



## A whirlwind tour of issues relating to paper

### The figures

The UK used 12.5 million tones of paper and cardboard in 2002.

Paper can be recycled 5 times before the wood fibres become too weak and need to be replaced.

Including paper, cardboard, newspapers, magazines, telephone directories and packaging, each family in the UK uses the equivalent of six trees per year.



30% of all household rubbish is paper.

The UK recovers about 50% of all the paper used each year. UK papers mills use a lot of recycled material in the paper they manufacture – about 66% - compared to only 48% in European mills.

### The issues

Recycling paper means we don't have the problems of disposal associated with burying our rubbish in landfill sites, or incinerating it.

Recycled paper uses 30 to 70% less energy than making new paper, and far less water too.



Trees for paper making are often grown and harvested as a long term crop with new trees planted to replace those cut down. This is often referred to as "sustainable forestry". One drawback is that these managed plantations do not provide the wildlife habitats of naturally occurring forests.

Timber and occasionally paper products made using wood from sustainable forests often bear the Forest Stewardship Council (FSC) logo. This guarantees that the wood does not originate from irresponsibly cleared, virgin forests in places such as the Amazon.

### The politics

Paper, along with garden and kitchen waste is covered by targets in The Waste Strategy 2000, which aims for a 25 % reduction in biodegradable waste going to landfill by 2005.

If we can't bury this paper anymore, we must either recycle it or burn it in incinerators.

A report from CSERGE (Centre for Social and Economic Research on the Global Environment) investigated whether it is better to recycle or incinerate waste paper. "The UK's national income rises by around £154 for every additional tonne of paper recycled; recycling creates three times the number of jobs that incineration would; recycling offers savings for local authorities; and recycling paper saves more energy than is generated through its incineration."

### The solutions

Reduce the amount of paper used in school especially in ICT classes by printing on both sides.

Reuse paper in school by creating scrap boxes where partially used paper can be used again for "rough" work, in Art, D&T and other classes. Shredded paper can be sold to mail order companies as a packaging material and in certain circumstances, as animal bedding (but be careful of poisonous inks or dyes).

Recycle paper at home and school. Many households now have a kerbside collection service for waste paper such as newspapers and magazines. If not then take your waste paper to a local paper bank.

Close the loop and buy recycled paper products at home and school. Most paper suppliers carry a range of high quality recycled paper for printers and photocopying.

Visit [www.recycledproducts.org.uk](http://www.recycledproducts.org.uk) to find out more about recycled paper products.

### Take action

Lobby your school to buy recycled paper. Write a letter to your headmaster asking if your school has a green purchasing policy. Point out all the good environmental reasons for buying green products and ask for changes to be made. Get the letter signed by as many staff and pupils as possible.





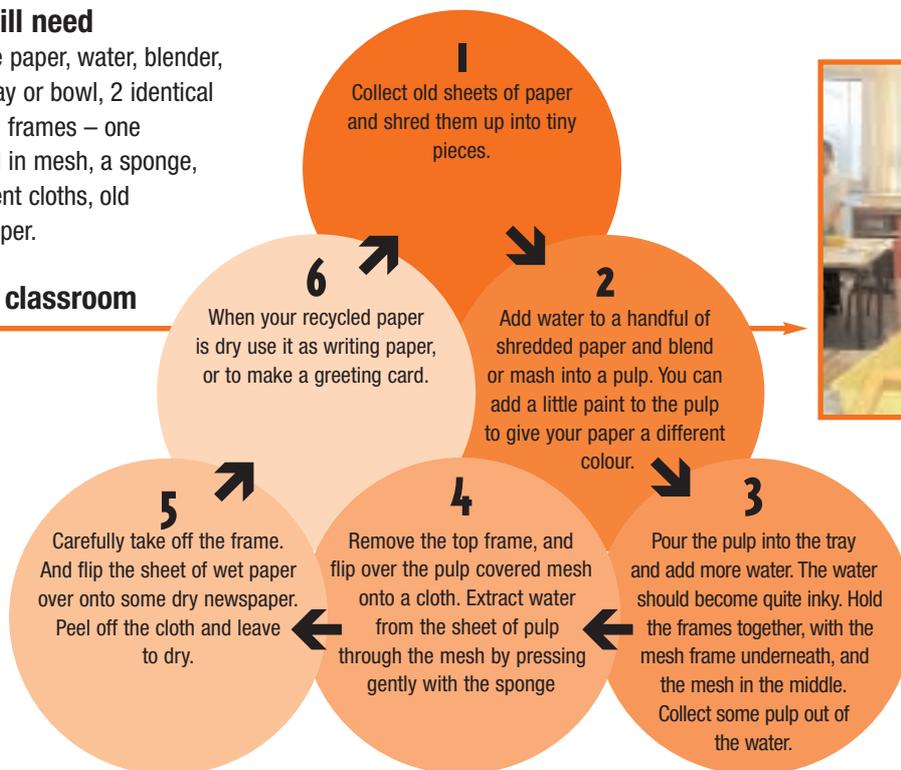
## How we make paper

People have been making paper for nearly 2000 years, and the method is very easy to learn. Here we show you how to make your own recycled paper, and compare the six easy steps with what goes on in a modern, industrial size, paper mill. For a full description of how to make paper in class visit [www.recyclezone.org.uk/az\\_makepaper.aspx](http://www.recyclezone.org.uk/az_makepaper.aspx)

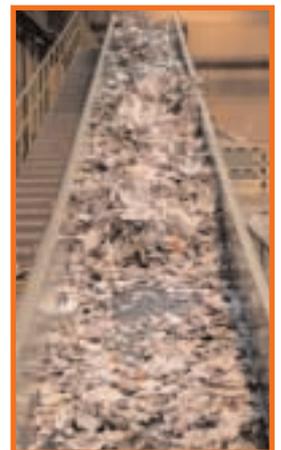
### You will need

- Waste paper, water, blender, deep tray or bowl, 2 identical wooden frames – one covered in mesh, a sponge, absorbent cloths, old newspaper.

### In the classroom



Paper on its way to be pulped.



### In the paper mill

Pictures courtesy of Aylesford Newsprint

A huge reel of the paper used to make newspapers.



An industrial size paper making machine.



## Buy recycled campaign

In groups, pupils should try to influence their school or Local Education Authority to buy recycled products. As research has shown that 47% of a school's waste is paper, the instructions are based on a campaign to buy recycled paper. This activity can be used for Citizenship classes to develop enquiry, presentation skills and group interaction. It will help pupils understand how school decisions are made and how they can influence policy. The campaign can also help with ICT skills, literacy and numeracy.



*Use group power to make a difference*

### Campaign stage one - research

You will need to find out certain information if you are going to persuade the school to buy recycled paper. It is likely that there will be a number of people involved in the decision making process and they will consider financial, environmental and other factors. Here are some questions you may need to answer:

- Who is responsible for purchasing paper at school and what is the decision based on? How much does it cost? Who supplies the paper? How often is new paper ordered?
- What types of paper does your school use? E.g. printing, photocopying, art, paper towels and exercise books?
- How much paper does your school use?
- Is there a recycled alternative?
- Does your school buy any recycled paper products?
- Does your school buy Forestry Stewardship Council endorsed products?
- Is there a cost difference between the current paper order and the cost of switching to recycled paper? Would a "step change" help your case?

### Pulp facts and pulp fiction

Some people talk a lot of rubbish about paper recycling; here we sort out the truth from the trash.

#### ***It requires more energy to make recycled paper than new paper***

**Trash!** If we look at the papermaking process alone, then it does normally take more energy to make paper from waste paper than from pulp because of the extra cleaning involved. But pulp does not grow on trees! If we include all the other energy requirements involved in turning wood chips into pulp, the making of recycled paper does save energy.

#### ***Making recycled paper requires a lot of bleaching***

**Trash!** Most recycled papers require little if any bleaching. If a mill has no de-inking or cleaning

equipment, it can only accept unprinted or lightly printed (e.g. computer) waste paper. At other mills printed waste is cleaned either by dispersal where the ink is diluted and dispersed in the pulp. Or by de-inking – where a detergent (usually phosphate free) is used to dissolve the ink. Then air bubbles are injected into the pulp. The ink sticks to the bubbles and rises to the surface where it is skimmed off. Where bleaching is used, mostly chlorine-free agents are used.

#### ***Recycled Papers are always of poor quality***

**Trash!** The quality of recycled paper has benefited from great improvements in papermaking technology over the last three decades. Quality control is almost invariably computerised and subject to the



strictest testing and checking. Many recycled papers are now indistinguishable from virgin equivalents.

#### ***Recycled Papers are always more expensive***

**Trash!** There is now a wider choice of recycled papers available, many of which are competitively priced.

Source: Paperback

### Campaign stage two - presentation

Using the information you have gathered design a presentation stating your case for the switch to recycled paper.

You can produce this as a drama or as a formal business presentation using overheads or a Power Point presentation.

Invite the people who purchase your school's paper to attend the presentation. Ask when they will make a decision and how you will be notified.

Remember, this is a complicated decision process, one of many that have to be made to run a school. It will help if you can identify any cost savings made by off-setting any additional costs with money gained through recycling. It may also be easier for the school to make the switch in stages (step change) perhaps by replacing one type of paper at a time. Remember to mention that a decision to buy recycled paper may give the school some good publicity.

### Campaign stage three - publicity

Once you have persuaded the school to switch to recycled paper you need to let the rest of the school and community know.

Hold assemblies to inform the rest of the school and invite local councillors and media along. Write a press release and take photos, and then send these to local newspapers.

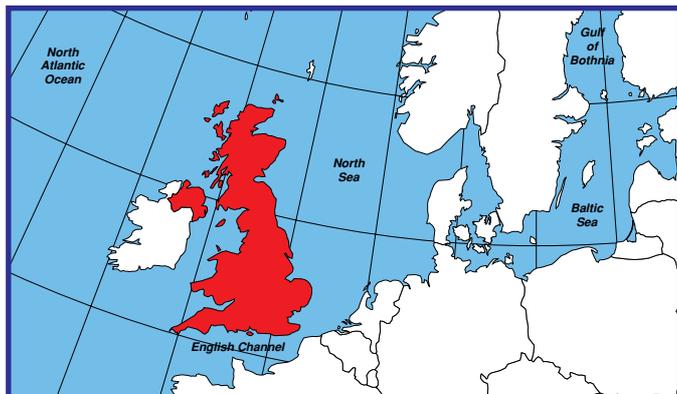
Remember that recycling is just one of the solutions to our waste problems. Publicise how waste can be reduced and reused making even greater savings to the environment!



*What types of paper do you use at school?*



## Focus on the United Kingdom



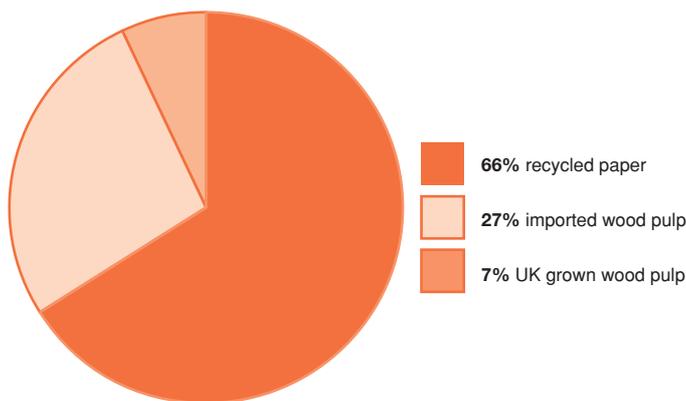
**Location** Northern Europe

**Population** 60,000,000

**Capital** London

Paper first came to England in 1488. Today, the UK is the fifth largest user of paper in the world – we need at least 6.4 million hectares of forest which is an area 9 times the size of Ireland, to supply our annual demand for timber products... But where does it come from? How is it made? What happens to it when we've finished with it?!

### Contents of paper made in the UK



### What our paper is made of

The raw material of paper making is wood pulp. The best trees for the production of wood pulp are softwoods such as spruce and fir which grow in the northern coniferous forests of North America, Scandinavia and Russia: 94% of new wood used by the UK paper and board industry comes from European, sustainably managed forests. The other 6% comes mainly from North America. Because the UK only has 11% of land devoted to forestry, compared with 25 – 80% in other European countries, waste paper is also a really important raw material for the British paper and board industry. In 2002, waste paper represented 66% of the fibre used in papermaking. So, in the UK, 66% of fibres used in paper making come from waste paper, 27% comes from imported wood pulp and 7% comes from home-grown wood pulp.

Source: Woodland Trust, Lets Recycle & Confederation of Paper Industries website



### Paper manufacture

The UK manufactures 6.2 million tonnes of paper a year. Some manufacturers use virgin pulp but two thirds of the 24 UK paper mills use recovered paper and many use nothing else.

### Paper products

Some of the paper is exported overseas, the rest is distributed as newspapers, packaging, stationery, tissues and other paper products across the country.

### Recycled paper

Recycled paper is paper produced from fibres that have been through a paper mill at least twice. These fibres come from post-consumer waste paper (used paper from packaging, newsprint, tissues) or pre-consumer waste paper (unused paper from off cuts, unprinted paper or damaged paper from mills).

Almost any household waste paper can be recycled, including used newspapers, cardboard, packaging, stationery, magazines, catalogues, greeting cards and wrapping paper. Waste paper is collected from household recycling sites, kerbside collections, or at designated sites for special collections.

Before paper can be recycled, it needs to be sorted, graded and baled prior to its transportation to the mill. There are over 60 recognised grades of waste paper in Europe and the paper grade determines what it can be used for. For example, long fibre, higher quality grades like office waste can make graphic paper, tissues and newsprint, but lower grades which includes mixed waste papers are used to make the middle layers of packaging papers and boards.

Paper cannot be recycled indefinitely because every time fibres are recycled they lose strength and after being reused about 5 or 6 times, the fibres become too short and are not strong enough for papermaking.

### End use

Unfortunately, many people simply do not recycle their paper and it is disposed of as rubbish. Approximately 5 million tonnes of paper is buried in landfill sites in the UK each year.





### Waste Online

This informative website provides information on all waste issues, including paper. Look at the Waste Online information sheets first – as you may well find everything you need to know on these excellently researched summaries.

[www.wasteonline.org.uk](http://www.wasteonline.org.uk)



### Paperback

This company supplies many different types of recycled paper – students taking part in the Buy Recycled Campaign might want to use Paperback to find out the cost of recycled paper products. There is also a comprehensive guide to the facts and fiction of recycled paper.

[www.paperback.coop](http://www.paperback.coop)

### Aylesford Newsprint

Aylesford produce 100% recycled paper for newsprint and they use over 500,000 tonnes of waste paper each year. This website has a great section that shows in detail how recycled paper in an industrial scale paper mill.

[www.aylesford-newsprint.co.uk](http://www.aylesford-newsprint.co.uk)



### Let's Recycle

When it comes to recycling this website means business – literally! Let's Recycle supplies

information predominantly for the recycling industry and there's a good list of paper mills, paper grades and paper prices. This is also a good place to find statistics for paper recycling in the UK.

[www.letsrecycle.com](http://www.letsrecycle.com)

### Yellow Woods Challenge

The Yellow Woods Challenge is a schools environmental campaign run by Yellow Pages, the Directory Recycling Scheme and the **WEEE Trust**. It aims to recycle old Yellow Pages directories and educate children about environmental issues. Schools can win cash prizes for their innovative recycling projects and for recycling the most directories. For more details on how you can participate visit the Yellow Woods Challenge website.

[www.yellow-woods.co.uk](http://www.yellow-woods.co.uk)



### Confederation of paper industries

These people are the eyes, ears and voice of the UK paper industry. This website has an excellent section for children called Kids Korna with games, quizzes and information. The website also includes several informative pages of facts and figures. Well worth a visit!

[www.paper.org.uk](http://www.paper.org.uk)



### Recycled products guide

If you're interested in products made from recycled paper then this site provides the information you need. In the online database are 100's of UK companies that are manufacturing new products from recycled pulp.

[www.recycledproducts.org.uk](http://www.recycledproducts.org.uk)



### Mail preference service

Direct mail sent from companies trying to promote their products often makes up a large percentage of the paper that we recycle. If you want to receive less direct mail then register with the Mail Preference Service. They will make sure that your name and address are taken off mailing lists and you should receive considerably less junk mail.

[www.mpsonline.org.uk](http://www.mpsonline.org.uk)



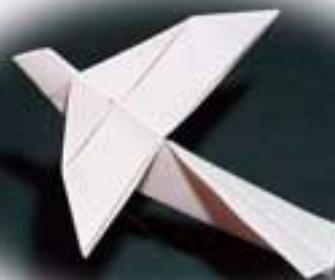
### It's out there on the internet – paper sculpture

We all know that paper can be recycled but what about reusing paper. For a start a sheet of photocopy or printer paper can be reused by printing on both sides, but what then? Well, if you want some amazing ideas for giving sheets of paper a new lease of life then visit the websites listed below. Both use paper folding techniques to make amazing models.

The first website will show you how to make some stunning paper aeroplanes and even paper bats and birds that really fly. The second website provides a perfect introduction to the Japanese art of paper folding called Origami. Origami has been around for many hundreds of years and some of the 3-dimensional models that can be made from a simple sheet of paper will have you reaching into your recycling bin for raw materials. Join the fold, but remember to recycle your models when you no longer want them!

[www.origami.as/home.html](http://www.origami.as/home.html)

[www.amazingpaperairplanes.com/FoldingRobin.html](http://www.amazingpaperairplanes.com/FoldingRobin.html)



*It's a paper plane, but not as we know it!*