

## "WILLY ON WASTE"



The lessons and activities in this Resource Kit are designed to create a basic awareness and knowledge of waste management issues in New Zealand and to equip students with the necessary skills to protect and improve our local environment. Students will implement these skills and feel as if they are playing a role in saving the earth. (It is too easy for them to feel helpless in the face of environmental crisis and do ..... nothing.)

"Willy on Waste", a teacher's Resource Kit on environmental waste has been designed and developed for teachers of Intermediate and Primary school pupils in the Gisborne District by the Environmental Health Section of the Gisborne District Council. In this kit are two programmes - one for J1-J2 and the other for S3-F2.

### **AIMS**

That the students learn how to:

1. Create an awareness and understanding of the waste we create.
2. Change their attitudes and behaviour to achieve waste reduction.
3. Manage their rubbish in our local environment.

### **SKILLS THAT WILL BE USED**

Communication, problem solving skills, work and study skills, numerical skills, information skills, physical skills, social and co-operative skills.

Lessons and activities have been designed to be flexible in both time and age constraints.

The environmental waste lessons can encompass a range of curriculum areas including social studies, economics, language, art and craft and of course science.

This is how it may fit into your **Science** programme based on the Science Strands in the National Curriculum:

1. Making sense of the **Material World**:  
Landfills, reuse, recycle, compost, packaging, litter, hazardous waste.
2. Making sense of the **Living World**:  
Resources.
3. Making sense of **Planet Earth and Beyond**:  
Resources, reduce, litter, hazardous waste.
4. Making sense of **Science and Technology**:  
Waste.

### TOPICS INCLUDED ARE:

- ❖ Environmental Resources
- ❖ Waste
- ❖ Landfills
- ❖ Waste Reduction
- ❖ Reuse
- ❖ Recycling
- ❖ Composting
- ❖ Litter
- ❖ Hazardous Waste and the Effects of Ozone.



### OVERVIEW

The emphasis throughout this kit is to increase students awareness and understanding of waste reduction and recycling by participating in "hands on" individual and classroom activities.

It is to be used in conjunction with the Environmental Health Section of the Gisborne District Council.



As well as the resource material being made available, Gisborne District Council is willing to be involved in the presentation of the material. The level of this involvement to be negotiated with each individual school.

There is no copyright on the material in this kit, so it can be photocopied. It has been designed with photocopying in mind.

It is envisaged that as a student progresses through a school, they will cover all of the material necessary to understand the topic "Environmental Waste" as presented in "Willy on Waste".

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### REFERENCES AND ACKNOWLEDGEMENTS:

**"A Word on Waste"**  
Regional Waste Section  
A.R.C. Environment  
Auckland Regional Council

**"Recycling - Education Resource Kit"**  
Community Business and Environment Centre  
Kaitaia

**"Keep New Zealand Beautiful"**

**"WILLY ON WASTE"** has been printed on Recycled Paper.

- Session 1: RESOURCES** - Everything Comes From the Earth.  
Students will begin to understand the concept of natural resources.  
❖ Examples, discussion, mobile construction.
- Session 2: RESOURCES** - Running out?  
Students learn how natural resources are used and will understand the difference renewable and non-renewable resources.  
❖ Clay activity, discussion, bead game.
- Session 3: WASTE** - Waste Generation has Increased.  
Students will begin to understand that our society has experienced cultural changes which affect the use of natural resources and the production of waste.  
❖ View photos, discussion, visit from elderly person, sorting exercise.
- Session 4: WASTE** - Waste at School.  
Students will learn what waste is and what happens to it. They will understand how waste is handled, collected and disposed of at school and their home.  
❖ Discussion, questions compiled, caretaker visit, waste survey, graphing.
- Session 5: WASTE** - Waste in our Community  
Students will understand what rubbish is made of and that it can vary in composition over time or by location of collection.  
❖ Discussion based on "Gisborne Waste Survey", comparative study.
- Session 6: LANDFILLS** - What is a Landfill?  
Students will understand what a landfill is and how a landfill works.  
❖ Photos, discussion, story or poem, acrostic.

**Session 7: LANDFILLS** - Their problems.

Students will understand some of the problems associated with landfills and conclude that by producing less waste and recycling, we conserve landfill space.

- ❖ Discussion, quantitative calculation, burying experiment.

**Session 8: REDUCE** - Waste Reduction in the Classroom.

Students will understand that waste is not just landfill space and pollution but use of raw materials. Reduction, the first step in minimising waste can start in the classroom.

- ❖ Discussion, sorting exercise, environmentally friendly picnic.

**Session 9: REDUCE** - Shop Objectively / Packaging

Students will realise how much packaging they receive when they purchase a product and will be able to make decisions about excessive and necessary packaging.

- ❖ Supermarket visit, reporting, discussion, brainstorming.

**Session 10: REUSE** - Waste can be Reused.

To show students that some things that are thrown out have value. To introduce them to the concept of reuse as an alternative to disposal.

- ❖ Brainstorming exercise, construction, arts and craft.

**Session 11: RECYCLE** - What is Recycling?

Students will understand that recycling conserves resources, protects the environment, reduces solid waste for disposal and conserves energy.

- ❖ Sorting exercise, discussion.

**Session 12: RECYCLE** - How and where to Recycle.

Students will understand what is recyclable and initiate home recycling.

- ❖ Outside visitor, discussion, construction of pamphlet.

**Session 13: COMPOST** - Organic Waste to Soil Conditioner.

Students will understand that organic waste can, by composting, be made into a natural fertiliser and soil conditioner. They will learn how organic material decomposes.

- ❖ Comparative study, discussion, seed sowing, construct "mini compost bin", leaf litter study.

**Session 14: LITTER** - Waste in the Wrong Place.

Students will understand what litter is and how it can be avoided.

- ❖ Photos, discussion, survey, brainstorming, collage, display, wordsearch.

**Session 15: HAZARDOUS WASTE and OZONE DEPLETION** - What is the Problem?

Students will learn what hazardous products are and will be able to recognise common household examples.

- ❖ Home survey, discussion, categorising, design.

- Session 1: RESOURCES** - Everything Comes from the Earth.  
Students will begin to understand the concept of natural resources.  
❖ Examples, discussion, worksheet.
- Session 2: RESOURCES** - Running out?  
Students learn how natural resources are used and will understand the difference renewable and non-renewable resources.  
❖ Clay activity, discussion, worksheet.
- Session 3: WASTE** - Waste Generation has Increased.  
Students will begin to understand that our society has experienced cultural changes which affect the use of natural resources and the production of waste.  
❖ View photos, discussion, comparative study, sorting exercise.
- Session 4: WASTE** - Waste at School.  
Students will learn what waste is and what happens to it. They will understand how waste is handled, collected and disposed of at school and their home.  
❖ Discussion, questions compiled, caretaker visit, waste survey, weighing, graphing.
- Session 5: WASTE** - Waste in our Community  
Students will understand what rubbish is made of and that it can vary in composition over time or by location of collection.  
❖ Discussion based on "Gisborne Waste Survey", comparative study, worksheet.
- Session 6: LANDFILLS** - What is a Landfill?  
Students will understand what a landfill is and by making their own, will understand how a landfill works.  
❖ Photos, discussion, construction and operation of mini landfill.

**Session 7: LANDFILLS** - Their problems.

Students will understand some of the problems associated with landfills and conclude that by producing less waste and recycling, we conserve landfill space.

- ❖ Video, draw a plan, discussion, quantitative calculation, brainstorming exercise.

**Session 8: REDUCE** - Waste Reduction in the Classroom.

Students will understand that waste is not just landfill space and pollution but use of raw materials. Reduction, the first step in minimising waste can start in the classroom.

- ❖ Discussion, sorting exercise.

**Session 9: REDUCE** - Shop Objectively / Packaging

Students will realise how much packaging they receive when they purchase a product and will be able to make decisions about excessive and necessary packaging.

- ❖ Shopping survey, worksheet, discussion.

**Session 10: REUSE** - Waste can be Reused.

To show students that some things that are thrown out have value. To introduce them to the concept of reuse as an alternative to disposal.

- ❖ Brainstorming exercise, construction, arts and craft.

**Session 11: RECYCLE** - What is Recycling?

Students will understand that recycling conserves resources, protects the environment, reduces solid waste for disposal and conserves energy.

- ❖ Sorting exercise, flow chart, presentation.

**Session 12: RECYCLE** - How and where to Recycle.

Students will understand what is recyclable and initiate home recycling kits.

- ❖ Discussion, construction of pamphlet, stickers, floor plan, report.



**Session 13: COMPOST** - Organic Waste to Soil Conditioner.

Students will understand that organic waste can, by composting, be made into a natural fertiliser and soil conditioner. They will learn how to make compost.

- ❖ Comparative study, discussion, construction and maintenance of compost scheme.

**Session 14: LITTER** - Waste in the Wrong Place.

Students will understand what litter is and how it can be avoided.

- ❖ Photos, discussion, worksheet, survey, brainstorming, collage, display.

**Session 15: HAZARDOUS WASTE and OZONE DEPLETION** - What is the Problem?

Students will learn what hazardous products are and will be able to recognise common household examples.

- ❖ Home survey, discussion, categorising, design.

### WASTE / RECYCLING EXCURSIONS

Local visits should be made in conjunction with this programme.

Perhaps the class could be divided into three groups, each visiting, making notes, taking photos and reporting back to the class.

### SUGGESTED VISITS

#### 1. Landfill Visit

For health and safety reasons, visits to the Paokahu Landfill are fairly restricted.

Groups of students could visit the site in a minibus, or parents cars and view it from the vehicle, taking photos if necessary. They should consider:

- ❖ Does it smell?
- ❖ Is rubbish being blown around?
- ❖ Is it well covered?
- ❖ What wildlife can they see?
- ❖ Is there much vehicular activity?
- ❖ What machines are present?
- ❖ What other collections / activities are going on at the landfill site?

#### 2. Local Supermarket Visit

Assign each student a type of product (e.g. meat, bread, milk, lollies, cheese, bananas, soda pop etc) and ask that they notice how it's packaged.

- ❖ How is it packaged?
- ❖ Is there a choice of packaging for the product e.g. fizzy drink in glass bottle, aluminium can or plastic bottle?
- ❖ What is the packaging used for (protection, identifying product etc)?
- ❖ Can it be recycled or reused?
- ❖ Could the product be wrapped with less packaging?

#### 3. Recycling Station Visit

Arrange for the students to visit Gisborne Paper Salvage - contact Duncan McIntosh, telephone 867 6209.

Facts to find out:

- ❖ How far is the centre from school?
- ❖ What hours is the centre open?
- ❖ Do many people use the centre?
- ❖ Do they pick up from other collection centres?
- ❖ What are these?
- ❖ What sort of materials does the centre accept?
- ❖ What materials are recycled the most?
- ❖ What are their markets?
- ❖ How is recycling promoted?

### ARTICLES

Collect and display newspaper and magazine articles to find out about environmental waste issues.



Do people in your community support recycling? What do they do about it? Here are some questions to ask your family, friends, neighbours and local business people.

## HOUSEHOLDS

1. Does your area have a door-to-door collection for recyclables? **Don't know**
2. If yes, does anyone in your household put recyclables out for collection. **Yes No**
3. If no, would you put recyclables out for a door-to-door collection if your area had one? **Yes No Don't know**
4. Do you or does anyone in your household take recyclables to a collection centre? **Yes No**
5. What recyclables do you return: *(tick box)*  

<input type="checkbox"/> Paper	<input type="checkbox"/> Glass	<input type="checkbox"/> Oil
<input type="checkbox"/> Plastics	<input type="checkbox"/> Cardboard	<input type="checkbox"/> Aluminium
<input type="checkbox"/> Cloth	<input type="checkbox"/> Other	<input type="checkbox"/> Other metals
6. If there is no collection centre in your area, would you use one if it was available? **Yes No Don't know**
7. Do you buy products that come in recyclable packaging? **Yes No Don't know**
8. Do you think it is worth paying a little more for such products? **Yes No Don't know**
9. Do you buy re-refined motor oil? **Yes No**
10. Do you have a home composting system? **Yes No**
11. If you buy a product in a spray can, do you check to see if it contains CFC's? **Yes No**
12. Do you think there are enough incentives for people to recycle their rubbish? **Yes No**
13. If no, what other incentives do you think are needed?  

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14. Should local authorities participate in and support recycling? **Yes No**

## BUSINESSES

- |   |            |           |                   |
|---|------------|-----------|-------------------|
| 1. Does your business recycle any products or packaging?  | <b>Yes</b> | <b>No</b> |                   |
| 2. If yes, what does it recycle?  |            |           |                   |
| _____   |            |           |                   |
| _____   |            |           |                   |
| 3. Does your business sell any products made from recycled materials or using recycled packaging? | <b>Yes</b> | <b>No</b> |                   |
| 4. If yes, what products are these?   |            |           |                   |
| _____   |            |           |                   |
| _____   |            |           |                   |
| 5. Is there a collection service that picks up recyclables from your business?                    | <b>Yes</b> | <b>No</b> |                   |
| 6. If no, would you use this kind of service if it was available?                                 | <b>Yes</b> | <b>No</b> |                   |
| 7. Do you advertise any of your products as being made from recycled materials?                   | <b>Yes</b> | <b>No</b> |                   |
| 8. When people buy something from you, do you always wrap it unless they ask you not to?          | <b>Yes</b> | <b>No</b> |                   |
| 9. What kind of wrapping do you use?  |            |           |                   |
| _____   |            |           |                   |
| _____   |            |           |                   |
| 10. Does your business sell any products in bulk?   | <b>Yes</b> | <b>No</b> |                   |
| 11. If yes, what products are these?  |            |           |                   |
| _____   |            |           |                   |
| _____   |            |           |                   |
| _____   |            |           |                   |
| 12. Does recycling save your business any money?  | <b>Yes</b> | <b>No</b> | <b>Don't know</b> |
| 13. If yes, how does it do this?  |            |           |                   |
| _____   |            |           |                   |
| _____   |            |           |                   |
| _____   |            |           |                   |
| 14. Does your business sell any products in spray cans that use CFC's?                            | <b>Yes</b> | <b>No</b> |                   |
| 15. Would you be willing to use your business as a depot for collecting recyclables?              | <b>Yes</b> | <b>No</b> |                   |

**THANK YOU FOR TAKING THE TIME  
TO ANSWER THESE QUESTIONS**

