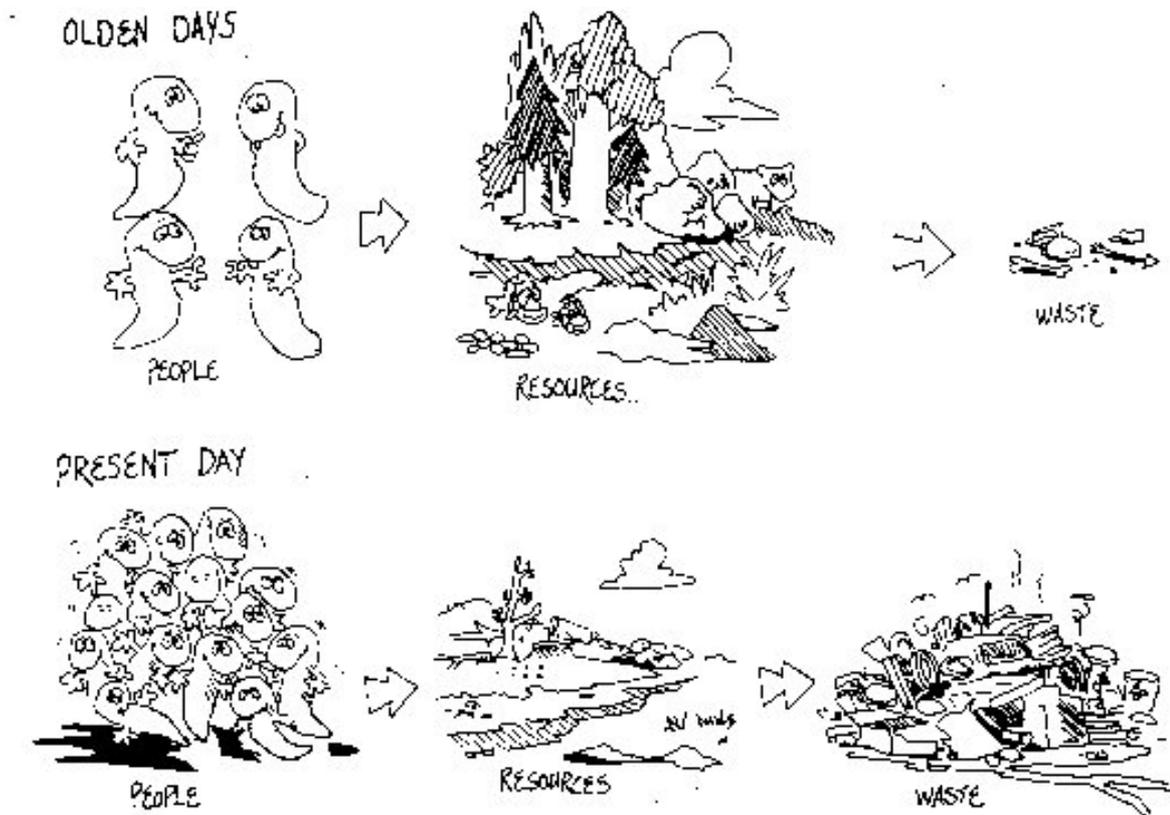


# WASTE

Waste Generation has Increased  
Since Our Great Grandparent's Day



## OBJECTIVES:

Students will begin to understand that our society has experienced cultural changes which affect the use of natural resources and the production of waste.

## BACKGROUND INFORMATION:

Not only has increased population put pressure on the earth's resources, our standard of living and our sophisticated technologies have also taken their toll on resources, particularly non-renewable resources. As well, we are producing vast amounts of waste which are seriously harming our planet.

### **Class Plan (Levels 1 and 2)**

1. View old photos of "Great Grandmother". Students discuss what great grandmother is doing and how this differs from the same activity today (clothes, toys, shopping, eating, garden).
2. Invite a grandparent to the classroom. Ask them how things have changed over time. What waste did they have when they were young? What happened to their waste?
3. Discuss / report on life before supermarkets.
4. Just as great great grandmother's housing and transportation differed from ours, so too did her rubbish. Students choose an item from the rubbish bag and decide whether it belongs in "Ours" bin or the "Great Great Grandmother's" bin. Students explain why they put the item into the container they chose, e.g. technology changes - plastics.

#### **Materials:**

- ▶▶ Photos (300 x 300mm).
- ▶▶ Bag of 'clean' rubbish (include bones, vegetable waste, crockery, glass, tins, packaging, clothes, toys, electrical appliances, ball-point pens, paper plates).

### **Class Plan (Levels 3 and 4)**

1. View old photos of "Great Grandmother". Students discuss what great grandmother is doing and how this differs from the same activity today, (clothes, toys, shopping, eating, garden).
2. Students fill out Worksheet: "Once Upon a Time".
3. Just as great great grandmother's housing and transportation differed from ours, so too did her rubbish. Students choose an item from the rubbish bag and decide whether it belongs in "Ours" bin or the "Great Great Grandmother's" bin. Students explain why they put the item into the container they chose, e.g. technology changes - plastics.
4. Compare the benefits and problems of waste then and now.

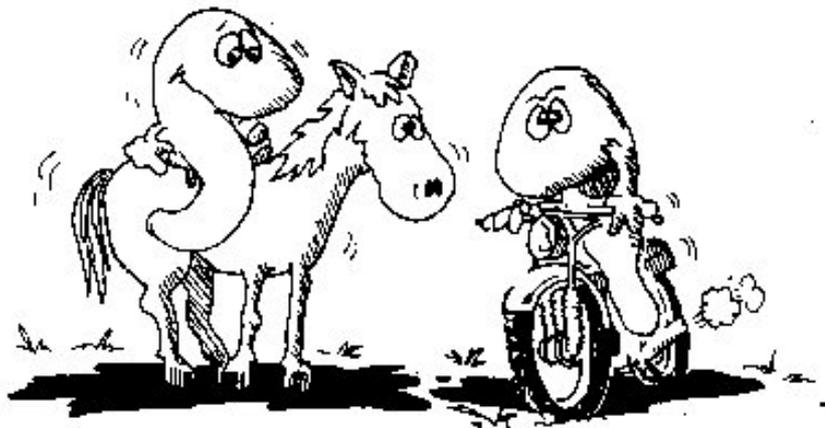
#### **Materials:**

- ▶▶ Photos (300 x 300mm).
- ▶▶ Worksheet.
- ▶▶ Bag of 'clean' rubbish (include bones, vegetable waste, crockery, glass, tins, packaging, clothes, toys, electrical appliances, ball-point pens, paper plates).
- ▶▶ Two empty containers labelled "Ours" and "Great Grandmothers".

# WORKSHEET

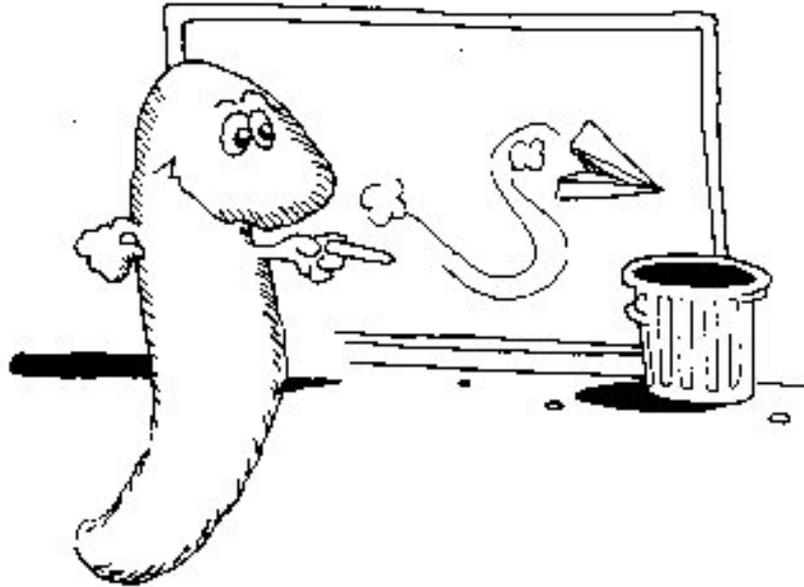
## "ONCE UPON A TIME"

	1900	Today
Clothing		
Transport		
Food		
Toys		
Homes		



WASTE

**Where Does School Waste Come From and Where Does It Go?  
Who Takes Care of Waste at School?**



**OBJECTIVES:**

Students will learn what waste is and what happens to it. Students will understand how waste is handled, collected and disposed of at school and their home.

**BACKGROUND INFORMATION:**

Waste is any human-made or natural material that is discarded. Waste is created from the use of materials in activities such as eating, cleaning, recreation etc.

## Class Plan (Levels 1 and 2)

### 1. Questions

To lead into this activity, initiate a discussion based on the following questions:

- ❖ Who knows that waste or rubbish is?
- ❖ What are some other names we have for waste? (Trash, garbage, rubbish, litter etc.)
- ❖ Where do we put our classroom waste? (Bin, sink, fire.)
- ❖ What happens to our waste when it leaves the classroom?
- ❖ What kinds of waste do we throw away? (At home and at school.)  
Make a list.

### 2. Invite the School Caretaker to the class to talk about what waste is, how it is collected and handled, and where it is taken from the school. Prepare questions in advance such as:

- ❖ What is our school's waste made of?
- ❖ Where is rubbish collected at school?
- ❖ How often is it collected?
- ❖ How much does the school throw away each week – year?
- ❖ How much is incinerated?
- ❖ Where is rubbish taken?
- ❖ What happens to it?

### 3. Children conduct a survey. Collect all rubbish discarded by the class for several days. Lay a sheet on the floor, dump the rubbish on it and have students sort it (using plastic gloves) according to category, i.e. paper, plastic, metal. Brainstorm the physical properties they used to decide which category to place each piece of rubbish into e.g. shape, texture, pliable, brittle, elastic, colour, size, smell etc.

### 4. Graph or tally graph the results.

#### Materials:

- ▶▶ Sheet for sorting.
- ▶▶ Rubber gloves for each student.

## Class Plan (Levels 3 and 4)

1. **Questions**

To lead into this activity, initiate a discussion based on the following questions:

- ❖ Who knows that waste or rubbish is?
- ❖ What are some other names we have for waste? (Trash, garbage, rubbish, litter etc.)
- ❖ Where do we put our classroom waste? (Bin, sink, fire.)
- ❖ What happens to our waste when it leaves the classroom?
- ❖ What kinds of waste do we throw away? (At home and at school.)  
Make a list.

2. Invite the School Caretaker to the class to talk about what waste is, how it is collected and handled, and where it is taken from the school. Prepare questions in advance such as:

- ❖ What is our school's waste made of?
- ❖ Where is rubbish collected at school?
- ❖ How often is it collected?
- ❖ How much does the school throw away each week – year?
- ❖ How much is incinerated?
- ❖ Where is rubbish taken?
- ❖ What happens to it?

3. Children conduct a survey. Collect all rubbish discarded by the class for several days. Lay a sheet on the floor, dump the rubbish on it and have students sort it (using plastic gloves) according to category, i.e. paper, plastic, metal.

Working in groups, weigh a category of rubbish, graph

**Materials:**

- »» Five days worth of classroom rubbish.
- »» School Caretaker willing to visit.
- »» Sheet.
- »» Rubber gloves for each student.
- »» Small scales for weighing rubbish.

# WASTE

## WASTE IN OUR COMMUNITY



### OBJECTIVES:

Students will understand what rubbish is made of and that it can vary in composition over time or by location of collection.

### BACKGROUND INFORMATION:

Waste is any solid, liquid or gaseous matter which is discharged, unwanted or discarded by the current generator or owner and includes materials that could be reused, recycled or recovered.

Household waste is waste created in a home, flat, or residence.

### **Class plan (Levels 1 and 2)**

1. Ask each student to bring two pieces of clean rubbish that was discarded by their family at home during the week.
2. Compare this rubbish to what was discarded during the class.
3. Discuss how waste differs depending on point of collection (school, home, commercial, industrial) and the time of the year (this affects the organic matter that makes up half the household rubbish e.g. corncobs, grass clippings, orange skins and also paper e.g. Christmas wrappings).
4. If you have a Playcentre or Kindergarten adjoining your school, ask if you can compare their rubbish to your own.
5. Discuss where the rubbish goes. How else does waste reach the landfill (trailers, commercial and industrial waste).

#### **Materials:**

- ▶▶ Clean rubbish from home.
- ▶▶ Sheet to sort on.

### **Class Plan (Levels 3 and 4)**

1. Discuss extracts from "Domestic Waste Survey of Gisborne City".
2. Compare the composition of a "Gisborne Household Bag" to the composition of your own class rubbish bag.
3. Discuss effects time of the year may have on the composition of the rubbish bag (e.g. the Gisborne survey was done in February - a lot of the organic waste was corn cobs and husks, plum stones etc. At other times of the year there may be more grass clippings etc.)
4. Worksheet "Household Waste". Transfer the percentages of each type of waste in a typical Gisborne rubbish bag to the worksheet. Divide the bag into the appropriate sized area of each type of waste.
5. Discuss where the rubbish goes. How else does waste reach the landfill (trailers, commercial and industrial waste).

#### **Materials:**

- ▶▶ Worksheet "Household Waste".

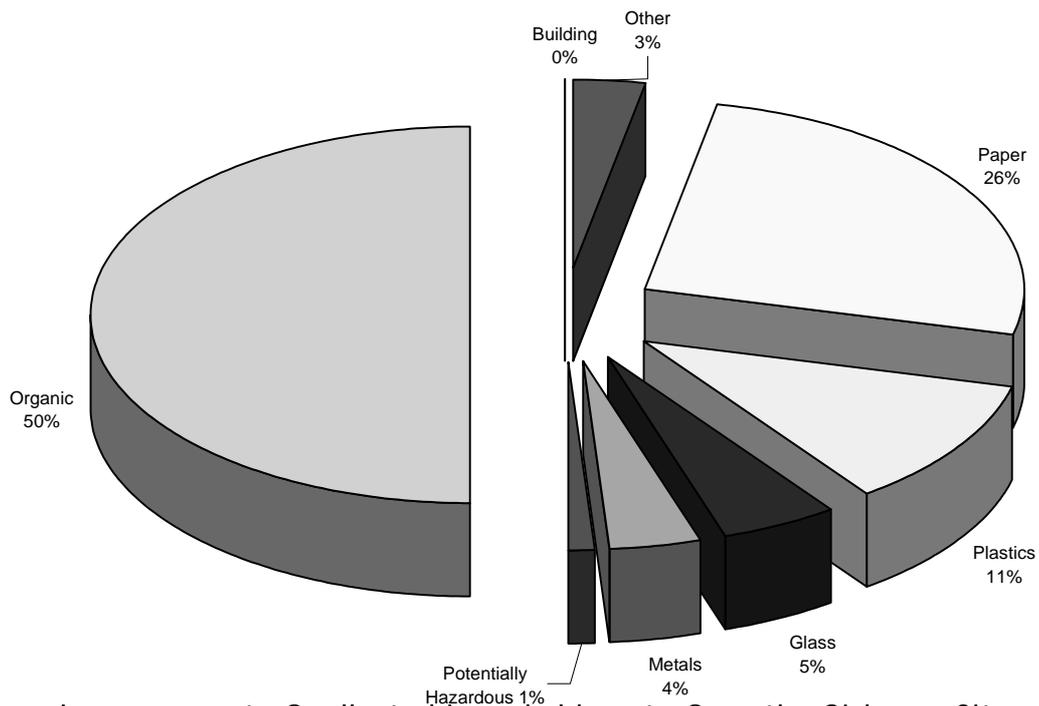
# WASTE

## Extracts from "Domestic Waste Survey of Gisborne City"

In 1995, a domestic survey was carried out in Gisborne. The results obtained from the survey are shown below:

Figure 1

Composition of Household Bag (by weight) - Gisborne City



The major component of collected household waste from the Gisborne City was organic materials (49.8%), followed by paper (26.4%) and plastic (10.5%). The other categories into which the waste was sorted were relatively minor. Organic material included grass clippings, weed and garden waste, kitchen scraps (potato peelings, leftover food, tea bags etc) and waste fat/oils.

Council does regular surveys to find out information about waste. This information is used to plan for the future.

As a result, although there has not been much impact on the total amount of waste produced, what happens to it has radically changed.

**In 1995 Gisborne district landfilled about 70,000 tonnes.**

**In 2002 the district sent 18,000 tonnes to landfill.**

**Gisborne is on the road to Zero Waste.**

What was once landfilled now has a further life by being recycled, reused, or composted. Much of the waste resource from the primary sector has found alternative end uses as stock food or mulch.

One of the main drivers of this change was making those people who make rubbish pay directly for the disposal of their rubbish. (This has happened in Gisborne but not outlying rural areas).

When it was free to take a load of rubbish to the landfill, and people could put 6 full bags of rubbish out at their gate every week, there was no incentive for people to look for other alternatives. Also there were no business opportunities for recyclers or composters or other diverters of waste.

The composition of a bag of waste is still similar to what it was in 1985 but now the average household puts out half a bag and recycles or composts the rest.

There is still room for further reductions.

Half the rubbish is organic, mostly kitchen waste, and there are better ways of using this resource.

There is an opportunity to affect waste habits in outlying rural townships by providing improved facilities and providing incentives or dis-incentives.

# ADDITIONAL MATERIAL

Household Waste

