

## 6.3 The 6Rs

Many consumers are trying to think of the environment and sustainability when they buy things; they are thinking of 'green' issues. Designers and manufacturers are required by law to try to reduce the environmental impact of the products they create. Six keywords summarise approaches that can be taken by the consumer, the designer, the manufacturer and the retailer:

- Reduce
- Refuse
- Recycle
- Rethink
- Reuse
- Repair.

### Reduce

Consumers need to look to reduce the number of products they buy, or consider buying products that use less energy.

Manufacturers are looking to design products that:

- have less materials in the product
- take less energy to manufacture
- need less packaging during transport.

Retailers can reduce carbon emissions by transporting products straight to the consumer from the place of manufacture, instead of via warehouses and shops.

### Recycle

Products are converted back to their basic materials and remade into new products. Examples include:

- Glass crushed, melted and made into new bottles.
- Aluminium cans melted down to make new products.
- Plastic bottles recycled into drainage pipes and clothing. (It takes 25 two-litre plastic bottles to make one fleece.)

Designers and manufacturers of products need to design products for recycling. Car manufacturers are obliged to label all plastic parts in new cars to aid recycling of all those parts. Electrical and electronic products now have to include recycling instructions for the consumer. These state that products should be taken to special recycling points at the end of their life. Many local councils now collect materials that can be recycled separately from normal domestic waste. Products collected include cardboard packaging, steel and aluminium food cans, plastic bottles, glass bottles and jars.

### Reuse

Glass milk bottles are a classic product that is reused. A more recent product that can be reused is a printer cartridge, which can be refilled. Some products have filters that can be washed rather than using disposable, single-use filters.

Consumers could sell or donate products they no longer use themselves, so that someone else can use them.

#### Objectives

Understand the meaning of the 6Rs.

Name and explain examples for each category.

#### Key terms

**6Rs:** six words beginning with the letter R. Each describes an action that can be taken to reduce the environmental impact of products.

No deposit,  
no return,  
no kerbside  
collection

Americans throw  
25 million plastic  
bottles per hour

Plastic recycling firm  
reports shortage of  
plastic bottles

**A** Recycling the headlines

#### links

Check the codes for plastics on page 10, 1.5 Plastics.



Designers need to consider how a product may be dismantled at the end of its life so that parts may be reused.

### Refuse

The consumer has the choice as to whether they buy a product or not. They can ask the following questions:

- Should they refuse the product because it is too inefficient (in use, or in its use of materials)?
- Should they refuse the product because its packaging creates too much waste? (Disposable cups from the coffee shop, plastic carrier bags from the supermarket, plastic water bottles.)

The designer and manufacturer have an increasing need to think about how the consumer will react to their products; will they refuse them?

### Rethink

Consumers can ask the question, "Do I really need this product?" (Do you really need to replace your mobile phone every year?)

Designers and manufacturers can make products that do the same job more efficiently. They can design the packaging so that it is easier to recycle (for example, by making the packaging from a single material).

### Repair

Designers have a responsibility to design products that can be repaired more easily. It takes fewer resources to replace a part of a product, than to replace the whole item.

### Precycling

The aim of **precycling** is to delay recycling for as long as possible. Consumers should consider some of the other Rs before making the decision to dispose of the product:

- repairing a product instead of disposing of it (e.g. fitting a new bearing to a washing machine, upgrading a computer)
- refusing a product (refuse a disposable cup from a coffee shop; take your own mug instead!)
- reusing a product (a cotton carrier bag at the supermarket, or using a food container to store and organise other products).

Precycling reduces the need to recycle. A product may have many different uses with more than one consumer/owner.

#### Activity

##### Applying the 6Rs to everyday products

For each of these products, describe how the consumer or designer can think about the 6Rs and precycling:

- Mobile phone
- Tetrapak drinks carton
- Wooden dining table
- Metal desk lamp
- Child's toy.



**B** A classic example of reusing a product

#### Key terms

**Precycling:** delaying the recycling or disposal of products, by repairing, reusing, or refusing.

#### AQA Examiner's tip

- Understand the meaning of each of the 6Rs.
- Be able to describe how they could be applied to everyday products.

#### Summary

The designer and manufacturer need to produce products that can be reused or recycled easily.

Products need to be efficient in their use of resources.

The consumer needs to decide if they really need the product.

The consumer is responsible for what happens to a product at the end of its life.