

Creating waste systems that support WasteWise learning and behaviours

A basic guide to starting paper, general recycling and composting systems in a school

The 4 R's: Refuse, Reduce, Reuse, and then Recycle

Most of us have learned that there are 3 R's in the process of creating and maintaining a comprehensive recycling and composting program. Though this is a good start for educating and making recycling a more mainstream concept, it is vital to recognize the ultimate goal of this type of program; **eliminating waste!**

To eliminate waste, we need a clear thought process; steps in deciding if we are contributing to the waste stream or if we are helping to eliminate it.

The 4 R's:

Refuse	<i>As a consumer, the impact of refusing waste is a clear statement to the producer. This choice is a powerful one in that adults and students refuse to take on the responsibility of waste and only wish to receive the wanted or needed product.</i>
Reduce	<i>As you gain a better understanding of what waste is and the impacts it has on our natural, economic and social environments, reducing becomes a choice of consciousness. Reducing waste allows you to participate at any level.</i>
Reuse	<i>Using conventional waste to divert it from the waste stream offers a broad spectrum of savings. From plastic containers to shipping containers, the reuse of a product introduces a second life cycle.</i>
Recycle	<i>Though recycling is the last "R" in this thought process, it has become the most commonly used element. Recycling is absolutely important in eliminating waste and will always be part of the ongoing process. Separating out recyclables from other waste is a responsibility that often lies with the end consumer. The problems that arise with recycling are usually the lack of knowledge and accessibility.</i>

We all need to practice waste management and the 4R's are a process for us to reach the goal of eliminating waste.

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Starting up a paper recycling collection system

What you need to get started

Bins for each room

- Insure bins are suitable size and located next to the general rubbish bin to create a waste station.
- Many schools choose a colour coded scheme for bins similar to the Auckland Council curb-side collection bins: red for rubbish, yellow for general recycling and green for organic material. Therefore, many schools choose to purchase blue paper recycling bins.



Definition of a waste station:

A designated area for all waste disposal. Research indicates that students and adults are more likely correctly dispose of items if rubbish and recycling bins are side-by-side. Any bin that is located on its own will encourage all rubbish, regardless of ability to be recycled or composted, to be disposed of in the bin.

Emptying and monitoring for contamination

Each school is different. Below are some common procedures found in Auckland schools:

A group/class of students to collect and empty paper into centrally located bins. Students only collect bins that have no contamination, or non-recyclable paper or card materials.

A group/class of students do a “spot check” of classroom bins. Recording classrooms that have little/no contamination, including recyclable materials in the rubbish bin. Classrooms with no excellent waste practices maybe acknowledged or rewarded during the school year.

Creation of instructional video that shows the proper items to go into the recycling bin and highlights commonly misplaced items. This video can be used for beginning of the year education, as well as for any class that consistently fails the “spot check”.

Benefits of recycling paper and cardboard

- Saving trees, some paper and card recycled in NZ* check with collection company
- In 1976 Devonport Borough Council was began the first recycling collection scheme. Since then recycling paper and card has become an easy first step for schools starting their waste diversion and reduction systems.

Paper collection company

Auckland Council: Offers general recycling collection for free to schools in the Auckland region. Each participating school receives one or more 660L collection bins. The Council will organise a free bi-weekly onsite collection, to be agreed upon with the school. The number of collections bins a school received is based on the current student population. Use Makethemostofwaste website to order request bin.

Private collection companies:

There are several private companies that collect paper and cardboard recycling in the region. If your school’s paper and cardboard recycling needs are greater than your allotted bins a private company maybe a solution. The cost and availability of paper and card recycling collect vary greatly.

Simple but helpful signage for paper recycling AND rubbish bin.

Good signage is important to assist people of all ages on using recycling and rubbish bins correctly. A good sign will be easy to read, have clear coloured pictures of actual items, stay away from clip art images, and are found on every bin throughout the school. That means staff offices and meeting spaces, remember adults need reminders also. (pic of good signs)





Starting up a general recycling collection system

Collection bins

Carefully consider the placement, size and lid type .

Placement

Determine where the staff and students eat and dispose of their waste, i.e. classrooms, courtyard or cafeteria. If the students eat everywhere consider if restricting them to a few key areas that will have waste stations is possible.

- Recycling and/or soft plastic bins must be part of a waste station, or a designated area with rubbish and diversion bins.
- Start with one or two waste stations. Only increase the number of stations available to the students once minimal contamination is recorded.

Size

Having a collection bins that are too big can be just as much of an issue as having bins that are too small.

- Complete a whole school waste audit to determine how much general recycling your school discards a day. Use this data to inform your bin size.
- Also, consult your grounds people. They may have requirements of how big the bins can be for them to safely lift them. Even more so if students will be emptying the bins.

Lid type

Research shows that students and adults are less likely to put items in a bin if they have to lift a lid, or if the lid is dirty. In general, bins that allow for disposal of items without having to touch the bin are used more often by students and adults.

Signage

Similar to the suggestion in the previous paper recycling section, keep the signage simple and clear. Using generic signs with clip art will have limited impact on your students and staff. However, signs are designed by students and include real images of what to/not to put in the recycling bin have a greater impact on proper waste disposal by students and adults alike. Refer to the paper recycling section for more tips on proper signage.

Benefits of general recycling collection and/or soft plastic collection

- Glass, tin and aluminium are 100% recyclable
- Plastic is made up of harmful chemicals that should be kept out of landfills and our environment

Collection company

Similar to paper recycling Auckland Council offers a general recycling collection free to all schools in the region. The type of material that is allowed in the bin is identical to the yellow-lid curbside recycling collection Auckland Council offers to residential properties. If your school has more volume then the Council bins allows, similar to your paper recycling, your school must hire a private company to collect the excess materials.

Emptying and monitoring for contamination

Each school is different. Below are some common procedures found in Auckland schools:

- If possible have a group/class different then the students that collect and monitor the paper recycling, responsible for emptying the bins. Whether it is students or staff that empty the bins they should have a procedure for providing feedback about the type of times that are wrongly disposed on in the bin, and issues excess food or liquid contamination.
- When possible have the waste station next to a sink/rinse station. Students should be expected to rise any dirty items before disposing in the recycling bin.
- Have a procedure and schedule for cleaning the bins. Students that clean bins are less likely to put unclean items in them in the future.
- Creation of instructional video that shows the proper items to go into the recycling bin and highlights commonly misplaced items. This video can be used for beginning of the year education or shown during community events on the school grounds.



Starting up a food waste collection system

Getting started

Choose a composting system to begin, or add to your waste stream. Each type of compost system breaks down different foods quickly. No single system will be able to handle all your school's compostable material. It is common for a school to get one system working for an extended period of time before attempting to add a second and third system.

Compost bins

Compost bins come in all sizes and can be as simple as a pile of green waste in a garden area or a modern modular system. Whatever compost bin style you choose this system requires layer of green and brown materials, and therefore should not be solely used for food scraps. When compost bins are being properly maintained they can quickly break-down grass clipping, leaves, and food scraps (excluding meat and dairy).

If compost bins are not correctly maintained they can become very slow to breakdown, attract flies and vermin. A compost bin needs as much maintenance as any other system to function properly.

Worm Bin

Like compost bins, worm bins come in all shapes and sizes, from as little as an ice-cream container that students maintain at their table, or a converted spa bath. Worm bins can excite, inspire and motivate students to engage with nature, and waste reduction learning.

The key to a successful worm bin is to treat the worm like family pets. Students and staff need to learn about what type of food the worms like to eat, what a healthy home looks like, and the signs of an unhappy worm community.

Remember:

- Worms are very little, make sure you know how much food a worm bin system can handle before you purchase the system.
- Worms need one "meal" of paper a day, or 2/3 food scraps and 1/3 compostable paper. Many schools use dirty paper towels because they are not recyclable.
- Like pets worms a plan needs to be in place for when their owners are away. Make sure there is a plan for school holidays.
- Worm "tea" is an amazing liquid fertiliser for plants because of all the amazing nutrients and bacteria in it. Therefore, students should always have protective gear and supervised by an adult

Bokashi Bins

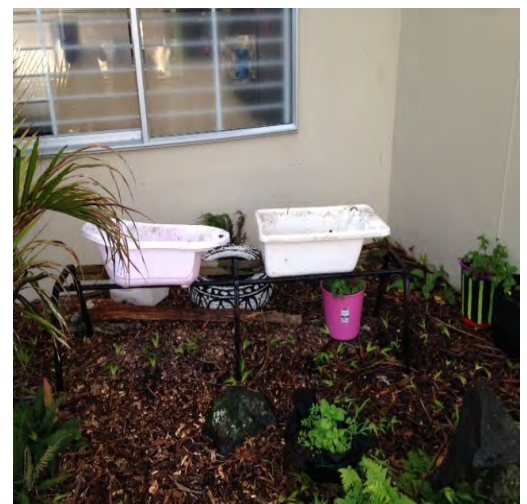
This bin system was created for apartment living. This system has many advantages including the ability to take all types of food scraps and can be easily stored under counters. When properly maintained this system will smell similar to a jar of pickles when opened, and nothing while closed.

Offsite composting services

There are a growing number of companies that collect compost, similar to a recycling collect. These companies can be useful when the school's compost greatly exceeds onsite composting systems, ie. hosting large events for whanau.

Benefits of food waste collection and composting:

- Able to use composted materials to support school or community gardens. With each batch of quality compost, a school can start any number of gardens, including: vegetable, flower, butterfly, bee friendly, native, Rongoā Māori medicinal gardens and orchards.
- Composting systems can be used to support learning about the biology, chemistry and environmental science.
- An easy first step for schools starting their waste diversion and reduction systems.



Pictured above. Like compost bins, worm bins come in all shapes and sizes.



Collection bins

Similar to recycling bins, thought should be given to the size of food collection bins.

Like your schools recycling bins, food collection bins should be placed where students and staff eat as part of the waste station.



The food collection bin is normally the smallest bin in a waste station. A large bin maybe too heavy to lift for staff or students and will be more difficult to rinse out.

Not all schools need food collection bins with lids. If the food scrap bins are inside and emptied daily, lids can be an unnecessary extra cost.

Until your school has a large enough compost system to handle all the food scraps, their needs to be a clear procedure for what to do when the systems are full. This commonly happens near the end of term, or after celebrations with a lot of food waste. If students over fill any of the compost systems you will have a pile of rotting food, not a functioning compost system.

Creation of instructional video that shows the proper items to go into the recycling bin and highlights commonly misplaced items. This video can be used for beginning of the year education or shown during community events on the school grounds.

Collection procedure

Your composting system/s will determine what types of food scraps can be collected.

Most schools have success running their food collection similar to their paper collection, a group of students/class that collect the food scraps each day. These students need to ensure that only the right food material is being collected.

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Monitoring and maintenance

All composting systems need monitoring and maintenance to work properly. Time needs to be set aside a least once a fortnight for students to evaluate the health of the system and do any required maintenance.

As with other waste systems in the school, composting systems can be a great learning tool for students, and therefore, work well if students/classes are rotated between tasks, ie. food collection term 1, and weekly worm bin maintenance term 2. It is equally important that teachers are trained on the systems.

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