



General Certificate of Secondary Education

Design and Technology: Textiles Technology 3547

Full Course Higher Tier

Mark Scheme

2005 examination – June series

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

NB This mark scheme is intended as a guide to the type of answer expected but is not intended to be exhaustive or prescriptive. If candidates offer other answers which are equally valid **they must be given credit**.

Many responses at this level are assessed according to the **quality** of the work rather than the number of points included. The following level descriptors are intended to be a guide when assessing the quality of a candidate's response.

- Level 1** The candidate has a basic but possibly confused grasp of the issues. Few correct examples are given to illustrate points made. This candidate does not have a clear idea of what s/he is talking about.
- Level 2** The candidate has some knowledge but there will be less clarity of understanding. Some correct examples given to illustrate points made. This candidate knows what s/he is talking about but is confused in part.
- Level 3** This candidate has a thorough understanding of the issues and has provided relevant examples to support the knowledge shown. This candidate knows what s/he is talking about.

- 1 (a) **Visitors to the museum want to buy products to remind them of what they have seen.**

Explain different ways the designer can get ideas from the exhibition.

e.g. incorporate colour or pattern into own design, use shape of exhibits, develop designs based on images of exhibits.

NOT websites, surveys, questionnaires, text books

Marks awarded as follows:

Simple explanation, e.g. 'I could use the colours'

1-2 marks

Or more detailed explanation,

e.g. 'I could investigate patterns on exhibits then develop them into a design for print.'

3-4 marks
(4 marks)

- (b) **Designers often study the work of others for ideas.**

Explain why it is important that they do not make exact copies.

e.g. issues with copyright leading to legal action, products may not sell because they are not new, moral issues relating to theft of other designers' ideas, the benefits of not producing the same design.

Any three appropriate points, 1 mark each

An expansion of a point may count.

(3 marks)

(c) Discuss the promotion of textile souvenir products linked to special exhibitions.

e.g. if people enjoy exhibition they will be tempted to buy souvenir, can target market sector more accurately, ready-made promotion/advertising, makes money for the museum, enhances educational value.

Any three appropriate points, 1 mark each

An expansion of a point may count.

(3 marks)

2 (a) You have been asked to show your design ideas.

Use the criteria given in the design brief for the option you have chosen.

(i) Draw and label two different ideas for your product.

2 sketches to show **different** initial ideas for product.

NB candidates are not to be penalised if they do not use pencil.

Weak unimaginative idea presented. Little detail shown or may be for decoration only.

1 mark each

Unimaginative design idea with some detail, limited appeal to target market.

May be just product without decoration.

2 marks each

A quality design which will appeal to target market. Some attempt to be imaginative. May be a ‘tried and tested’ design with attempt to give it a new twist.

3 marks each

A quality design with strong appeal to target market. Evidence of originality. It will be clear what is intended.

4 marks each

(8 marks)

(ii) Describe two features of the idea you have chosen which will help it to sell.

Candidate should evaluate selected design for intended end use as considered by children and/or adults who might choose to buy it.

1 mark

Simple statements, e.g. ‘Children will like the design’

2 marks

More detailed statements with example e.g.

‘the product can be used for many different reasons.’

2 reasons 2 marks each

(4 marks)

- (b) Use sketches, labelling and notes to present a final design for your product including the head dress or 3-dimensional feature.**

If you have chosen the dressing-up clothes you must show a back view.

Marks will be awarded for:

- **use of theme;**
- **originality and quality of the design;**
- **use of colour in the product;**
- **use of fabrics and components;**
- **presentation of the final idea.**

Use of theme

- Level 1:** Little relevance to theme or it is used inappropriately. An existing design may have been copied. 1 mark
- Level 2:** Clear use of theme but may not be most interesting or appropriate for product. An existing design may have been modified slightly. 2 marks
- Level 3:** Thoughtful use of theme which is totally appropriate for product. Little evidence that an existing design has been copied. 3-4 marks
(4 marks)

Originality and Quality of design

The following should be considered:

modern, original and imaginative design, balanced composition/ effective use of space, effective proportions, appropriate for intended use, will the design work? Ability of product to be manufactured, and marketability; is it suitable for dressing up / is the learning panel value clearly indicated?

Level 1:	Lack of detail, unimaginative design which may not be appropriate for intended market, may not clearly relate to specification, poor use of space.	1-2 marks
Level 1/2:	Unimaginative design with some thought given to intended end use or target market. Relates to specification but may not be clear; overall balance weak. May not be easy to manufacture in quantity. Headdress/3D section appears as an afterthought. Headdress only = maximum of 4 marks	3-4 marks
Level 2:	Sound design related to specification with clear detail about product and end-use - this may be inappropriate in places. Design lacks some imagination but is likely to be popular with target market. Overall composition may be weak. Head dress/3D section may not integrate well with product or may lack some clarity. Product may not be easy to manufacture in quantity and may have some weaknesses. 'Bottoms' only = maximum of 7 marks	5-7 marks
Level 2/3:	Product will have strong appeal to target market, will be modern and likely to sell well. Design including head dress/3D section clearly related to specification. Good quality and imaginative design for product, suitable for end use. Space used effectively. Products will be able to be manufactured in quantity	8-10 marks (10 marks)

Use of colour(s)

Level 1:	Colour indicated but immature and not used to effect.	1 mark
Level 2:	Choice is pedantic, does not make product exciting.	2 marks
Level 3:	Used effectively/ imaginatively, mature and sensitive choice.	3 marks (3 marks)

Fabrics and components

Level 1:	Poor choice of fabric/ components, inappropriate for product, do not reflect theme.	1 mark
Level 2:	Sound choice of fabric/ components but will not be used to advantage/ may lack clear indication of what they are.	2 marks
Level 3:	Good choice of fabric/ components, may not be a wide choice but used effectively. Must state main fabric.	3-4 marks (4 marks)

Presentation

- Level 1:** Lack of care in presenting work, candidate will not communicate detailed information about product. 1 mark
- Level 2:** Candidate has taken care with presentation and labelling and most information about product is clear. 2 marks
- Level 3:** Well presented showing detail of product which will include extra information, e.g. labelling. Communication of intent. Back view of garment **must** be included. 3 marks
(3 marks)

- 3 (a) **Describe the qualities you need in the main fabric for your product.**

Explain why you think these qualities are important.

E.g. hardwearing, appropriate weight, does not require special care, strong, able to be decorated in various ways, light resistant, aesthetically pleasing, stiff or soft according to product, reflect light, non-flammable (accept ‘inflammable’ as BOD), low cost, non-allergenic, colour changing. NOT about environmental issues, components or style features. Reasons should be related to properties needed in candidate’s product.

Marks awarded as follows:

- Level 1:** Very few qualities considered, candidate will typically suggest fibres, e.g. cotton. Explanation will be confused and unrelated to product/end use. This candidate displays little knowledge and is unable to explain needs. 1-2 marks
- Level 2:** Range of qualities considered, some may be inappropriate. Candidate may suggest some fibres and give an explanation for the choice. This candidate has a good grasp of the qualities needed but response lacks detail. 3-4 marks
- Level 3:** Detailed range of appropriate qualities considered. Explanation shows clear understanding of needs of end user and nature of product. 5-6 marks
(6 marks)

- (b) **The manufacturer’s label will be made as a separate component.**

- (i) **Describe how computer technology will help in the manufacture of this label.**

e.g. use of various software packages to help with various stages of design process, use of computerised printing/embroidery machines.

Must be describing a **separate** component.

Marks awarded as follows:

- Simple statements, e.g. ‘Sew them on a computerised machine’. 1-2 marks
- More detailed descriptions e.g. ‘use computerised sewing machines which will automatically embroider the label design’. 3-4 marks
(4 marks)
- Must refer to CAM for 4 marks

(ii) Explain why the manufacturer would have the label made in a different factory.

e.g. specialist machines/workers may be used, checked for faults, cost effective, specialist components available, saves storage.

Any three appropriate points, 1 mark each

An expansion of a point may count.

‘efficient’ needs qualifying

(3 marks)

4

(a) The choice and use of colour is important if your product is to sell. Describe how you could test different colour effects when developing ideas.

Candidate should describe **one** or more method(s) of experimenting with colour effects as part of the product development, e.g. use of paints, papers, fabrics, computer software, dyes, threads. Reference may be made to proportions of coloured areas, juxtaposition of coloured areas, overlaying of colours, intensity of colours.

Marks awarded as follows:

Simple statements with little detail

e.g. ‘experiment with computers, change the colours’.

1-2 marks

More complex statements with detail and/ or explanation of purpose e.g.

‘experiment with layers of fabrics to see how different colour effects can be achieved and how they can be used to make the product more interesting’.

3-4 marks
(4 marks)

(b) Name two different ways to add colour to your product.

E.g. tie-dye, batik, embroidery, appliqué, plexi-foil, stencilling, image transfer, fabric paints / pens, beading, marbling, dip dye. NOT CAD. Not ‘quick and easy’, unless qualified.

Any 2 different techniques, 1 mark each

plus 1 mark each for relevant advantage

and 1 mark for each relevant disadvantage related to product / end use.

2 techniques, 3 marks each

If advantages / disadvantages correct for chosen method, even method incorrect, do not penalise twice.

(6 marks)

- (c)
(i) **The design team will make a final prototype of a new product.**

Describe how it might be used to help ensure that manufacture is trouble free.

E.g. to test accuracy of size/ shape of product, find out how shaping might be achieved, check on methods of manufacture, staffing, machines, consider a range of materials which will help achieve shape, iron out potential problems.

Marks awarded as follows:

Simple statements, e.g. 'to make sure the product works'. Must relate to manufacture.

1-2 marks

More detailed statements, e.g. 'to check on the fabrics so that head dress will stand upright in use'.

3-5 marks

(5 marks)

- (ii) **The prototype will be used to set standards for the manufacture.**

Give two manufacturing tolerance levels for your product.

E.g. to determine tolerances for seams, placement of style details/trims, finished sizes, hem widths, construction processes to be used.

2 appropriate standards, 1 mark each

2 marks

plus detail of standard, 1 mark each

2 marks

For full marks, realistic numerical values must be included

(4 marks)

- 5 (a) **Explain why manufacturers of textile products use quality control systems.**

e.g. higher quality products made so sell better leading to repeat orders, money saved because fewer wasted materials, less time spent putting problems right, investment in automated machinery means goods made more efficiently and accurately.

Marks awarded as follows:

Very basic information, will tend to refer only to the saving of money with little explanation of how this is achieved.

1-2 marks

Candidate understands that investment in QC (quality control) saves money in the long term. Accurate examples of how this is achieved.

3-5 marks

(5 marks)

(b) When cutting fabrics, many layers are cut at a time using a band saw.

What health and safety precautions would the manufacturer take to ensure the safety of the workforce?

e.g. danger of laceration to hands, inhalation of textile dust, use of extractor, distraction of workers leading to accidents. Effective safeguards needed, e.g. use of chain mail gloves, wearing of masks, marking out work area so others do not enter when work is in progress, training of workforce, maintenance of equipment, emergency stop button. NOT goggles. Must relate to band saw and not general issues about Health and Safety.

Marks awarded as follows:

- | | | |
|-----------------|--|-------------------------------|
| Level 1: | Very few issues considered, candidate will typically suggest basic precautions e.g. tie hair back, no running, advice may be confused and unrelated to industrial production. | 1-2 marks |
| Level 2: | Range of issues considered, some may be inappropriate. Candidate will suggest some problems and give an explanation of the dangers but precautions may not be adequate. This candidate has a good grasp of the issues but response lacks detail. | 3-4 marks |
| Level 3: | Detailed range of issues with appropriate precautions considered. Explanation shows clear understanding of industrial production and associated dangers. | 5-6 marks
(6 marks) |

6 (a) What are smart fabrics?

Smart fabrics are ones which can react / change automatically to their surroundings.

2 marks for correct definition **(2 marks)**

(b)

(i) Describe one smart fabrics used in sportswear.

e.g. Speedo 'Fastskin', laminated fabrics which sense temperature changes, Electro-conductive textiles which heat garments in extreme conditions, fabrics which prevent water ingress. Does not have to be named. Do not penalise if wrong name given to right description. Do not accept Lycra, denim, nylon, microfibre, Coolmax, Sympatex, Gortex (these are modern fabrics, not smart fabrics).

Marks awarded as follows:

- | | |
|--|-------------------------------|
| General statement which will tend to refer to fabrics which change colour. This candidate will not have understood the concept of 'smart' and will be confused. Reference will be made to a technical textile which may not be new or 'smart'. | 1-2 marks |
| Sound understanding of what is meant by 'smart'. This candidate will describe a modern fabric used in a particular sports application and will be able to explain how it is useful. | 3-4 marks
(4 marks) |

(ii) Smart fabrics are very expensive.

Why might someone buying sportswear think it is worth the extra cost?

e.g. safety aspects, novelty value, fashion aspects, peer pressures, usefulness,
e.g. improves performance, better chance of winning.

Any 3 points, 1 mark each

An expansion/explanation may count as a point.

(3 marks)

(c) Describe one other smart fabric that you have researched.

Explain what it is used for.

e.g. fabrics which change colour with different temperatures, give off a smell when scratched (micro-encapsulation), lamination with lenses which change pattern as fabric moves, memory textiles, body monitors, wearable electronics, medical textiles, fibre optics.

General statement about smart fabrics, e.g. ‘one which changes colour at different heat’. There will be some confusion and the candidate will not be clearly aware of a smart fabric which is different from the one in (b)(i).

1-2 marks

Sound understanding and clear description of a different smart fabric. The candidate is able to clearly explain how the fabric is used and why it is useful.

3-5 marks
(5 marks)

7 Study the photographs of the two cushions.

Answer the questions which follow.

(a) Describe the ways in which the two cushions have been made interesting.

Must be about fabrics and components.

Cushion A: use of toning colours, use of shiny fabrics, use of different fabrics, layering of fabrics, use of beads and stitchery to add interest and texture.

Cushion B: use of shiny fabrics, layering of fabrics, use of pin tucks rather than applied decoration to give texture and surface interest, tassels, quilting, pleating, ribbing.

Marks awarded as follows:

Simple statements e.g. ‘Two colours have been used on cushion A but only one on cushion B’.

1-2 marks

More detailed statements e.g. ‘Different fabrics and beads have been used to provide interest on cushion A, but cushion B relies of manipulation of the fabric to give interest’.

3-5 marks
(5 marks)

(b) Evaluate the use of zips to fasten the back of these cushion covers.

e.g. zips are a good choice because they are quick and simple in use and lie flat on the cushion without adding bulk. They wash easily and are strong. They are easy to insert so are not expensive to manufacture, allow easy access, inconspicuous. However, they do not add any interest to the design and may snag the delicate fabrics used for the cushions.

Marks awarded as follows:

Candidate will outline some advantages of using zips but they will not always relate to the cushions shown. All points will tend to be positive with no evaluation.

1-2 marks

Candidate considers advantages of using zips on the cushions and refers to one or more drawbacks as well.

If no disadvantages, award maximum of 3.

3-4 marks

(4 marks)

(c) The label says that the cushion cover must be dry cleaned.

Explain why it should not be washed.

e.g. fabrics / components delicate, washing may damage them, colours may run, fabrics may shrink, will be difficult to iron.

Either 3 points for 1 mark each, or fewer points with detail / expansion.

(3 marks)

(d) As fashion cushions, these designs are intended to have a limited life.

What are the environmental issues related to the manufacture of such “throw away” products?

e.g. fabric production can use up valuable non-renewable resources such as oil to produce polyester fibres. Energy is also used in all manufacturing process which leads to CO₂ emissions and other by-products which can harm the environment. Chemicals used to colour and finish fabrics can produce harmful waste. Large amounts of water are used in finishing processes. Disposal of discarded products requires huge landfill sites and some fabrics take many years to decompose. Environmental impact of transporting goods and materials, sometimes from one continent to another. Many of these fashion products are sold at very low prices which does not reflect the true cost to the global environment. Products designed for a longer life can help minimize some of the impact of industrial activity.

Marks awarded as follows:

Level Simple statements e.g. ‘synthetic fibres are not environmentally friendly’.

1: Candidate will tend to concentrate superficially on only a few issues and offers little information, many aspects will be ignored. Little connection made between superficial consumption and environmental damage.

1-2 marks

Level More detailed information with example(s). This candidate has some understanding of issues at a basic level or may have more detailed understanding of a few issues.

3-4 marks

Level Sound understanding of issues involved with accurate and appropriate examples given across a wide range of issues.

5-6 marks

(6 marks)

(e) Explain why some textiles products are packaged before going to the shops.

e.g. to keep them clean, to protect delicate fabric/components, for transportation, to carry consumer information, for marketing/advertising purposes.

Any four appropriate reasons, 1 mark each

An expansion of a point may be counted as a reason

(4 marks)