

THE SIX Rs

This mobile revision pdf is based on detailed work found in the Product Design section.

Tap on the green link button below to go to the complete website section



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THE SIX Rs

1. REDUCE - REAL LIFE
EXAMPLES

2. REUSE - REAL LIFE
EXAMPLES

3. REFUSE - REAL LIFE
EXAMPLES

4. RETHINK - REAL LIFE
EXAMPLES

5. RECYCLE

6. REPAIR

REDUCE

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If we are serious about supporting the environment, one of the first ways of helping, is by reducing our use of materials and energy.

For example, many people use a car, to get to and from work, or for shopping. Switching to a bus or train would reduce the amount of fuel / energy required and the damage to the environment caused by each trip.

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REDUCE – TEXTILES - FASHIONS

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Buy clothes and fashions that can be repaired, or clothes that are second hand.

This is growing in popularity, as people realise the true cost of new clothes. The manufacture of clothes / textiles, negatively impacts the environment, on a global scale. Therefore, we need to reduce our desire for new clothes / fashions



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REDUCE – TRANSPORT USAGE

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Get a bus or train to work and reduce the number of car journeys. Shared transport reduces our use of energy and our carbon footprint. Use a bicycle or walk, when it is possible to do so.

It is estimated that a quarter of the European greenhouse gas emissions, is due to transport.

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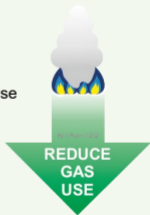
REDUCE – ENERGY IN OUR HOMES

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Reduce our use of energy at home. Only turn on the central heating when it is really required. This reduces our use of natural gas, lowering the amount of pollution we personally release into the atmosphere.

In the UK, fourteen percent of green house gases, originate from our gas central heating.

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REDUCE – OUR USE OF PLASTIC

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Plastic cutlery, straws and cups, are often disposed of carelessly, ending up in the environment, including the waterways and even oceans. This has been publicised in recent years, by TV programmes, highlighting the negative effects of plastic on sea life. Consequently, reducing or stopping the use of plastic utensils / containers, is popular amongst environmental campaigners.

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an exercise



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REDUCE – OUR USE OF INSECTICIDES

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We should be aiming to reduce or eliminate the use of pesticides / insecticides by agriculture. These do not only kill the pests, they tend to kill other insects, that are important to plants and trees.

The decline of the bee population around the world, has been blamed on the use of some indiscriminate pesticides. Bees are very important pollinators, for our plant based food.

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REUSE

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Most people are now aware of the need to reuse products, rather than disposal, when they are no longer wanted. More and more products, are manufactured so that they can be disassembled and their components used again, or so that they can be re-purposed.

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REUSE - BUILDINGS

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Reusing buildings and changing their function, rather than a new build, is quite common. This is called 'adaptive reuse'. Battersea Power Station built 1929 - 1935, is an excellent example of 'adaptive reuse'.

It was decommissioned in 1975 and was given 'listed building' status. By 2014, after restoration, it was re-purposed for up-market residential use, with restaurants and a selection of shops, offices, cultural spaces and other leisure facilities.

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REUSE – GLASS BOTTLES

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The home delivery of milk in bottles, was popular in the 1970s and 1980s.

Households received a daily delivery and return the empty bottles, from the previous day. These would be cleaned and refilled with milk at a dairy. Home delivery declined dramatically, due to competition from supermarkets.

However, the reuse of milk bottles is once again, seeing a growth in popularity.

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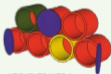
REUSE – UPCYCLING

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Upcycling is a type of recycling. When a product comes to the end of its life cycle, it is dismantled and its components / parts are reused to produce high quality products, often a higher quality than the original product. For example, reclaimed plastic drainage tubing can be reworked to produce 'funky' storage units (see below). Upcycling a component, means that it is upgraded into a higher quality product, adding value

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OLD POLYBUTENE DRAINAGE PIPE



UPCYCLED INTO A
MULTICOLOURED 'FUNKY' STORAGE UNIT

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REUSE - REFILLS

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Some manufacturers / retailers, offer customers the opportunity to refill, rather than buying a new, container with its contents. Good examples of this are washing up liquid, washing powder and hand wash.

The customer reuses the original container and simply buys a refill, saving on packaging and plastic waste.

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WASHING-UP
LIQUID REFILL



WASHING POWDER
REFILL



HAND WASH
REFILL

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REUSE - REFURBISHMENT

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A good example of this is furniture. There is a vibrant market in second hand furniture. For example, there are companies that perform house clearances. Typically, the company removes the furniture and puts it on display in their shop, for resale. Second hand shops are popular today and provide a welcome service, to people looking for quality, cheap furniture.

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REUSE – NEARLY NEW CLOTHES

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There are a number of websites, offering a clothes resale service and they have become very popular. People set up an account, to sell and buy clothes, shoes and other accessories. The websites enable the customer to sell unwanted, quality clothes easily.

The RealReal, Le Prix, Depop, Material World, Poshmark and Vinted, are a few examples of companies that offer this service.

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REUSE - FINDING A NEW USE FOR OLD YACHT SAILS

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An eco-conscious South African company called Sealand Gear, reclaim old boat and yacht sails, banners and billboards. Most of this used and discarded material, would normally end up in a landfill, at the end of its useful working life and potentially pollute the environment. The company cleans the used material and transforms it into desirable, fashionable, sturdy bags.

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REFUSE

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As we all become aware of the need to protect the environment, more and more people are practising 'refuse'. This is where people refuse to buy products that are harmful to the environment or refuse to buy products that have excess packaging, that is often non-recyclable.

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REFUSE - SINGLE USE PRODUCTS

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Refuse to buy or use single use products.

This includes disposable plastic cups, cutlery, straws and plastic bags, which pollute the environment around us and even the oceans . Refuse to buy products that contain materials or ingredients, that are damaging to the environment.

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REFUSE CAMPAIGN - MICROBEADS

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A recent campaign against products that contain microbeads (plastic beads - dangerous to animals and sea life), found in some shower gels and makeup, was highly successful. This was due to supermarket customers, 'refusing' to buy products that contained microbeads. The UK Government supported a ban on microbeads in 2016.

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REFUSE PRODUCTS THAT ARE NOT ENVIRONMENTALLY CERTIFIED

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Refuse products that are not certified as sustainable. An example is the 'Ecolable' scheme, managed by the European Union.

Established in 1992, it aims to promote products and services, that are environmentally friendly. Companies and businesses that use this symbol / label, have shown consistently, that they sell products and services, that conserve the environment.

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RETHINK

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Rethink - when designing, consider manufacturing the product from sustainable materials.

Rethink - do you really need the product, you are thinking of buying?

Rethink your lifestyle i.e. walk instead of driving a car, for a short journey. Turn electrical devices off, when they are not in use.

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RETHINK – QUESTIONS WE SHOULD ASK OURSELVES WHEN BUYING

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Do I really need to buy this product?

Can it be repaired / maintained?

Is it recyclable?

Is it reusable or single use?

Can it be re-sold as 'nearly new',
after I have used it?

Tap the image for information / more questions we should ask ourselves



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RETHINK - PAPERWORK

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Rethink - do you need to receive unnecessary paperwork / letters. An example: change from paper based bank statements, to electronic statements, using online banking. This is a personal decision, but it is worth thinking about. This saves paper and the trees, printed bank statements and their envelopes are manufactured from.

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RETHINK - TRANSPORT

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Rethink how you commute to and from work. Thousands of people rethink their transport needs and switched to cycling, every year. Recent years have seen the growth of cycling, as a preferred and healthy method of commuting / transport.

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CYCLE TO WORK



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RETHINK – ENVIRONMENTALLY FRIENDLY PRODUCTS

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Rethink - the products you buy. Are they environmentally friendly? We should be spending some time considering the everyday products we purchase. Are environmentally friendly alternatives available? If the answer is yes, then we should be prepared to change.

A good example of this is washing powder / liquid. Environmentally friendly versions are available.

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RETHINK - OBSOLESCENCE

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Rethink - when faced with Planned and Perceived Obsolescence. Learn to recognising both of these concepts.

Planned obsolescence, is when a product has been designed to last a limited time and then fail. This means a customer has to buy a new replacement.

Perceived Obsolescence is when a manufacturer persuades potential customers, to update / upgrade an existing product.

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OBSOLETE

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RECYCLE – CLOSED LOOP RECYCLING

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Closed Loop Recycling is when a company manufactures a product, customers buy the product and then return it at the end of its useful life. The company then recycles all the materials back into the same product, ready for resale. No new raw materials are used in this process. This is a closed system.

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CLOSED LOOP RECYCLING EXAMPLE PRODUCT

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Recycled PET / PETE (polyethylene terephthalate), can used to manufacture soft drinks bottles, by injection moulding / blow moulding machine. This material comes in a range of colours and is completely recyclable. When recycled it does not degrade into a lower quality form. In theory, it can be recycled again and again, without a drop in quality.

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RECYCLING - DOWNCYCLING

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Recycling often leads to '**downcycling**'.

This means that the materials and components that are reclaimed from discarded products, are recycled into lower quality products.

When paper is recycled and reprocessed, it loses some of its original quality. Recycled writing paper often ends up as lower quality card board and manilla folders. Sometimes recycled writing paper is processed with new paper pulp and then it can be used for writing paper again. Quality writing paper can be downcycled only four / five times.

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QUALITY WRITING
PAPER



PHOTOCOPIING
PAPER



CARDBOARD
FOR PACKAGING



TISSUE PAPER
TOILET PAPER



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REPAIR

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Products are often designed to be thrown away when they fail. This is especially the case in respect to small electronics devices.

However, there is a growing consumer campaign, to ensure that products are as environmentally friendly as possible. One way that this can be achieved, is through designing products that can be repaired and maintained. One such product is a kettle.

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ADVANTAGES OF REPAIRABLE PRODUCTS

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Can be updated, to be more efficient, lengthening their useful lifetime.

It is cheaper to repair than replace an entire product.

Repairable products are environmentally friendly, as they save/conserves materials and help limit damage to the environment.

Some products need annual checks / servicing, to ensure they continue to work, are safe and efficient (e.g. a car).

Products that can be repaired / maintained are beginning to be popular with consumers.

Tap the image for more advantages of repairable products



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