

# Setting up a school recycling programme



CITY OF CAPE TOWN | IZIKOHO SIKHAKHO | SINDO KAAPSTAD  
THIS CITY WORKS FOR YOU



# FOREWORD

## The Waste Wise Programme

The City of Cape Town initiated the Waste Wise Programme in 2002 to help minimise waste, illegal dumping and littering in Cape Town. The main aim of the programme is to educate all Capetonians about the realities and consequences of waste, and ultimately, to show people how they can be part of the solution in doing their bit to protect the environment.

In 2006, Cape Town became one of the first cities in Africa to implement an Integrated Waste Management Plan. One of the key goals of this plan is to reduce the amount of waste sent to Cape Town's landfills by 25% over the next few years. In order to achieve this goal by 2012, the City needs to develop and roll out effective systems of waste separation and recycling.

## Educating Cape Town's future citizens

One of the key subprojects of the Waste Wise Programme is to develop and implement an effective education and recycling programme for schools in Cape Town. The objectives of this programme are as follows:

- To raise awareness among educators, learners and their families
- To enable educators to raise awareness of the cause and effect of poor waste management and the benefits of integrated waste management
- To provide environmental tools to enhance the quality of life for Capetonians
- To assist schools with portfolio development and waste minimisation projects

So far, 100 schools in Cape Town have participated in the Waste Wise School Programme, and with the assistance of this booklet, we hope that your school will be the next to join. The booklet will provide you with all the information as well as practical tips and advice you'll need to start and manage a successful waste management and recycling programme at your school. Good luck, we're sure you'll find it to be a highly exciting and rewarding initiative!

## Contact

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# WHY WASTE IS SUCH A PROBLEM

It is an alarming fact that the amount of waste we generate in Cape Town is growing faster than our city's population. You have probably heard about carbon emissions, the depletion of the ozone layer, climate change and the problem of sustainability. All of these issues relate to global warming and the very real crisis that is currently facing Planet Earth.

## What is global warming?

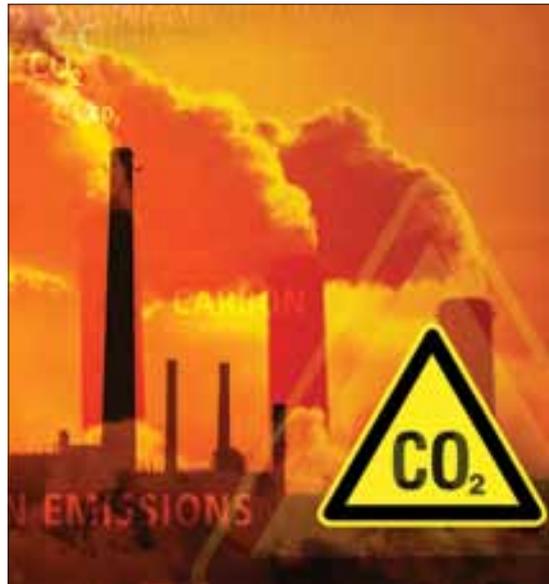
Carbon dioxide and other gases keep the earth's surface warm by trapping heat from the sun inside the atmosphere. This heat is necessary in order to sustain life on the planet. However, by burning fossil fuels such as coal, oil and gas – and by destroying forests around the world – we have drastically increased the levels of carbon dioxide in the atmosphere, and this is causing temperatures to rise.

Almost all scientists agree that we are already experiencing the negative effects of global warming. Glaciers are melting, plants and animals are no longer able to survive in their natural habitats, and we are experiencing erratic weather patterns (such as storms and droughts) more often. The rise in temperature is a very real threat to our planet, and human behaviour is directly responsible for it.

## I agree that global warming is a real problem, but what does it have to do with waste?

When waste or rubbish is not managed properly, it causes different types of pollution. The greenhouse gas methane is one example. Methane, which is 24 times more harmful to the environment than carbon dioxide, is produced when the organic waste in landfill sites decays without the presence of sufficient oxygen.

Furthermore, landfills can also pollute soil and groundwater. Considering the fact that the earth is a closed system, all resources that we remove from the system by burying them in landfills or burning them, are lost to us forever.



## FAST FACTS: What is a landfill site?

- A landfill site – commonly known as a tip – is a scientifically chosen, designed, engineered and managed location for the disposal of waste. It needs to be relatively close to where waste is generated in order to limit transportation costs.
- Modern landfills are lined with watertight plastic sheeting, but in the case of old landfills, natural clay barriers are relied upon to prevent toxic leaks.
- On delivery, waste is spread, compacted and covered with soil, sand and rubble. Once buried, it lies there to decompose, but this takes an extremely long time. A plastic bottle, for example, can take up to 1 000 years to decompose completely. Newspapers from 100 years ago were recently discovered at a landfill site in New York – and they were still perfectly readable!

# JUST HOW BAD IS THE WASTE PROBLEM IN CAPE TOWN?

Capetonians produce 6 000 tons of waste every single day – that is between 1,7 and 2 kg of waste per resident per day. Annually, the Western Cape disposes of enough waste to fill a row of trucks equalling the distance from Cape Town to Gauteng; that is 1 200 km! All of this waste ends up at one of Cape Town's three remaining landfill sites: Vissershok, Bellville South and Coastal Park.

The amount of waste going to our landfills is growing too rapidly, and it is becoming increasingly difficult to find geologically suitable sites for new landfills.

This means that we can do one of two things: transport our waste greater distances, which will lead to far higher service tariffs for Capetonian households and businesses, OR we all need to commit to minimising waste.

## How can we minimise waste?

We can minimise the total output of waste by making an effort to reduce, reuse and recycle.



## FAST FACTS: In metropolitan Cape Town (2 487 km<sup>2</sup>) ...

- waste generation increased by 7% over the past year – this is more than the population growth rate;
- Capetonians generate a total of 7 100 tons of waste every day (roughly 10 000 tons per working day, or 2,5 million tons each year);
- only 14% of this waste gets recycled; and
- without intervention, Cape Town will be generating four million tons of waste per year by 2012.

# WHY SHOULD SCHOOLS GET INVOLVED?

Now that we know why waste needs to be managed properly – and that Cape Town is facing a potential waste crisis – we arrive at the next important question: Why is it important for schools to get actively involved? Here are some of the most important benefits of implementing waste management programmes in schools:

- It instils the right values and behaviour in our children: By teaching our scholars what needs to be done to take care of our environment, and how each person can make a positive contribution, we're producing a future generation of environmentally friendly citizens.
  - It presents the school with new learning opportunities: Recycling at school is an exciting way to enrich the curriculum, as it offers a realistic context for learning.
  - It moves your school towards sustainability: Implementing a waste management programme can be a great first step towards making your school more sustainable.
- 
- It saves and generates money: Reusing and recycling waste can significantly reduce the amount of rubbish your school throws away, which, in turn, can reduce the rates you pay. A well-implemented school recycling programme can also generate an income for your school.

## TYPES OF WASTE

Before looking at how your school can reduce, reuse or recycle the waste it generates, we need to take a look at the

types of waste and different waste streams that you may be dealing with.

## Two different waste classes

The first step we need to take in order to get wise with waste is to understand the

two different classes of waste. All waste is divided into two categories based on the

different risks it poses to society and the environment:

- The first category is general waste, i.e. waste that does not pose an immediate threat to man or to the environment. Examples of general waste include household waste, builder's rubble, garden waste, etc. Although it is not immediately toxic, general waste can produce leachate over time, which is very harmful to the environment.
- The second category is hazardous waste, i.e. waste that is legally defined

as 'hazardous' in the state in which it is generated. Waste is classed as hazardous based on its chemical reactivity or toxicity, explosiveness, corrosiveness, or other characteristics that cause, or are likely to cause, real environmental danger.

Learners at your school will need to understand both waste classes, so as to be able to distinguish between waste which is safe to recycle, and that which needs to be managed outside of the school's recycling programme.

## GENERAL WASTE STREAMS

**Next, you will need to know about each of the different waste streams in order to identify which forms of waste can and cannot be recycled.**

### Tins and metals

We all buy canned foods and beverages on a daily basis. Have you ever stopped to think about what happens to the can once you throw it away? Does it become part of the 400 tons of used cans that are recycled in the Western Cape every month?

Collect-a-Can claims to recycle 66% of all beverage cans in South Africa, providing a source of income to more than 37 000 'collection entrepreneurs'. The recycled metals are used to make new products of the same quality – thus conserving irreplaceable natural resources. There is a huge demand for steel scrap metals worldwide; in fact, South Africa exports up to 50% of the scrap it recovers.

It does not matter if cans are crushed, rusted or burnt – they can all be recycled!



# Cardboard and paper

Cardboard and paper are excellent materials for recycling. For every ton of paper that is recycled, 17 trees are saved, and 40% less energy and 30% less water is needed to produce new paper. Today, recovered paper is the most important raw material in the production of paper and cardboard in South Africa. In addition, many well-known South African newspapers are being printed on paper that contains 25% recycled paper pulp. Below is a list of the paper types that can be recycled. (Remember to remove staples, sellotape, Prestik and pins/paper clips.)

- Old memos/letters
- Computer paper
- Used photocopy paper
- Windowless envelopes
- Old books
- Pale-coloured paper (invoices, etc.)
- Newspapers
- Magazines
- Cardboard (flattened)



## The following cannot recycle:

- Wet or dirty paper (tissues, paper towel, food wrappings, paper with spills)
- Wax or plastic-coated packaging for liquids (milk cartons)
- Self-adhesive paper (Post-it™ notes)
- Carbon paper
- Chemically treated fax or photographic paper
- Dog food bags, potato bags, wax-coated boxes

# Glass

Glass is almost 100% recyclable. More than 185 000 tons of glass is recovered and recycled in South Africa every year. Green, amber and clear glass can be recycled, and it does not matter if the bottles or jars are broken. Remember to remove bottle tops (recyclable plastics), lids (metal ones are recyclable as well) and corks from the glass before placing it in recycling bins.

## Did you know?

Recycling a glass bottle saves enough electricity to light a 100 W bulb for four hours; and for every ton of glass recycled, 1,2 tons of raw material and 114 l of oil is saved.



# Plastics

Recycling plastics is easy. The trick is to make sure you know which plastics can be recycled separately, and which should only be recycled together.

Typically, the following kinds of plastics are grouped together for recycling:



- 1. PET: Polyethylene terephthalate** – carbonated softdrink bottles, juice and mineral water bottles, some jars, some household cleaners and food trays
- 2. HD-PE: High-density polyethylene** – deeply coloured opaque bottles (milk, scouring powder, fabric softener, household cleaners, salt, etc.), supermarket carryout bags



- 3. PVC: Polyvinyl chloride** – clear plastic bottles, clear trays for foods and toiletries
- 4. LD-PE: Low-density polyethylene** – frozen-vegetable bags, garbage bags, building film, soft supermarket carryout bags, fridge bags, soft squeezable bottles
- 5. PP: Polypropylene** – most yoghurt, margarine and ice-cream containers, screw-on bottle caps, potato chip bags, straws and lunch boxes



- 6. PS: Polystyrene** – some yoghurt and similar containers (if they crack when bent sharply), take-away food tubs, clear meat pack trays, egg packs, disposable cutlery
- 7. Other** – automotive and appliance components, cooler boxes

When it comes to recycling plastics, the 'wash and squash' rule applies – rinse the container, and then squash it. Paper labels can be left on the containers.



However, plastic caps should be thrown away, since they are usually made of a different type of plastic than the container, and cannot be recycled easily.

Unfortunately, many plastic packaging items are still not recyclable in South Africa, but this is changing rapidly as more leading retailers work to ensure that all their packaging is acceptable for recycling, or that there is sufficient interest and quantities to recycle a greater range of plastics. Currently, **plastics that cannot be recycled include the following:**

- Multi-laminated plastic foils (for food packaging such as bacon)

- Compound plastic packaging (such as Tetrapak milk and fruit juice cartons)
  - Tetrapak is already recyclable in Johannesburg and may soon be in Cape Town
- Polystyrene food trays

Tetrapak is recyclable. For more information on Tetrapak recycling, write to: [contactus@tetrapak.co.za](mailto:contactus@tetrapak.co.za)

If Capetonians were to say no to products with packaging that cannot be recycled, a strong message would be sent to manufacturers to design and package their products in a more environmentally friendly way.

## Organic waste

Creating compost from organic waste (such as leftover foods, vegetable peelings) saves space in our landfills and, in turn, decreases the amount of methane gas produced at landfill sites. In addition, it puts important nutrients back into the ground and thus nourishes the earth.



## Electronic waste (e-waste)



E-waste includes computers, TVs, stereos, DVD players, fax machines, cellphones, and other electronic household appliances that have been thrown away by their original owners. E-waste should definitely be recycled, because it is a valuable source of secondary raw materials. It will also become toxic if it is not treated and discarded properly.

# TURNING YOUR SCHOOL INTO A WASTE WARRIOR

Now that we understand the two different types of waste and the various waste streams, let's take a look at the five steps your school needs to take in order to become a waste warrior:

- Set up a waste management committee for the school
- Conduct a waste audit
- Reduce the waste your school produces

- Reuse materials to prevent them from becoming waste
- Set up a waste recycling programme at your school



## SETTING UP A WASTE MANAGEMENT COMMITTEE

The first step in setting up a successful waste management programme in your school is to ensure that all parties that will affect the programme's success, namely school management, educators, parents, learners and the school's cleaning staff, buy into the idea, and are committed to making it work. One of the best ways to do this is to create a waste project committee that includes representatives from each of the abovementioned groups.

### The waste coordinator

Your first requirement will be to identify the school's waste coordinator (leading waste champion). Ideally, this will be a fairly senior educator within the school (someone from

within top school management). The waste coordinator will be responsible for heading up the waste management committee, and coordinating the waste management programme in the school. More specifically, he/she will need to:

- take responsibility for initiating, planning and implementing the waste audits;
- develop and drive the implementation of action plans to reduce, reuse and recycle waste within the school environment;
- raise awareness of the school's waste management programme and highlight the roles that each of the key groups need to play to make it a success;

- provide training for other school staff;
- set up and chair regular meetings with the school's waste management committee;
- keep the school's head educator and management informed; and
- raise awareness within the surrounding community, the press and local businesses with the objective of generating support/ financial assistance for the initiative.

## Representatives from top school management

It would be ideal if the school's principal could be directly involved in the waste management programme, since that would ensure the school's full support. However, this is unlikely, since the principal is generally too busy to be involved in each school initiative on a day-to-day basis.

The waste committee should thus set up regular update sessions with the school principal, to keep him/her informed about how the initiative is progressing, the success the programme has had, what the committee has planned next, and what challenges the programme is facing. The objective of these sessions would be to get the principal's support in implementing new waste management ideas, and addressing some of the problems or hindrances.

Having the complete support of the school's principal is crucial to the ultimate success of the programme. (See the section on key criteria for success on page 26.)

## Representatives from the teaching committee

The waste committee should include two or three other educator representatives.

Depending on how the teaching body is structured, these educators should ideally come from different areas of the school – for example, one educator could come from the academic side, one from the arts and crafts side, and one from the sporting side.

## Representatives from the parent body

The success of the waste management programme, specifically the school's recycling centre, will depend on support from the parent body (bringing waste to school from home for recycling, and offering to help in the recycling centre). It is, therefore, vital to have parents on the waste management committee.

Since parents are only involved with the school while their children are studying there, it is important that an ongoing parenting body, such as the Parents Association, assists in making sure that two or three committed parents are available to be part of the waste management committee each year. It may actually be a good idea to ask the Parents Association to take responsibility for electing the parents that will take part on an annual basis.



## Learner representation

Having learners on the waste committee is vital, since they will assist in generating awareness and support amongst their peers. One idea is for the student body to vote for their own learner representatives. Another option is to elect learners on a rotating basis, so that multiple learners can have a chance to be involved and learn about the processes behind the waste management programme.

## Representation from the school's cleaning staff

Although learners, educators and parents can do a great deal to ensure the success of the programme, the school's caretaker

and cleaning staff also need to support the ideas and processes if the initiative is to be a success. It is thus recommended that they also be involved in the waste committee. An idea would be to invite them to participate in key planning sessions, or to hold regular sessions to bring them up to date on how the programme is doing, the role they are playing in making it a success, and how they could further assist in helping the programme to succeed.

Now that your waste committee has been established, you can move on to conducting your waste audit.

# CONDUCTING A WASTE AUDIT

To find out how much and what type of waste your school currently throws away, your waste committee will need to obtain the necessary permission and support to plan and conduct a complete waste audit. This audit will give you answers to the following questions:

- **Where does your school produce most of its waste?** Schools produce waste in classrooms, offices, dining halls, computer rooms, bathrooms and on the playground. Finding out where certain types of waste are produced in your school, will help you to position your recycling points effectively.
- **What types of waste are produced?** Some of the more common waste types produced by schools include paper and cardboard, paper towels, food, milk cartons, cold-drink cans and plastic



packaging. Understanding what types of waste materials your school produces will help you to decide which of the waste streams your recycling centre should focus on.

- **How much waste does your school produce?** Knowing roughly how much of each waste type your school produces will help you to plan what size bins your recycling centre will need. You can also use that information to measure whether your school's recycling efforts have reduced the amount of waste you are throwing away.

## Here are some guidelines on how to conduct your school's waste audit:

### A. Materials

#### You will need the following:

- Bagged rubbish
- Old carrier bags (eight for each group involved in the audit)
- 10–20 large bin bags
- Spring balances or newton meters
- Ground sheets/floor covers
- Clipboards with copies of the recording sheet
- Rubber gloves for everyone involved
- Overalls or old clothing

### B. Preparation

- Pick an average school day on which you will audit your school's waste. Let all the staff know when the audit will take place.
- Carry out a risk assessment – consider what the dangers associated with the audit might be, and put measures in place to minimise them.
- You may want to send a letter to the parents to inform them about the activity, ask them to provide old clothing for

the children to wear on the day, and possibly to request the assistance of adult volunteers.

- Ask the school's caretaker to save one day's waste from the entire school, including non-teaching areas such as bathrooms, staff rooms, offices and the playground.
- Ask the caretaker to look through the bags, remove sharp objects, and label each bag with the area of the school it came from (for example, classroom 1, playground, etc.). Ensure that bags of food waste are clearly labelled and kept separately. Store all bags of waste safely overnight.

### C. The audit

- Clearly explain all the health and safety issues to the learners involved in the audit. Gloves should be worn at all times, and learners should call an adult if they see any sharp objects in the rubbish.
- Weigh all bags containing discarded food, and capture the results in grams on the recording sheet. Once you are done, you can dispose of the waste in the usual manner.
- Divide the learners involved in the audit into three to four groups. Each group should have a ground sheet to work on, a recording sheet and pencil, and a set of spring balances or newton meters.
- Get each group to empty the bags of rubbish – one at a time – onto the plastic mat, and sort it into the different types of waste shown on the recording sheet below.
- Groups should have a separate carrier bag for each waste type. They will sort the waste into these bags, and weigh them



Material	School total (kg) per day	School total (kg) per week (x 5 days)	School total (kg) per year (x 38 weeks)	%
White paper				
Coloured paper				
Cardboard				
Plastics				
Metal				
Glass				
Fabric				
Food waste				
<b>TOTAL</b>				100%

## REDUCING THE WASTE THE SCHOOL CREATES

The best way to solve the waste problem in Cape Town is to reduce the amount of waste we produce. Depending on the outcome of your waste audit, your school should try and focus on the waste stream(s) you are producing the most of. Here are some tips on how to reduce the waste you generate:

- Avoid buying products with excessive packaging.
- Reduce packaging by buying the items you use frequently in bulk, and by purchasing refills and concentrates.
- Try to buy products with packaging that is made from recycled materials.



- Try not to buy disposable products, such as disposable razors or paper plates.
- Choose glass over plastic, as it can always be recycled. Many plastic packaging items are still not recyclable in South Africa.
- Avoid all toxic and hazardous products. For example, try to use organic cleaning products in your school and at home. They are safer for you and for the environment.

**Idea!** Why not allocate a waste generation area to each of the classes in your school, and ask the learners to come up with clever ways to reduce the amount of waste being produced. Implement the viable ideas, and track the effect it has on the school's waste generation. Award the class whose recommendations have the biggest impact on the volume of waste the school produces.

## REUSING THE WASTE THE SCHOOL CREATES

One of the most important things for a waste warrior to remember is that waste is not waste until it is wasted! Finding clever and effective ways to reuse waste will save your school money, help your school to make money, and help to cut down on the volumes of rubbish being sent to landfills. Here are some handy tips to help your school reuse the waste that it is generating:

- Before disposing of something you no longer need, try to think of other ways in which your school could use it. For example, discarded paper could be used to make papier-mâché; discarded cans could be used in your arts and crafts class; glass jars could be used to hold crayons or pencils in the classroom, etc. Once you have identified ways to reuse certain waste streams, ask the learners to bring that kind of waste to school from home, thereby reusing waste that is generated in households as well.
- Look outside of your school for people

who want to reuse the waste you are producing. For example, some artists use recycled waste to produce their art. You may even be able to sell your waste to external parties, thereby making some money for your school.

- Where possible, repair items that are broken. Support the local seamstress and carpenter. This will reduce waste as well as stimulate employment, growth and development in your community.
- Avoid using non-recyclable materials, such as cling wrap or tinfoil, around your school.
- When it comes to organic waste such as leftover food stuffs, create compost. There are different ways to make compost, so select one that suits your specific situation. Think about how much organic waste you have access to, as well as the time and space you have available for composting. You could also consider using the compost for a small vegetable garden. The school could then

sell the vegetables to members of your community, and in so doing, generate additional income.

- Other possible products that can be produced from organic waste are organic fertilizers or worm tea. Chat to your local nursery to see whether they have a demand for these sorts of products, and ask the experts there for some advice about producing them.

**Idea!** Based on your audit, allocate a waste stream to each class in your school, and task them with coming up with different possible ways to reuse that waste. Ask each class to produce a project showcasing the ideas they have come up with, and put these projects on display around the school. Implement the viable ideas at school.



## SETTING UP THE SCHOOL RECYCLING CENTRE

Having carefully looked at what waste the school is creating, ways to reduce that waste, and ways to reuse the materials before they are wasted, the final step in the move towards effective waste management is to set up the school's recycling centre.

Recycling refers to the separation of recyclable waste from the general waste stream, the processing of these materials, and their reuse. Recycling not only saves resources, but it also reduces the environmental impact of manufacturing new products, and the impact of waste at landfills.

Many successful recycling businesses have been set up in South Africa, for example, Collect-a-Can and the Glass Recycling Company. These businesses offer employment opportunities to a large number of people from the surrounding communities and, in so doing, contribute to growth and development in our country.

Let's take a look at the different aspects of setting up a recycling centre at your school.



# What will your centre recycle?

To decide which of the waste streams your recycling centre will work with, you should consider the results from your waste audit. The success of your centre will, to a large extent, depend on the access you have to the various waste streams. If, for example, your audit showed that your school does not throw away much glass, then you will need to either leave glass out of your recycling plans, or depend on outside sources to bring glass into the centre.

Here are some ways to make sure that you are benefiting from all the waste that is being generated at school:

## Internal recycling points

- Make recycling easy by positioning recycling points as close to the source of waste as possible, for example, place a paper recycling bin next to the photo copier/printer.
- Label recycling points clearly, so that everyone knows where they are, and what they are for.
- Put recycling points and normal rubbish bins next to each other.
- You may be provided with internal recycling containers by your collectors, or you can use data from your waste audit to help you decide what type, size and quantity of recycling bins will best suit the needs of your school.

## Collecting from internal recycling points

- Decide who will be tasked with emptying the internal recycling containers and delivering waste to the recycling centres.



Learners could, for example, get involved on a rotational basis. Think about any equipment that learners or other 'internal collectors' will need, and how often you would want them to collect.

## External sources of waste

Looking to external sources of waste is definitely recommended for a school recycling centre. Here are some possible outside sources that you could consider across all waste streams:

- Learners' homes (for organic waste, plastics, glass, cans and paper)
- Restaurants near your school (specifically for glass and cans, and perhaps also for organic waste)

- Retail outlets near your school (specifically for cardboard boxes that merchandise is delivered in)
- Businesses that operate near your school (for the supply of high-quality white paper, etc.)
- Other schools close to your school that have not implemented their own recycling programme, and that are happy to supply waste from their school and from their learners' households to your centre

The distance between your school's centre and the various waste sources, as well as how you will get the waste from those sources to your centre, needs to be carefully

considered. Although access to more waste will certainly enable you to generate more revenue, you need to be sure that the costs of getting the waste to your recycling centre do not exceed the benefits.



## Who will collect your waste?

Once you know which waste streams your centre will recycle, you need to choose your collectors, and make arrangements with them. Here are some things to consider when making your decision:

- **TYPES** – Look at what type of waste each collector will pick up. This is especially important when it comes to plastics, as they all melt at different temperatures, and collectors tend to recycle only one type of plastic. This has implications for sorting, as you need to know which plastics need to be separated from one another during the sorting process.
- **PRICE** – Which collectors will give you the best price for the waste that you have collected and sorted? The more you sort your waste, the better the prices you will

be able to secure. For example, you are likely to get less for paper if you send all your paper products – newspapers, magazines, white paper (office paper) – to the same recycler, than you will get if you sell specific products to specific collectors or customers. You could, for example, sell good quality magazines to second-hand bookstores or high-quality white paper to Mondi.

The price that you can secure for the different waste streams will vary depending on the collector you are dealing with, and the level to which you sort your waste. For example, you can usually get 15c per kilogram of recycled paper, but if you separate the white office paper from the other paper products, and sell that, you can secure up to 45c per kilogram.

## Below is some idea of what collectors and recyclers are willing to pay:

Waste stream	Example price
Plastics – depends on the company you are dealing with and the level of sorting you are prepared to do, for example, removing caps and lids	Between 85c and R1,20 per kilo for PET 1, 2 PE-HD, 5PP
Glass	13c per kilo
Cans	33c per kilo
Paper – as above, depends on the level to which you are prepared to sort your paper products (varies from company to company)	Approx 15c per kilo for mixed paper, 45c per kilo for white office paper

- **VOLUMES** – What quantity of waste do collectors/recyclers require you to have before they are prepared to pick it up? Consider the implications in terms of the amount of storage space you have available in your centre – for example, smaller centres should work

with collectors that are happy to pick up smaller quantities of waste. Most plastic collectors tend to want you to have five to six bale bags available before they will collect. Glass, paper and can recyclers would prefer to collect once your containers are full.

## What infrastructure do you need?

Once you have decided on the waste streams that you will recycle, you need to consider the infrastructure requirements associated with setting up your centre. Here are some aspects you need to consider:

### Location – where will your centre be based?

- **SPACE:** Your recycling centre will need sufficient space for you to accommodate, sort and store the waste that comes in. Most collectors will only pick up once you have reached sufficient volumes, so you will need to be able to store the sorted waste until you reach their volume benchmarks. You will also need space to store the bins that the recycling

companies deliver to your site for paper, glass and cans. Taking all of these requirements into account, the ideal place will be at least as large as a double garage.

- **ACCESS:** Your centre must also be accessible, so as to ensure easy delivery of waste coming in from external sources, as well as waste collection. The ideal place will have a parking area big enough to turn a small truck.
- **HEALTH AND SAFETY:** Because a recycling centre processes and stores waste materials, you need to pay careful

consideration to the health and safety aspects. From a health perspective, consider the odour that the waste might generate (especially if you are dealing with organic waste and composting). Also, think about the effect of insects such as flies that may be attracted to your centre. Ideally, your centre should be placed away from high-traffic areas within the school, and away from school neighbours who may not be open to having the centre located close to their properties. If paper is one of your waste streams, you need to consider fire risks, and put the relevant measures in place – for example, no smoking on the site. Also, make sure that you have a fire extinguisher readily available, and that staff know where it is and how to use it in case of an emergency.

## Bricks and mortar – what do you require?

When considering the actual structure you will need to have in place or build for your recycling centre, consider the following:

- **SIZE:** As mentioned before, a space that is at least as large as a double garage is recommended.
- **PROTECTION FROM THE ELEMENTS:** Your centre should offer the people working there as well as the waste (that has been delivered, is being sorted, or is being stored) protection from heat, rain and wind. A structure that contains four walls, a roof, a window (to let in light and fresh air when required) and large double doors (that big bale bags can easily fit through) is recommended.



Extra height is also advantageous, as it will enable you to store waste, such as bale bags, on top of one another.

- **SECURITY:** To prevent vandalism and minimise the risk of your sorted waste being stolen, you need to be able to secure your recycling centre when it is not being manned. The structure itself should be lockable, and you should have a fence with a lockable gate around the perimeter.
- **WATER AND ELECTRICITY:** You will need access to water to ensure the staff can wash their hands after working with the waste. Electricity will allow you to keep a light on at night, which will assist with security. Electricity is also important for running the office.
- **OFFICE SPACE:** Your centre will need easy access to a telephone, and ideally, a fax machine and e-mail facility. This will help you to set up initial agreements with waste suppliers and collectors, and to notify collectors once your waste is ready to be collected.

## Waste equipment – what will you need?

- **SORTING TABLES:** You will require a sufficient number of sorting tables to handle the volume of waste that comes into your centre. Tables should be easily accessible, and should have sufficient space around them. Consider labelling tables so that new members of staff can quickly catch on in terms of where each of the waste streams should be sorted.
- **BALE BAGS FOR PLASTICS:** You will need containers to manage each of your waste streams. For plastics, you will need bale bags and ideally, stands on which those bags can be hung. These stands support the bags, and make sure that they stay open, which makes it easier to drop sorted waste into them, and to check that the same plastic types are being stored together. Make sure that your bale bags are clearly labelled (e.g. PET 1 or PET 4) to assist sorters with where to place which plastics, and to make sure that collectors pick up the right bags when they come to the centre.
- **CONTAINERS:** Your recycler will drop off the necessary containers for glass, cans and paper. If required, label them to assist sorters.
- **WHEELIE BINS:** You will also need one or two wheelie bins on site so that you can dispose of non-recyclable waste that might have been sent to the centre by mistake.

**Idea!** Why not liven up your recycling centre by asking pupils at the school to create posters based on the idea of

waste management and the role it plays in protecting the environment, which you can put up for display around the centre? This will also increase the learners' level of personal involvement in the centre.

## Safety – what measures should you put in place to minimise risk?

- **VEHICLES:** From a safety perspective, consider the vehicles coming to and from the centre, and make sure that learners and people working in the centre are not at risk.
- **PROTECTIVE CLOTHING:** Make sure that all the centre's staff and volunteers wear gloves and possibly even plastic jackets or overalls when they are sorting through waste. This will protect them from any possible contamination.
- **SHARP OBJECTS OR HAZARDOUS WASTE:** Make sure that sorters are always on the lookout for sharp objects, and that they can easily identify and deal with hazardous waste that may have been delivered to the centre by mistake.



**Idea!** Teach learners and the centre's staff about hazardous waste and the more environmentally friendly options that can replace hazardous cleaning products. Ask learners to create artwork (posters/ murals) that showcase hazardous waste

products, and include information on how to safely dispose of such products. Display this artwork around the recycling centre to ensure that all sorters are aware of what to look out for, and how to deal with hazardous waste should they come across it.

## Staffing your centre

When it comes to staffing your centre, think about the volume of waste that will be coming into the centre each week to determine how many people you will need to sort it. Should your centre not have financial resources to hire staff to run it, you will need to work on a volunteer basis. Ask the school's Parents' Association to assist you in finding parents who are able to help.

You could also consider this as an opportunity to uplift unemployed members of your community by offering them jobs at the recycling centre. This will obviously affect the profit you are able to generate, but the social responsibility aspect may help you to generate financial sponsorship from local businesses.

Take into consideration that your centre may be staffed by several different groups of people on an ongoing basis. Ensure that the processes that need to be followed are clearly laid out in order to guarantee that the centre always runs efficiently, whoever is staffing it.



## Finances

In addition to helping to combat the waste crisis in Cape Town, a well-run recycling centre is also likely to generate some revenue for the school. You will need to work out how this money will be handled.

You should also think about how the money that the centre is generating will be used. Are there specific projects that the school



needs to raise funds for, or can the profits be used to enhance the recycling operation by hiring a manager, purchasing a bakkie, etc?

# GENERATING AWARENESS AND LONG-TERM SUSTAINABILITY

The long-term success of the school's waste management programme will depend on the initial awareness and understanding that you create, and the long-term commitment to making it work. Here are some tips to help

you in terms of launching the programme, educating people about how it will work, and keeping the programme going.

## Generating awareness

### In general

- Recycling should be seen as fun and easy. Think about organising an exciting launch event that will involve the entire school, parents, leading members of the local community, businesses (who have already offered to support the initiative, or who you would like to approach for support), and the local media.

### Among staff

- Hold an introductory meeting with all staff members, including the cleaning staff. Explain why the school would like to implement a waste management system, and how the recycling system will work. Communicate the role everyone needs to play in ensuring the initiative is a success.
- Run a staff waste management training session. Make sure that all members of staff understand the process – from the initial waste audit, through to organising external and internal recycling collections, and determining the roles of individual staff members.
- Create a calendar displaying key dates and

milestones for the programme. Place the calendar, together with information about the programme, on staff notice boards.

- Run follow-up training sessions in order to give staff ideas about how to include waste management topics in the curriculum.

### Among learners

- Get the learners that are members of the waste management committee to present the waste management plan during assembly. Think of ways to make the presentation fun, exciting and interactive.
- Give fortnightly updates during assembly to inform learners about how the programme is progressing. Showcase key milestones and successes on notice boards and the school's website.
- Think about organising social activities based on waste management, such as community cleanup days where learners go out into the community and help to collect litter.
- Give learners branded bibs or hats to wear on the days that they are collecting waste from school recycling points.

- Arrange a visit from a member of your local authority's waste management department.

## Among parents

- Follow up the launch event by sending home a 'How to Recycle' guide for all parents. This guide should clearly outline what parents can and cannot send to the school's recycling centre, as well as the way in which recyclables should be delivered – for example, washed and rid of all excess water, etc.

- Ask the Parents Association to include the waste management programme as an item on the agenda of their meetings.
- Include a regular waste management update about any achievements and new initiatives that are being planned in the school's newsletter.
- Ask parents who might have ideas about how to improve the programme or generate sponsorship money for the initiative to contact the waste management committee.

# Keeping it going!

Getting a school programme started is one thing; keeping it going is a much harder task. The following section gives some tips and practical advice about how to ensure the sustainability of the programme you put in place:

- Make sure that you have a member of staff as a waste champion – someone who has accepted responsibility for keeping the momentum going and moving the programme forward. Ensure that the waste champion continually monitors the scheme, and provides feedback to the waste committee. The waste champion must also keep the head educator as well as the rest of the staff up to date regarding the programme's progress and upcoming initiatives.
- Put measures in place to ensure regular updates from the people who manage the recycling centre. They will have a clear idea of the volume of waste that is coming in and how it is changing. If it starts to decrease, they will be able to alert you so that you can put measures



in place to remotivate learners, parents, staff and cleaners. Centre staff can also alert you to any problems the programme might be experiencing.

- If the level of involvement and commitment drops off, ask educators to include waste management related topics in their lesson plans. Consider field trips to give learners a first-hand view of a landfill, or bringing in an expert to talk to learners about waste and the impact it has on the environment.
- Reward the school when the programme works well – everyone likes recognition for success. Talk to the local media about the programme and what it has achieved to see if you can secure press coverage. Set up rewards for waste management champions – the class that comes up with the best way to reuse waste, or the class that produces the best waste awareness posters for the school recycling centre. Also, look out for any national or regional awards and

competitions that your school could enter.

- Finally, consider succession planning. To make sure that the waste management programme does not falter when the elected waste champion(s) leave the school, put some succession planning tactics in place. For example, there will always be a Parents Association, so

give them the task of electing the two parents who will serve on the waste management committee each year; or make sure that the head educator elects a waste champion from within the staff complement on an annual basis, and that running the waste management programme is part of that educator's job description for the year.

## CRITICAL FACTORS FOR SUCCESS

Throughout the booklet, we have discussed a number of factors that are central to your school being able to set up and run a waste management programme. Here is a summary of all the boxes you need to tick to ensure your venture will be a success:

- **People to champion the cause** – Make sure you always have a waste champion in place, backed up by a number of committed waste warriors.
- **Support from the top** – Ensure that members of the school's top management understand and support the waste management programme. This should be seen as an integral part of the school's day-to-day operations.
- **Support from the staff** – Work to ensure that the entire faculty, the school caretaker and the cleaning staff understand and are supportive of the waste management programme.
- **Recycling facilities** – Having the right infrastructure and equipment in place is crucial. You need a secure, contained and protected area from which to run your recycling operation. It must be secured during non-school hours, to prevent illegal dumping, and prevent people from stealing waste that has already been sorted. You also need well-signposted recycling points across the school to ensure that it is as easy to recycle waste as it is to throw it away.
- **Recycling staff** – Your centre will need people to run it on an ongoing basis. Volunteers tend to be less reliable than paid staff, so try and look for ways to raise funds to bring in salaried staff. Remember that you will also need someone with great communication and negotiation skills to get you the best deals from suppliers, collectors and recyclers.
- **Ability to generate awareness and understanding** – Make sure staff, learners and parents are aware of the waste management programme, the benefits associated with recycling, and what is required of them. Communication is crucial to keep these key groups updated on how the programme is doing, and what is planned next.

# WASTE CONTACTS DIRECTORY

Company name	Type of business	Contact details
Abalimi	Urban agriculture (UA) and environmental action (EA) association	Tel/fax: 021 371 1653 E-mail: info@abalimi.org.za Website: http://www.abalimi.org.za
Buyisa-e-Bag	Company that aims to encourage the collection, reuse and recycling of plastic shopping bags discarded in the waste stream	Tel: 011 975 9933 Fax: 011 394 6592 E-mail: info@buyisaebag.co.za Website: http://www.buyisaebag.co.za
Collect-a-Can	Recycling organisation (tins and cans)	Tel: 021 534 7010/Fax: 021 534 4160 E-mail: rodrick@collectacan.co.za Website: www.collectacan.co.za
EEASA (Environmental Education Association of SA)	Supports environmental education in Southern Africa	Website: www.eeasa.org.za
EPSASA (Expanded Polystyrene Association of SA)	An association representing expanded polystyrene manufacturers, raw material suppliers and equipment suppliers in South Africa	Tel: 011 805 5002 Fax: 011 805 5033 E-mail: epsasa@aaamsa.com Website: www.epsasa.co.za
EWASA	Electronic Waste (e-waste) Association of South Africa	Tel: 021 706 9829/Fax: 021 706 6622 E-mail: envirosense@xsinet.co.za Website: www.e-waste.org.za
Glass Recycling Company	Recycling organisation (glass)	Tel: 011 803 0767/Fax: 011 803 0421 E-mail: info@theglassrecyclingcompany.co.za Website: www.theglassrecyclingcompany.co.za
Greenworks	Online resource that provides tips and suggestions on how South Africans can make a difference to the state of our planet	Fax: 086 531 6340 E-mail: grace@greenworks.co.za Website: www.greenworks.co.za
IWEX (Integrated Waste Exchange Programme)	City of Cape Town programme launched to reduce the amount of hazardous and general waste material entering landfill sites through the exchange of industrial waste streams	Tel: 021 400 3298/2292 Fax: 021 400 4302 E-mail: WasteWise.Users@capetown.gov.za Website: www.capetown.gov.za/IWEX
Institute of Waste Management	Promotes environmentally acceptable and cost-effective waste management with the aim of protecting the environment and South Africans from poor waste management	Tel: (011) 675 3462 Fax: (011) 675 3465 E-mail: iwmsa@telkomsa.net Website: www.iwmsa.co.za

Mondi Recycling	Recycling organisation (paper)	Tel: 021 931 5106 E-mail: CT_Ronnie_recycler@mpsa.co.za OR adhaas@mpsa.co.za Website: www.paperpickup.co.za
Nampak Recycling	Recycling organisation (paper)	Tel: 021 507 4300 E-mail: bob.christie@za.nampak.com Website: www.nampak.co.za
National Recycling Forum	Non-profit organisation created to promote the recovery and recycling of recyclable materials in South Africa	Tel: 011 675 3462 Fax: 011 675 3465 E-mail: iwmsa@telkomsa.net Website: www.recycling.co.za
PETCO	Focused on the specific objective of promoting and improving the waste management and recycling of post-consumer polyethylene terephthalate (PET) products on behalf of all stakeholders in the PET industry in South Africa	Tel: 0860 147 738 (0860 1 is PET) OR Tel: 021 788 9954 Fax: 021 788 1592 E-mail: info@petco.co.za Website: www.petco.co.za
Plastics Federation of South Africa	Industry body representing the plastics industry of South Africa	Tel: 021 591 5513/Fax: 021 591 5516 E-mail: enquiries@plafed.co.za Website: www.plasticsinfo.co.za
Polystyrene Packaging Council (PSPC)	Council that aims to encourage collection, reuse and recycling of polystyrene packaging	Tel: 011 793 2658/Fax: 086 692 2438 E-mail: info@polystyrenepackaging.co.za Website: www.pspc.co.za
ROSE Foundation	Non-profit organisation managing the environmentally acceptable collection, storage and recycling of used lubricating oil in South Africa	Tel: 021 448 7492 Fax: 021 448 7563 E-mail: usedoil@iafrica.com Website: www.rosefoundation.org.za
Sappi Waste Paper	Recycling organisation (paper)	Tel: 021 552 2127 Fax: 021 552 2152 E-mail: marlene.brown@sappi.com Website: www.sappi.com
South African Tyre Recycling Process Company (SATRP)	Association whose function is to initiate a waste (scrap) tyre collection process to make the waste tyres available to private enterprises for recycling purposes	Fax: 086 503 9880 E-mail: info@rubbersa.com Website: www.rubbersa.com
Waste Wise Campaign	City of Cape Town Waste Minimisation Education & Awareness Programme	Tel: 021 400 3298/2292 Fax: 021 400 4302 E-mail: WasteWise.Users@capetown.gov.za Website: www.capetown.gov.za/solidwaste



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