

UNIT 4: REDUCE

VOCABULARY

Antiques
Community
Disposable
Generate
Manufacture
Non-renewable
Packaging
Renewable
Resource
Second-hand
Waste

Collection
Consumer
Garage Sale
Landfill
Minimisation of Waste
Opportunity shop
Reduction
Repairable
Reusable
Sustainable



BACKGROUND

Waste REDUCTION is a method of minimising waste so we don't produce so much. Waste is not necessarily rubbish – waste is a reusable resource. We dispose of material as waste only when we think it is no longer useful or we believe it cannot be reprocessed ecologically. If a sustainable future is to be assured, we need to conserve all our resources, especially non-renewable resources and energy.

Reduction is the most important part of the 3 R's of solid waste management: reduce, reuse, recycle. Reduction keeps materials out of the waste stream. Waste minimisation aims at eliminating waste before it is produced and reducing its quantity and toxicity. Waste prevention, or to avoid making waste altogether is the primary goal. Reducing the quantities of waste we produce lessens some of the resources and money spent on waste collection and disposal. Methods to reduce waste include changing packaging, substituting reusable items for disposable ones and developing products that are more durable or at least repairable.

To achieve a genuine reduction in the waste stream it maybe necessary to reject excess packaging. Recyclable packaging or a reduction in the volumes and types of packaging should be encouraged. Our purchasing patterns need to change. It is better to buy durable rather than disposable, and not to buy as much.

Minimising waste within the industrial and commercial sectors is one of the primary objectives for Auckland Regional Council Environment. Simple modifications to production methods or equipment will reduce waste levels or enable wastes to be more easily separated whilst in a reusable form. Significant reduction in waste can be achieved by simple changes to work practices and procedures. Overseas examples show 75% of the changes necessary to reduce waste and improve operating efficiency can be attributed to good housekeeping and only 25% of the changes required technical modifications requiring capital expenditures.

Paper and cardboard amounts to 80% of office waste in the commercial sector. When a paper recycling programme is implemented in an office block, costs are substantially reduced. Telecom's head office in Auckland with 360 staff reduced their rubbish output from 210 bags pre week to 70 bags. They also saved themselves \$14 000 per year in rubbish disposal costs.

Materials students may bring from home

pencils
classroom rubbish
kraft paper
plastic gloves



REDUCE IT!

KEY CONCEPT

The best way to reduce the amount of rubbish we produce is not to produce it in the first place.

LEARNING OBJECTIVES

Students will identify and develop waste reduction activities for the classroom.

MATERIALS

- Pencils
- Classroom rubbish bin (full)
- Kraft paper
- Plastic gloves

BACKGROUND INFORMATION

Many of the items in the rubbish bin could be eliminated by implementing the reduction ethic, by ourselves as consumers or by industry as producers. Buying in bulk or using refillable containers can reduce classroom waste.

LEARNING STEPS

1. Explain to students what waste reduction means. How does reducing waste before we create it help preserve resources and landfill space?

Here are some ways to reduce waste:

- Share copies
- Use blackboard whenever possible
- Start a reuse it box for scrap paper
- Use refillable pens
- Use old exercise books for drawing
- Use both sides of the paper



- Use refillable items for juice bottles, lunch boxes, etc.
2. Using the plastic gloves, remove each piece of rubbish and place on the kraft paper (on to a table). Ask students how they could better use each item. e.g. reuse it, recycle it or use durable products instead of disposables.

EXTRA ACTIVITIES

1. A Waste Free School

Develop an overall plan for the school to reduce waste (including energy, paper, food, wrappers, litter), introducing separation and recycling schemes, checking litter, composting garden and food wastes, incorporating environmental education into all areas of the curriculum.

In these and other ways the whole school community becomes involved – Board of Trustees, school management, teachers, students, parents, neighbours, PTA, class leaders... Everyone must contribute and take responsibility for this exciting project!

Ring the Auckland Regional Council Enviroline (09) 366 2070 for assistance with this activity.

2. A "Reduce Waste" Display

Develop a display for the school foyer or other prominent place on the 3 R's of solid waste management – Reduce, Reuse, Recycle. Select four or five good examples of each and show how waste can be reduced (bread, paper, packaging, etc.) items that can be reused (clothing, toys, sports gear, books) or recycled

(cans, bottles, plastics, paper, etc.). Show before and after examples of repair, restoration or reuse.

efficiency, cost reduction, community health and wellbeing.

3. **Brainstorm Wastes**

In groups or as a whole class discussion list 50 (or 100) items used in and about the home, in the community, in industry, in sport and recreation... e.g. cups & saucers, tennis racquet, garden tools, clothes, shoes, batteries, chairs, light bulbs, can, pens, nappies, stoves, bicycles, toys, flowers, fruit, etc.

Now for each item, consider whether we could reduce the need for this product or repair it or reuse it in some way. Or could we give it to someone else who could use it? Replace it with a more simple alternative? What can be done as individuals? families? school? community? city? nation?

4. **Our School Cut Waste!**

Promote a waste reduction campaign around the school with poster, logos, slogans, displays, songs, etc. Use the best slogan and logo to design a t-shirt. Maybe a local business could sponsor printing the t-shirts?

5. **Lessons From Your Lunch**

For thousands of years, we survived without aluminium foil, plastic wrap, lunch paper, etc. to keep food fresh. Next time you pack a lunch, think about the effect of each packaging item you use. What happens to either foil, plastic or paper when you throw it out? Is it biodegradable? Can it be recycled? What resources does it use? Could you use a reusable container instead? Ask your friends to look closely at what is in their lunchboxes.

Plan an environmentally friendly picnic. Only bring what you will eat or use.

6. **Why Reduce Waste?**

Discuss, write an article for the local paper or school newsletter, prepare posters, or make up a display to explore the benefits of reducing waste. Investigate such issues as landfill space, saving resources and energy, reducing pollution, increasing production

SHOP FOR LESS

Reduce What You Buy



KEY CONCEPT

Not all packaging is necessary.

Packaging is often used to sell a product.

LEARNING OBJECTIVES

Students will realise how much packaging they receive when they purchase a product and will be able to make decisions about excessive packaging and necessary packaging.

4. Each group can report their findings to the class. Have them discuss how each product was packaged and if that packaging is reusable, recyclable or can be reduced. Is the product over-packaged?

MATERIALS

- Worksheet 14 "Shopping Survey"

EXTRA ACTIVITIES

1. Voice Your Opinion

If some of the products surveyed were over-packaged, why not write to the product's manufacturer and ask if they can use less packaging?

2. Community Survey

Research/investigate/interview what your community is doing to reduce waste. What provision is there for recycling of furniture, clothing, sports equipment, second-hand goods, other cast offs? Who is involved? Could more be done? Should the class write to someone? Who?

3. Junk Mail Explosion

Do some research on your mail. Compare the amount of unrequested "junk mail" with the number of letters and business mail (bills for example) that your family receives each day. Junk mail can include advertising fliers, coupons, catalogues, and requests for contributions. Weigh the amount of "junk mail" your family receives during one week. Ask your parents if they want to receive this "junk mail". If not, why not make a sign for the letterbox? Something like "No Circulars" or "Junk Mail Free Letterbox".

BACKGROUND INFORMATION

Supermarkets have several different examples of packaging. They provide a good venue for examining and comparing a wide variety of packaging.

LEARNING STEPS

1. Organise a class trip to the local supermarket.
2. Divide the class into 4 groups:
 - 1) fruit and vegetable section
 - 2) dry goods (flour, baking goods, etc.)
 - 3) meat section
 - 4) convenience foods (pre-packaged meals)
3. Ask each group to complete Worksheet 14. Each group should choose five different products to survey in their category.

4. Consumer Choice

Set up a display committee to receive class contributions of advertisements taken from newspapers, magazines, "junk mail", brochures, etc. which best display waste reduction or reduced packaging, or encourage recycling, reuse of containers, litter reduction, etc. Encourage your display team to make an effective presentation of the advertisements they have selected. Use this in conjunction with other recycling and reuse projects.

WORKSHEET 14

SHOPPING SURVEY

Product	Type of Packaging	Disposable or Durable	Can it be reused or recycled?	Conclusion
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				