

WASTE WISE IN ALICE

*An excursion guide to the Alice Springs
Regional Waste Management Facility*



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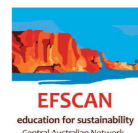
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*Written by: Felicity Forth
Design and Layout (internals): Felicity Forth
Design and Layout (Cover): Colemans Alice Springs
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Introduction

Around 30 to 40 rubbish trucks full of household rubbish arrive at the Alice Springs Regional Waste Management Facility (RWMF) every working day. That's a lot of waste! We all know the solution to this problem is to reduce, reuse and recycle, but how we go about that in a place like Alice Springs, which is over 1500km from the nearest urban centre?

This is where *Waste Wise in Alice* – an excursion guide to the Alice Springs Regional Waste Management Facility (RWMF) - comes in. *Waste Wise in Alice* gives local students an opportunity to learn about waste management in their hometown by providing activities for students to complete before, during and after an excursion to the Alice Springs RWMF. *Waste Wise in Alice* aims to show Alice Springs students first hand where their rubbish goes and what they can do to reduce the amount of rubbish going into landfill. It will also show students how the Alice Springs Town Council are doing their bit to reduce, reuse and recycle what waste they can at the RWMF, before it is disposed at landfill.

This guide will help to maximise student learning as they prepare for and enjoy their excursion, and later reflect on what they learnt from their trip to the Alice Springs Regional Waste Management Facility. It includes some great resources explaining what happens to our waste in Alice and the many ways we already reduce, reuse and recycle here. There are links to other innovative waste education kits across Australia and the world and short online videos that will inspire your class that they are not alone in their quest to reduce, reuse and recycle. And of course, *Waste Wise in Alice* provides teachers with all of the useful background information on booking a tour to the Alice Springs Regional Waste Management Facility, so you can start planning your excursion right away.

All lessons in *Waste Wise in Alice* are linked to the to the Australian National Curriculum Framework.



How this excursion guide works

This excursion guide has been developed to accompany a visit to the Alice Springs Regional Waste Management Facility (RWMF). It has been separated into four modules designed to prepare students for, immerse them in and give them opportunities to reflect and act upon their excursion to the tip.

Although these modules are sequential, it is possible to just pick a few activities from each module. The modules are:

1. Before you go
2. A Trip to the Tip
3. Back at School
4. Time to Act

Before you go

These six lessons introduce the class to waste issues in Alice Springs and to the waste minimisation hierarchy. Kick off the topic by asking kids where they think their rubbish goes and then watch some locally made videos on waste in an effort to gain some answers. Learn more about what goes on at the Regional Waste Management Facility through what the people that work there have to say and get the students to develop their own Alice Springs waste minimisation hierarchy. Go in depth with a jigsaw activity about the key components of Alice Springs waste management system. Pull apart the Alice Springs Recycling Directory to see the many ways you can recycle in Alice Springs or review your own waste stream with a lunch box audit.

Once permission slips are all signed, and the mini bus is booked, you can prep your students on their trip to the tip, by handing them their own *A Trip to the Tip* booklet. (Remember to go through the Alice Springs RWMF safety rules before the excursion.

A Trip to the Tip

This module is delivered as a booklet designed to be taken on the excursion and will be largely completed on the day. *A Trip to the Tip* booklet is divided into three sections based on the three main areas the tour will visit: the waste transfer station, the landfill area and the Rediscovery Centre.

Back at School

Back at School students have time to consolidate their learning from the tip by reviewing the *A Trip to the Tip* booklets, and completing a flow chart on waste at the Alice Springs RWMF. Students can creatively reflect on their learning by creating a short video or poster on the 3R's in Alice, develop a low-waste collage using shopping catalogues or create their own toys from junk to demonstrate repurposing waste in action.

Acting Up

Hopefully, by this point students will be thinking, "What can we do to reduce waste?" This is where the *Time to Act* of the kit comes in. Rather than being a prescriptive lesson plan, this section includes three possible class room activities to reduce the classes waste footprint (either creating a classroom compost pile, setting up a recycling system in the classroom or hosting a naked lunch day for the class) and resources to help your class act on one of these three ideas.

An overview of lessons in this guide

Lesson	Students will complete	Resources
Module 1: Before you go – An introduction to waste management in Alice Springs		
1.1 The problem with waste	Definitions and examples of biodegradable and non-biodegradable waste A labelled drawing of their lunch box showing which items are biodegradable and which items are not.	NA
1.2 Reducing, Reusing and Recycling in the Territory	Question sheets based on two local short videos on waste management in the Northern Territory. A waste minimisation hierarchy on one waste type.	Resource 1 YouTube Clips
1.3 People involved in the Alice Springs waste story	A waste minimisation hierarchy based on who is involved with managing waste in Alice Springs.	Resource 2
1.4 Reducing, Reusing, Recycling in Alice Springs	A poster based on one of four case studies of places that reduce, reuse or recycle waste in Alice Springs.	Resource 3 A3 paper
1.5 Looking at our own waste: a lunch box audit	A waste audit of the class's lunch waste and questions based around the audit.	Resource 4 Waste audit resources
1.6 Unpacking the Alice Springs Recycling Directory	Answers to questions on how to recycle in Alice Springs, using information from The Alice Springs Recycling Directory.	Resource 5 The Alice Springs Recycling Directory.
Module 2: A Trip to the Tip - The excursion workbook		
2.0 A Trip to the Tip: Part 1	A map of the transfer station at the Alice Springs RWMF showing what types of waste goes where.	Resource 6 (Part 1)
2.0 A Trip to the Tip: Part 2	Answers to questions on each of the many stops on the landfill tour.	Resource 6 (Part 2)
2.0 A Trip to the Tip: Part 3	A treasure hunt at The Rediscovery Centre.	Resource 6 (Part 3)
Module 3: Back at School – Applying the learning from the excursion		
3.1 Review your trip	A table outlining the different types of waste at the RWMF. A flow chart based on what happens to different types of waste at the RWMF	A Trip to the Tip workbook Resource 7 A3 paper
3.2 Low package collage	A collage using supermarket catalogues showing low and high waste packaging.	Supermarket catalogues A3 paper
3.3 My junk toy	A toy made from salvaged junk. A list of the items used to create the toy.	Salvaged junk/ packaging, construction resources Resource 8
3.4 Tell the world	A poster/PowerPoint/ video on waste management at the Alice Springs RWMF using photos from the excursion to promote the services at the Alice Springs RWMF to reduce, reuse and recycle.	Computer
Module 4: Time to Act – Class action project to reduce your class's waste footprint		
4.0 Action stations	A student-planned, hands on project to reduce waste generate at the school (either by creating a class compost, starting recycling at school or hold a naked lunch day).	See links in Time to Act lesson.

Links to the Australian Curriculum

This series of lessons is designed to be conducted as part of either geography or science from a Year 4 to a Year 8 level. It fits best for a Year 4 level for the geography learning area: *The sustainable management of waste from production and consumption (ACHGK025)* and the science learning area: *Natural and processed materials have a range of physical properties; these properties can influence their use (ACSSU074)*.

Table 1 below shows how each lesson can be linked to the Australian Curriculum in geography and science (version 7.5). As it spans five year levels, only generalised descriptors are given. It specifically addresses the *sustainability* cross-curriculum priority. Other capabilities addressed include: *Literacy, Personal and social capability, Critical and creative thinking and Ethical behaviour*.

Links to the Australian Curriculum

Lesson	National Curriculum links (Year 4-8)
1.1 The problem with waste	Geography. Geographic Knowledge and Understanding Year 4: The sustainable management of waste from production and consumption Year 5: The influence people have on the human characteristics of places and the management of spaces within them Year 7: The classification of environmental resources and the forms that water takes as a resource Year 8: The causes and consequences of urbanisation, drawing on a study from Indonesia, or another country of the Asia region (ACHGK054) Geographic Inquiry and Skills (Yrs. 4-8) Observing, Questioning and Planning Collecting, Recording, Evaluating and Reflecting Science Science Understanding: Chemical Sciences (Yrs. 4-8) Science as Human Endeavour: Use and influence of science Science Enquiry Skills: Processing and analysing data and information, Communicating
1.2 Reducing ,Reusing and Recycling in the Territory	
1.3 People involved in the Alice Springs waste story	
1.4 Reducing, reusing, recycling in Alice Springs	
1.5 Looking at our own waste: a lunch box audit	
1.6 Unpacking the Alice Springs Recycling Directory	
2.0 A Trip to the Tip: Part 1	Geography Geographic Inquiry and Skills Collecting, Recording, Evaluating and Reflecting Science Science Understanding: Chemical Sciences (Yrs. 4-8) Science as Human Endeavour: Use and influence of science Science Enquiry Skills: Processing and analysing data and information, Communicating
2.0 A Trip to the Tip: Part 2	
2.0 A Trip to the Tip: Part 1	
3.1 Review your trip	Geography Geographic Inquiry and Skills Collecting, Recording, Evaluating and Reflecting Science Processing and analysing data and information Communicating
3.2 Low packaging collage	
3.4 Tell the world	
3.3 My Junk Toy	Design and Technologies: Design and technologies process and production skills
4.0 Time to Act: Container Deposit system Creating a school compost pit Naked lunch	Geography: Geographic Inquiry and Skills Reflecting and Responding Communicating Science Science Understanding: Chemical Sciences (Yrs. 4-8) , Biological Sciences (compost activity) Science Enquiry Skills: Processing and analysing data and information, Communicating

Before you go

Planning your excursion to the RWMF

Contact Alice Springs Town Council (ASTC)

All trips to the Alice Spring Regional Waste Management Facility (RWMF) will need to be accompanied by an ASTC staff member. Schools will need to call 8950 0500 and speak to the Environment Officer to book a tour in advance. At least two weeks' notice is required.

Vehicle requirements

Due to OH&S issues schools will need a mini bus to visit the landfill.

Risk management check list

As for any excursion, teachers will need to complete all the departmental excursion checklists and organise parental permission prior to the excursion.

Follow standard excursion procedures

As for all excursions, teachers need to ensure that all departmental policies and procedures are adhered to including teacher to student ratio, the notification of parents about the excursion and exercising a duty of care.

Student safety

Remind students that they will require sun protection, a hat, a water bottle, sun cream and covered shoes. Students will be issued with a high visibility safety vest and will not be able to leave the bus unless accompanied by a member of ASTC staff.

Getting there

Alice Springs Regional Waste Management Facility is located on Commonage Road, just south of Heavitree Gap in Alice Springs. School groups are advised to park their bus next to the recycling sculpture just before the entrance to The Rediscovery Centre and await council personnel. Council staff will come to the bus and issue all students with a high-visibility safety vests before the tour sets off to explore the components of the RWMF. The tour will take approximately 1 hour.

What will my class see at the RWMF?

The tour of the Alice Springs Regional Waste Management Facility incorporates three areas: the waste transfer station, the landfill which includes numerous stops at different processing areas for different types of waste and the Rediscovery Centre. Here is some a bit of background on each of these areas. More information on each of these areas can be found in *Resource 2* and *Resource 3*.

The waste transfer station

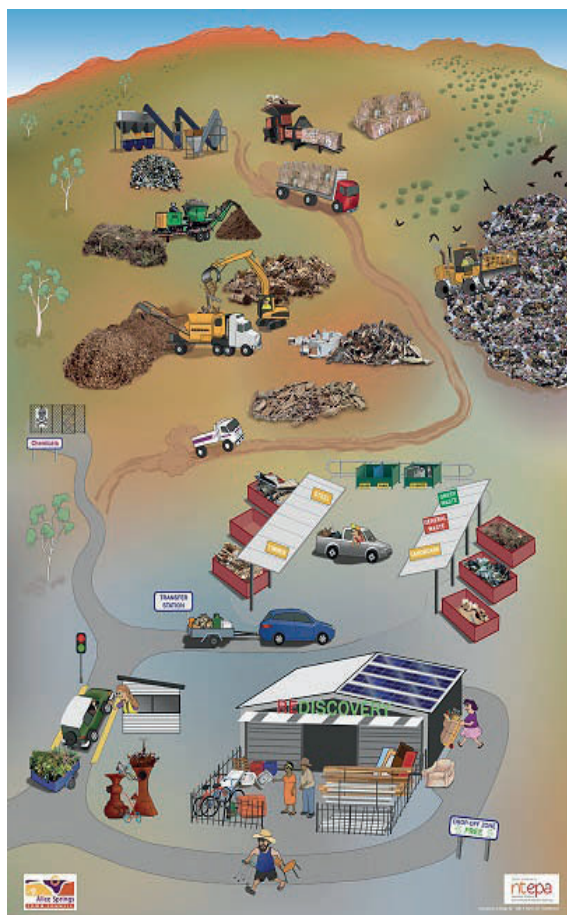
The waste transfer station is the sorting area where people dropping off rubbish can sort their waste into different skips, so it can be more easily recycled or reused. At the waste transfer station there are areas or skips to dispose of different types of waste or recycling, such as cardboard, electronic items, glass, green waste (or garden cuttings), steel, timber, tyres, white goods, mattresses and batteries.

The Rediscovery Centre

The Rediscovery Centre is essentially a tip shop where people can either drop-off unwanted resalable items or buy second hand goods at bargain prices. Its sells everything from old books to bicycles and building materials.

The landfill

The landfill is where household and commercial waste that can't be recycled or reused ends up. Surrounding the landfill are stockpiles of different recyclable materials such as green waste, steel or glass awaiting processing, recycling or reuse.



The Alice Springs Regional Waste Transfer Centre

Design and Illustration: Julie A Taylor, JAT Illustrations

Safety at the Regional Waste Management Facility

Class management

Discuss safety issues and protocols with students beforehand. The Alice Springs Regional Waste Management Facility has many potential hazards including sharp objects, heavy vehicle traffic and biohazards. For this reason we ask that the students do not to leave the vehicle at the transfer station or the landfill site and to only look, but not touch, at the Rediscovery Center. Given this, it is wise to ensure that students are well briefed on potential hazards and are closely supervised at the Rediscovery Centre. It's advisable to have a plan as to what to do with any behavioral issues prior to the excursion.

Dress right

It is ASTC safety policy that all people on site wear fully covered shoes and a high-vis vest. The RWMF staff will provide the high-vis vest, but it is the responsibility of the school to ensure students are wearing fully covered shoes.

Amenities

There is a public toilet located inside the Rediscovery Centre if needed. The only drinking water available for the public at the RWMF is at the Rediscovery Centre. It is recommended that all students bring a water bottle with them.

Don't forget

As per school policy ensure you take a first aid kit with you on the excursion.

Temptations

There are lots of interesting things to look at the Rediscovery Centre, many of which may be tempting for young students. Remind students that the Rediscovery Centre is a 'look, but don't touch' place for them. Students are also asked to 'walk, but not run' within the Rediscovery Centre, due to the number of potential trip hazards there.

Waste terminology and abbreviations

Below are some definitions of commonly used waste management terms used in this guide.

Term	Definition
Compost	Decayed organic material used as a fertiliser for growing plants.
Dispose	To throw away, which in this context means to send to landfill.
E-waste	Electronic or electrical waste (anything with a plug or battery), such as televisions, computers, fridges, printers, kettles, irons, microwaves etc. In Australia this is often used to refer to goods such as computers and televisions.
General waste	Material that is intended for disposal to landfill. For instance, the rubbish that goes in your wheelie bin.
Green waste	Plant material from gardens and parks such as grass clippings and tree prunings.
Landfill	A site for the disposal of waste material by burial. Did you know the whole hillside at the RWMF is made out of compacted rubbish? It has been created over years and years of Alice Springs' rubbish being dumped, compacted and covered.
Organic waste	Separated food and garden waste that can easily be composted
Reduce	In the context of waste management this means buying less or buying products with less packaging, so that the amount of waste is reduced.
Recycle	When items are broken down and processed so that they can be made into something else. For instance metal is smelted down and recycled into new metal.
Recyclable	Anything that is able to be recycled.
Repurpose	To use an item in a different way from its original use. For instance, old clothes can be turned into cleaning rags.
Reuse	Reuse mean to use something more than once, as opposed to a disposable item, which is generally used once and then thrown away. For example, an aluminium drink bottle can be reused for many years.
Waste	Anything that is no longer wanted or usable, which is to be thrown away. Generally refers to material that is thrown away rather than recycled.
Waste Minimisation Hierarchy	The order of preference for action to reduce waste, which is usually presented diagrammatically in the form of a pyramid. Reduce, reuse, recycle and dispose are all parts of the Waste Minimization Hierarchy.
Weighbridge	A weighing device that vehicles drive onto, in order to weigh the waste delivered to a landfill for disposal.

Abbreviations

AS - Alice Springs

ASTC- Alice Springs Town Council

NA – Not applicable

RWMF - Regional Waste Management Facility

Teacher Resources

This range of resources will help teachers prepare for and deliver this unit providing background and teaching ideas on waste management both in Alice Springs, Australia and globally. For all resources required for activities in this guide, the name of the lesson is flagged in brackets beside the resource. If the resource isn't required for an activity, but provides good background, it will denoted with an asterisk.

Local Waste Managers and Recycling Services

Envirobank: 39 Cameron St, Braitling NT 0870 (08) 8953 7964

<http://www.envirobank.com.au/container-deposit-service/depots/>

Russ Driver and Co - Recycling Services: 58 Sargent St, Braitling NT 0870 (08) 8952 1087

Recyclabill: 0477449213 or Recyclabill on Facebook

Alice Springs Town Council resources

Waste and Recycling: <http://www.alicesprings.nt.gov.au/services/waste-and-recycling>

The Rediscovery Centre: <http://www.alicesprings.nt.gov.au/services/waste-and-recycling/rediscovery-centre>

To learn more about recycling in Alice Springs check out the [recycling factsheet](#) located on the [Waste and Recycling](#) page of the Alice Spring Town Council website.

[Alice Springs Recycling Directory](#) [Unpacking the Alice Springs Recycling Directory] located on their webpage or you can find it at

http://www.alicesprings.nt.gov.au/sites/default/files/Recycling%20Directory_2015_A3.pdf

Local videos

How to conduct a household waste audit (10.09)

Rachel O'Leary (2009) NT

Local video on how to do a waste audit [Lunch box audit lesson*]

<https://www.youtube.com/watch?v=-IK93VqycGo>

Recycling in Alice Springs, (3.43) [Reducing, reusing and recycling in the Territory]

The Arid Lands Environment Centre (2012)

http://www.alec.org.au/recycling_in_alice_springs

Recycling@TheTop (15.00) [Reducing, reusing and recycling in the Territory]

Video Darwin City Council

<http://www.darwin.nt.gov.au/live/recycling-and-waste/recyclingfacts>

Container Deposit Scheme - putting recycling in your pocket (1.00) [Acting up]

<https://www.youtube.com/watch?v=Bixp7qoldm8&feature=youtu.be>

Other Videos/ YouTube clips:

Conducting a waste audit for the Waste-Free Lunch Challenge [Lunch Box Audit]

ROntario, Sep 25, 2013,



Teacher Resources

A short video that demonstrates how to conduct a waste audit for the Waste-Free Lunch Challenge.
<https://www.youtube.com/watch?v=oXEQx6aBguQ>

UGA Waste Audit (2:30) [Lunch box audit]

Capilano University, 2008

A short fun music video on a university student conducting a waste audit.

<https://www.youtube.com/watch?v=W7RrvMaibnM>

ECO-ACTIVE Waste Audit Animation [Lunch box audit]

Freedom Media, 2014,

<https://www.youtube.com/watch?v=AYcgw1rANMw>

Costa's Guide to Household Composting (3:31)

[Time to Act]

An informative overview on why compost and how to do it featuring Costa

<http://www.youtube.com/watch?v=HngvowScx6g>



Background information:

The NT Container Deposit Scheme [Time to Act]

<http://www.ntepa.nt.gov.au/container-deposits>

NT Container Deposit Grants [Time to Act]

<http://www.ntepa.nt.gov.au/container-deposits/grants>

Online waste educational resources:

Case of the broken loop

(Educational Resource), EPA USA

An excellent educational resource with fun activities introducing and revising essentials recycling and waste minimisation concepts (e.g. puzzles and cross words)

<http://www.epa.gov/wastes/education/pdfs/4-6.pdf>

How to reduce, reuse and recycle waste in schools

Sustainability Victoria, Resource Smart Schools

Some good ideas, very detailed, good links

<http://www.sustainability.vic.gov.au/services-and-advice/schools/resources/waste-module-resources>

Cool Australia

Another great school's resource worth checking out.

<http://www.coolaustralia.org/welcome> -

Trip to Tip Workbook

North East Waste (NE Waste): <http://www.newaste.org.au/index.html>

Teacher Resources

Low waste lunch [Time to Act]

A fact sheet: that compares 2 different lunches

<http://www.newwaste.org.au/assets/low-waste-lunch.pdf>

Living in your Greenhouse,

North East Waste Forum,

A series of waste lesson plans from NE NSW - includes worksheets and lesson plans- simple and easy

http://www.newwaste.org.au/assets/living-in-your-greenhouse_lessonplan_yr4-6.pdf

• [Compost Lesson Plan](#)

• [Living in your Green House Lesson Plan Year 7-10](#)

Low Waste Lunch, North East Waste Forum [Time to Act]

<http://www.newwaste.org.au/assets/low-waste-lunch.pdf>

Healthy zero waste lunch toolkit, WA Waste Wise Schools Program [Time to Act]

How to run a zero waste lunch day kit

http://www.wasteauthority.wa.gov.au/media/files/wws/Waste_Free_Lunch.pdf


Nude food steps for schools, Wipe Out Waste South Australia, [Time to Act]

Two-page guide to running a zero waste lunch day

http://www.wow.sa.gov.au/uploads/1/9/2/6/19269635/nude_food_steps_for_schools.pdf

Waste Free school lunches (video) [Time to Act]

Ecochick Adventures, Channel 31's Room To Grow, <https://www.youtube.com/watch?v=CA8Z7CejiSY>



Nude food steps for schools

Quick step guide to having a Nude Food day

Step 1: Work out the scale of your waste-free lunch.

- Will it be held by one class, one year level, or the entire school?
- Will it be held for one day a week for a term, or the whole year?

Step 2: Assess the recycling systems at your school/in your class.




- Does your school have a separate commingled recycling collection?
- Is there a green organics collection or compost available on site?
- Your class, year level etc could start a 10c container collection. See how much you can raise on your nude food days!
- Have you got appropriate bins in your classroom to represent the different separation systems available.

Step 3: Conduct an audit before starting your nude food days.

- Look in the activities section on the WOW website for ideas on audits that you can undertake with your class to measure and collect data on the amount of food packaging that is currently being brought to and disposed of at school.

Step 4: Communicate your nude food plans, objectives, details etc with your students and colleagues.

- Holding a presentation during a school assembly is a great way to reach all staff and students, and encourage and motivate others to do the same (if it's not whole school). This is also a chance to clarify details (if it is whole school).
- If there is a noticeboard or morning bulletin at your site, don't forget to include an article about your nude food days.
- Develop posters to promote your nude food day.

A program of Zero Waste SA delivered by KESAB environmental solutions

Lesson Plans

Waste Management in the Centre

In Alice Springs there is currently no kerbside recycling program so most of our household waste isn't recycled. This means much of our waste ends up feeding a growing mountain of rubbish at the Alice Springs RWMF. But this doesn't have to happen. Alice Springs Town Council estimates that up to 75 percent of this waste can be recycled if we separate out the recyclables. We can reduce this pile of waste if we follow the 3 R's of the waste minimisation and reduce, reuse and recycle.

REDUCE: Waste can be reduced by opting for low waste packaging when we buy food, or thinking twice before buying something we don't need.

REUSE: Places like second hand shops and the Rediscovery Centre give us options to make sure our old goods are reused not just thrown out in general rubbish. The waste transfer station at the RWMF allows residents to separate their different waste so it can be more easily reused or recycled.

RECYCLE: There are lots of items that can be easily recycled here in Alice Springs. Things such as drink containers, liquid paper board, tin cans, aluminium cans, metal, cardboard and glass bottles can all be recycled in Alice - it just takes a little more organisation to get started. Businesses such as Recyclabill and Russ Driver, provide a pickup service to households and businesses. Alternatively, residents can take their recyclables themselves to depots such as the one at the RWMF.

The following lessons in the *Before you go* module introduce students to what happens to waste in Alice Springs and the ways they can reduce the amount of waste ending up in landfill here.

1.0 Before you go

1.1 The problem with waste

Subject area: Geography

Suggested timing: 50 minutes

Summary: This lesson introduces students to different types of waste and the problem of managing waste.

Students will learn: the difference between biodegradable and non-biodegradable rubbish and why rubbish not breaking down becomes a problem. They will also start to look at what waste can be recycled in Alice Springs in the context of their own lunch box.

Background notes

- Managing rubbish is a big problem – with Australians producing around 800kg of rubbish per person per year.
- Rubbish is becoming an increasing problem mainly because people are buying more goods in more packaging.
- We can reduce the amount of waste that needs to be buried in the ground by reducing, reusing and recycling the waste we have.

Materials: N/A

The activity

- 1) Tell the students you are going to be learning about waste in Alice Springs in preparation for the trip to the RWMF. They are going to focus on why waste is such a problem – not just in Alice Springs, but all around the world. But to do this it's helpful to think about all the different types of waste there are.
- 2) Brainstorm and list the types of waste you create in your home or at school (i.e. plastic bags, food waste, etc.)
- 3) Group the waste into types that break down naturally (like paper and food waste) and types that don't (like plastic).
- 4) Explain the difference between biodegradable waste (things that break down naturally) and non-biodegradable waste (things that don't breakdown naturally) and why this is important. Have students to define these terms in their books.
- 5) Label the groups of waste listed in your brainstorming as biodegradable or non-biodegradable with the help of the students.
- 6) Discuss how some things break down slowly or not at all resulting in a big pile of rubbish and why this is important when it comes to managing waste.
- 7) Open up a students lunch box and discuss what is biodegradable and non-biodegradable?
- 8) Can any of these items be recycled or reused? (List items on board and annotate according to suggestions).
- 9) Get students to go through their own lunch boxes and draw and label each item in their books noting if it is biodegradable or not or if it can be easily reused or recycled.

Discussion questions

- Were you surprised at how much in your lunch box is non-biodegradable?
- Did anyone in the class have no plastic in their lunch box at all?
- Where does rubbish go once it gets put in the bin after lunch?
- What happens to the waste that doesn't breakdown?
- Why do you think this is a problem?

- How will we see evidence of this when we visit the RWMF the later on?
- What are some ways you think councils like Alice Springs Town Council try to reduce the amount of waste going into landfill?(list on board and have students write in books)

Summation: Waste can be a problem all around the world – because it doesn't break down. Next lesson we'll start to learn how we try to manage the problem of waste in the Northern Territory – both in Alice Springs and Darwin.

1.2 Reducing, reusing and recycling in the Territory

Subject Area: Geography

Suggested timing: 50 minutes

Summary: This lesson gives the students an overview of why it's important to manage waste and some ways we manage waste in Alice Springs.

Students will learn: Some examples of how waste is managed in Alice Springs and Darwin and be introduced to the "reduce, reuse, recycle" (waste minimisation pyramid) concept.

Materials

Copies of *Resource 1: Reducing, reusing and recycling in the Territory*

Video 1: Darwin City Council *Recycling@TheTop* (first 2 minutes)

<http://www.darwin.nt.gov.au/live/recycling-and-waste/recyclingfacts>

Video 2: The Arid Lands Environment Centre, *Waste and Recycling in Alice Springs* (3.42)

<http://alec.org.au/programs-2/desertsmart/recycling-in-alice-springs>

The activity

1. Explain to the students that they will be watching two short video clips to learn more about waste in the Northern Territory.
2. Hand out *Resource 1: Reducing, reusing and recycling in the Territory* noting they will be able to answer the questions with the help of the two videos.
3. Play each video clip twice giving students time to answer the question sheet
4. Review answers from Resource 1.
5. Introduce the Waste Minimisation Hierarchy Pyramid. Show the Waste Minimisation Pyramid on the board and have students copy it into their books. Define reduce, reuse, recycle and dispose.
6. Annotate the Waste Minimisation Hierarchy on the board with examples of reduce, reuse and recycle taken from the videos and other examples the students might know.
7. Discuss why it is best to reduce first, then reuse and then recycle.
8. Referring to part 3 in *Resource 1: Reducing, reusing, recycling in the Territory* review how plastic bags can be reduced, reused and recycled. See if students have other ideas as to reducing, reusing and recycling plastic bags.
9. In pairs students to complete part 3 of *Resource 1* about one type of waste i.e. glass and brainstorming possible ways to reduce, reuse and recycle that type of waste.
10. Allow students to share their brainstorms with the class, giving time for suggestions from class members
11. EXTENSION: If there is time, students can research their type of waste and ways to reduce, reuse and recycle it in more detail.

Summation: Reflect on what they have learnt about waste and the 3 R's. Review the new terms learnt (reduce, reuse, recycle and dispose). Remind the students of the upcoming excursions to the RWMF and how they will be seeing the R's in practice on the excursion.

1.3 People involved in the Alice Springs waste story

Subject area: Geography

Suggested timing: 50 minutes

Summary: Students will read about the people involved in managing waste at the Alice Springs RWMF and elsewhere in the town and then complete a waste minimisation hierarchy based on Alice Springs waste.

Students will learn: to recognise the different roles in managing waste in Alice Springs and how these roles reduce, reuse, recycle or dispose of waste.

Materials: *Resource 2: People involved in the Alice Springs waste story*, A3 paper, scissors, glue

The activity

- 1) Introduce the activity to students explaining how today they will get a bit more of a picture of how waste is reduced, reused, recycled and disposed of in Alice Springs both at the RWMF and in recycling places outside of the RWMF – by working through the interviews of characters that work in the industry in Alice Springs
- 2) Read through *Resource 2: People involved in the Alice Springs waste story* together – it can be done as a play.
- 3) Write reduce, reuse, recycle and disposal on the board. Revise the meaning of each as a group. Choose a couple of characters from *People involved in the Alice Springs waste story* and write their name where they might fit best. Discuss why they fit there.
- 4) Once they get the idea hand the challenge over to the students – now it's their turn to make their own waste hierarchy in small groups using the character from the sheet.
- 5) Hand out *Resource 2: People involved in the Alice Springs waste story* one to each group (one to each group).
- 6) Give the students time to cut out the character and their speech and assemble their own waste hierarchy pyramid by sticking the characters on the A3 sheet in the right order.
- 7) As they work review their work. Why did you put this one here? Are there any other places this one could go?
- 8) EXTENSION: Challenge the students to think of one other character that is missing. Write up their script and stick it on (i.e. composting).

Discussion questions

- How did you find the activity? Was it sometimes hard to choose where characters go?
- Which characters did you find hardest to fit?
- Do you think some characters could be reducing and recycling at the same time? How.
- Do you think we might meet some of the characters on excursion to the RWMF – which ones?

Summation: It takes a lot of people working together to manage Alice Springs waste. We saw today where Alice Springs' waste can go and the different people who are a part of this. We'll get the chance to see some of these people, places and machines involved in Alice Springs waste when we visit the RWMF.

1.4 Reducing, reusing and recycling in Alice Springs

Subject area: Geography

Suggested timing: 20-50 minutes

Summary: In groups students will prepare a poster based on one of the interviews of four people who work with Alice Springs' waste. The information will be fed back to the class as a jigsaw activity.

Students will learn: how waste is reduced, recycled, reused and disposed of in four different locations in Alice Springs.

Materials: *Resource 3: Reducing, reusing and recycling in Alice Springs*, A3 paper, coloured markers

The activity:

- 1) Divide the class into four groups and allocate each of the groups one of the four case studies in *Resource 3: Reducing, reusing and recycling in Alice Springs*.
- 2) Students read through one of the four case studies consisting of interviews with key people who manage Alice Springs' waste.
- 3) Using coloured markers students to answer six questions about their case study together:
 - What is name of the person in the case study and their job?
 - How does their job does help to reduce, reuse, recycle or dispose of Alice Springs' waste?
 - What is the main type of waste they manage?
 - What can Alice Springs people do with their waste to help make their job easier?
 - What are three interesting facts you learnt about the case studies?
 - What is one question you'd like to ask the person in the case study about their job?
- 4) When groups have completed their case study, get students to share their information with the class.

Discussion questions

- Which of the four places do you think is the most important in managing Alice Springs' waste and why?
- Where would you like to work the most? Why?

Summation: Each of the four places we learnt about today does its bit to help manage our waste – three of them are at the RWMF and another one is separate. Alice Springs doesn't have kerbside recycling – but that doesn't mean recycling is impossible. Next lesson we'll be looking at the many different places in Alice Springs you can go to recycle.

1.5 Looking at our own waste – a lunchbox audit

Subject area: Geography

Suggested timing: 50 minutes after lunch

Summary: Students look at their own lunchboxes and discover what they could do to minimise waste from their lunches.

Students will learn: to recognise the amount of packaging waste from students lunches that ends up in landfill and identify ways to reduce this.

Materials: Copies of *Resource 4: Conducting a lunch box audit*

A printout of drink containers accepted by the NT Container Deposit Scheme (http://www.envirobank.com.au/wpcontent/uploads/2014/10/Collection-Depot-Sign_1200x900_Oct20131.pdf)

Five labeled boxes or garbage bags with the following labels; soft plastic, drink containers, food scraps, paper waste and general waste.

A tarp or something to spread the rubbish out on.

A set of scales, rubber gloves and metal tongs.

The activity

- 1) Students can watch this videos of other lunch audits for inspiration: *UGA Waste Audit* (2.30) <https://www.youtube.com/watch?v=W7RrvMaibnM>
- 2) Introduce the different labels you will be using and explain to the students that they will need to use the boxes when disposing of their lunch on the day of the lunch audit. Remind them what waste can be reused or recycled and what waste goes to landfill.
- 3) Nominate some students to be the waste monitors on the day to ensure students put the waste in the right containers.
- 4) After lunch get students to empty out the content of their lunch boxes onto the tarp outside.
- 5) Use tongs and gloves to sort the rubbish into the marked boxes or plastic bags and then using scales weigh the contents of each bag.
- 6) Record the weight of each type of waste and the number of containers in *Resource 4: Conducting a lunch box audit*.
- 7) Give students time to complete the question in Resource 4 and then review their answers.
- 8) EXTENSION: Use the table in Resource 4 to create a bar graph of the different quantities of waste (measured by weight) counted in the lunch audit. Colour the different bars based on whether the waste is food waste (green), container waste (yellow), soft plastic (black), paper waste (blue) or general waste (red).

Discussion questions

- Were you surprised by the amount of waste our class created?
- What are some ways we can bring lunch to school with less rubbish?
- What kind of lunchboxes would make reducing waste easier?
- If each drink container gets a 10c deposit, how much money do we make as a class?
- What do you think of trying to have a 'no waste' lunch? Could we do it?¹

Summation: Looking at our own lunchboxes shows us how much waste we create just by bringing our lunch to school. Food waste can be composted, container waste can be cashed in, but soft plastic and other waste just goes into landfill. Next time you visit the supermarket look for what lunch items you could buy with less waste.

¹ This is a good time to sound class out for interest in a naked lunch day for Time to Act module.

1.6 Unpacking the Alice Springs Recycling Directory

Subject area: Geography

Suggested timing: 20-50 minutes

Summary: In this straightforward activity, students are given the recycling directory and the worksheet to help them discover the many ways they can recycle and reuse their unwanted goods in Alice Springs.

Students will learn: to draw information from a tabulated source (Alice Springs Recycling Directory) about recycling in Alice Springs and about the different businesses involved with managing the town's waste.

Materials:

[Alice Springs Recycling Directory](#) (either paper copy or online),

Resource 5: Unpacking the Alice Springs Recycling Directory

The activity

- 1) Introduce the activity by reminding students that in Alice Springs there are many different ways to recycle and today they will be looking at the [Alice Springs Recycling Directory](#) to find out more about how we can recycle in Alice.
- 2) Hand out *Resource 5* and explain that they will need to draw all their information from the Alice Springs Recycling Directory, which you can provide in hard copy form or have projected on the board directly from the website.
- 3) Assist students to understand how the table format of the directory works – by completing the first few questions of Resource 5 together before setting them loose to complete the questions in Resource 5 individually.
- 4) EXTENSION: Give early finishers a chance to research one of the businesses listed in the directory in greater detail such as the Container Deposit Scheme.
- 5) Conclude the lesson by revising the answers with the students and conducting a brief discussion.

Discussion questions

- Did anything about doing this activity surprise you?
- There are lots of ways to recycle in Alice Springs, what do you think stops people doing it?
- What do you think could be done so people are encouraged to recycle more?
- Is there anything that could be recycled in Alice Springs that is missing from the directory? (e.g. Household battery recycling)

Summation: Looking at the *Alice Springs Recycling Directory* shows us all the ways we can recycle in Alice Springs. It also shows us that recycling in Alice can be hard work. When we visit the RWMF we'll see the many ways they recycle and reuse our waste at the RWMF.

2.0 A Trip to the Tip

Subject area: Geography

Suggested timing: 20-50 minutes

Summary: These three activities, designed for the excursion to the Alice Springs Regional Waste Management Facility, will tune students into what is going on at the three major parts of the RWMF: the transfer station, the landfill and surrounding stockpiles and the Rediscovery Centre.

Students will learn: about the different areas of the Alice Springs Regional Waste Management Facility and how they are involved in reducing, reusing and recycling Alice Springs' waste.

Materials:

- A clip board for each student
- Copies of the *Trip to the Tip Workbook*
- A pen or pencils
- A camera (and nominated photographer) – if planning on doing the *Tell the World* activity

The activity

- 1) Hand out the *Trip to the tip workbook* prior to leaving on the excursion.
- 2) Read through the three sections reminding students that they will have to fill it in as they go so they will need to use pens and clipboards. There is a section for each of the three parts of the trip: The Transfer Station, the Landfill area and The Rediscovery Centre.
- 3) Once on the excursion, help the students fill in the sheet as they go. For younger students they might be able to skip some questions in the landfill tour if it is taking too long.
- 4) Remind the students they will need to keep the workbooks, as it will assist them in completing activities after the excursion.

Discussion questions:

- At each station around the landfill, discuss if this particular station helps to reduce waste and how.

Summation: Hopefully, seeing the workings at the RWMF has shown you some firsthand examples of reducing, reusing and recycling as well as showing you what happens to everything that we don't reuse or recycle. We will need our completed *A Trip to the Tip* workbook for many activities back at school, so keep them safe.

3.0 Back at School

3.1 Reviewing the trip

Subject area: Geography

Suggested timing: 20-50 minutes

Summary: Review the information from the excursion and develop a flow chart that shows where the different types of waste go in Alice Springs.

Students will learn: To develop a flowchart based on a variety of resources including their own observations and notes from the trip to the Alice Springs RWMF.

Materials:

Completed *Trip to the Tip* workbooks

Copies of *Resource 7: Review your trip*

The activity

- 1) Hand out *Resource 7: Review your trip* and give students 5-10 minutes to complete in pairs. Review the answer together- using the activity as a springboard to review the trip itself. Tell the students that they are going to use this information to develop a flow chart of where waste goes in Alice Springs.
- 2) In the middle of the whiteboard draw a circle and write the words *Where does our waste go?*
- 3) Ask the students to list the different types of waste they saw at the tip (looking at the diagram of the transfer station in the *A Trip to the Tip* workbook may help) and list these surrounding the question on the board.
- 4) Start developing a flow chart linking waste items seen at the tip to where they go.
- 5) Now turn the task over to the students. Ask the students to develop their own flow charts on A3 paper outlining where these waste goes.

Discussion questions:

- What are the positive aspects of this flow chart? [ask the kids to point out a few]
- What areas of this flow chart could be improved? And how?
- We saw lots of recyclables at the landfill – what do you think is happening there?
- Is there a way you think the council can get more people to recycle in Alice Springs? (list them and discuss)

Summation: Hopefully this lesson has helped you get your head around everything we saw at the RWMF and how they are working towards improving waste. We will use this information to create our own presentations about reducing, reusing and recycling at the RWMF.

3.2 Low waste packaging collage

Subject area: Geography

Suggested timing: 20-50 minutes

Summary: Students will develop a collage of low packaging and high packaging food items using cut out supermarket catalogues and their own illustrations.

Students will learn: To communicate information on high waste and low waste food items in a poster format.

Materials:

Supermarket catalogues, scissors, glue, A3 paper

The activity:

- 1) Revise the waste minimisation hierarchy and why reducing is the most important step of all.
- 2) Discuss low packaging options at the supermarket – a big box of sultanas verses six small ones, a large tub of yogurt rather than the snack sized one and so on.
- 3) Discuss why people buy items with lots of packaging (for easy transport of single serves) and what people can do to get around this (buy larger packages and use reusable containers instead of disposable ones).
- 4) Tell students this activity will give them an opportunity to think about smarter buying to reduce waste by choosing what items in a supermarket are high waste and what are low waste packaging and create a collage.
- 5) Ask students to divide their paper in half and label one side high packaging and the other low packaging. Then in groups of two or three they begin the collage.
- 6) Encourage the students to discuss their choices as they go along, as not all items will fit neatly in either side of the divide.
- 7) Once everyone has finished - ask each group to nominate one item they chose for high packaging and an item they chose for low packaging and explain why they chose them.
- 8) Conclude the lesson with a discussion – students may be shocked when they start to do the exercise about how much packaging there is and how hard it is to avoid packaging.

Discussion questions:

- How do you think learning about high and low packaging waste will influence the way you shop?
- Can you think of any items in particular that you could change to help your family reduce its waste footprint?
- Food shopping isn't the only area where there is lots of waste. Can you think of some other areas where food is wasted?

Summation: This activity shows us how significant waste from shopping is once you stop to look at it. It also gives you a chance to reflect on your own buying practices. Remind students that this activity shows why the reduce part of reduce, reuse and recycle is so important and so achievable with a bit of forethought.

3.3 My junk toy

Subject area: Geography, Design and Technology

Suggested timing: This will run over several lessons – once the students get started it may be difficult to stop them.

Summary: Throughout the world kids make their own toys from rubbish. This activity shows students that rubbish can be reused and repurposed as a plaything.

Students will learn: to design, plan and create a toy using assorted collected junk.

Materials:

Copies of *Resource 8: My junk toy*

A large assortment of junk collected by kids (plastic bottles, bicycle inner tubes, plastic packaging, tin cans etc.)

Tools for cutting, fixing, gluing items together, plus paint to decorate.

The activity:

- 1) Prior to the activity ask the students to bring in rubbish items from home. Show the students the video of the turtles made from recycled materials – to inspire them of the possibilities.
- 2) Explain that the material will be used to make a plaything (or art model). You can inspire the students by creating a competition for the best toy.
- 3) Once enough junk has been collected, let the students start to develop their toys (or models) using the materials available.
- 4) Get the students to complete *Resource 8: My junk toy* detailing the toy's name, its special features, every item they used to make the toy and their thoughts on the project. It will be handed in with their toy at the end.
- 5) Encourage students to keep bringing in junk as required.
- 6) Once complete, give the students a chance to share their creation (and what it is made from) with their classmates.

Discussion questions

- What surprised you about this activity?
- Does doing this activity make you think about rubbish differently? How?
- Does doing this activity make you think about buying toys differently? How?
- Why is it better to use junk to make something than just buy it at the shops?

Summary: This activity will show students that making toys or models is a great way to repurpose junk that would otherwise go to the tip. Remind the students where the junk would have gone if they hadn't reused it. Repurposing means using something in a different way to its original use – by using rubbish to make junk we have all repurposed it and had fun along the way.

3.4 Tell the world

Subject area: Geography

Suggested timing: 2 to 3 lessons

Summary: This activity is a chance for students to synthesise their learning into a creative project, such as a poster, PowerPoint or a video.

Students will learn: To creatively communicate their learning on reducing, reusing and recycling waste in Alice Springs – incorporating knowledge acquired from the classroom and the field trip to the Regional Waste Management Facility (RWMF).

Materials:

Poster: A3 paper, pencils, photos from the RWMF

PowerPoints: computer, digital photos from the RWMF

Video: iPads or similar, digital photos from the RWMF

The activity:

- 1) Recap what the students have learnt from the excursion to the RWMF.
- 2) Tell the students that they are going to be developing their own PowerPoint/ video or poster to promote the value of reducing, reusing and recycling waste and how the Alice Springs RWMF (and other waste businesses) are a big part of this.
- 3) The finished product will need to explain why reducing, reusing and recycling is important and have at least two local examples of each - either at the RWMF or elsewhere in Alice Springs.
- 4) Encourage students to use photos from the excursion to illustrate their presentations.
- 5) When students have completed their work, encourage them to share their work with one another.

Discussion Questions

- Based on what you have learnt, do you think your family could recycle or reuse more? How?
- What about your school, do you think your school could recycle or reuse more? How?
- What are some ways schools could do more to reduce their waste footprint? (e.g. buying less packaging, composting).

Summary: There is a lot more to the RWMF than just a place to dump rubbish. Properly used the RWMF can help residents make the most of their waste – reusing and recycling much of it. Soon the class will have the opportunity to come up with an idea and a plan for the school to better manage its waste.

4.0 Time to Act

Subject area: Geography

Suggested timing: One lesson for the scoping activity. The remaining time is dependent on the size of the project.

Summary: The children will decide on one of three possible actions to address waste at the school: a) create a composting program, b) plan and have a no waste lunch day or c) start a recycling/container deposit collection system. They will plan how to implement this solution by using project-planning methodology.

Students will learn: to approach a problem from a range of differing perspectives and jointly devise a possible solution. Students will investigate and plan a solution to the school waste problem using knowledge they have acquired over the unit of work.

The activity:

- 1) Introduce the three possible activities that your class could do to combat waste at the school: create a class compost, organise a naked lunch day or start a recycling/container deposit collection system at school. Students might have their own ideas they want to go with.
- 2) As a class, conduct SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) on each of the three ideas proposed.
- 3) After reviewing the SWOT analysis, decide as a class which idea is the most achievable and best to go with.
- 4) Start planning the project. Here are some project-planning tools to get your project underway:

<http://www.studygs.net/orgstr1.htm>



The projects:

1) Creating a class compost:

Creating a class compost is a hands-on and straightforward way for the class to reduce its waste footprint – by ensuring all organics are composted. You can watch Costa's video for inspiration at *Costa's Guide to Household Composting* (3:31)

<http://www.youtube.com/watch?v=HngvowScx6g>

There are many lesson plans for making your own classroom compost. Here is one:

<http://www.newaste.org.au/assets/compost-with-gh-lesson-planfinal.doc>

2) Recycling at school:

Students know what can be recycled at school – you can put your heads together as a class to create a plan for recycling at school using the NT Container Deposit Scheme and start your own container collection and recycling system.

The NT Container Deposit Scheme

<http://www.ntepa.nt.gov.au/container-deposits>

3) Naked lunch day

Imagine a lunch without packaging. What a challenge – but it can be done – especially if students invest in hard lunch boxes with separate compartments first. There are plenty of educational sites on planning a nude lunch day.

WA Waste authority has made a whole unit on it:

http://www.wasteauthority.wa.gov.au/media/files/wws/Waste_Free_Lunch.pdf

Here's the steps from SA Wipe Out Waste website

http://www.wow.sa.gov.au/uploads/1/9/2/6/19269635/nude_food_steps_for_schools.pdf

Waste Free lunch video: <https://www.youtube.com/watch?v=CA8Z7CeJlSY>

Here is a fact sheet to get you started: <http://www.newaste.org.au/assets/low-waste-lunch.pdf>

Whatever the project you choose ensure your class shares your project with the wider world: it can be with an assembly presentation, a newspaper article, a story in the school newsletter or a YouTube video - just some way to share your successes.

Summation: There is nothing like a hands-on project to inspire students to learn as they do. Through deciding upon a waste solution and working together to make it happen students should feel motivated that the course was more than 'just talk'. This will be a great reward for the hard work to date.

Resources

Resource 1: Reducing, reusing and recycling in the Territory

Part 1a) Watch the first two minutes of the Darwin City Council video *Recycling@TheTop* <http://www.darwin.nt.gov.au/live/recycling-and-waste/recyclingfacts> and answer the questions below.

1. What are the three R's to reduce waste?

2. Why is it important to reduce, reuse and recycle?

3. How much rubbish can a garbage truck carry?

4. How many truck of rubbish do they throw away in Darwin each year?

5. What could the rubbish from the average Aussie family fill each year?

6. This video is based in Darwin. What is one big difference between recycling in Darwin and Recycling in Alice Springs?

7. What are some positive ways they are recycling in Darwin?

Part 1b) Watch the *Waste and Recycling in Alice Springs* video and answer the questions below.
Here is the link: <http://alec.org.au/programs-2/desertsmart/recycling-in-alice-springs.html>

1. Why did the council decide to get a glass crusher?

2. What are they using the glass for?

3. Is this an example of reducing, reusing or recycling? Explain.

4. How does Alice Waste Disposal recycle the rubber from tyres?

5. Name two things the recycled rubber can be used for?

6. Why do you think it's better to recycle rubber than throw away tyres?

7. Can you think of any other good uses for old tyres? Explain.

Part 2) Here are some suggestion as to how you can reduce, reuse and recycle plastic shopping bags. See if you can add a few more of your own ideas in the boxes provided.

	Example of Actions
Avoid	Don't use any plastic bags at all – find other ways to carry your shopping
Reduce	Say no to plastic bags from shops whenever possible
	Fit more items into one plastic bag
	Use a reusable bag instead of a plastic shopping bag
Reuse	Reuse your plastic bags again and again – take them back next time
Recycle	Take your plastic bags for recycling at your supermarket
Dispose	Put plastic bag in the rubbish bin after you use them



Choose another type of waste and complete the table below. See how many ideas you have for each step.

Type of Waste: _____

	Example of Actions
Avoid	
Reduce	
Reuse	
Recycle	
Dispose	

Resource 2: People involved in the Alice Springs waste story

There are lots of characters involved in managing waste in Alice Springs. Here are just a few.

A Street in Alice Springs

A resident and their wheelie bin



Hi, I'm Carmel and I live in Alice Springs. Every week I take my wheelie bin out to the street to be picked up by the rubbish truck. It may seem like the end of it for me, but for my rubbish it is just the start of its journey to the landfill.

Rubbish truck driver

I drive a rubbish trucks in Alice Springs. I pick up your wheelie bin and over 6000 bins from around town and take them to the Alice Springs Regional Waste Management Facility (RWMF). Once I get to the RWMF I drive up the hill to the landfill and empty out all the waste.



The Alice Springs RWMF

Hi, I'm Ben I'm the supervisor at the RWMF. Most of the time – residents can't visit the **landfill** themselves. But if you want to see where the rubbish trucks go you'll have to hop in my ute and check out the different parts of the landfill.





Compactor Driver

You can't see me but I'm driving this **compactor**. All rubbish coming into the landfill from the rubbish trucks is first compacted (or squashed) using this compactor truck. Can you see how the spiky metal wheels rip up the rubbish and squash it at the same time? After the rubbish is compacted I use a front-end loader to cover the rubbish with soil. Once I've crushed your rubbish it can't be used anymore so make sure you separate out all the recyclables first.

Glass Crusher Operator

I also work the **glass crusher**. I'm hiding in there amongst the machinery. I take this pile of old bottles and crush them up into crushed glass using this machine here. Then we sell the crushed glass to people for using use in their gardens or for making concrete.



Chipper Operator

I work the **chipper**. It turns the **green waste** or garden clippings you leave at the transfer station into a thick **mulch**. We leave this to break down into mulch for several weeks and then we sell it off to people to use in their gardens or use it to landscape Council's parks and gardens.

Concrete Crusher

Yes I'm busy, I even crush up old concrete so it can be used again. These bollards here are made of reused **crushed concrete**. We also sell it off to builders for use as road base.



The Rediscovery Centre



Furniture Maker at Rediscovery Centre

G'day I'm Martin. I work here at the tip shop or Rediscovery Centre. I've been employed to **turn waste pallets into furniture** such as arm chairs and tables. To do this I take the wood off packing pallets and use it to build all kinds of furniture. What I love the most is finding the perfect thing and it finding me.

Morning I'm Al, I'm a local **junk sculptor** and I regularly visit the Rediscovery Centre out here at the tip to find bits and pieces to incorporate into my art. My next project in 2016 will be working with school kids to create a flock of sheep out of all recycled materials.



Hi my name is Oliver and I run **The Rediscovery Centre** – also known as the tip shop. You can drop off your old goods here for free as long as it can still be used. We accept almost anything as long as it's not complete broken – this includes building materials, books, toys, old furniture even old prams. Then we sell this stuff for a very good price.

Hi, my name is Hayley Michener, I am Council's Environment Officer. Residents can now recycle paper, cardboard and glossy magazines for free at the Regional Waste Management Facility. These materials are baled into 500 kg cubes and sent interstate, where they are recycled back into paper products such as cardboard boxes. We also have a free electronic waste drop off at the Regional Waste Management Facility once a month! So bring your old computers and televisions to be recycled.



The Transfer Station

My name is Tina I'm currently working in the **weighbridge** here at the Alice Springs RWMF. This is your first port of call when you come to the dump. I direct people to where they go so they can drop off goods at the transfer station or at the landfill.



Hi, it's Ben again. One thing I do is make sure people use the **transfer station** properly. The way it works is there is a row of different bins for different types of waste such as general waste (or household waste), green waste (or garden cuttings), steel, cardboard and demolition waste from building sites as well as areas for glass, aluminum cans and things to go to the Rediscovery Centre. Using the transfer station correctly makes it easier to recycle and reuse things because the different materials are separated ready to be taken to different areas for recycling or reuse.

We use hook trucks to take the containers to different areas of the tip. So the green waste goes to the green waste pile and the steel goes to the steel pile so it's ready for reuse or recycling.



Recycling other places in Alice Springs



Tyre Recycler

My name is Fritz Henke. I own a business called **Alice Waste**. As well as having a fleet of rubbish trucks we recycle rubber from car and truck tyres. We grind tyres up in our machines then we use the rubber to make a whole range of different rubber products. We make rubber sleepers, wheel chair ramps, rubber mats and we also make a lot of soft fall for kids playgrounds.

Hi, I'm Liz Driver. I manage **Russ Driver and Co Recycling Services** with my

husband Russ. You can drop off all your old recyclables here at Russ Drivers at 58 Sargent Street. That includes tin cans, aluminum cans, glass bottles and old metal items like fridges. Or you can give us a ring and we can drop off old 44-gallon drums for recycling, which we can pick up once they're full.



Hi my name is Bruce Park I work for **Envirobank** in Alice Springs. We look after the 10 cent Container Deposit Scheme for NT Government. We will take your drink bottles, can, water bottles, flavoured milk and liquid paper board containers like poppers and give you 10 cents in return. You can bring your containers in on any day between 8am and 4 pm or the first Saturday of the month between 8am and 12pm and we'll count them out and pay you cash on the day.

My name is Kevin – or Bill and I run **Recyclabill**. It's a recycling service where I drop off yellow wheelie bins, which you can fill with recyclables (such as drink containers, aluminum cans, steel and glass). Once your bin is full just give me a ring and I'll swap the bin over and take your recyclables with me. It's a win/win situation. I make money out of your recycling and you can rest assured that you are doing your bit for the planet.



Resource 2 (cont.): Labels for the Alice Springs Waste Minimisation Pyramid

Cut out the labels below and place them on your own Waste Minimisation pyramid according to whether they are an example of reducing, reusing, recycling or disposing of waste. Note some may fit in two areas – if so make up two labels in the two different areas and paste them on.

A resident and their wheelie bin	Rubbish truck driver
Compactor driver	Glass crusher operator
Chipper operator	Concrete crusher
Furniture maker at Rediscovery Centre	Junk Sculptor
Manager Rediscovery Centre	Tyre Recycler
Recycling Services Manager	Envirobank – container deposit scheme
Recyclabill	Manager Rediscovery Centre
Transfer station supervisor	Hook truck driver at transfer station

Resource 3: Reducing, reusing, recycling in Alice Springs

Sheet 1: Rediscovery Centre

Name: Oliver Eclipse

Where: The Rediscovery Centre

Job: Team leader at the Rediscovery Centre



Q1) How does the Rediscovery Centre work? What can people drop off here?

Everything... to an extent, of course, we don't want absolute rubbish. Even slightly broken furniture we'll take because we have Martin here now that fixes furniture up and brings it back to life, which is a great thing. So just about anything we'll take as long as it's not completely broken.

Let's see, we'll take old fish tanks, art, knick-knacks, glass, steel, wooden posts from people's gardens, bathtubs and sinks. For household goods we'll take plates, children's toys, we have lots of books, lots of videos, lots of DVDs and records as well. We even have tag and testing done here, which means you can bring electrical equipment down here, as long as it works again. We'll plug it in and test it and then we resell it.

Q2) Do people ever drop off things you can't sell?

Yes, all the time. That's why it's really important for us to view it before you do drop it off. So we are not left with the waste and the rubbish. You come around the side of the shop and there is a drop off area – it says there quite boldly just to come and see somebody in the shop and we can have a quick look at it and decide from there if we'd like to take it or not.

Q3) How are people reducing waste by coming to thing to the Rediscovery Centre?

Rather than items going to the landfill, we can get a look at them and see if they're resalable. What you'll see when you come down here is the fact that there is a lot that can be resold. It doesn't have to be perfect as long as it works.

Q4) What would you say to people interested in having a look at the Rediscovery Centre? Any bargains?

If you want to see what's around, I'd basically to say come down. The whole shop is a bargain. Books are 50 cents, we've got DVDs for 50 cents. What we sell changes every day, not even once a week - it changes continuously. It's worth coming back every so often as well. A lot of customers just keep coming – they do and eventually they walk away very happy.

Sheet 2: Transfer Station

Name: Ben

Job: Supervisor at the RWMF Rediscovery Centre

Q1) What is a transfer station? Why have you put one in at the Alice Springs WMF?

The main reason the transfer station was put in is to have more facilities for recycling and the separation of waste. The way it works is we have green waste bins for putting green waste in, demolition bins for putting building waste in etc.

Q2) So you're saying it gives customers a chance to separate it for you and that makes it easier for you to recycle?

Yes, because we have all the set out bins and the bins get taken to a designated area for reuse, recycling or disposal. Before a transfer station was put in everything was thrown in together – so you'd have good recyclable timber that would be covered in food scraps – so you can't use anything. By having separate bins we don't end up with good recyclable stuff being covered in food scraps. So it's really important people using the transfer station make sure they put the right type of waste in the right bin.



Q3) When do people typically go to use a transfer station?

Anytime anyone brings a load of rubbish to the tip, it all goes to the transfer station. No one goes to the landfill anymore, it's blocked off to the public. The only people that are allowed at the landfill are council employees and designated contractors that are in big trucks.

Q4) So, how does it all work with the skips at the transfer station? Can you give us an example of where some of the waste in the bins at the transfer station goes?

So for example your green waste, it goes down the back of the landfill and gets put in a stockpile and that stockpile then gets chipped up and turned into garden mulch. That gets sold to the public as garden mulch. That's where the transfer station really works - if that green waste was mixed in with general waste you wouldn't be able to separate it, it would end up in landfill and buried for no reason. At least anything that comes in as green waste now goes out as mulch. Another example is demolition waste. If there are any bricks or tiles we try to save them and sell them at the Rediscovery Centre. Timber, any good timber, now we have someone making furniture we try to put that aside and make furniture out of it or just sell it as lengths of timbers. All the steel gets put in a stockpile so once a year it all gets bailed up and sent away to Adelaide.

Sheet 3: The Landfill

Name: Mark Craig

Job: Machinery Operator on the landfill at RWMF. I drive the compactor truck, hook truck, front-end loader, excavator all the machines we have here at the tip.



Q1) Where does all this rubbish come from?

Most of it comes from households, from the kerbside pickup of your wheelie bins. Skip bins that have been around on building sites also come here. And then the general waste from our transfer station (that's your putrescible waste) that goes up here too. Some days you can have a dump truck coming in every half hour or more. We probably get around thirty to forty trucks a day.

Q2) What happens to the rubbish once it's dumped here? I look around I can only see this rubbish here, where has all the other rubbish gone?

It's all buried in the landfill. That hill that you drive up – it's all rubbish that has been buried and compacted in. So from ground level at the tip shop – if you look up the hill from the tip shop all that rubbish from ground level and that's been built up over the years. And where the top of the hill is out the back it all just gets put in there, compacted at a certain rate and then we cover it with dirt.

Q3) Does anything from the landfill ever make it back to the Rediscovery Centre? Or is that once it's there it's too late?

For a lot of things – once it's in general waste and compacted with other waste it is too late. But not for everything. We have what we call scavenger crews – they go up there most days for a little bit going through what people put in the landfill. They take out bits of furniture, timber, bits of steel anything that's reusable we pull out. Some people's waste is not really waste.

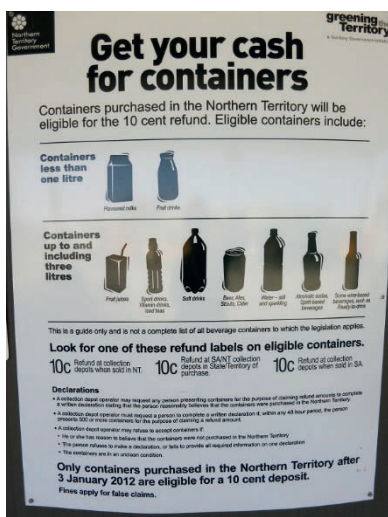
Q4) How can Alice Springs people help make less of this rubbish?

By recycling more and not throwing so much into their green bins. Coming and using the service we have to offer where you split waste up at the transfer station. Or even if you've got something to get rid of, instead of just instantly throwing it out bring it to the tip shop because a lot of that stuff we'll take it as a donation. It costs you nothing to get rid of it and we can sell it on and it doesn't end up in landfill.

Sheet 4: Envirobank: cash for drink containers

Name: Bruce Parker

Job: Operations Manager at Alice Springs Envirobank at 39 Cameron St in Alice Springs. I make sure everything runs smoothly when people come in to drop in drink containers and get their 10 cent refund.



Q1) How does Envirobank work?

People can bring in their cans, water bottles and drink bottles and receive a 10 cent refund on every single item that has the 10 cents stamp on it. We will pay cash and refund on the day. People can come in from Monday to Friday from 8am to 4pm and the first Saturday of every month from 8am to 12pm.

Q2) What types of containers do you accept?

Pretty much any drink containers as long as they aren't too big. Flavoured milk containers, fruit drink up to 1 litre in size and all your

plastic bottles, aluminum cans, fruit juice containers, beer bottles up to 3 litres in size. If it has the 10 cents stamp on it you can cash it in. We also ask that you bring all bottles without the lids on as they can't be recycled as easily.

Q3) Who are your main customers?

Hotels, caravan parks and recycling providers like Russ Drivers and Recyclabill are our main commercial customers. They often have between \$500 and \$1000 worth of containers in a single drop off. We also have schools and private individuals that want to get some money back themselves coming in.

Q4) What do you do with all the containers?





We sort through them, bundle them up into different types of containers and then ship them to South Australia for recycling.

Q5) Why is returning drink containers important?

Returning drink containers reduces the amount of rubbish going to landfill or ending up in the environment, it increases recycling rates which means less raw material is needed for new products and it lowers greenhouse gas emissions.

Resource 4: Conducting a lunch box audit

School lunchtime litter tally

Item	Number	Weight (g)	Can we reuse or recycle it? If so how?
Soft plastic - non-recyclable 			
Drink Containers - Recyclable 			
Food waste - Compostable 			
Paper - Reusable 			
Other general waste - Non-recyclable			
Total			

1. What was the most common type of waste? Is it recyclable?

2. What could have been used instead? Explain.

3. What was the heaviest type of waste? Is it recyclable or compostable?

4. What parts of your lunch waste were non-recyclable?

5. What can you do to reduce the amount of packaging that you throw away with your lunch?

6. How do you rate your lunchbox in regards to packaging? (Circle your answer)

Excellent

Good

OK

Could be better

Terrible

Resource 5: Unpacking the Residential Recycling Directory

Do you know how to recycle in Alice Springs? The Alice Springs Town Council (ASTC) Residential Recycling Directory shows you where to take different types of items for recycling. This directory is packed with information from where to take your old clothes to how to make money from your empty cans. Take a look and see if you can complete the following questions.

To complete this sheet you will need to have a copy of the ASTC Residential Recycling Directory on hand you can download it here: [Alice Springs Recycling Directory](#)

1. Look at the Alice Springs Recycling Directory – count how many different types of recyclables are listed across the top row?

2. Using the headings along the top of the table, list all of the types of things you can recycle in Alice Springs?

3. Are there any things in the list that surprise you? Which ones?

4. What type of places are listed going down the page? List 3 examples.

5. What are the two places that are managed by Alice Springs Town Council where you can recycle?

6. What can you recycle for free at the ASTC Regional Waste Management Facility? List 3 examples.

7. What items cost money to recycle at ASTC RWMF?

8. Look at the top row. What can you recycle for free at the ASTC Rediscovery Centre?

9. Look at the tyres column. What is the cheapest place to recycle tyres?

10. Look at the whitegoods/ scrap metal column. Where can you recycle white goods or scrap metal in Alice Springs? Which places cost money and which are free?

11. Where can you take unwanted household goods in Alice Springs?

12. Look at the cans and plastic bottles column – which places in Alice Springs will give you 10c for drink containers?

13. Why do you think there is a separate column for chemicals and oil? (i.e. why can't you include these things in your general rubbish?)

14. What do you think the companies that take scrap metal do with it? Why?

15. Looking at the table, which types of recycling facilities have you or your family used in the past?

16. Are there any types of recycling listed in the Recycling Directory that you think you or your family might use in the future?

17. Extension: Choose one item from the list and research how it is recycled around the world online. Find out where it is recycled, what parts are removed first, how it is recycled and what items are made of the recycled materials? One fantastic site to check out is the Mobile Muster website - <http://www.mobilemuster.com.au/learn-about-recycling/>. It shows you how and where all the components of old mobile phones are recycled around the world.

Resource 6: A Trip to the Tip Workbook

Part 1: Transfer Station

Draw a bird’s eye view map of the Transfer Station. On the map label the different bins and draw one item you would expect to find in each bin. In the table below show where the different types of waste go after they have been put in the bins at the transfer station.



The Transfer Station

What goes in what bin

Type of waste	Where it goes
Green waste	To the green waste pile where it is chipped into mulch and sold on to residents for their gardens.
E-waste	
Steel	
Demolition waste	
Glass	
General waste	
Concrete	
Other_____	

Part 2: Landfill and beyond

- 1) **STOP 1: The weighbridge:** What is the weighbridge for? How does it work?

- 2) How much does your bus weigh? _____ Kg

- 3) **STOP 2: Chemical dump point:** Name two items you can see at the chemical dump point. Why is there a special area for waste chemicals and waste oil?

- 4) **Stop 3: The hill up to the landfill:** What is the landfill hill made of?

- 5) **Stop 4: Metal recycling scrap heap:** Name 3 items you can see on the metal stockpile.

1.

2.

3.

- 6) What happens to the **metal** before it is taken to Adelaide for recycling?

- 7) **Stop 5: Building materials heap:** What can be reused from the demolition waste heap?

8) What happens to the **waste concrete** and how is it reused?

9) **Stop 6: Green waste and mulch piles:** How does the green waste go from being garden waste to mulch?

10) How is this an example of reusing waste?

11) **Stop 7: Glass crusher:** Name three ways the glass is used after it is crushed?

1.

2.

3.

12) **Stop 7: Landfill:** Which part of the waste minimisation hierarchy is the **landfill** about (reduce, reuse, recycle, dispose).

13) Why can't you see very much **rubbish** at the landfill? Where does it all go?

14) What can you see on the landfill? List as many items as you can see at the landfill and then count them.

15) Of the items you have listed above circle the items you think could be recycled (like paper, metal or cardboard), underline the items you think could be reused (like organics or things you could take to the Rediscover Centre), put a line above the items you think could have not have been bought in the first place (like plastic bags).

- 16) Looking at your list: How much of the waste you have listed do you think could have not gone to the landfill if it had been properly sorted?

- 17) Can you see the metal pole in the middle of the landfill? What is it for? How much further does the landfill have to grow according to this pole?

Reflection Questions

- 1) What is the most interesting thing you learnt today?

- 2) How does seeing the waste at the RWMF effect how you think about your rubbish?

- 5) **Extension:** Draw and label your favourite waste management technology

Part 3: Rediscovery Centre Treasure Hunt

Explore the Rediscovery Centre to find an item for each clue and either draw or write the item in the correct box. Remember to 'walk and look', anyone either running or touching will be disqualified. Please share your answers with your friends.

You can eat dinner with it	You'd find it in your bathroom	It's made out of old furniture or wood.
It's educational	You could use to build something	It cost less than \$1
A book	A baby would use it	You wished you had it at home
It has two wheels	You don't know what it is	Something electrical
Something that makes shade	Something broken	Something from the olden days

Resource 7: Review your trip

For each of the types of waste you see on your visit to the RWMF in the table, decide what happens to the waste there, i.e. are they reducing, reusing, recycling or disposing of the waste? Discuss your answers as a group.

Area	Where does it go	What happens to it and is this an example of reducing, reusing, recycling or disposing
E-waste		
Demolition waste		
Metal area		
Green waste		
The glass crusher		
General waste		
Crushed concrete		
The Rediscovery Centre		

Resource 8: My junk toy

Name: _____ Date: _____

Group Members: _____

Toy Name: _____

Description of the toy’s special features

List of materials used
