



**General Certificate of Secondary Education  
June 2012**

**Design and Technology: 45701  
Textiles**

**(Specification 4570)**

**Unit 1: Written Paper**

**Final**

***Mark Scheme***

---

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 events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised 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 students' 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.

Further copies of this Mark Scheme are available from: [aqa.org.uk](http://aqa.org.uk)

Copyright © 2012 AQA and its licensors. All rights reserved.

**Copyright**

AQA retains the copyright on all its publications. However, registered schools/colleges for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to schools/colleges to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Set and published by the Assessment and Qualifications Alliance.

**1(a) (i) Marks awarded as follows:**

No answer worthy of credit 0 marks

No to pattern – repeat of question

Inspire design ideas for colour, texture, shape, style, fabrics, theme, design ideas or decorative techniques.

A means of communicating ideas to the client. To make a trend forecast story board.

2 different reasons, 1 mark each **(2 marks)**

**1(a) (ii) Use of images in the mood board**

**Marks awarded as follows:**

No answer worthy of credit 0 marks

One or two very simple shapes or ideas taken from mood board 1 mark

Imaginative use of mood board, taking more than one simple shape from the mood board to create detailed shapes and pattern 2 marks **(2 marks)**

**Creativity and originality of pattern**

**Marks awarded as follows:**

No answer worthy of credit 0 marks

Simple idea with shapes that repeat to build a pattern 1 mark

A more creative or complex pattern is shown that may include mirrored, stepped, or rotated shapes 2 marks **(2 marks)**

**Quality of drawing**

**Marks awarded as follows:**

No answer worthy of credit 0 marks

Drawing is unclear or lacks detail 1 mark

Drawing is clear, candidate has drawn enough to show pattern to good effect. 2 marks **(2 marks)**

**(6 marks)**

**1(b) (i) Modern materials**

The candidate may include named specific modern materials or may describe the properties and characteristics of type/s of modern material. Materials may include modern fabrics and/or components. Credit is given to those who show awareness of technological advances in textile materials. Candidates may refer to micro fibres and micro-encapsulated fabrics, thermochromatic and hydrochromatic dye/printing, nanotechnology, electronic devices as components such as LEDs or electronics integrated into textiles, recycling, organic, fair trade cotton, bio fibres, biodegradable fibres. Candidates might refer to technical developments in traditional fibres or to non-traditional fibre sources for fabrics. Lycra is not to be considered a modern fabric, however, elastomeric fibres could well form part of modern fabrics. New methods of fabric construction might be mentioned or new fabric properties and functions including new fabric finishes, eg Teflon. Ultra violet protection and moisture management could be referred to. Smart and interactive textiles such as those with conductivity, those that can sense, monitor and react and transmit information. Reflective, phosphorescent, fibre optic, biomimetic fabrics might be described or those fabrics which are aromatic, eg 'scratch and sniff', or antibacterial or anti-allergenic or easy care. This part of the question is open to the candidates to show their subject knowledge in relation to the design question. Other examples: solar panel, electroluminescent wire/tape, 3-D print with glasses to view it, Gore-tex, Kevlar, Nomex, Tencel, Bamboo, Coolmax, photochromic beads, Morphotex, laser cut, Tyvek, uv/solar thread, hi-visibility tape etc.

Up to 6 marks for each design idea. Two sketches to show different initial ideas for product. Candidates are not to be penalised if they do not use pencil.

Design should be neat and clear for full marks. If both ideas are similar, mark first as it stands; alter second (max 4 marks)

**Creativity and originality of idea based on the rainforest**

**Marks awarded as follows:**

No answer worthy of credit	0 marks
A design that is inspired by the theme of the rainforest.	1 mark
Imaginative design that is highly creative and original with inspiration taken from the theme of the rainforest.	2 marks

**(2 marks)**

**Quality of notes and sketches**

**Marks awarded as follows:**

No answer worthy of credit	0 marks
Little or no annotation, fairly well presented sketch	1 mark
Candidate will communicate ideas very clearly with excellent presentation and annotation.	2 marks

***(2 marks)***

**Use of a range of fabrics and components, including modern materials**

**Marks awarded as follows:**

No answer worthy of credit 0 marks

One or more fabrics and components, may include one modern material  
1 mark

A thoughtfully selected range of fabrics and components, must include one or more modern materials.  
2 marks

***(2 marks)***

***(2 x 6 marks = 12 marks)***

**1 (b) (ii) Marks awarded as follows:**

No answer worthy of credit 0 marks

Candidate will link fabric colour, pattern, texture, fibre type, fabric construction, sustainable and environmental fabric to the theme.

1 mark for any correct point.

***(2 marks)***

- 1(c)** Marks are given for:
- Use of rainforest theme (2 marks)
  - Use of a range of fabrics and components including use of modern materials (3 marks)
  - Creativity and quality of the design (4 marks)
  - Effective use of colour in the design (2 marks)
  - Presentation of the final idea (2 marks)

Final design to include:

**Use of rainforest theme**

No answer worthy of credit (0 marks)

Little relevance to theme or it is used inappropriately. An existing design may have been copied. 1 mark

Thoughtful and/or imaginative use of theme which is totally appropriate for product. Little evidence that an existing design has been copied. 2 marks

**(2 marks)**

**Use of a range of fabrics and components including modern materials**

No answer worthy of credit 0 marks

One or more fabrics and components are included in the design, but in a straightforward manner that has limited effectiveness and may not be appropriate. 1 mark

1 mark

More than one fabric, and components used to good effect, including reference to modern materials. 2 marks

2 marks

A detailed range of well selected fabrics, components and modern materials that reflect the theme and annotation may be added to explain. 3 marks

**(3 marks)**

### **Creativity and quality of the design**

The following should be considered:

Contemporary, creative, original and imaginative design for a textile product, balanced composition/effective use of space, effective proportions, appropriate for intended use, will the design work?

Use of components that are in keeping with the fabrics selected and theme.

May also have included appropriate decorative techniques but not necessarily.

#### **Marks awarded as follows:**

No answer worthy of credit 0 marks

Unimaginative design with some thought given to intended end use though lack of detail. Relates to some areas of design brief but may not be clear, overall balance weak.

1 mark

Good design related to all aspects of design brief with clear detail about product. Design might lack some imagination but is likely to be popular. There may be some lack of clarity about materials.

2 marks

Product will be highly creative and original and likely to sell well to the target market. Design clearly relates to all aspects of design brief. High quality and very imaginative design for product.

3 – 4 marks

**(4 marks)**

### **Effective use of colour in the design**

This is not about colouring in of the design idea. The following should be considered:

How has colour been used? Are the colours toning, contrasting, complementary?

Do they work for the product? Do they promote the rainforest theme?

#### **Marks awarded as follows:**

No answer worthy of credit 0 marks

Use of colour is immature and not used to effect and does not make product exciting. Or colour is indicated in written notes only.

1 mark

Used effectively/imaginatively, mature and sensitive choice.

2 marks

**(2 marks)**

**Presentation of final idea**

**Marks awarded as follows:**

No answer worthy of credit

0 marks

Lack of care in presenting work, candidate will not communicate detailed information about product.

1 mark

Candidate has taken care with presentation, quality of drawing and labelling and information about product is clear.

2 marks

**(2 marks)**

2 (a) (i)

	<b>Tool or equipment</b>	<b>Reason for using this Tool or equipment</b>
	<p>Straight knife, Band saw/Band knife, vertical blade, jig saw, straight knife cutting machine, mass saw cutter.</p> <p>Allow machine cutter if reasoning given.</p> <p>No to scroll saw, giant cutter, pattern cutter.</p>	<p>To cut fabric in multiple layers to speed cutting.</p>
	<p>Pinking shears</p> <p>Allow zig zag scissors</p>	<p>To cut to give a zig-zag edge that will prevent fabric from fraying and so neaten edge, to give a decorative edge.</p>
	<p>Laser cutting/CAM cutter</p>	<p>To cut intricate designs in fabric, accurately and consistently, and to seal cut edges.</p> <p>Also allow to cut a stencil</p>
	<p>Large/long scissors, shears, fabric scissors, tailor scissors or shears</p>	<p>Long scissors to cut fabric quickly by hand</p> <p>No to cut paper</p>

**(8 marks)**

**Marks awarded as follows:**

No answer worthy of credit

0 marks

1 mark for each correct name or description of tool or equipment and 1 mark for each correct reason.

**2 (a) (ii) Marks awarded as follows:**

No answer worthy of credit

0 marks

Overlocker

1 mark

**(1 mark)**

**2 (b) (i) Marks awarded as follows:**

No answer worthy of credit	0 marks	
Risk assessment. only acceptable answer	1 mark	<b>(1 mark)</b>

**2 (b) (ii) Marks awarded as follows:**

No answer worthy of credit	0 marks	
Finger and hand injuries from blades. Can cut/bruise skin. High noise level may damage hearing. Any correct point 1 mark		<b>(1 mark)</b>

**2 (b) (iii)** This question is not about classroom practice, must be appropriate for workplace, ie factory

**Marks awarded as follows:**

No answer worthy of credit	0 marks
----------------------------	---------

Protective equipment and clothing e.g. finger guards, eye shields/goggles, masks, ear protection, embroidery hoop/frame.  
Emergency stop button  
Uniform clothing, long hair tied up. No loose clothing, jewellery  
No food and drink around machinery  
Seats adjusted for correct posture.  
Training/safety officer to instruct  
Safe behaviour  
Ventilation to remove toxic vapours.  
Marked danger areas, warning signs.  
Fire exits clear. No trailing wires.  
Keep work surfaces tidy.  
Regular machinery checks.  
Take regular breaks  
Safety rules/instructions.  
Carrying out risk assessments.

No to chain mail gloves just for sewing, no to one person only per machine, not to turn off machine after use.

Any 3 different correct points 1 mark each.

**(3 marks)**

gettyimages®

3 (a) (i)



Reflective tape – plus any other appropriate links.

Fluorescent nylon - jacket

Polyester /cotton non-iron fabric – shirt or trousers

Stain resistant fabric with heat set crease - trousers

**(4 marks)**

**Marks awarded as follows:**

No answer worthy of credit

0 marks

1 mark for each correct label link to photo, up to 4 marks

**3 (a) (ii) Marks awarded as follows:**

No answer worthy of credit 0 marks

Reflective tape – high visibility, reflects car headlights/street lights, seen at night, easily recognised.

Fluorescent nylon - high visibility, easily seen, strong, dries quickly, non-iron

Polyester /cotton non-iron fabric – easily laundering/fabric doesn't crease, properties related to fibres – soft, strong, cool to wear, breathable, durable.

Stain resistant fabric with heat set crease – easy to keep clean, smart appearance given, less laundering needed.

No to repeat points from question.

1 mark for each correct point, up to 1 mark for each fabric type.

**(4 marks)**

**3 (b)** Named modern fabric must be different from above.

E.g.: Microfibres used to make fabrics, laminated fabrics such as Gortex, Fastskin, nanotextiles, phosphorescent, photochromatic printing/fabric, stomatex etc. Any other recognised modern fabric. See notes for 1(b)(i) Modern Materials for more modern fabric examples.

**Marks awarded as follows:**

No answer worthy of credit 0 marks

1 mark for a named fabric or a description of a fabric. 1 mark

Candidate names and describes fabric. 2 marks

**(2 marks)**

**4 (a) (i)** Speeds Production – takes less time to embroider, mass production possible

Costs reduced – less labour costs/quicker production/less wastage of thread

Accuracy of stitching – embroidery placed correctly. Correct number/size/type of stitches/correct colour thread. Prevents human error.

The design can be stored on the computer – quick to retrieve, easy to repeat design.

Safer using computer – can monitor thread breakage, emergency stops, less manual work/dangers

Can stitch more than one at a time – multiple embroidery heads stitch identical designs simultaneously.

**Marks awarded as follows:**

No answer worthy of credit 0 marks

Some of the answers have been given as example – do not give credit for repeating given answers. 1 correct answer for 1 mark, up to 6 marks.

**(6 marks)**

- 4 (a) (ii)** Colour, fibre content, strength, not prone to tangling, appropriate amount of twist, appropriate count/thickness, sheen/light reflection, colourfast, visible.

**Marks awarded as follows:**

No answer worthy of credit 0 marks

1 mark for each correct different point, up to 2 marks.

**(2 marks)**

- 4 (a) (iii) Marks awarded as follows:**

No answer worthy of credit 0 marks

Simple statement, e.g. Stock arrives just before production begins.

1 mark

Candidate gives more detail, e.g. Candidate realises that there is a cost effective aspect because stock storage requirements are reduced. Stock delivery may be delayed causing production problems. Less chance of stock being damaged.

2 marks

**(2 marks)**

- 4 (b) (i)** Running stitch is a hand embroidery stitch.  
Other hand embroidery stitches e.g. chain, couching, cross, blanket, stem stitch etc.

No to running as a repeat, straight, zig zag, lock stitch (these are machine stitches) tacking, appliqué.

**Marks awarded as follows:**

No answer worthy of credit 0 marks

2 different hand embroidery stitches, 1 mark each

**(2 marks)**

- 4 (b) (ii)** Use notes and diagrams to explain how embroidery stitches can be done by hand.

5 marks will be given for

Step-by-step instructions (2 marks)

Quality of notes and sketches (2 marks)

List of equipment needed (1 mark)

**If name is incorrect for technique described then max 4 marks  
If machine embroidery stitch is explained then up to 2 marks only  
Accept a running stitch method**

**Step-by-step instructions**

No answer worthy of credit 0 marks

Explanation of method is adequate and would mostly work.  
1 mark

Accurate explanation of method hand embroidery including use of correct materials and equipment. Candidate understands method and can clearly explain it.  
2 marks

**(2 marks)**

**Quality of notes and sketches**

No answer worthy of credit 0 marks

Basic detail, simple diagrams, few steps, notes only or diagrams with no notes/labels 1 mark

Detailed diagrams with clear labels, neat presentation  
2 marks

**(2 marks)**

**List of equipment needed**

No answer worthy of credit 0 marks

More than 1 item such as needle, scissors, hoop,  
1 mark

**(1 mark)**

**5 (a) (i) Marks awarded as follows:**

No answer worthy of credit 0 marks

Any appropriate fabric with pile – velvet, (polar) fleece, velour, Terry, brushed cotton and microfibre if named, eg polyester microfibre.  
1 mark

No to felt (unless washable felt) and no to just fibre types, eg cotton

**(1 mark)**

**5 (a) (ii) Marks awarded as follows:**

No answer worthy of credit 0 marks

Washable, soft, hard wearing. One point/brief statement  
1 mark

Candidate explains one or more points in more detail, linking fabric property to fibre/construction or to target market

If answer for 5(a)(i) is a fibre only (and so incorrect), marks can still be given for 5(a)(ii) if correct properties are given for that fibre.

2 marks

**(2 marks)**

**5 (b) Marks awarded as follows:**

No answer worthy of credit 0 marks

No to movement device – repeat of example - but explanation mark can be given if different from example.

A sound recording device is put inside the toy - The child can record sound and play it back for fun.

Add sound effects/music – to interest/entertain/educate the child

Add light features/game – to interest/entertain/educate the child.

Any other relevant electronic component that may interest/entertain/educate or make interactive, eg devices for tracking, monitoring, heating or camera, radio, speakers.

No to non-electric components, eg micro encapsulated, thermochromatic

**(6 marks)**

1 mark for each correct and different point up to 3 marks.

1 mark for each correct explanation up to 3 marks.

**5 (c) No to repeat component from 5(b).** No to pocket, and no to dyes.

Could include any **other modern** fastenings, threads, trimmings, interfacing, motifs, labels or electronic components such as LEDs, fibre optics, solar panel, conductive thread, thermal insulating wadding, inflatable technology, Internet communication device, monitoring/tracking device, components made from modern or smart materials.

**Marks awarded as follows:**

No answer worthy of credit

0 marks

Candidate describes or explains what one other modern component adds to a textile product. Candidate might have only basic understanding and may be confused.

1 mark

Candidate describes and explains what one other modern component adds to a textile product, or gives a detailed description or a detailed explanation.

2 marks

Candidate describes and explains in detail what one other modern component adds to the product and why this might be useful/appealing to the user, eg solar panels, inflating pads, monitoring devices, transmitting devices, Internet communication, conductive thread/wire/fibres

3 marks

**(3 marks)**

**6 (a) (i) Marks awarded as follows:**

No answer worthy of credit

0 marks

Candidate must show awareness of the idea that it is for future trends to get 1 mark

Candidate explains in detail that it is a story board or mood board to show a future fashion trend with new ideas and influences that will affect consumer preferences in the future. Can be presented in report form or visual story boards that link to different target markets.

2 marks

**(2 marks)**

**6 (a) (ii) Marks awarded as follows:**

No answer worthy of credit

0 marks

Global data from trade fairs, trend spotters, top designers' work, cool hunters looking at street style, retail sales data, what is selling well, analysis of existing products, going to runway shows, looking at forthcoming cultural events/exhibitions/films/television/youth videos/festivals, social media such as what celebrities are wearing, analysis of social climate and political mood, moodboard, market research, questionnaires/surveys/polls to find out what target market wants.

Any 3 different correct points 1 mark each. 1 mark can be given for further explanation of a point, up to 3 marks.

Give maximum 1 mark only if 3 sources with no detail of research information, eg Internet, magazines, television.

No to primary/secondary research, or Internet unless an example of piece of research is given. Must refer to existing product analysis – not just existing products.

**(3 marks)**

**6 (a) (iii) Marks awarded as follows:**

No answer worthy of credit

0 marks

Helps them to make a mood board to inspire design ideas.

Influences shape, style, colour, fabrics and design features when designing.

Helps guarantee that product designed is relevant and will sell in future.

Guides thinking on target market requirements

Any 3 different correct points 1 mark each. 1 mark can be given for further explanation of a point, up to 3 marks.

**(3 marks)**

**6 (b)** Quality of written communication (QWC) will be tested on this question.

Explain, giving examples, how recycled materials can be used in fashionable textile products.

**Marks awarded as follows:**

Look at points made, the amount of detail and variety of examples. Consider quality of written communication.

No answer worthy of credit

0 marks

Simple statements or those that only include reusing unwanted garments/swapping/charity shop second hand clothing or disassembling them to make new clothing. Candidate will tend to concentrate superficially on only a few ideas and offers little information, many aspects will be ignored. Response is structured poorly with little or no use of Design and Technology terminology and with numerous errors in grammar, punctuation and spelling.

1 – 2 marks

More detailed information. May only include reusing unwanted garments/ disassembling them to make new clothing and one other way. Could include for example: - upcycling/customising, using end of fabric rolls, reclaiming fibres/fabrics, recycling polyester/plastic or using a wider range of recycled materials including components. This candidate has some understanding more than one aspect of using recycled materials in fashionable textile products, at a basic level or may have more detailed understanding of only a few examples. Response is fairly well structured with some use of Design and Technology terminology and with a small number of errors in grammar, punctuation and spelling. 3 – 4 marks

Sound understanding of a variety of examples with detailed information. Response is well structured with good use of appropriate Design and Technology terminology and shows a good grasp of grammar, punctuation and spelling. 5 – 6 marks

Excellent understanding of a wide variety of examples with accurate and detailed information. Response is well structured with good use of appropriate Design and Technology terminology and shows a good grasp of grammar, punctuation and spelling. If bullet points are used to structure answer, then full, detailed sentences must be employed. 7 – 8 marks

**(8 marks)**

**7 (a) (i) Marks awarded as follows:**

No answer worthy of credit 0 marks

A partnership between producers and consumers that ensures the workers receive a fair/correct wage, fair working conditions, better access to markets in developed countries and community support, no child labour.

Candidate has basic understanding 1 mark

Candidate has more in depth understanding including more than 1 point.

2 marks **(2 marks)**

**7 (a) (ii) Marks awarded as follows:**

No answer worthy of credit

0 marks

Cotton produced using natural fertilisers, pesticides and herbicides to protect the biodiversity of the environment, workers' health and consumers' health. Regulations prohibit the use of genetically engineered seed for organic farming.

Candidate has basic understanding including idea of no toxic chemicals being used during cotton production.

1 mark

Candidate has more in depth understanding including more points than just no toxic chemicals being used during cotton production. Refers to fertiliser/pesticide/herbicide rather than just 'chemicals'.

**(2 marks)**

2 marks

**7 (a) (iii) Marks awarded as follows:**

No answer worthy of credit

0 marks

Parents are concerned for the health and wellbeing of their child and of the workers producing the cotton. Parents believe organic cotton to be a safer product than standard cotton.

Candidate has basic understanding that parents wish to protect their child from the toxic chemicals used in cotton production

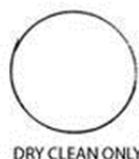
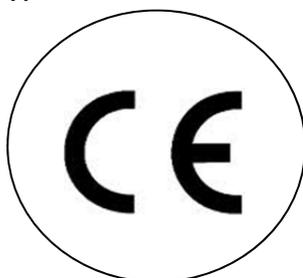
1 mark

Candidate has more in depth understanding including that parents wish to protect their child from allergic reaction/skin irritation, or includes reference to danger to the workers from the toxic chemicals used in cotton production.

2 marks

**(2 marks)**

**7 (b) (i)**



**Marks awarded as follows:**

No answer worthy of credit

0 marks

Symbols correctly circled as above, 1 mark for each correct answer.

If 1 correctly circled symbol included	1 mark
If 3 symbols are circled, with 2 correct included	1 mark
If 4 symbols are circled	0 marks

**(2 marks)**

**7 (b) (ii) Marks awarded as follows:**

No answer worthy of credit	0 marks
Wash instructions, fibre type, barcode, recycled, keep away from fire, country of origin, fairtrade logo, organic cotton logo, size, brand, BSI, age, safety marks..	

**Not fabric content**

Any correct point 1 mark, up to 4 marks.

1 mark only for washing instructions – even if different washing instructions are listed – 1 mark for all	<b>(4 marks)</b>
---	------------------

**7 (c) (i) Marks awarded as follows**

No answer worthy of credit	0 marks
Knitted	

**(1 mark)**

No to production methods, eg batch. Accept warp knitted.

**7 (c) (ii) Marks awarded as follows**

No answer worthy of credit	0 marks
----------------------------	---------

Stretchy, soft, comfortable, warm/insulating, breathable. Knitted fabric has a high elasticity and stretch, can keep its shape, no or few seams needed.

Do not accept strong

**(3 marks)**

1 mark each correct point related to knitted fabric, up to 3 marks.

No to safe for baby, unless a valid reason is given that relates to construction.

If the answer for 7(c)(i) is incorrect, then candidate gives relevant reasons in 7(c)(ii), eg 'elastane is woven in to add elasticity', then mark 7(c)(i) wrong but give marks for 7(c)(ii).