ECO World Savers

Recycling

G4007

Activities To Build Awareness & Understanding

Les Ray

ECO World Savers

RECYCLING

Acknowledgements

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Published by ECO Publishing International Ltd., 2009

ISBN 978-1-907049-00-2

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Printed on recycled paper

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Why Recycling?

Teacher's Guide & Planning

The Key Issues

- The amount of waste we produce is increasing.
- We need to increase the amount of waste that is recycled, because some resources are finite.
- Landfill and burning have their own environmental and social issues, so recycling is an obvious solution.

Additional Activities

Language

- Encourage persuasive writing by developing campaigns to recycle more.
- Write explanations to show how hazardous waste can affect the environment.

Maths and Science

- Incinerating 10,000 tonnes of waste creates 1 job, landfilling the same amount of waste creates 6 jobs, but recycling the same 10,000 tonnes creates 36 jobs. Create mathematical problems around such data.
- Consider the creation of carbon dioxide and greenhouse gasses and look at their effects.

Art and Humanities

- Create displays to show the differences between degradable and biodegradable products. Use pictures of such products cut from magazines to make collages.
- Choose a historical period and find out how they dealt with their waste. How is it different from now?

Research

- Use the internet to investigate landfill and its side effects.
- Find out if there are any landfill sites in your areas. How are they managed to avoid problems?
- Investigate packaging of products. What can be done to reduce this?
- Investigate packaging and find out about its chemical content.

More Information

With increased population and affluence, we all have many more goods than ever before. This means that more new packaging materials are being developed, probably out of artificial materials. These do not break down when they are put in the ground. Waste is usually burned (can send greenhouse gasses into the atmosphere) or put in landfill (can cause gasses and liquids to poison our environment). Some waste is dumped at sea causing hazards for wildlife and pollution. A big issue is: Is recycling worth it? Does it cost more in environmental and financial terms to recycle?

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Why Recycling?

We need to increase the amount of waste that is recycled, because we cannot carry on burying and burning waste forever.

• Complete this chart with examples of kinds of waste.

Domestic	Industrial	Hazardous

Waste is made up of different substances and materials:

Biodegradable - breaks down naturally and eventually disappears.
Non-biodegradable - does not break down naturally in the environment.

• Look at the list below. Write the correct kind of waste in the right bin.

Biodegradable bin		Non-biodegradable bin
	Left-over food **Paper** **Drinks cans** **Plastic bottles** **Glass** **Wood** **Batteries** **Clothes** **Leaves**	

• Suppose that chemicals are not disposed of properly and find their way into rivers or streams. What might happen?

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What Happens To Our Waste?

Teacher's Guide & Planning

The Key Issues

- Our waste is either incinerated (burned), put in landfill or recycled. Some is dumped at sea.
- These can all have negative effects on the environment.
- Everyone can help by producing less waste and following the 'three Rs' – reduce, re-use, recycle.

Additional Activities

Language

- Develop story techniques and planning around a sequence of events, e.g., the life of a piece of waste, from disposal to recycling.
- Argue the case for and against the 3Rs. What are the best arguments?
- Consider prefixes such as 're' in reuse and re-cycle. Find other examples.

Maths and Science

- Analyse how much is reused or recycled in school during the week. Collect data, e.g., about amounts of paper, plastic or glass, to make graphs. Which is the best kind of graph to use?
- Use this data to develop mathematical problems on percentage and ratio.
- In science, consider what is produced when a variety of products are burned.

Art and Humanities

- Investigate food cycles and how polluting the environment may affect these.
- In geography, look at how pollution can affect the life in the ocean if waste is dumped there.
- Make pictures using re-used/recycled fabrics.
- Create posters to encourage people to adopt the 3Rs.

Research

- Carry out surveys in school and at home to find out how many people know about the 3Rs.
- Follow up by considering which of the three options are best used in school and at home. Are the findings different?
- Find out more about landfill and its dangers.

More Information

Recycling saves far more energy than is generated by burning waste because it means making fewer new things from raw materials. It also means less pollution from smoke, ash and gasses. Deprived of air and water, even organic wastes degrade slowly in a landfill. The decaying waste in landfill can produce weak acidic chemicals, which combine with liquids in the waste to form a liquid called leachate and landfill gas. Landfill gasses contain methane and carbon dioxide, which can add to global warming.

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What Happens To Our Waste?

- Label the pictures to show what happens to our waste.
- Write on the pads some advantages and disadvantages of each.

Burning

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Know Your Recycling Symbols

Teacher's Guide & Planning

The Key Issues

- We are under increasing pressure to recycle more and we need clarification regarding which materials or products can be recycled.
- Symbols help us to understand a concept without reading words. They can therefore be used internationally.

Additional Activities

Language

- Encourage instructional writing. Write instructions to be used alongside a symbol for aluminium. These should look at disposal, type of material and recycling processes.
- Look at other symbol systems, e.g., codes. How can they be translated into language? Use them to write in this 'new' language.

Maths and Science

- Investigate magnetism. Use examples of steel and aluminium. Decide which metals are not attracted by magnets.
- Use this data to draw graphs or charts. Which are the best to use?
- What chemical components in electrical equipment make it worthwhile recycling them? Which are dangerous?

Art and Humanities

- Design new symbols or logos for a variety of products.
- Make some of these into 3D models, using waste itself.
- Create a new national recycling symbol for your country. Hold a competition and decide which is the best.

Research

- Look at packaging to find out the chemical make-up of plastics.
- Find out more about all the symbols for plastics. What are the differences between them?
- What symbols are used in other countries? How are they different from the ones that you recognise?

More Information

Labels appear on packaging to advise consumers and promote environmental claims. To ensure these claims are accurate, a set of international standards have been developed. The presence of 'a recycling symbol' does not necessarily mean that the product or material will be accepted locally. The internationally-recognised recycling symbol is the three chasing arrows icon, the Mobius Loop. The symbol is only supposed to be used on goods that are 'recyclable' or include 'recycled content'.

Answers: (Following icons down the page). 1. Please put this in a bottle bank. 2. Recyclable aluminium. 3. Recyclable steel. 4. Capable of bring recycled. 5. Dispose of this carefully. 6. Do not dispose of electrical equipment. Final question: Germany and Canada.

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Know Your Recycling Symbols

- Why do you think it is important for there to be symbols on products to show if they can be recycled?
- Match the symbols to their meanings.
- What clues are in the pictures?

	Do not dispose of electrical equipment in a waste bin.
alu	This is capable of being recycled.
	Dispose of this carefully and thoughtfully. Do not litter.
	Recyclable aluminium.
	Recyclable steel.
	Please put this in a bottle bank.

- Which countries do you think these come from? Look carefully at the words and the pictures.

Umweltzeiche Weil ..... Jury Umweltzeichen 1	ENVIRONAMENTAL CHOICE CHOIX ENVIRONNEMENTAL 2

1.

2.

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What Can You Do?

Teacher's Guide & Planning

The Key Issues

- By acting locally, we can all create real and sustainable global change.
- Everyone can help by producing less waste and following the 'three Rs' – reduce, re-use, recycle.
- We need to be aware of the environmental impact of what we do with the 'three Rs'.

Additional Activities

Language

- Keep a 'waste diary' for a week in school. How much does each person produce?
- Encourage discussion and techniques of argument by arguing the case for 'best environmental option' for each of the 3Rs.

Maths and Science

- Collect data in school about how much each class is re-using, recycling or how much it is reducing waste. You could weigh some items, e.g., the class waste bin every day. What is the best way to display and communicate this data?
- How is the garden a good place to illustrate the 3Rs?

Art and Humanities

- Make a display of symbols about recycling to inform others in your area.
- Design your own symbols that will be appropriate to your locality.
- Consider how 'global' change can be started locally. Look at the chain of economics and climate change that can affect us, e.g., recycling more paper at home may mean fewer imports of wood from a developing country. Will this help the environment or ruin their economy?

Research

- Find out more about recycling symbols and what they mean.
- Investigate dangers associated with plastic bags in the environment.
- What can be done to help recycle them?
- What uses can such plastics be when recycled?

More Information

To increase recycling, we need to collect more waste in recycling bins, build more recycling plants and educate people about recycling. By recycling more waste, we can save landfill – reducing the need to find new sites; save energy – reducing global-warming gasses and pollution; save raw materials; save water – reducing shortages and pollution. Every year, the average domestic waste contains enough unrealised energy for 500 baths, 3,500 showers or 5,000 hours of television. Children should be aware of problems with recycling: Can recycling use more energy and cause environmental impact through the production of greenhouse gasses?

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What Can You Do?

• **REDUCE! REUSE! RECYCLE!** Write what you can do to help.

REDUCE: trying to stop waste being created in the first place

REUSE: waste that can be used by someone else

RECYCLE: waste that has been turned into something useful

DISPOSAL: if all else fails. Landfill.

Cancel delivery of unwanted newspapers.

Re-use plastic shopping bags.

Use kitchen waste in compost.

• Which is the ***best*** environmental option of these? Why?	• Which is the ***worst*** environmental option of these? Why?