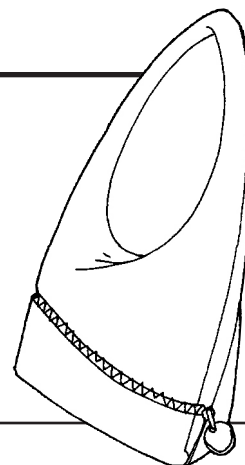


Carrier bags

The big picture

Task

To design and make a simple personal carrying device.



The story so far

With increasing concern for the environment, there is likely to be greater demand for carrying devices that can be used when travelling on foot or on public transport. The students' task is to research carrying devices that already exist in different

parts of the world and to use this information to design and make a carrier for someone in the local community. The design should take into consideration all the requirements of users in order to develop an appropriate technology.

Learning

Designing

Using ideas from designers in countries around the world.

Using ergonomics to improve product performance.

Making

Producing bags (in the widest sense) using textiles.

Technical matters

The strength of materials and the effectiveness of different joining methods.

Other matters

Appropriate technology.

Design decisions

The sort of product

This has been decided by the teacher – a bag of some sort but there is clearly a wide range of choice with regard to the sort of bag.

The customer

The student can decide whom the product is for.

The performance of the product

The student can decide what the bag will carry.

The appearance of the product

The student can decide the overall shape and form of the bag although this may be governed to some extent by the purpose of the bag. The student can choose any decoration for the bag.

The way the product works

The student can decide how the product works in terms of how the bag holds what it has to carry and how the person using the bag carries it – the nature and positions of handles and straps.

The way the product fits together

The student can decide how the parts that make the bag fit together.

The student can decide how any handles or straps are attached to the bag.

The materials, fastenings and finishes

The student can choose from:

- a range of construction fabrics: sacking, medium calico, cotton duck, cotton drill, cotton corduroy,
- stiffening materials: card, tarlatan, buckram, Vilene® and Bondaweb®;
- padding materials;
- a range of found materials: packaging, card tubes, plastic sheeting, etc. (useful for producing decorative embellishments);
- a range of appropriate fastenings and fixings: thread, string, laces, press studs, hooks and eyes, Velcro®, buckles, zip;
- a range of decorative finishes: block printing, appliqué, machine embroidery, special effects, e.g. using a tagging gun with plastic discs.

carrier bags

Products

In this school the teacher required the students to design bags to be used for carrying particular items, so a key consideration was the use to which the bag would be put as well as the appearance of the bag.

Here the student produce a cylindrical bag for carrying hats.



Here the student produced a rectangular bag for carrying lunch.



Here the student produced a simple draw-string bag for gym kit.

Here the student produced a bag to carry homework books using the fabric from an old pair of jeans. He received a lot of help in fitting the zip.



Here the student produce a bag for carrying needlework in progress.

Values

Technical

Students should appreciate that, while it is desirable to use materials with the most appropriate properties, this may not always be possible and that a compromise may be necessary.

Economic

Students should appreciate that solutions are often dependent on locally available resources.

Environmental

Students should consider the impact on the environment of the use of materials from trees and plants.

Social

Students should appreciate the wide range of solutions developed by different cultures over time in response to their particular needs.

Moral

Students should consider the wider idea of 'burden' and how co-operation can 'lighten loads.'

Aesthetic

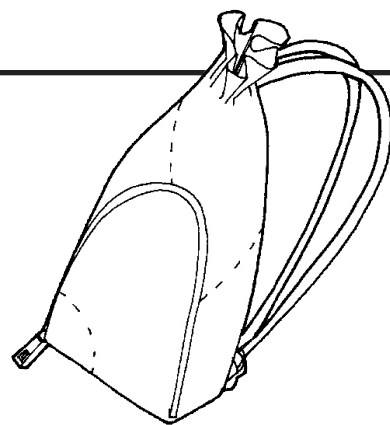
Students should consider the need for attractive 'carriers' for a variety of occasions.

Carrier bags

The detail

Sample brief

Design and make a bag that can be used by someone travelling on foot or on public transport to carry something of value that is only moderately heavy.



Sample specification

What the product has to do:

- provide the means for carrying particular items;
- be suitable for the identified user, allowing the user to carry things in a safe and comfortable manner.

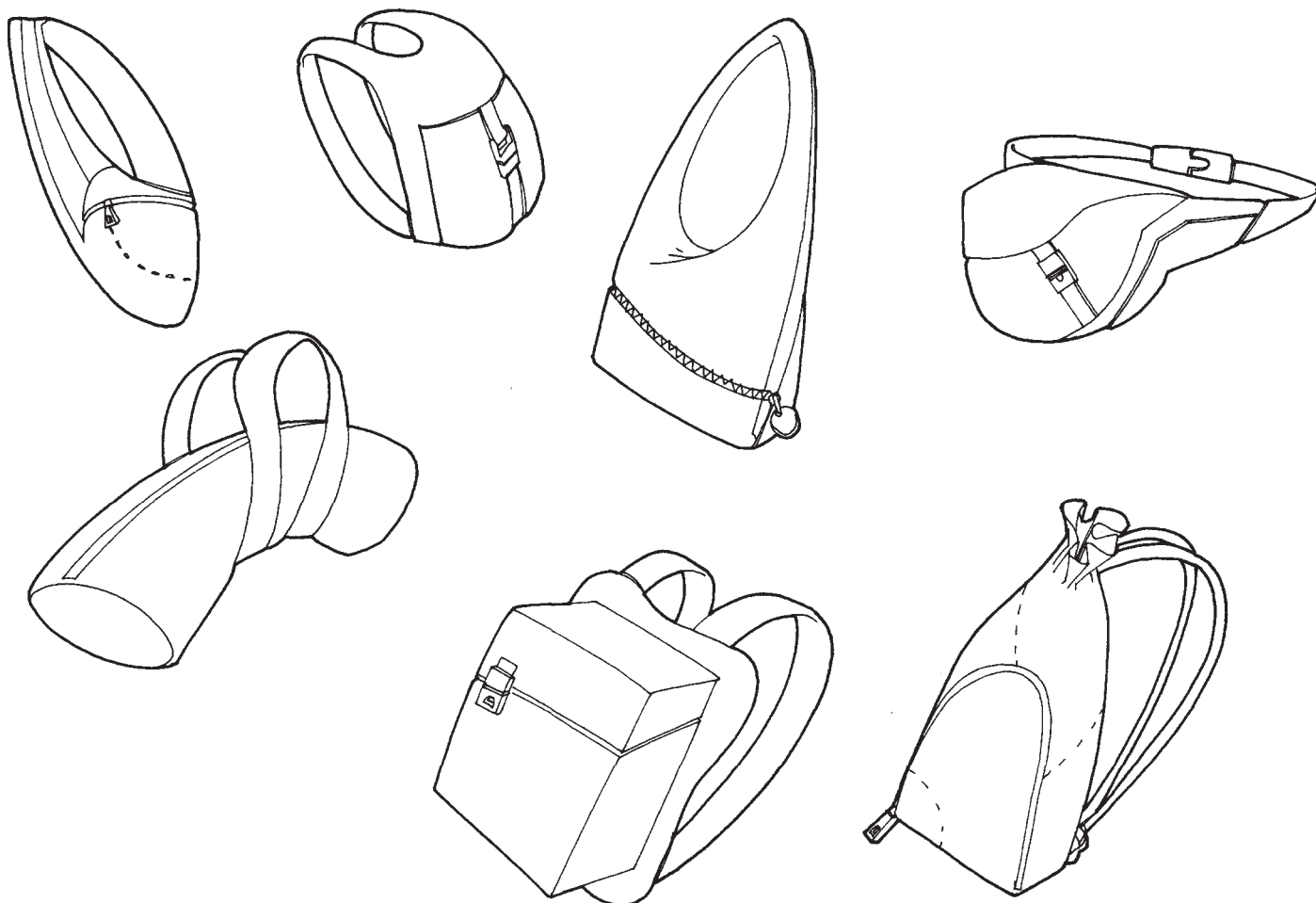
What the product should look like:

- be appealing to the identified user.

Other features:

- limited environmental impact e.g. uses some recyclable or recycled materials.

Starter sketches



Nuffield teacher talk

'OK, so you've decided you want it for sports kit. And you've got all your sports kit plus a towel and all that stuff you use in the shower. Right, try putting those things into a neat arrangement so you can work out a size and shape for your bag. And remember you'll need an opening that makes it easy to get them in and out.'

'It's a small bag for cosmetics but you want it to look different. Remember how the horse chestnut is all spiky on the outside yet smooth on the inside where it holds the conker? Well, start with that as an idea for your bag – the outside is very different from the inside. What could you put on the outside?'

'Yes, short spikes, lumps, bumps, shapes hanging off short pieces of thread, tassels are all possible.'

'Try drawing the bag edge-on several times and add different sorts of outsides till you get an interesting effect.'

'Those straps look really short in your drawing. Are you sure that the bag will be easy to put on and off? You're not sure. You could check by comparing the length of your straps with those on the haversacks we've got on display. Can you see how to make them adjustable?'

'You want it to be see-through so that you can check that you've got all your books without opening it. So what fabric could you use – transparent PVC is possible? It might be difficult to make the whole thing from this but you could build in a couple of 'windows'. Check out how easy it is to sew it onto another fabric like canvas.'

Resource Tasks

General design

For the first Capability Task in Year 8:

- SRT 4 *Writing interview questions*
- SRT 15 *Getting visual ideas from sections of pictures*
- SRT 30 *Layout*
- SRT 32 *Instructions*
- SRT 38 *Evaluating outcomes – winners and losers*

For the second Capability Task in Year 8:

- SRT 3 *Selecting recording tools*
- SRT 14 *Attribute analysis*
- SRT 19 *Appreciating products – feel*

For the third Capability Task in Year 8:

- SRT 5 *Identifying needs and wants*
- SRT 16 *Making random connections*
- SRT 28 *Modelling with spreadsheets*
- SRT 40 *Freehand product analysis*

Focus area design

TRT 2 *User trips with textile products*
(unless already tackled in Year 7)

Communication

CRT 9 *Presenting textile product designs*

Making

TRT 7 *Small bag*
TRT 8 *Large bag*

Technical

TRT 15 *Investigating fastenings*
TRT 16 *Is it woven or knitted*
TRT 20 *Testing for strength and stretch*

Commercial

TRT 5 *Marketing: Why are only some clothes advertised*
TRT 6 *Care: looking after clothes*

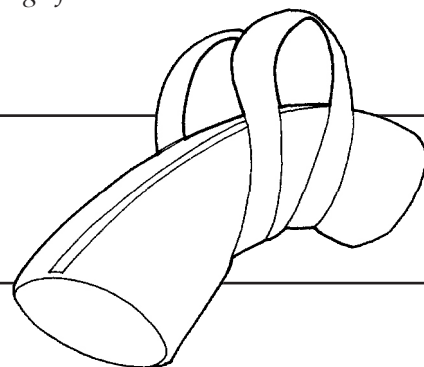
Case Studies

Carrying, downloadable from the website www.secondarydandt.org

ICT opportunities

Use the Internet to find out about carriers that are used in different parts of the world. Try putting '+fair +trade +bags' in the search engine. Look directly at www.fairtradefederation.com/memret.html.

Use CAD to develop patterns for decorating a fabric bag. Use CAD/CAM to develop printing blocks for decorative patterns. Use CAD/CAM to produce embroidered motifs.



Hot comfort



The big picture

Task

To design and make a textiles-based product that keeps somebody or something warm.

The story so far

Hot Comfort is a company which specialises in products that are warm and comforting for people and for animals.

The students' task is to develop products that would be suitable for Hot Comfort to sell.

Learning

Designing

Using an identified need (keeping warm) as a starting point for design.

Making

Constructing textile items that fit irregular 3D shapes.

Using batch production of textile items.

Technical matters

Matching properties to purpose with regard to thermal insulation and stretch-to-fit properties.

Other matters

Marketing.

Design decisions

The sort of product

The student can decide the sort of product with the condition that it has to keep somebody or something warm.

The point of sale

The student can decide where the product will be sold.

The customer

The student can decide whom the product is for.

The purpose of the product

The student can decide what the product will do, provided it is required to keep somebody or something warm.

The appearance of the product

The student can decide the overall shape and form of the products although this will be governed to some extent by the purpose of the product, whom it is for and where it will be sold. The student can also choose any decoration for the product.

The way the product works

The student can decide how the product works in terms of the way in which it achieves both the 'keep warm' and 'fitting' functions.

The way the product fits together

The student can decide how the product fits together by considering how the required shape and fit can be achieved from yarn by knitting or from separate pieces of fabric joined together.

The materials, fastenings and finishes

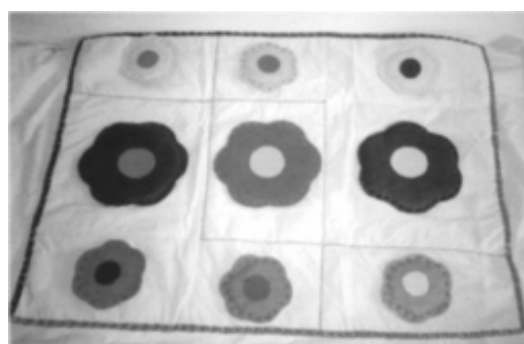
The student can choose from:

- a range of ready made woven fabrics from fibres, such as wool, cotton, synthetic, e.g. acrylic, nylon, polyester;
- a range of non-woven fabrics, e.g. felts;
- a range of yarns from which to produce fabric, such as wool, cotton, synthetic e.g. acrylic, nylon, polyester;
- a range of appropriate fastenings and fixings: thread, string, laces, press studs, hooks and eyes, Velcro®, buckles, zip;
- a range of decorative finishes: block printing, appliqué, machine embroidery.

Products

Here the teacher has built on pattern cutting work carried out in Year 7 so the students have both the confidence and skill to develop patterns for a wide range of 'Hot Comfort' products.

Here these students have produced pairs of slippers.



Here the student has produced a cot quilt.



Here the students have produced scarves.



Here the student has produced a coffee pot cosy.

Values

Technical

Students should appreciate that, while it is desirable to use materials with the most appropriate properties, this may not always be possible and that a compromise may be necessary.

Economic

Students should use the idea of value for money to think about the influence of price on marketability. They should consider how they might ensure that their design is appropriately priced.

Environmental

Students should consider the source of the materials used, their disposal after the product has completed its useful life, and the effect of the manufacturing processes.

Social

Students should consider how ensuring comfort is an important part of relationships.

Moral

Students should also consider the way textile items are manufactured both in developing and in developed.

Aesthetic

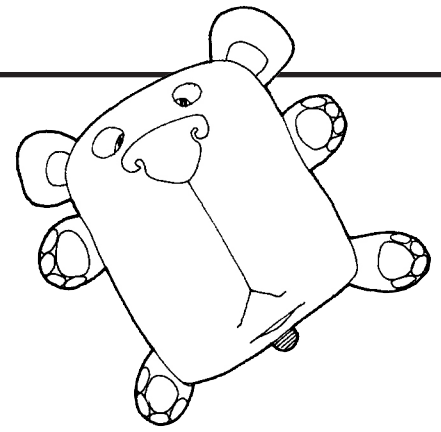
Students should consider the relationship between the appearance of their designed items and the style they are trying to achieve.

Hot comfort

The detail

Sample brief

Design and make a textile product that will improve comfort by keeping somebody or something warm.



Sample specification

What the product has to do:

- provide the means for keeping somebody or something warm;
- be suitable for the identified user in that it fits comfortably and is easy to put on and take off.

Other features:

- limited environmental impact, e.g. uses some recyclable or recycled materials;
- be part of a range of similar products.

What the product should look like:

- be appealing to the identified user.

Starter sketches



Nuffield teacher talk

'OK, so you want to produce a some head-warmers. And you're stuck. Try thinking like this. There are two basic ways to do it. You can either make a tube which fits on the head and is gathered at the top, or you can produce a shaped skullcap that fits all over. Which do you think would take least time?'

'The tube – why do you think that? Yes – because you can make it from a single piece of fabric. How would you do that? Right – just join it up lengthwise to make a tube. How will you make sure that it fits snugly round the head? Yes – use a knitted fabric that stretches. What about the top – how will you gather that? Yes – just sew in some coloured string and pull it tight.'

'Why baby booties? 'Cos your big sister has just had twins. OK. Can you knit? No – well now's your chance to learn. It's really easy and booties are small so they'll grow quickly.'

'One thing to decide is what sort of yarn. What would be best for keeping feet warm? Not sure. How could you find out? OK, do a test – what sort of test? Wrap test tubes of hot water in different yarns and see which one stays hot the longest. Yes – that would be a start.'

'OK, a hot-water bottle cover for your gran. Have you got the hot-water bottle here? Good – you can use it to work out your pattern. Start by putting it on a folded-over piece of paper and draw round it. Notice how the hot-water bottle will be a couple of centimetres thick when it's full of water.'

You have to make allowance for that in the size of your pattern. So draw around your outline, say 2 cm from the edge. Now you can cut them out at the same time and carefully pin them together around the hot water bottle to find out the best position for the seam. Just one thing – you've pinned it all the way round – how are you going to get the bottle in and out?'

'Cool scarves for teenagers? Not really to wrap round but just to hang with neat symbols at the ends. Not sure how this fits with warm comfort? For cool evenings in late summer? Aren't you stretching it a bit? You really think you've spotted a gap in the market? OK, tell me about the symbols. They're all to do with buttons used in playstation games. And you reckon you can draw the buttons in outline, scan them in and then use the computer-controlled sewing machine to produce them in mean colours on the pale grey fabric you'll use for the scarf. Go for it!'

Resource Tasks

General design

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- SRT 28 *Modelling with spreadsheets*
- SRT 40 *Freehand product analysis*

Focus area design

TRT 2 *Simple user trip* (unless tackled in Year 7)

Communication

CRT 9 *Presenting textile product designs*

Making

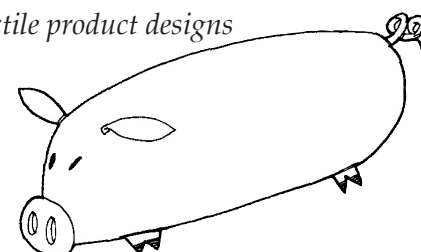
- TRT 7 *Small bag*
- TRT 8 *Large bag*

Technical

- TRT 14 *Matching properties to purpose* (unless tackled in Year 7)
- TRT 15 *Investigating fastenings*
- TRT 16 *Is it woven or knitted?*
- TRT 19 *Testing for insulation*
- TRT 20 *Testing for strength and stretch*

Commercial

TRT 5 *Marketing: Why are only some clothes advertised*



Case Studies

Netting (photocopiable).

ICT opportunities

Use the Internet to find out about insulating products. Try putting '+insulating +bags' in the search engine. Look directly at www.pacsplus.com/

Use CAD to develop patterns for decorating any woven fabric used. Use CAD/CAM to develop printing blocks for decorative patterns. Use CAD/CAM to produce embroidered motifs. Use CAD/CAM to produce knitted items via knitting machines.