

Types of Rubbish

You need

- ★ a computer spreadsheet/graphing program
- ★ protective gloves
- ★ scales
- ★ classmates

Activity One

The students in Room 4 decide to collect and sort a day's class rubbish into different types.

We can use a separate bin for food scraps. What other types of rubbish do we need bins for?



1. a. As a class exercise, sort 1 day's rubbish into different types.
b. What are the most common types?
c. How much of each type might your class create in a week? Work out a way to show this.
2. One group in Room 4 measures the *mass* of their rubbish by weighing it on scales. Another group finds the *volume* of the rubbish by estimating how much of a classroom bin each type takes up.

The students combine their results in a table.

Some rubbish is really light but takes up a lot of room.

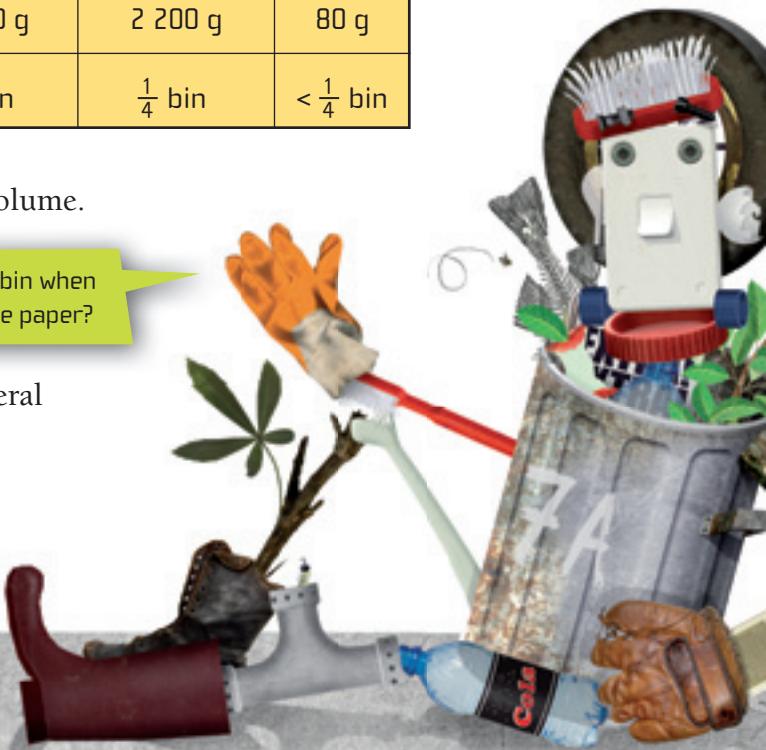
Room 4's Rubbish

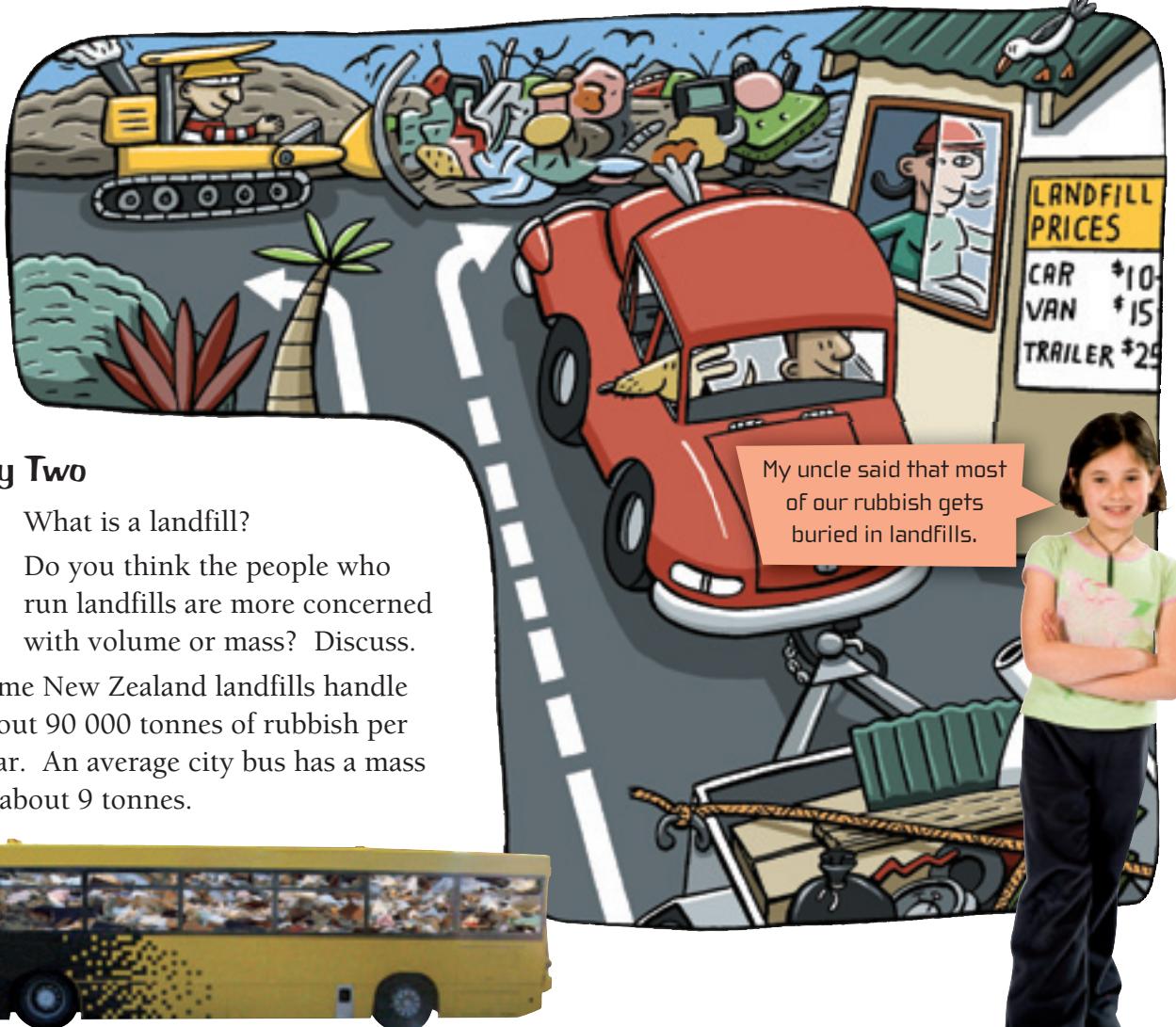
	Recyclable plastic	Non-recyclable plastic	Paper and cardboard	Organic (food waste)	Other
Mass	70 g	200 g	2 500 g	2 200 g	80 g
Volume	$\frac{1}{4}$ bin	$\frac{1}{2}$ bin	1 bin	$\frac{1}{4}$ bin	< $\frac{1}{4}$ bin

- a. Discuss Room 4's results for mass and volume.

Why does food waste take only $\frac{1}{4}$ of the bin when its mass is nearly the same as that of the paper?

- b. Explore the volume and the mass of several items of rubbish. What do you notice?
- c. How could you reduce the volume of this rubbish?





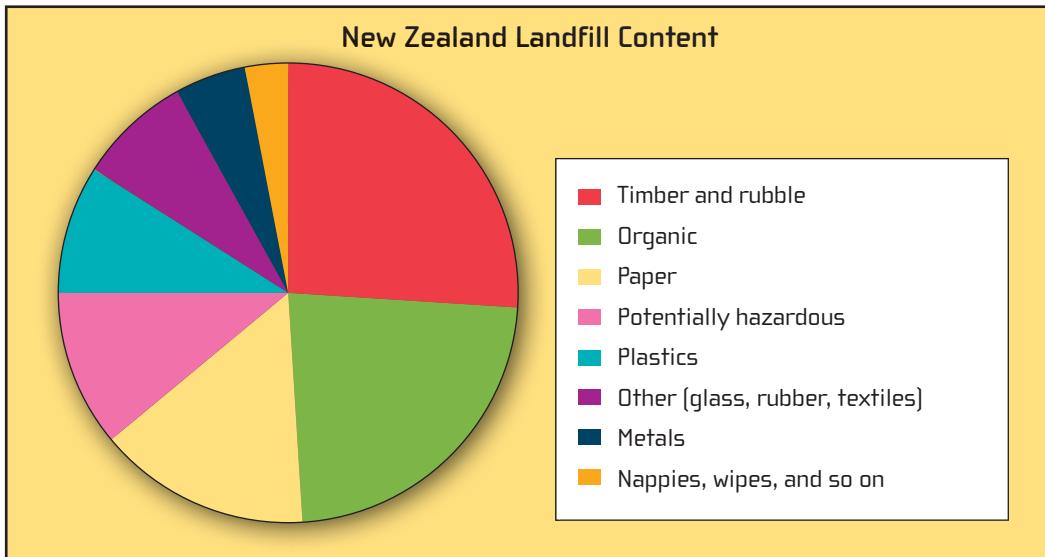
Activity Two

1.
 - a. What is a landfill?
 - b. Do you think the people who run landfills are more concerned with volume or mass? Discuss.
2. Some New Zealand landfills handle about 90 000 tonnes of rubbish per year. An average city bus has a mass of about 9 tonnes.



How many “buses” are disposed of every day in one of these landfills?

3. One group in Room 4 finds this pie chart showing (by mass) what ends up in New Zealand’s landfills in a year.



- a. If the waste metal shown on the pie chart was 25 000 tonnes, what was the approximate mass (in tonnes) of each of the other categories?

- b. i. Which category on the pie chart would have the most volume in relation to its mass?
ii. How might this volume be reduced?
c. What might landfill operators do with organic waste to reduce its volume?

4. The Room 4 students also find information about the contents of an average rubbish bag put out for collection.

Contents	Percentage by mass
Kitchen scraps and garden waste	43
Paper, cardboard, newspapers, advertising flyers, and packaging material	31
Plastics	10
Glass	6
Metals	6
Other (for example, batteries, paints, medicines, cleaning chemicals)	4



- a. Using a computer, make a pie chart to show this data.
b. Discuss with a classmate how else you could show these categories and percentages.

5. Discuss possible reasons for any differences you see between the pie chart in question 3 and yours in question 4a.

Activity Three

1. Discuss with a classmate why there is more waste to dispose of today than 70 years ago.
2. Investigate what people are now doing to reduce waste.



Focus Categorising data and interpreting graphs