

Waste NOT Want NOT



Teachers Notes

Learning Objectives

Students will be able to:

- classify different forms of packaging by materials used and their ability to be recycled
- recognise that some packaging is necessary
- recognise that all packaging has some environmental cost; and
- make responsible choices when buying packaged products.

Focus Questions

1. How does some packaging help to reduce food wastage?
2. How has lifestyle influenced packaging?
3. What types of packaging do we use?
4. What effect does packaging have on the environment?
5. How can you be more environmentally responsible with the packaging you choose?

Learning Outcomes

As per the National profiles

Studies of Society and Environment

- *Time, Continuity and Change*
Understanding the past, Time and change, Interpretations and perspectives
- *Resources*
Use of resources, management and enterprise
- *Natural and Social Systems*
Natural systems, Economic systems
- *Investigation, Communication and Participation*
Investigation, communication and participation

English

- *Speaking and Listening*
Texts: Contextual understanding; Linguistic structures and features: Strategies

Activities

Junior Primary - Lunch Refuse Survey

Students survey the packaging that is thrown out at lunchtime from lunchboxes.

Middle Primary - History of Packaging

Students construct a time line of the history of packaging and then carry out an oral history interview with an elderly person to discover how shopping has changed over time.

Upper Primary - Packaging Survey

Students conduct a packaging survey from supermarket catalogues or at their local supermarket.

Background Information

Packaging is an important industry. Packaging preserves and protects food, therefore reducing spoilage and wastage. But the packaging comes at an environmental cost. This cost includes the energy used in withdrawing and extracting the resources, manufacturing the product, transportation and finally disposal of the packaging.

The message of reduce, reuse and recycle is incomplete. It is important for people to think of what they are buying and to consider not buying the product if it is over packaged or uses excessive resources.

There needs to be a balanced viewpoint about packaging. Some people do not want layers of plastic or foam surrounding foodstuffs or goods. They contend that to produce the packaging, the environmental cost outweighs the benefits. For example, many plastics are derived from petroleum products and producing the plastic or foam sheeting is costly, thus increasing the cost of the goods.

On the other hand, packaging does reduce food wastage, protects the food from disease organisms and other types of contamination, and helps to maintain freshness and quality. As packaging becomes thinner, lighter and more cost-effective, some of these concerns may disappear.

One of the problems we face is that the food we eat is usually transported long distances. In some countries, up to 30% or more of food is lost or wasted, destroyed or contaminated on the way from producer to consumer, among other things due to deficient packaging. If more people grew their own food or supported producers in their own area, much of the current food wastage and high prices of foodstuffs would not occur.

In 1995, the recycling rate for newspaper was 53%, and 73% of packaging paper was made from recycled paper. The rate for plastic HDPE milk and juice bottles was 42%, PET bottles 30%, glass 43%, steel cans 27%, aluminium cans 65% and milk and juice cartons 22%. Recently, some of these recycling rates have improved.

Shredded milk and juice cartons and newspaper can be recycled at home in your garden compost heap (which under ideal conditions takes about three months to break down). Many local communities throughout Australia have recycling bins and facilities which will take most of the recyclables mentioned, as well as clothes and cork.

The benefit of minimising waste is that it conserves natural resources such as minerals, energy, native forests, petroleum and landfill sites; saves money, both in household incomes and in business, as well as wasting less; reduces environmental impact because fewer areas are affected by resource extraction, harvesting or solid waste disposal; and less fossil fuels are burnt for energy used in manufacturing, transport and disposal.

By thinking about the packaging of a product before we purchase, we can make a decision that won't cost the earth, while still recognising the value of packaging in food preservation.

Activity Information

Junior Primary - Lunch Refuse Survey

Materials

8 labelled boxes
bread bags
magazines or supermarket catalogues
Activity Sheet 37

Activity

Purpose: to recognise the amount of packaging waste that ends up as landfill.

1. Each lunchtime for five days students put out the boxes which are labelled with words and magazine pictures: soft plastic, hard plastic, glass, liquid paper board (milk and juice containers), drink cartons, paper, cardboard, aluminium foil. Leave the normal school bin for food scraps.
2. Students supervise each box and the food bin each day.
3. The boxes are then taken somewhere out of the way. Be sure to inform the staff about what you are doing so they can tell their students.
4. After lunch the class goes out on to the oval (if it is not windy) and empties out the contents of each box. Each student is given a pair of bread bags as gloves. Litter monitors can be selected to carry out this task rather than the whole class.
5. A litter graph is created using the contents of each box to form a bar on the graph. The items in each bar are counted and recorded on the graph back in the classroom.
6. Dispose of the litter correctly and discuss results at the end of the week.
7. Ask the students how they can personally reduce the amount of packaging they have in their lunchboxes.
8. Hold a competition between all the classes to see which class can have the 'least waste' lunch.

Middle Primary - History of Packaging

Materials

Activity Sheet 38
Information Sheet O

Purpose: to understand the changes which have occurred in packaging.

1. Students construct a time line of the history of packaging from information presented in Information Sheet O.
2. Students carry out an oral history interview with an elderly person (Activity Sheet 38) to discover how shopping (and therefore packaging) has changed over time. Interview questions are only suggestions and can be adapted or added to.



Upper Primary - Packaging Survey

Materials

Activity Sheet 39

Activity

Purpose: to examine the environmental costs of packaging.

Students are lead to discuss the environmental costs of packaging in terms of litter, landfill, energy, use of resources and effect on animal life, both marine and land based.

1. Discuss which types of packaging are more biodegradable, and which ones take the longest to break down.
2. Collect supermarket catalogues for a few weeks before you do this activity or arrange a visit to your local supermarket.
3. Students identify products and packaging to complete their survey.
4. Discuss results, and fill in any product/packaging which has not been covered using Activity Sheet 39 to conduct a 'tick and flick survey'.
5. Discuss the environmental costs of packaging. Consider the issues of: Natural resource collection, production, long distance transportation of goods (i.e. fuel costs and pollution), vehicle wear etc.

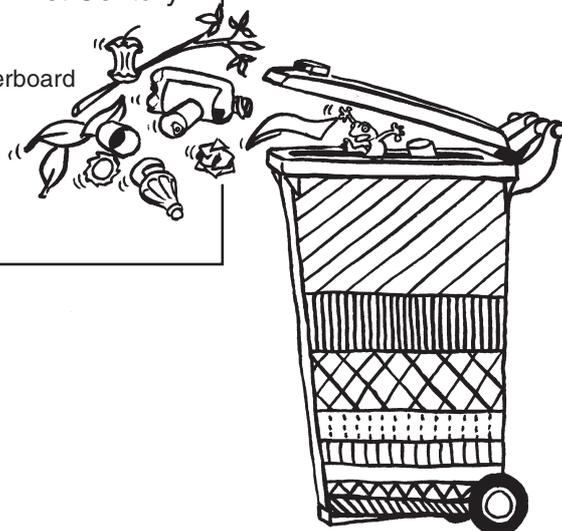
Free Resources

"Designing Packaging for a Sustainable Future"
A3 Poster.

"Let's Give some thought to our environment"
Information Sheet.

"Meeting the Major Challenge for the 21st Century"
Information Sheet.

Available from the Association of Liquidpaperboard
Carton Manufacturers
PO Box 6250
North Sydney NSW 2059
Tel: 02 9954 4588
Fax: 02 9954 4546



Activity Sheet 37: Lunch Refuse Survey

School Lunchtime Litter Tally

Item	day 1	day 2	day 3	day 4	day 5	Total
soft plastic 						
hard plastic 						
glass 						
milk or juice cartons 						
cardboard 						
paper 						
drink cartons 						
aluminium foil 						

- Which was the most common packaging thrown out? _____
- What could have been used instead? _____
- Which was the least common packaging thrown out? _____
- Why do you think this was so? _____

- How do you rate your lunchbox in regards to packaging? (Circle your answer).
very good good OK bad very bad
- What can you do to reduce the packaging that you throw away at lunchtime? _____

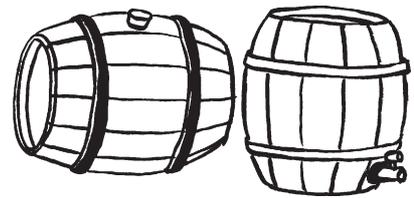
Unit 13: Waste Not - Want Not

Information Sheet O: History of Packaging

Aboriginal people used packaging during their nomadic journeys. The efficiency of the 'dilly-bag' was commented on by early European settlers.

1788

Packaging was quite limited in the early days of Australian settlement, over two hundred years ago. Food items were usually stored and carried in bulk containers such as boxes, barrels and jute sacks which were heavy and awkward to carry. The food did not keep well and was easily contaminated by insects, mice and rats. Large amounts were lost in storage. It was hard to buy food out of season or from other places. Such food was a rare treat.



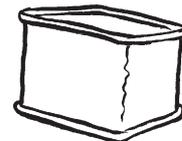
1840 -1850

Tin can invented which enabled food such as condensed milk, butter and meat to be kept and transported safely. In 1840 Sizar Elliott in Sydney experimented with canning food and by the 1850s Australia was exporting surplus food in tins to Europe.



1862

First jam factory in South Australia made tinned jam.



1866

First hand blown glass bottles (Joseph Ross, Darling Harbour)

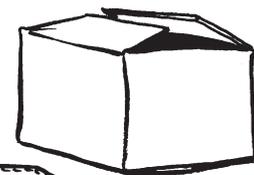


1868

First paper mill (Samuel Ramsden in Melbourne) produced wrapping paper such as tissue paper (newspaper was used for wrapping up until that time).

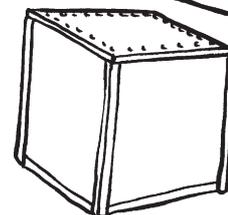
1900s

Corrugated cardboard made by pasting layers of paper together was used for making boxes and cartons.



1910s

Waxed paper used to wrap sweets.



1914

Cardboard shipping containers were produced by J. Fielding and Co. in Sydney providing an alternative to wooden crates.

1915

First machine-made glass bottles were used for milk.



1917

First milk carton was invented.

1920s

Fibre board containers were produced by Fielding and Co. Paper bags were introduced and became the standard for retail packaging. Multi-walled sacks were produced for packaging cement and other bulk products.



Unit 13: Waste Not - Want Not

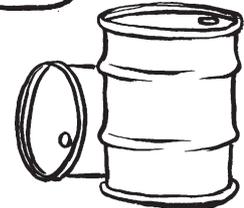
1928

Heat sealed wax paper used to package bread.



1930s

Open-topped cylindrical cans used by Heinz to can spaghetti.



1940s

World War II saw the use of steel drums for shipping food, fuel etc. to the war front.

1950s

Plastics such as polyethylene, PVC and polystyrene and aluminium toothpaste tubes and aerosol cans.



1958

Tetrahedron-shaped carton (Tetra-Pak) - the first container in Australia which could be formed, filled and sealed in one operation.

1960-1970

Supermarket-style shopping which prompted an increase in mass produced, prepackaged goods and disposable products.

1961

Single-trip glass bottles.



1967

Plastic margarine tubs.



1968

Milk cartons introduced into Australia.

1969

Comalco's aluminium drink cans.

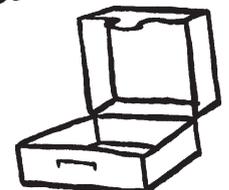
1970s

Wine cask (invented in Australia), polystyrene foam produce cases, padded post bags, PET soft drink bottles, aseptic packages for long life juice and milk cartons, microwave food packs, cling wrap, vacuum metalised papers, blister packs, laminates, styrofoam trays and bar codes on packaging.



1980s

HDPE plastic milk and juice bottles, small pouches for dishwashing detergent concentrates, trigger pumps for spray cleaners, ring pull for aluminium/steel cans, finger pumps for soap and cosmetics.



1990s

Cheer pack (like a milk carton without the paper core), stand up plastic pouch packs for detergents and other liquids, synthetic wine cork, milk cartons lightweighted by 20% since 1970, foil laminates for potato chips and other moisture sensitive foods, pouring spouts introduced for milk and juice cartons, transparent plastic "cans" to replace steel for fruit, pull top lid for steel cans



Unit 13: Waste Not - Want Not

Activity Sheet 38: History of Packaging

Name _____ Date _____

Interview an older person to find out about packaging in the past.

Guiding questions for you to ask:

How did you shop in the past?

Where did you shop?

How often did you have to shop for groceries? Why?

Which products did you buy in bulk?

Did you enjoy shopping or was it a chore?

What did you buy?

Which products were packaged?

Did you grow any of your own food? if so, what and why?

How did you store foods such as milk, bread, meat and ice-cream?

What did you use to carry all your groceries?

How has food packaging changed over your life time?

What do you think about the amount of packaging used today?

Did you and others recycle any of your rubbish?

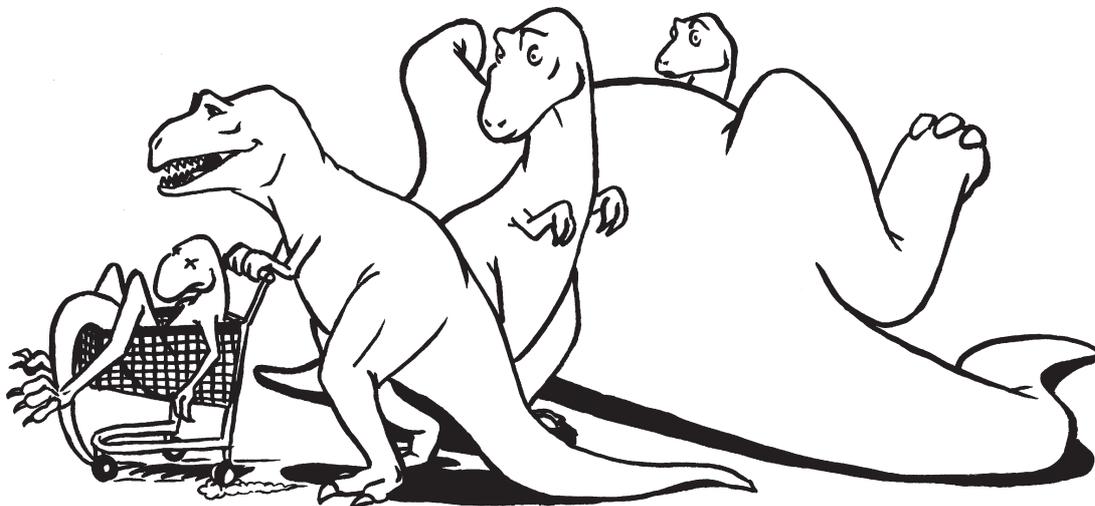
What kind of things did you recycle?

What changes are there in shopping compared to the past?

How has shopping become better or worse than it was in the past?

Be sure to make a time to sit with your subject.

Repeat answers back to her/him to make sure you are getting the right messages.



Unit 13: Waste Not - Want Not

Activity Sheet 39: Packaging Survey

Name _____ Date _____

Look at the packaging of the product and place a tick (Yes) or a cross (No) in the columns.

	meat 	milk 	juice 	soft drink 	cereal 	vegies 	fruit 	ice cream 
PACKAGING								
Plastic								
Glass								
Cardboard								
Paper								
Tin								
Aluminium								
Polystyrene								
Plastic film								
Foil lined cardboard								

Place a tick next to each one (above) that is biodegradable, reusable or recyclable.

- Why is packaging necessary? _____

- Which packaging do you think is the most environmentally-friendly? Give reasons.

- Which packaging is the least environmentally-friendly? Give reasons.

Unit 13: Waste Not - Want Not

4. Which types of packaging could you avoid buying? Give some examples.

5. Do you think that you can influence a manufacturer's choice of packaging? Yes No

If Yes, how would you do this?

If you don't think you can, why not?

6. What are the environmental costs of packaging?

