

RECYCLING

Recycling is processing old material to make it good enough to be used as new, e.g. melting down used aluminium drinks cans so that new cans can be made without using fresh aluminium. Sometimes the old material is added to the new. Most 'new' steel contains up to 40% melted scrap steel.

Plastics - most thermoplastics can be recycled, e.g. 'PET' used for fizzy drinks bottles is recyclable. Thermoset plastics are not recyclable.

Metals- Pure metals can be recycled. Alloys can only be effectively recycled if all the scrap is the same alloy.

Wood & Ceramics- are not recyclable.

Products that are made of material that can be recycled will normally display the three arrow symbol on the label.



Recycling is part of the government's drive to reduce the amount of waste in this country. The aim is to reclaim and re-use as much material as possible. However, this is not always possible, some materials e.g. ceramics, cannot be recycled, but can be used for other purposes, e.g. old ceramic products are used as hard-core, a layer of broken ceramics and bricks, onto which concrete is poured to make pathways, etc.

The government's policy can be called the '4Rs' policy.

Reduction - Reduce the production of waste in the first place.

Re-use - Clean and re-use products, e.g. bottles.

Recover - Recycle paper, glass, cloth, steel and aluminium, etc.

Remove - Remove as little as possible and try and gain energy from burning the waste or collecting methane gas from a landfill site.

Life Cycle Analysis (LCA) This analysis process involves collecting data at each stage of the manufacture and use of a product, from the extraction of the raw materials, to the problems it produces when it is thrown away at the end of its life. The data is about:

1. The cost of getting the raw material e.g. digging metal ore from the ground.
2. The cost of converting the raw material into a usable material, especially how much energy was used (electricity, coal, gas or oil).
3. How much recycled material was used in making the product.

4. How much time, energy and waste was involved in each making process.
5. How much material, time and energy was used in packaging the product and distributing it to the shops.
6. How easily it can be disposed of safely, or used for recycling at the end of its useful life.

LCA can be applied to the manufacture and use of a computer.



The aims of responsible manufacturers are:

- A) To reduce the amount of energy used in manufacturing the product.
- B) To make a product that lasts a reasonably long time.
- C) To make it as recyclable as possible when it is worn out, or out of date.

Recyclable packaging



1. What do you understand by the term 'Life Cycle Analysis'?
2. How would you identify a responsible manufacturer?
3. What is the difference between the terms 'recycled' and 're-used'?
4. A clear glass jam jar is to be recycled. What would you expect to happen to it?
5. What is the government's policy about reducing waste and energy use?
 - A. Identify **four** products that are used at home that could be recycled. Say what they are for and what material you think they are made from.
 - B. Identify **four** products that are used at home that could be re-used, either for their intended use or for an alternative use. State how they could be re-used.