



Oxford Cambridge and RSA

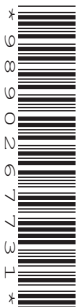
Wednesday 12 June 2024 – Morning

**A Level in Design and Technology:
Fashion and Textiles**

H405/02 Problem Solving in Fashion and Textiles

Resource Booklet

Time allowed: 1 hour 45 minutes



INSTRUCTIONS

- Use this Resource Booklet to answer **all** the questions.
- You should spend **35 minutes** reading this Resource Booklet.
- Do **not** send this Resource Booklet for marking. Keep it in the centre or recycle it.

INFORMATION

- This document has **8** pages.

ADVICE

- Read this Resource Booklet carefully **before** you start your answers.

The stimulus in this booklet relates to challenges encountered by a local craft enterprise that is looking to expand and develop its product range of recycled textiles.

Together Community Group (TCG)

TCG is a support group that meets every week in its local community centre. The group is made up of people from a range of backgrounds. Some members of the group are new to the town and are looking to make new friends. The group is led by a part-time Art teacher called Ann. She is supported by other volunteers who are craft enthusiasts such as retired nurses and artists.



The focus of TCG is for group members to share textiles skills and to make and sell items to raise money for charities. Within the group there are members who knit and crochet and other members who sew. The group has expanded recently and has allocated roles to members to help TCG achieve its goals. Some of the members have decided to visit charity shops to find resources to work with which will reduce waste and promote recycling. Old knitwear and leftover balls of wool are purchased which are then used to make new products.

The members who visited the charity shops have found that most of the donated knitwear is from high street stores and have been studying care labels to understand what the yarns are made from.



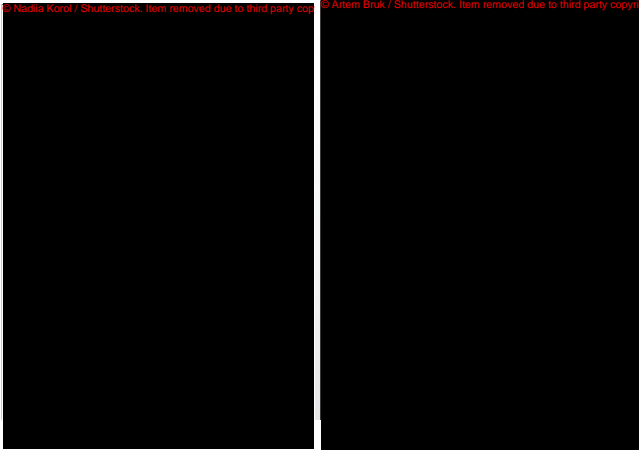
Back at the community centre, Ann led a group session to learn about fibres and their origins and properties. During the session, the group went through all of the stock that had been collected. Members identified from the care labels the different yarns before washing the stock ready to be used.

Stock	Information on care label
Blue jumper	100% acrylic
Floral cardigan	80% acrylic 20% elastane
V-neck jumper	70% cotton 30% merino wool
Child's cardigan	100% cotton

Selling at a Craft Show

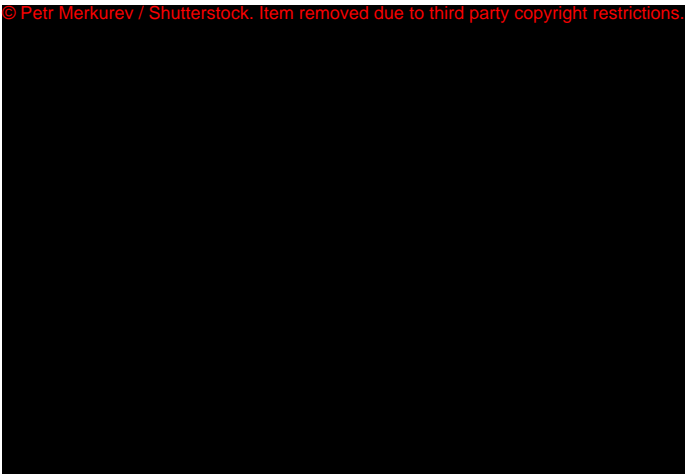
TCG is planning to sell some of its products at a craft show that is being organised towards the end of the year. Members of the group will set up the stall and sell items to raise money for different charities. They will also use the profits to buy new materials for the group to use.

TCG already has lots of small toys that have been knitted and it would like to make more using the leftover balls of wool that have been donated and bought from charity shops.



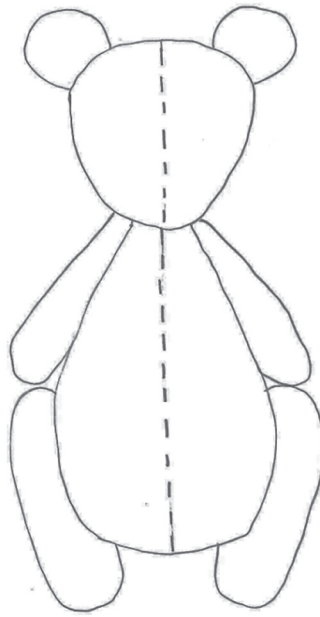
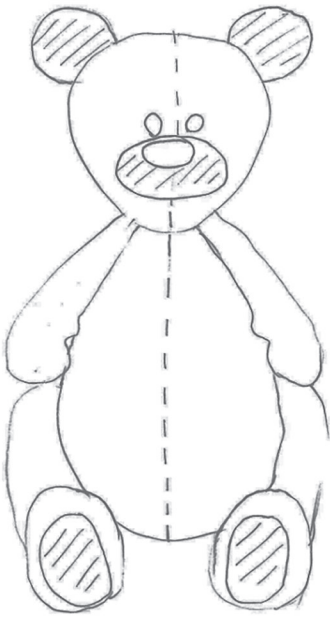
A New Direction

Ann is well aware that the soft toys TCG has made so far are very basic designs with just front and back panels. Now more yarns are available to the group and there is a better understanding of their suitability, Ann would like to make more interesting toys that TCG could sell for a higher price. Ann has looked online and in toy shops and has found examples of the sort of toys she would like TCG to make.



A New Product

TCG has decided on a new toy it wants to make. Group members have sketched out an idea for a 3D bear that can sit up. A pattern needs to be developed that can be interpreted by everyone in the group so that they can work together to make small batches of the product. Some members will knit or crochet the bears while others will use recycled fabrics and use a combination of hand or machine stitch. A label will be added to give care instructions to the owners of the product.

Product Design**Billy
Bear**

Outer:
100%
cotton
recycled
fabric

Filling:
100%
recycled
polyester

Hand
wash only

A Customer Request

The stall at the craft show was a success. TCG made £250 from selling toys and accessories.

A few days after the event, Ann received a phone call from the local hospital in the town. The hospital had heard about the charity work carried out by TCG and wanted to know whether Ann and her group would be willing to construct and donate 100 Billy Bears to give to babies and children up to the age of 8.

TCG had never made a product on this scale before. Ann started to think about possible changes to TCG's current Billy Bear design and its production processes to meet this customer request.

Ann saw the following in a text book relating to product testing and safety standards:



The UKCA mark replaced the CE mark from 01/01/22

Destructive and non-destructive testing for textiles products

Testing of fibres, fabrics and products for durability and aftercare.

All soft toys sold for intended use by children should be suitable from birth.

They need to have passed safety standards and manufacturers should test products and complete quality control checks at relevant points during production.

Examples of testing processes:

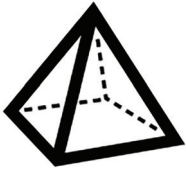
- Strength Test
- Flammability Test
- Wash Test
- Abrasion Test
- Consumer Trials

Records need to be kept of all tests and the results.

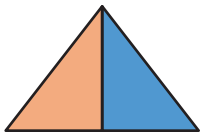


Product Diversification

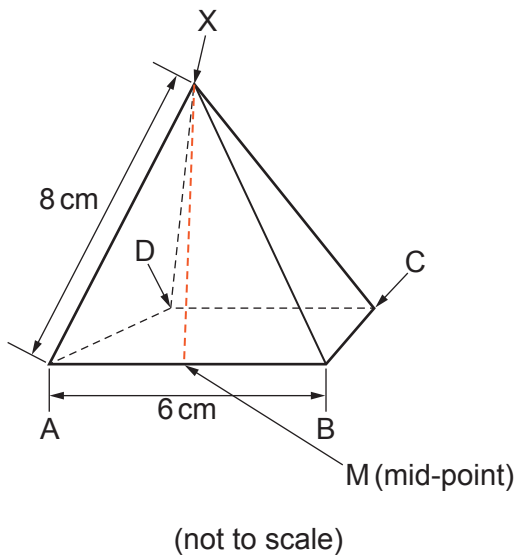
Following the successful collaboration with the hospital, TCG is considering other types of products. One of the group member's ideas is to make square based pyramid shapes that could be used for pin cushions and even cat toys by stitching ribbon onto the top of the product.



TCG will use the recycled fabric that it has collected and is considering different designs and patterns. One option is to use a different fabric for each of the faces of the pyramid and the base. Other options include stitching two coloured fabrics for each side as shown below:



The dimensions for one square based pyramid shape are as follows:



Group members are also thinking about making some pyramids with dimensions twice the size of the original pyramids.

The pyramids are classed as similar shapes.

A group member calculates the following volumes:

Pyramid	Volume (cm ³)
Small square based pyramid shape	81.388
Large square based pyramid shape	651.104

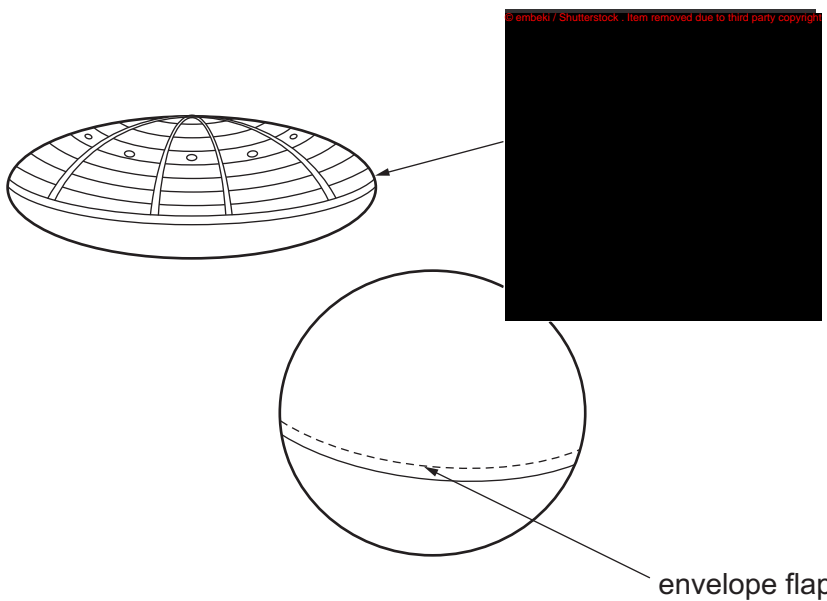
‘Home from Home ’

The ‘Home from Home’ trend is very popular with young people. Products that look homemade or use natural fibres or traditional skills create texture in the home and a cosy environment. Not everyone can knit and therefore accessories that look homemade are selling very well. TCG sees this as another option for further product diversification.



To reflect this trend, TCG decides to produce a crocheted floor cushion. Before getting underway, Ann presents information about fire safety legislation to the group. To meet these requirements, there needs to be a fire-retardant fabric incorporated into the design.

The group needs to choose between two designs for the cushion before the knitters can start to crochet the design.

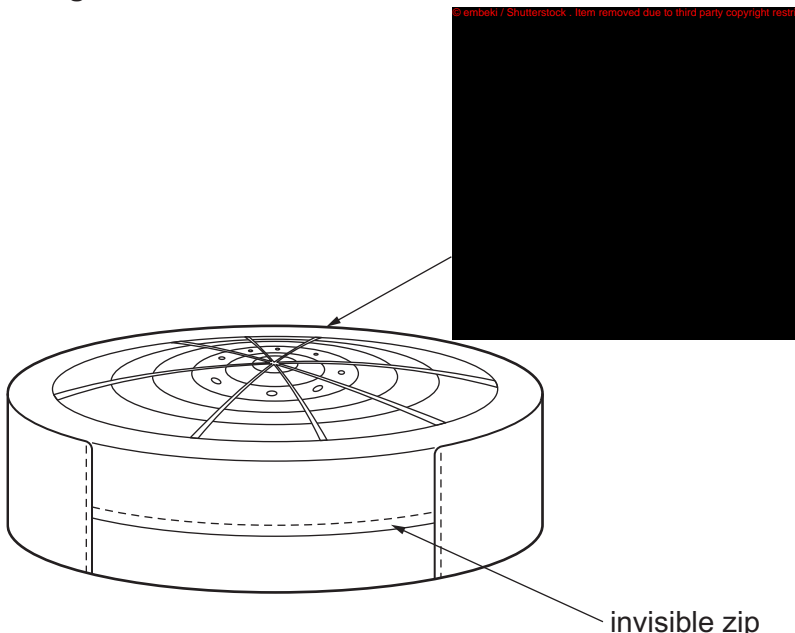
Design 1




envelope flap

Crochet cushion	
Fabric	Mixed yarns.
Filling	Polyester wadding in fire-retardant calico bag.
Closure	Envelope on bottom panel.
Aftercare cover	 
Aftercare filling	Sponge clean. Reshape when required to maintain shape.

Design 2



invisible zip

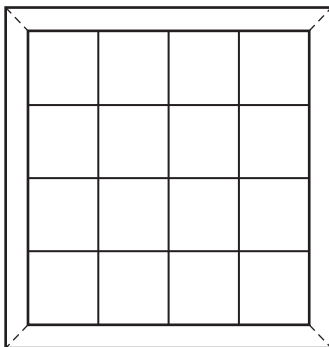
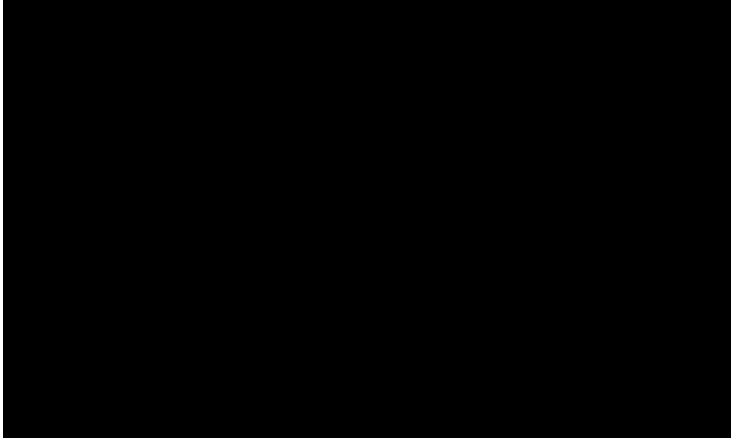
Crochet panel cushion	
Fabric	Mixed yarns and fire-retardant poly cotton.
Filling	Bean bag beans in netting bag.
Closure	Invisible zip panel in cushion cover.
Aftercare cover	
Aftercare filling	Sponge clean and top up beans as required.

Upcycling

Whilst the cushions are selling well, some customers have been commenting that they are not very durable for homes with pets and children and they are worried about pulling the yarns. The current floor cushion design is also difficult to clean as it is not fully machine washable.

To respond to this feedback, Ann would like to develop a product that gives TCG the opportunity to show off other textiles skills. She recently found a large stock of duvet covers and bedding in the storeroom gathering dust. Ann starts thinking how she could get her group to enhance a product by adding quilting, printing or dyeing techniques to a patchwork blanket design she has created.

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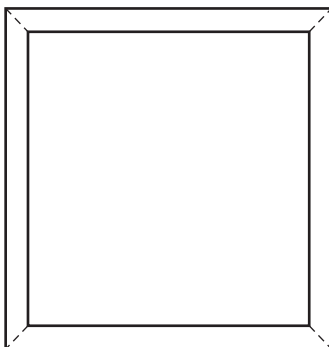


Front

Approximately 1 m square but can be adapted and scaled up.

Each square is 20 cm and the layout can be changed to create different patterns.

10 cm plain border, topstitched to lie flat.



Back

Plain fabric with border cut from contrasting fabric to allow maximum use of fabric.

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