All are committed to developing environmental awareness, stewardship and learning for sustainability within the formal and informal education sectors.

NEED is part of the Devon Local Nature Partnership and you can find a wide range of resources on **devonlnp.org.uk**, including:

- Environmental education
- Find an outdoor learning expert near you
- Learn about Devon's natural history
- Resources for schools
- The evidence for outdoor learning

Looking for help with your School Climate Action Plans?

The Department for Education has published its strategy 'Sustainability and Climate Change: A Strategy for the Education and Children's Services Systems' which states that by 2025, all schools should have:

- A Climate Action Plan – outlining how the schools plan to work towards Net Zero.
- A Sustainability Lead – a individual or team of people who will implement actions to improve the sustainability of the school.

Visit the Devon County Council Sustainable Schools page for useful links and information:
https://www.devon.gov.uk/support-schools-settings/school-effectiveness/teaching-and-learning/sustainable-schools/climate-action-plans/





Books for adults

'How to make and use compost; the ultimate guide'
by Nicky Scott, ISBN 978-1900322591

'Organic Gardening – the natural no dig way'
by Charles Dowding, ISBN 978-0857840899

'Compost: Transform Waste into New Life'
by Charles Dowding (Author), Jonathan Gibbs (Illustrator). ISBN 978-0241661543

The Compost Coach: Make compost, build soil and grow a regenerative garden - wherever you live!
by Kate Flood (Author)
ISBN 978-1922616456

Books for children

'Food waste'
by Deborah Chancellor
ISBN 978-0750257114

'Compost Stew'
by Mary McKenna Siddals, age 4-7
ISBN 978-1582463162

'Compost: A family guide to making soil from scraps'
by Ben Raskin,
ISBN 978-1782400486

'Yucky Worms' by Vivian French ISBN 978-1-4063-6704-1

Videos

There are useful collection of videos on both the Devon Community Composting Network website and the Recycle Devon Zone website:

https://zone.recycledevon.org/compost/

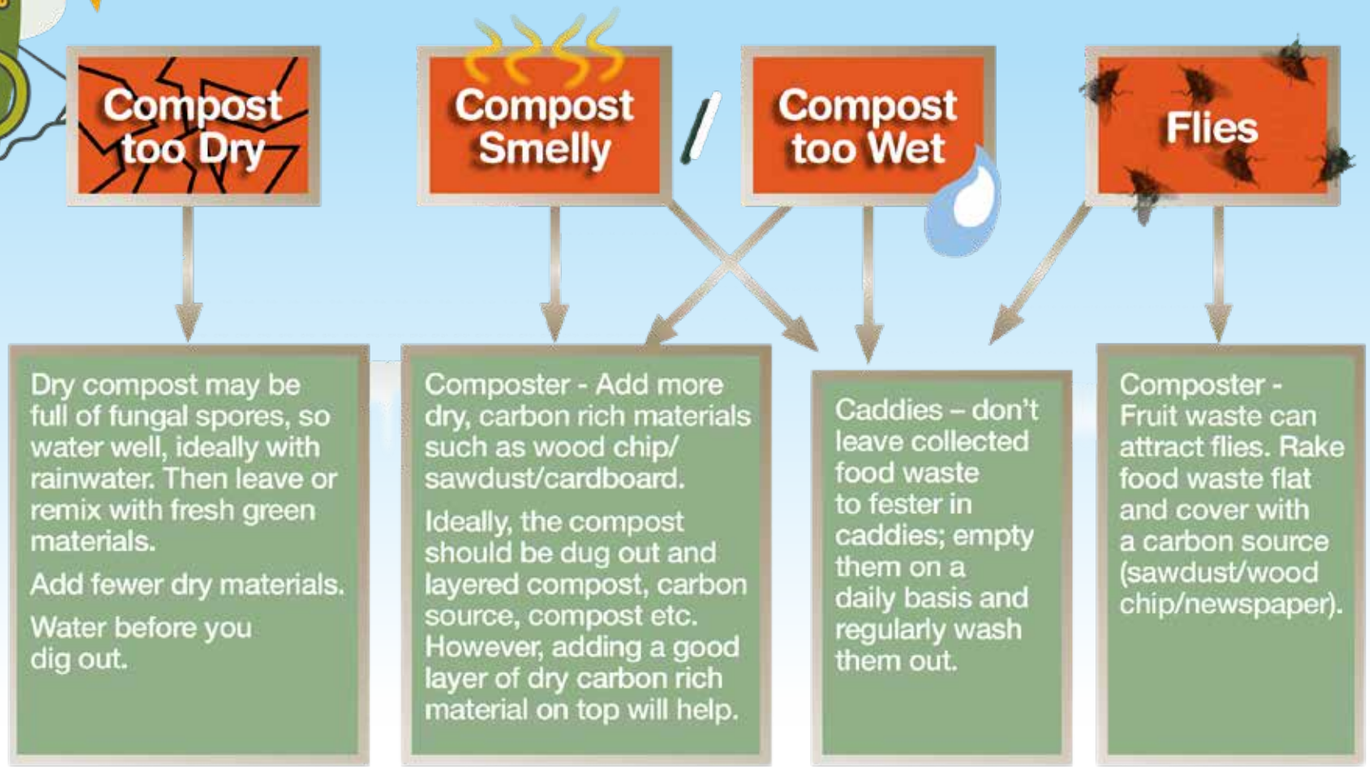
https://www.dccn.org.uk/videos/





Recycle Devon

Composting raw food waste using a HotBox, Pallet bin or New Zealand box



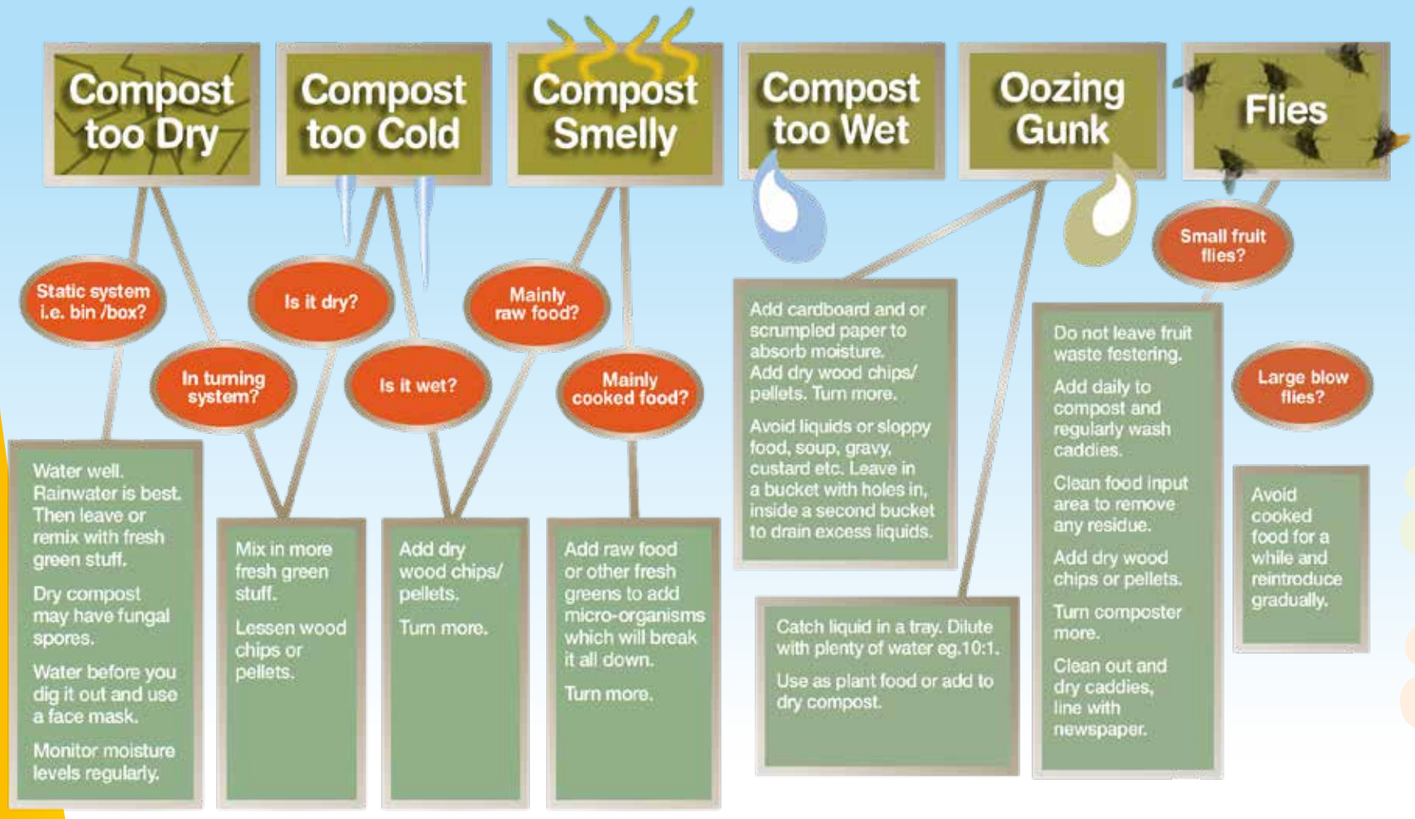
Remember the Compost Mantra: Food - Water - Air – Warmth

Devon Community Composting Network www.dccn.org.uk www.zone.recycledevon.org

Troubleshoot your compost

Troubleshooting guides

Composting cooked food using a turning system



Remember the Compost Mantra: Food - Water - Air – Warmth

Devon Community Composting Network www.dccn.org.uk www.zone.recycledevon.org

Risk assessment template

To download this template as a Word document so you can edit it to suit your school's needs go to zone.recycledevon.org/sites/default/files/Risk_Assessment_for_composting_activities_in_schools7.docx

Small portion of template shown for illustration purposes only

Hazard	Likely injuries or problems	Procedures already in place	Risk rating = Hazard severity x likelihood of occurrence (1 nil-5 high)	Further Mitigation	Residual risk rating
Location of composters	Contravening Animal By Products Regulations. Spreading of disease though animals.	1. Pigs not allowed on premises if composting of food waste is taking place. 2. Preferable that chickens are not on premises.	1. 4x1=4 2. 4x3=12	2. If there are chickens on site, they must be in a securely fenced off area and not have access to the composter. If there is any spillage of food or compost this needs to be effectively cleaned up. Notice about site hygiene to be put on the side of the equipment. This is important as the presence of decaying waste food will attract birds and vermin.	2. 4x2=8
Assembly of composters	1. Fingers trapped/banged/cut 2. Injury from handling heavy components	1a. Following the manufacturers' instructions 1b. Using appropriate tools 1c. Wearing gloves 2. Following good manual handling practice	1. 2x2=4 2. 2x2=4	1. Children only to take part at adult's discretion and under one to one supervision 2. Children only to take part at adult's discretion and under one to one supervision	None to children 1x2=2 adults None to children 1x2=2 adults
Collecting food waste	1. Injury from handling heavy containers 2 [illegible]	1a. Containers not to be overfilled 1b. Good manual handling procedures to be used 2a. [illegible]	1. 2x2=4 2. [illegible]	1. Age limit for children to help at adults' discretion. Possibly choose special monitors. Children to [illegible] and carry.	1. None to smaller children 1x2=2 others
Using composters	[illegible]	1c. Wear gloves (and wash after use) 2a. Containers not to be overfilled 2b. Good manual handling procedures	1. 2x2=4 2. 2x2=4	1. Adults o [illegible] turn and lift	1. 2x2=4 1. None to children.
	2. Injury from lifting heavy containers to transfer food into composters and from turning [illegible]	3a. Wear gloves (and wash after use) 3b. Good hand washing procedures	3. 2x2=4		4. 2x
	3 [illegible] waste on [illegible]	4. Follow manufacturers' and advisors' instructions and advice on mix quantities	4. 2x3=6	4a. Contact experts for advice 4b. Provide locks for 1st stage containers if appropriate	
	4. Flies/maggots	5. Immuno-compromised children and adults (e.g., no spleen, recovering from chemo-therapy) should not take part in composting activities	5. 5x1=5	Reassess after 6-12 months	
	[illegible]	[illegible] with respiratory issues - consider [illegible] participates in composting activities; [illegible] coughing, wheezing.	6. 2x2=4		
			1. 4x 2=8	1a. If too much waste, extra waste will have to go in dustbin for collection. [illegible] spread uncomposted food [illegible] gardens.	

SAMPLE



Food waste audit

5 day food waste audit sheet

School name: _____

Number of pupils on roll: _____

Please fill in white boxes only

mass (kg)

Category	Monday	Tuesday	Wednesday	Thursday	Friday	Total	Average
Fruit snack waste							
Uncooked food waste							
Cooked food waste							
Total							

Weekly total food waste	
Approx yearly total food waste	
Weekly food waste kg per pupil	

Recycle Devon

Contacts

Devon schools can book free waste audits, assemblies and a wide range of exciting curriculum linked workshops about recycling and composting.

Site visits to a Recycling Centre and Energy from Waste plant are also available.

Contact: The Waste Education Team, Devon County Council, 01392 383000 recycle@devon.gov.uk

Devon Community Compost Network (DCCN) – composting information for schools and community groups **www.dccn.org.uk**

Nicky Scott, Dr Compost – Composting systems and consultancy
Email: nickygradyscott@protonmail.com
https://drdotcompost.wordpress.com/

Local Authorities:

For advice on how to set up/improve a recycling collection in your school contact your local council:

East Devon: 01395 571515

Exeter: 01392 265010

Mid Devon: 01884 255255

North Devon: 01271 374776

Plymouth: 01752 668000

South Hams: 01803 861234

Teignbridge: 01626 361101

Torbay: 01803 701310

Torridge: 01237 428700

West Devon: 01822 813600

Devon County Council: 0345 155 1010

Credits

Special thanks to the staff and children of Blackawton Primary School – who helped us produce this guide!

The original Compost School Special was written by Nicky Scott, Heidi Diepold, Helen Peake and Melissa Harvey in 2012 and illustrated by Bob Gale and Nicky Scott. It was rewritten as the 'Composting in School – a practical guide' in 2016 by Melissa Harvey and Heidi Diepold, then further updated in 2026 by Bobby Hughes.



Recycle Devon

recycle@devon.gov.uk