

Less is best

Time: 50 minutes

Individual and Group

Purpose

To see how products can be redesigned to use less materials and possibly less energy as well.

Background to the task

How can we *both* have the products we need *and* cut down on the environmental impact? One design strategy is to 'do more with less'. This means redesigning products so that they

- Use less materials
- Use less different types of material
- Use less energy in manufacture and use
- Create less pollution at all stages of their life cycle.

Carrying out the task

In groups: look at and handle the products in front of you. Discuss what materials have been used and what possible manufacturing processes were involved.

Whole class discussion: Why is it sensible to reduce of materials and / or energy in production?

In groups: evaluate one of the products in front of you and make suggestions as to how it could be redesigned to

- Save on the use of materials
- Save on the use of energy

Plenary: towards the end of the class each group will give a short presentation about its product.

Recording results

- Use A3 sheets of paper and a marker pen to show how the product can be redesigned to use less materials.
- Make notes about possible ways of reducing energy

Teachers' notes

You may wish to unpack the four principles with the pupils through question and answer.

For more detail on the principles of 'Reduce, Reuse, Recycle' visit www.sda-uk.org. Alternatively visit <http://www.informationinspiration.org.uk/> and go to the 'information' pages, then ->strategies and then choose any of them that have the words 'reduce' or 'reduction'. **If you go onto -> 'Materials reduction' you will find links to over 15 case studies of good practice in materials reduction.** These might give you ideas for products to collect for use in lessons (see below).

Materials needed

Collect a variety of products that will raise these issues – ideally they should be everyday products that the pupils use. Often it is instructive to have pairs of products (e.g. a traditional and an electric toothbrush).

Packaging often provides good examples of waste, especially more up-market products such as perfumes, which come in two or three 'layers' of packaging. Biscuits might have (a) a protective vacuum-formed container, (b) a box, (c) a film outer cover: on top of this we are likely to bring the biscuits home in supermarket bags!

If you need images as well as objects to handle, furniture also offers examples. Try searching for things like 'Shaker furniture' and 'minimalist design' on Google images.

Extensions

More able students could use the <http://www.informationinspiration.org.uk/> site to do their own exploration of materials reduction and energy reduction. Again go to 'Strategies' and then onto 'Energy reduction'. Students will find here links to a number of products redesigned around this principle.