

ZERO WASTE Education

“Educating Today for a Sustainable Tomorrow”



Rural Recycling

Teachers Guide

Introduction:

Zero Waste Education (ZWE) is an award winning programme which teaches children about sustainable resource use through reducing, reusing, recycling and composting. Established in 1993 ZWE is taught in over 500 schools throughout New Zealand.

This Council funded programme enables children to investigate the link between Earth's natural resources, the products they use and see around them and the resulting waste that pollutes our environment. It empowers them to make decisions to reduce the waste pile by reducing, reusing, recycling and composting and by sharing their knowledge with others.

The programme consists of nine units each focusing on a specific solution to our waste problem. The units alternate each year so students receive new material while building on what they have previously learned. By the time students leave Year 8 they will have received all eight units.

- Years 1 and 2: Is That Rubbish? and The Litterless Lunchbox
- Years 3 and 4: Reduce Unit and Reusing Unit
- Years 5 and 6: Recycling Unit and Composting Unit
- Years 7 and 8: Resource Sustainability Unit and Water Unit

- Years 5-8: Rural Recycling (*specifically for rural and semi-rural schools*)

Unit Plan Overview

Unit plans are provided to assist teachers in undertaking curriculum planning for learning in class. Included in all ZWE unit plans are suggested hands-on extension activities. The unit plan promotes the inquiry learning process using the ZWE *Four R's of Inquiry*. A more detailed version of the inquiry model follows.



The ZWE visit takes place during the 'Research' stage of the inquiry process. During this time students will be immersed in the topic of 'Reducing the Waste Pile' and will cover selected achievement objectives from the New Zealand Curriculum. The aim is for students to build up a knowledge bank and become experts in the topic. Post ZWE, students are given an

opportunity to 'Regroup' as a class and consider the current waste related issues in their school, home or wider community. Students are then able to 'Respond' to a specific issue they are passionate about as group or independently. To 'Reflect' is an important part of the inquiry process and students should be given a chance to review and share what they have learnt and the actions they have taken.

Timetabling

This unit consist of four 45-minute lessons. Teachers can opt for one 45-minute session over four days, or two 90-minute sessions (with a 10-minute break mid-session). All lessons are taught by specialist educator.

Teacher Obligations

We ask that teachers remain in their classroom for the duration of all lessons.

Workbooks

Each student receives their own workbook to complete during the ZWE lessons. At the end of the unit students are encouraged to take their books home to share their learning. The workbook also includes formative assessment tasks which are completed under the guidance of the educator. Each formative assessment task focuses on the key learning intentions for the lesson and can also be used by the classroom teacher.

Marking Template

A marking template is provided for the classroom teacher, this outlines answers to the formative assessment tasks in the student workbooks.

Rural Recycling Unit

Students explore different types of waste found on a rural property, farm, orchard or lifestyle block and how they are disposed of. They will learn about the 3 B's (burning, burying and bulk storing of chemicals) and how damaging these practices are to human, animal and environmental health. They will research and explore alternatives to the 3 B's that look after the environment and their health.

After the ZWE visit teachers are encouraged to continue the learning through an inquiry learning process, detailed below.

Homework

A small amount of homework is required of students. The homework tasks are designed to be a fun way for students to share their learning and explore waste minimisation at home.

Literacy Integration

A list of relevant journal and 'connected' articles is provided at the end of this document. Some suggested ways for integrating this unit into your literacy programme follow.

Persuasive Writing: A take back system (with cents reward) for plastic, glass, steel and aluminum bottles and containers should be implemented in New Zealand again. All plastic packaging should be made for #1 or #2 plastics only. Students write a letter to the appropriate person in government or a packaging company arguing their point on one of these topics.

Explanation Writing: Explain what happens to when waste is buried or burned on a farm or orchard and the effect this has on human, animal and environmental health.

Visual Language: Student publish a poster, info brochure, e-book or create a video to highlight the problems and solutions with rural waste and recycling.

Curriculum Planner

Zero Waste – Rural Recycling			
Values: Community & participation. Ecological sustainability.	Key Competencies: Using language, symbols, texts. Participating & contributing.	Principles: Future Focus – sustainability.	Learning Areas: Social Sciences Health and PE
Possible Achievement Objectives: Social Science (Level 2) Students will gain knowledge, skills and experience to: <ul style="list-style-type: none"> • <i>Understand that people have social, cultural and economic roles, rights and responsibilities.</i> • <i>Understand how places influence people and people influence places.</i> Social Science (Level 3) Students will gain knowledge, skills and experience to: <ul style="list-style-type: none"> • <i>Understand how people make decisions about access to and use of resources.</i> Social Science (Level 3) Students will gain knowledge, skills and experience to: <ul style="list-style-type: none"> • <i>Understand how producers and consumers exercise their rights and meet their responsibilities.</i> • <i>Understand how people participate individually and collectively in response to community challenges.</i> 			
Health & Physical Education (level 2) Healthy Communities and Environments: Students will: Societal attitudes and values <ul style="list-style-type: none"> • <i>Explore how people’s attitudes, values and actions contribute to healthy physical and social environments.</i> Health & Physical Education (level 3) Healthy Communities and Environments: People and the environment <ul style="list-style-type: none"> • <i>Plan and implement a programme to enhance an identified social or physical aspect of their classroom or school environment.</i> 			

Suggested Inquiry Process

<p>Inquiry stage: Research</p>	
<p>Pre-visit: Check in: what do we already know about Zero Waste? <i>Think, Pair, Share (class brainstorm)</i>. Explore concepts: <i>natural resources, products, waste</i>. What are these and where can we find them?</p>	
<p>During visit: Most of the <i>research</i> stage takes place during the ZWE visit with the educator. The learning intentions and assessment tasks in this stage are based around the ZWE lessons, activities, workbook and marking template. Each assessment task below relates to a workbook activity (see ZWE marking template for more information).</p>	
<p>Learning Intentions:</p> <p>Students will be able to identify items of waste commonly found in rural settings, farms, orchards or life style blocks.</p> <p>Students will understand what the 3 B's are and the affect they can have on human, animal and environmental health.</p> <p>Students will research and discuss the recycling options available in their community.</p> <p>Students will be able to identify rural waste on their own property and learn how it is disposed of.</p>	<p>Workbook Assessment Activities:</p> <p>A1: Students identify waste they have seen at home or in rural settings and explain how they are disposed of.</p> <p>A2: Students connect the action of burning, burying and bulk storing (chemicals) with the impact they have on human, animal and environmental health.</p> <p>A3: Students complete an online investigation of rural recycling options and answer questions to show their findings.</p> <p>A4: Students undertake a home/ rural property investigation to find rural waste, learn how it is disposed of and interview an adult for more information.</p>

<p>Inquiry stage: Regroup</p>	
<p>Learning Intention:</p> <p>Examine the current situation concerning waste in the wider rural community.</p>	<p>Focusing Ideas, Questions:</p> <ul style="list-style-type: none"> - What are the issues? - How might they affect us now or in the future? - Why is it happening? - How do we feel about these issues? - Has our new knowledge changed the way we feel?
<p>Possible Activities:</p> <ul style="list-style-type: none"> - Create a class knowledge bank based on previous and new knowledge. - Discuss the issues using De Bono's Six Thinking Hats. 	

Inquiry stage: Respond

Learning Intention:

Respond to an issue concerning waste in the school or wider community.

Record findings / Improvements

Focusing Ideas, Questions:

- Which issue do we want to respond to?
- Can something be done?
- What could/would happen if...?
- How might we make others aware?
- How can our knowledge and ideas help others?
- How can we influence decisions made by others?
- Who is going to do what? *Who decides?*

Record findings / improvements:

- What sort of information should we show?
- How will we collect it?
- How will we sort and present the information?
- Who is going to do what? *Who decides*

Possible Activities:

- Conduct a waste audit at home, your property or the school to see how much could be recycled. You will need a tarpaulin, some reusable thick gloves (dishwashing gloves are good), choose categories and separate waste from bins into categories. For example, organic, paper, cardboard, recyclable containers (aluminum cans, steel cans, glass bottles and jars and plastics that are recyclable in your area). Once completed record findings and determine improvements that could be made.

Inquiry stage: Reflect

Learning Intention:

Share the learning journey with others, using a variety of ways to convey information.


Focusing Ideas, Questions:


- How has the issue changed?
- What is different? *Is anything different?*
- What evidence do we have to show this?
- Have your feelings changed about the issue?
- What could we do better next time?
- What is left to do?

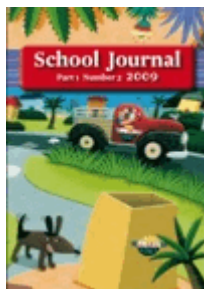
Possible Activities:


- Revisit the class knowledge bank, add to it with new knowledge.
- Explore ways of presenting information and share findings with as many people as possible.
- Create an informational video, organize a school assembly, community meeting or write a story for the local newspaper about rural waste and recycling options.

Additional Resources

Title	Author	Type	Level	Edition	Year
How big is your footprint? 	BILBROUGH, Norman	Article	Year 5	Part 03 No. 01	2011
An article about climate change in the twenty-first century.					

Title	Author	Type	Level	Edition	Year
Plastic Fantastic? 	WERRY, Philippa	Article	Year 6	Part 03 No. 03	2007
This article describes the peril of plastic bags and what's being done to reduce their number.					

Title	Author	Type	Level	Edition	Year
Trash and treasure 	BRASELL, Jill	Play	Year 5	Part 01 No.03	2009
Sadie's spring-cleaning day turns into a neighborhood recycling project. [Fourteen characters]					

Title	Author	Type	Level	Edition	Year
Garden to go 	NOONAN, Diana	Article	Year 5	Part 02 No.2	2009
Here's how you can make a moveable garden and be a creative recycler at the same time.					

Useful Websites:

Agrecovery – rural recycling options

<http://www.agrecovery.co.nz/>

Plasbak – rural recycling options

<https://plasback.co.nz/>

Community Recyclers

<http://communityrecyclers.org.nz/>

Recycling in New Zealand

<http://recycle.co.nz/>

EERST – Paper4Trees

www.paper4trees.co.nz

Love Food Hate Waste

<https://lovefoodhatewaste.co.nz/>

Local Council: Check out your local council's website for other education resources.