

# Making Waste Wonderful

## Aluminium Recycling

A learners guide



**Helping schools and communities reduce waste**



Ministry for the  
**Environment**  
*Manatū Mo Te Taiao*

**Sustainable Management Fund**

## Aluminium Information

Aluminium accounts for 8% of the earth's crust. It comes from a clay like material called **Bauxite**, which contains **Alumina**. New Zealand uses alumina that is mined in Australia.

It takes 4 tonnes of **Bauxite** to produce 2 tonnes of **Alumina** which after further processing, makes 1 tonne of aluminium. It takes a huge amount of energy to produce aluminium from Bauxite.

Aluminium is used in many industries. In the list below you can see how aluminium is used in New Zealand.

- 55% in building and construction
- 15% in containers and cans
- 10% in things such as airplanes
- 10% in electrical cables that carry the power to our homes
- 5% in fridges, cookers and other household goods

**Directions:** Read the information above then fill in the missing information in the squares below.



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55%



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5%



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15%



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10%



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5%



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10%

## Aluminium Information

Large amounts of energy are used in the manufacture of primary aluminium from bauxite.

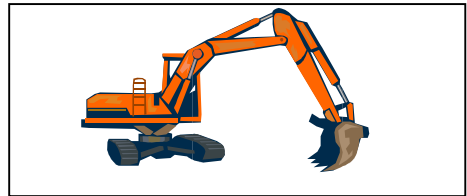
When Aluminium is made into metal it can be melted over and over again using very little energy. Most of the recycled Aluminium is used to make aluminium cans.

Each one tonne of recycled cans that is made saves about 5 tonnes of BAUXITE.

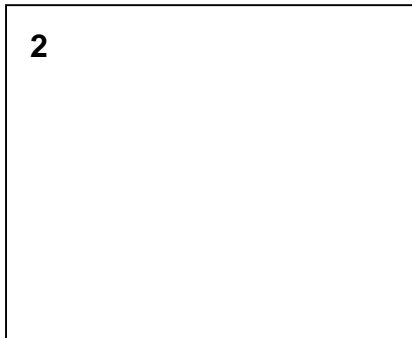
Aluminium is used in many every day items such as drink and food cans, furniture window frames, cars, ships, aircrafts, cooking utensils, motor mowers aluminium foil and roofs.

**Directions:** Read the information above and from the previous page, then follow the diagram below on the life cycle of aluminium and imagine you are making Aluminium metal and draw a picture in the box for each of the headings.

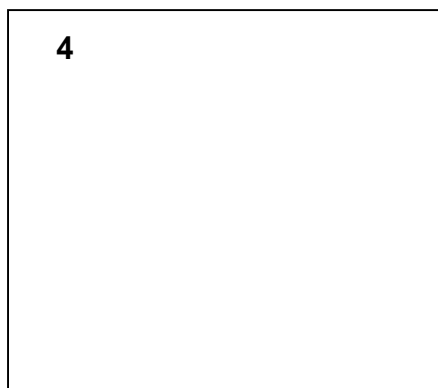
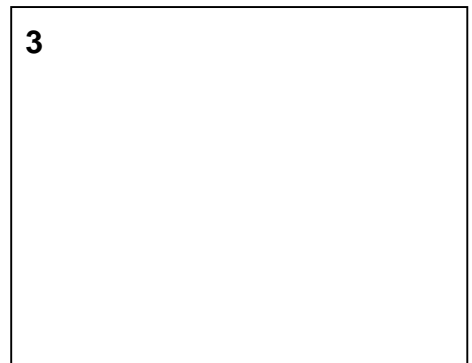
**1. BAUXITE (a clay like mineral) is mined for aluminium to produce ALUMINA (aluminium oxide)**



**2. Large amounts of energy are used to make aluminium. The aluminium is heated up (smelting) to pour into moulds**



**3. These are sent to manufactures to make into household products**



**4. When products have been used/emptied they can go for recycling**



### Aluminium Information

Aluminium is made by a New Zealand company at Bluff who makes 31,000 tonnes of aluminium per annum,

A magnet does not attract aluminium.

Most Aluminium recycled in New Zealand is exported.

It is estimated that

- 5,655 tonnes of aluminium is used annually in New Zealand.
- 3,460 tonnes That's 61% that is recovered for recycling

### To recycle aluminium

#### Aluminium Cans

Rinse and then store for recycling to take to

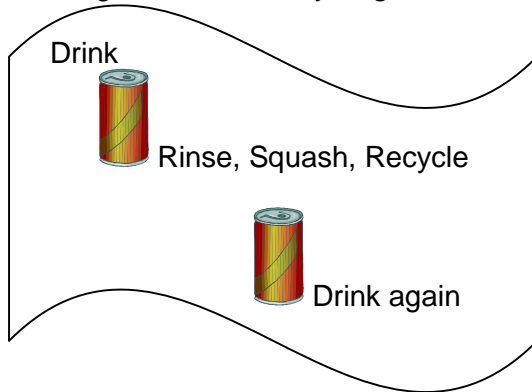
- The local transfer station.
- Public drop off facilities at schools or kindergartens.

#### Other Aluminium Products

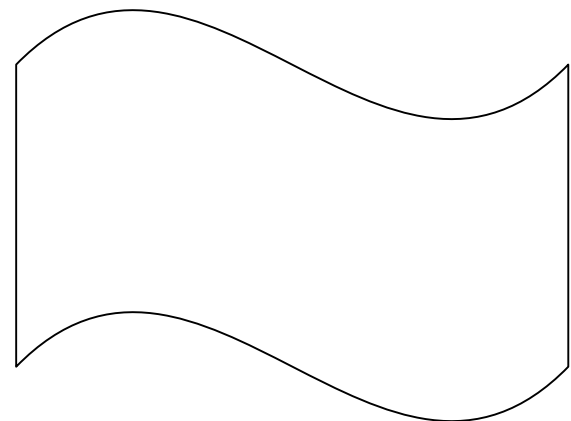
These can be taken to the nearest scrap metal dealer in your area.

**Directions:** Be a bumper sticker designer Create a sticker for each of these clients

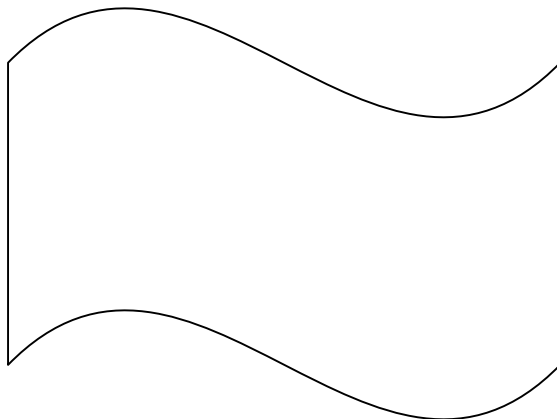
This client wants a bumper sticker with a message about can recycling



This client wants a bumper sticker that tells a message about the **value** of recycling an aluminium can. *Hint using over again*



This client wants a bumper sticker with a message about the **energy saved** when recycling an aluminium can



This client wants a message about **how** you can tell a can is aluminium

