

PART 3

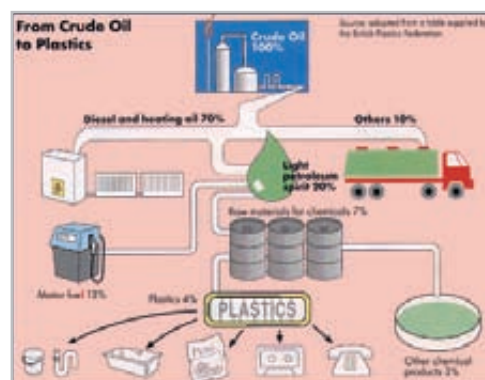
Waste investigation

Now you are going to investigate the four most important waste materials: 1) plastic 2) metal 3) paper and 4) glass. Find out where they come from, what problems they can cause and how you can manage the waste.

1 Plastic

The word plastic comes from the Greek word *plastikos*, which means “able to be molded.” This characteristic makes plastic perfect for things like bottles, toys and packaging material.

How are plastics made? Plastic is made of petroleum. About 4 % of the oil extracted in the world is used to produce all of the plastics we use in everyday life (half is used in transportation and half in production!).



The problem. Plastic is not bio-degradable and stays in the environment for a very long time. Landfill sites worldwide are filling up and burning plastics is also bad because highly dangerous substances are released. Although you might not suffer immediate side-effects, over long periods of time the health effects can be disastrous! Animals are also affected: about 2 million seabirds die each year due to eating or getting wrapped in plastic!

Solutions in Zanzibar

- **Reduce** plastic packaging where possible; don't buy water in a plastic bottle if you could drink from a glass at home. Buy sodas in returnable glass bottles rather than in plastic bottles
- **Reuse** plastic containers rather than buying new ones.
- **Recycle:** separate plastic bottles from the other waste and handle them over to a recycling facility in Zanzibar (for details on projects see 'Making a difference').

Recycling one plastic bottle saves the energy to run a 60w light bulb for 6 hours!



Plastic bags - a world view

Since plastic bags were first used in 1957 in North America, each year, an estimated 500 billion to 1 trillion plastic bags are consumed worldwide. That's over one million plastic bags used per minute!!! With so many plastic bags being produced it is important to understand the impact they have on the environment. A plastic bag can take up to 1000 years to break down when it is thrown away but no one really knows because plastic has not been around long enough to tell.

Zanzibar is different!!

Zanzibar banned plastic bags in 2006. The law says anyone found producing, importing, using or selling plastic bags could face a fine of up to one million shillings or more; and a possible jail sentence of up to a year. Although enforcement of the law has been a big challenge, Zanzibar has been very successful in widely eliminating plastic bags from the islands Unguja and Pemba – a success story we can be proud of!



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2 Metal

Metals are widely used because of their different properties: they are strong, good conductors of heat and electricity. There are 70 different types of metals, of which iron, steel and aluminium are the most important ones.

How do metals occur? Metals rarely occur in their pure form (e.g. gold and silver) usually they occur as mineral compounds such as aluminium oxide (bauxite).

The problem. Making metal from minerals needs a lot of energy and some metals can harm our environment.

Solutions in Zanzibar

- **Reduce:** use returnable soda bottles rather than buying a soda drink in a can.
- **Reuse:** (1) Make a plant pot from an old tin can. (2) collect soda bottle caps and make some crafts
- **Recycle:** separate metal from the other waste, get in contact with a recycling facility in Zanzibar and sell or donate your metal scraps.



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3 Paper

Paper is one of the most familiar materials in everyday use. For many years paper was made by hand and therefore was very expensive. People treated it with great care, and often saved it after they used it.



How is paper made of trees? Paper is made of wood from trees!

The problem. If paper is not recycled it ends up in landfills and gets burned. In addition, it is very destructive if trees for paper making are harvested from an old forest.

Solutions in Zanzibar

- Reduce the amount of paper
- Reuse paper especially in schools and companies
- Recycle paper at home and school

4 Glass

Glass has been widely used as packaging material especially before plastic was introduced. In Zanzibar a lot of sodas come in returnable glass bottles!

How is glass made? Glass is made from sand and two white, powdery chemicals known as soda and lime. In a glass factory, the glass ingredients are heated at high temperatures until the mixture becomes a thick syrup that can be shaped into many useful things e.g. bottles, drinking glasses or light bulbs.

The problem. The production of glass uses a lot of energy. If glass is buried in a landfill site it does not breakdown and stays there for millions of years. Broken glass is very sharp and can injure people and animals.

Solutions in Zanzibar

- Reduce the amount of glass products
- Reuse bottles and jars as storage containers for jam, juice or water. Be creative and make a new product out of a glass bottle e.g. by making mosaics or wind chimes
- Recycling glass is happening all around the world. In Zanzibar it is possible to return soda glass bottles to the shop. However, wine and beer bottles are not yet collected and recycled.



