

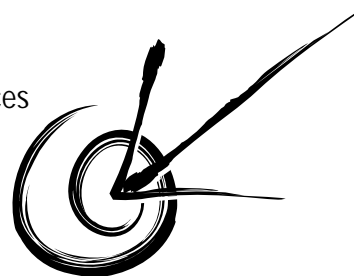


How Does Your Drink Rate?

Lesson aims

Drink containers make up nearly 15% of all rubbish collected during Clean Up Australia Day!

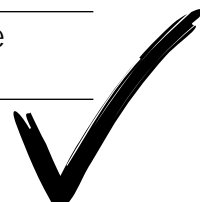
Students will conduct a survey on attitudes to drink container rubbish. Students will investigate how the containers are made and what resources are used. They will give each a rating out of five for environmental friendliness in terms of their impact on the environment including resource usage, reusability, recyclability and disposal.

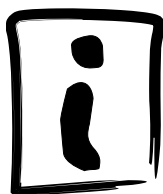


Learning outcomes

As outlined in the National Profiles:

Studies of Society and Environment	Place and Space	Features of places; People and places; Care of places
	Resources	Use of resources; Management and enterprise
	Natural and Social Systems	Natural systems; Economic systems
Science	Natural and Processed Materials	Materials and their uses, structure and properties
Mathematics	Chance and Data	Collecting data; Displaying and summarising data; Interpreting data
The Arts	Creating, Making and Presenting	Exploring and developing ideas; Using skills, techniques and processes Presenting





Background information

Plastic Containers

- Plastic containers are light in weight, reducing fuel consumption for transportation.
- 552 million plastic milk bottles are produced every year in Australia. Only half are collected and recycled.
- A PET plastic drink bottle can take up to 500 years to decompose in landfill.
- Recycling PET bottles saves 84% of the energy it takes to make PET bottles from raw materials.

Aluminium Containers

- Aluminium cans cool quicker than any other drinks package, saving energy and refrigeration costs.
- Recycling is so efficient that it can take as few as 60 days for an aluminium can to be collected, melted down and made into a new can sitting on a supermarket shelf.
- Aluminium does not 'degrade' during the recycling process, which means it can be recycled over and over again.
- Recycling requires 95% less energy than making new aluminium.
- It takes the same amount of energy to recycle 20 cans as it does to make one can from raw materials!
- Aluminium cans can be collected and cashed in at local depots for money – check out your local area. You may be able to raise some money for the school.

Paper Containers

- Milk and juice cartons are made from a material known in Australia as liquid paperboard.
- There are two different types of liquid paperboard cartons:

Gable top Cartons: These cartons are made from a layer of cardboard covered on each side by a layer of thin plastic. These cartons are used for milk and juices we keep in the fridge.

Aseptic Bricks: These cartons are made from five layers: one of cardboard, one of aluminium foil, and three of plastic. They are shaped like bricks and are used to contain juice, long life milk, sauces, soups, oil and other liquids.

- The composite nature of these cartons poses particular problems for recycling. Only 7% of liquid paperboard is recycled in Australia each year.

Steel Containers

- Steel is one of the world's most recycled products. In fact, steel is 100% recyclable, which means its life cycle is potentially continuous.
- Making steel from recycled cans uses 75% less energy than producing steel from raw materials.
- Steel is easily picked out of garbage and recycling waste by the use of large magnets.
- Each Australian disposes of, on average, about six kilograms of steel cans each year. About 3.5kg of this amount is sent to landfill.





Glass Containers

- Glass is infinitely recyclable. It can be recycled hundreds of times, thousands of times, even millions of times!
- Making glass from recycled material requires only 40% of the energy necessary to make glass from sand.
- Glass manufacturers today make glass bottles that are significantly lighter than even a few years ago. This is light-weighting; a process that saves both energy and raw materials.
- Recycled glass can be made into glass bottles and jars, road fill, filter materials and even insulation products.



Sources & further information

Sustainability Victoria:

This site provides information sheets on steel can recycling, aluminium can recycling, milk and juice carton recycling.

www.sustainability.vic.gov.au

Ollie Saves the Planet: This web site is full of games, puzzles and loads of information and projects.

www.ollierecycles.com/planet/aus/index.htm

Plastics and Chemicals Industries

Association: This web site provides information on plastics and research into plastic recycling.

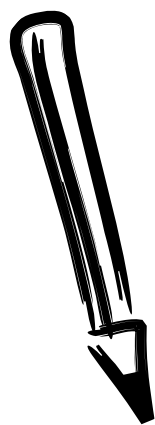
www.pacia.org.au

Steel Can Recycling Council: Provides resources for students and teachers.

www.cansmart.org

Visy Recycling: Facts and figures on glass recycling.

www.visy.com.au/recycling/



Classroom activities

1. Attitudinal Survey

- Ask students to complete the *Worksheet: Attitudinal Survey* asking friends during recess or lunch about their use of drink containers. Students will need to interview five people and add up their individual scores.
- Have the students go through their responses and record the class' results. Discuss the results of the survey through the following questions:

What was the most popular drink container?

Were people going to recycle their drink container?

Do people care if the container could be recycled or reused?

How many drinks do people consume every week?

What type of drink container do people prefer?

- Draw a bar graph to display the number of each or a pie chart to display the proportions of each material collected.

2. Packaging Material Analysis

- Ask students to think about the advantages and disadvantages of the different types of packaging material.
- Students can use the chart below to rate the environmental friendliness of one drink container. Remember the higher the rating the more environmentally friendly. Discuss what drink containers received the highest rating.
- Investigate how each of the drink containers can be collected and recycled. Students can be broken up into four groups and each given a type of packaging to research. Here are some hints.

Paper and cardboard can be returned to the paper manufacturers for re-pulping; local council recycling programs include paper and cardboard collections.

Aluminium beverage cans - set up your own or use a local can collection centre.

Plastics - local council collections.

Glass - local council collections.

- Ask each group to present their findings to the class.

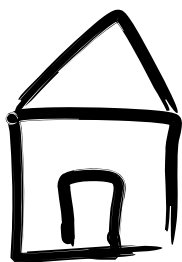
Packaging Material Analysis

My drink container... (Please circle your answer.)

Environmental Rating

	Yes	No
is made from recycled material	1	0
is made from a lightweight material	1	0
displays a recycling logo	1	0
could be reused	1	0
is recyclable	1	0
Total (out of 5)		

How Does Your Drink Rate?



Extension / Home-based activities

Lower Primary

Recycled Art

Develop some creative solutions to re-using items e.g. brainstorm what could you do with an aluminium can? An art or materials technology program could be developed around the idea of used aluminium cans as a building material.

Let's Make Music

Ask the students to make musical instruments out of their drink containers. For example rice could be used to partially fill a plastic bottle to make maracas.

Middle and Upper Primary

Company Image

Develop a list of companies that manufacture drink containers. In groups students can choose a company to research. The best way to do this is through the company's website. Ask students to look for information relating to how their drink container is made and if environmental issues are taken into consideration.

Knowledge Test

Students prepare a questionnaire of the products that can be recycled and test parents/adults and other students to determine the level of awareness of recycling in the community.

Let's Recycle

If your school does not recycle its drink containers, ask students to research what needs to be undertaken and write a proposal to be presented to the school's executive body.

How Does Your Drink Rate?

Worksheet: Attitudinal Survey

Instructions:

1. Ask your friends the questions in bold and record their answers in the empty boxes below.
2. You will need to survey five people.

What was the last drink container you used? (Use a separate tick for each person.)

Aluminium	Glass	Plastic	Cardboard

Was it recyclable? (Use a separate tick for each person.)

Yes	No	Don't know	Don't care

Where will it go when empty? (Use a separate tick for each person.)

Rubbish bin	Recycle bin	Storage	Reusing

How many of these drinks do you have a week? (Use a separate tick for each person.)

1	2	3	4	5	6	7	8 +

What is your preferred drinking container? (Use a separate tick for each person.)

Aluminium	Glass	Plastic	Cardboard