



GCE AS MARKING SCHEME

SUMMER 2023

**AS
DESIGN AND TECHNOLOGY - COMPONENT 1
FASHION AND TEXTILES
B601U10-1**

INTRODUCTION

This marking scheme was used by WJEC for the 2023 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

EDUQAS GCE AS DESIGN AND TECHNOLOGY - COMPONENT 1

FASHION AND TEXTILES

SUMMER 2023 MARK SCHEME

Marking guidance for examiners

Summary of assessment objectives for Component 1

The questions on this exam paper assess aspects of AO3 and all of AO4.

Within AO3, this exam paper assesses:

Analyse and evaluate –

- *wider issues in design and technology*

Within AO4, this exam paper assesses:

Demonstrate and apply knowledge and understanding of –

- *technical principles*
- *design and making principles*

In the mark grids, the marks allocated to assessment objectives are shown with respect to specific elements:

AO3 2a	analyse wider issues in design and technology
AO3 2b	evaluate wider issues in design and technology
AO4 1a	demonstrate knowledge of technical principles
AO4 1b	demonstrate understanding of technical principles
AO4 1c	apply knowledge and understanding of technical principles
AO4 2a	demonstrate knowledge of designing and making principles
AO4 2b	demonstrate understanding of designing and making principles
AO4 2c	apply knowledge and understanding of designing and making principles

The structure of the mark scheme

In low-tariff questions, the mark scheme includes indicative content which should be used to assess the quality of the candidate's response. The content is not prescriptive and candidates are not expected to mention all material referred to. Examiners should seek to credit any further relevant evidence offered by the candidates.

In high-tariff questions, the mark scheme has two parts:

- An assessment grid showing bands and associated marks that should be allocated to responses which demonstrate the characteristics required by the appropriate assessment objectives relevant to the question
- Indicative content which should be used to assess the quality of the specific response. The content is not prescriptive and candidates are not expected to mention all material referred to. Examiners should seek to credit any further relevant evidence offered by the candidates.

Applying the mark scheme

Stage 1 - Deciding on the band

Beginning at the lowest band, examiners should look at the candidate's response and check whether it matches the descriptor for that band. If the descriptor at the lowest band is satisfied, examiners should move up to the next band and repeat this process for each band until the descriptor matches the answer. Examiners should not seek to mark candidates down as a result of small omissions in minor areas of an answer.

Stage 2 - Deciding on the mark

During standardising (marking conference), detailed advice from the Principal Examiner on the qualities of each mark band will be given. Examiners will then receive examples of answers in each mark band that have been awarded a mark by the Principal Examiner. Examiners should mark the examples and compare their marks with those of the Principal Examiner.

When marking, examiners can use these examples to decide whether a candidate's response is of a superior, inferior or comparable standard to the example. Examiners are reminded of the need to revisit the answer as they apply the mark scheme in order to confirm that the band and the mark allocated is appropriate to the response provided.

Indicative content is also provided for banded mark schemes. Indicative content is not exhaustive, and any other valid points must be credited. In order to reach the highest bands of the mark scheme a candidate need not cover all of the points mentioned in the indicative content but must meet the requirements of the highest mark band. Where a response is not creditworthy, that is contains nothing of any significance to the mark scheme, or where no response has been provided, no marks should be awarded.

Where questions target multiple assessment objectives, an answer may deserve to be awarded marks from different bands for different assessment objectives. Where questions target more than one element within an assessment objective, and those elements are conflated and not considered separately within the mark scheme, examiners must not attempt to apportion marks within that assessment objective by element.

In summary:

- the first stage for an examiner is to use both the indicative content and the assessment grid to decide the overall band;
- the second stage is to decide how firmly the characteristics expected for that band are displayed;
- thirdly, a mark for the question is awarded.

Question 1

The trousers shown below are made from Gore-Tex.

- (a) Using notes and a diagram, explain how a breathable membrane (Gore-Tex) works. [6]
 (b) Describe **one** advantage to the user of wearing trousers made from Gore-Tex. [2]

	Science	Maths		AO3		AO4					Total
				2a	2b	1a	1b	1c	2a	2b	
(a)	✓					2	2		2		6

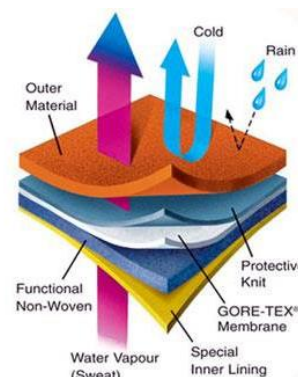
Candidates should demonstrate knowledge and understanding and awarded up to 6 marks.

The candidate should produce a diagram with appropriate supporting notes to be awarded the full 6 marks. Award up to 4 marks for appropriate notes without a diagram. Award up to 4 marks for a detailed diagram but without notes.

No response or an inappropriate response – 0 marks

Responses may include:

- A waterproof, breathable fabric membrane [1]
- Gore-Tex is a laminated fabric consisting of 5 layers [1]
- Gore-Tex is able to repel liquid water while allowing water vapour to pass through [1]
- It is composed of stretched polytetrafluoroethylene (PTFE), which is more commonly known by the generic trademark Teflon [1]
- Moisture shown to pass through layers to outside of the ski jacket to help control body temperature [1]



Credit other appropriate responses.

(b)	✓					1		1		2
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Candidates should demonstrate understanding and awarded 1 mark for a correct response.

No response or an inappropriate response – 0 marks

Award 2 marks for a response which may include:

- The Gore-Tex membrane allows sweat from the wearer to evaporate through the trousers allowing the wearer to keep cool and dry [1]
- The trousers are lightweight so that it does not prevent or hinder the wearer in anyway [1]
- The trousers can be worn in all weathers [1]
- keeping the wearer warm and dry as Gore-Tex is waterproof [1]

Credit any other appropriate descriptive response.

Question 2

Advances in CAD/CAM technology have given rise to alternative methods of designing and manufacturing textile products.

- (a) The bag shown below has been digitally printed. Describe the advantages to the designer of using a digital printer to create pattern on material like the one shown. [4]
- (b) The digitally printed bag has been mass produced. Discuss the quality checks it would go through before going on sale. [4]
- (c) The front, back and sides of the bag are to be digitally printed.
- (i) Calculate the total surface area of the bag to be printed. [2]
Show all calculations.
- (ii) 100ml of black ink will cover an area of 700cm². Each 100ml ink cartridge costs £3.50. Calculate how much ink is needed to print the bag and the total cost of printing. [3]
Show all calculations.

	Science	Maths		AO3		AO4					Total
				2a	2b	1a	1b	1c	2a	2b	
(a)	✓						4				4

Candidates should demonstrate understanding and awarded up to 3 marks.

No response or an inappropriate response – 0 marks

Responses may include:

- Digital printers do not require lengthy setup/clean up time between patterns [1]
- Can print 24 hours a day, 7 days a week 365 days a year [1]
- Designers can make colour and pattern changes immediately [1]
- Designers can print a sample before engraving screens for the final run [1]
- The digital printer can produce several repeat patterns all in a few minutes [1]
- Digital printing provides the reduction of down time [1]

Credit other appropriate responses.

(b)							2		2		4
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Candidates should demonstrate understanding and awarded up to 4 marks.

No response or an inappropriate response – 0 marks

Responses may include:

- Seam quality – straight, no puckering [1]
- Final dimensions are all within tolerances [1]
- Zip inserted correctly and in good working order [1]
- Quality of materials to be used [1]
- Labelling is accurate. Care and safety [1]
- Printing even all over [1]
- Print quality [1]
- Handles sewn on correctly [1]

Credit any other appropriate response.

(c) (i)		2				2			2
Candidates should demonstrate understanding and awarded up to 1 mark. (i) Calculate the total surface area of the bag to be printed. $50 \times 30 = 1,500 \times 2 = 3,000\text{cm}^2$ $25 \times 15 = 375 \times 2 = 750\text{cm}^2$ 1 mark $3,000 + 750 = 3,750\text{cm}^2$ is the total surface area to be covered 1 mark <i>Accept other methods of calculation.</i> <i>All calculations need to be shown for full marks.</i>									
(c) (ii)		3				3			3
Candidates should demonstrate knowledge and understanding and its application in this context to be awarded up to 3 marks based on: (ii) 100ml of ink will cover an area of 700cm^2. Each 100ml of ink cartridge costs £3.50. Calculate how much ink is needed to print the bag and the total cost of printing. $1\text{ml} = 700 \text{ divided by } 100 = 7\text{cm}^2$ 1 mark $3,750 \text{ divided by } 7 = 535.71 \text{ (536) ml of ink will cover } 3,750\text{cm}^2$ 1 mark $6 \text{ cartridges of ink } \times \text{£}3.50 = \text{£}21.00 \text{ total cost of printing the bag}$ 1 mark <i>Accept other methods of calculation.</i> <i>All calculations need to be shown for full marks.</i>									

Question 3

The denim jacket pictured below has been constructed using flat fell seams.

- (a) Using notes and sketches explain how you would construct and sew a flat fell seam. [4]
- (b) The denim jacket has machine embroidered detail. Appliqué could also have been used as a decorative technique. Explain why the manufacturer might have used machine embroidery instead of appliqué. [4]

	Science	Maths		AO3		AO4					Total
				2a	2b	1a	1b	1c	2a	2b	
(a)									4		4

Candidates should demonstrate knowledge of the design and make principle and awarded up to 4 marks.

No response or an inappropriate response – 0 marks

Responses should be based on:

- Sketch of a flat fell seam [1]
- Sketches of steps on how to construct a flat fell seam [1]
- Detail of construction steps [1]
- Detail which includes the overlapping of fabric and stitching to enclose the seam [1]

Credit other appropriate responses.

(b)						4					4
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Candidates should demonstrate knowledge and awarded up to 4 marks.

No response or an inappropriate response – 0 marks

Responses should be based on:

- Machine embroidery would be less time consuming and a more straight forward process than appliqué [1]
- Machine embroidery would only include the use of embroidery thread; fabric/s would be needed for appliqué [1]
- Machine embroidery may be more durable than appliqué sewn onto a jacket [1]
- Machine embroidery on a jacket may look more professional than appliqué [1]

Credit other appropriate responses.

Question 4

A manufacturer is making a batch of 4000 tops.

- (a) Bias binding has been used around the neck and the sleeves. Describe **two** reasons why bias binding has been used. [4]
- (b) It takes 1 metre of white fabric at £11.50 per metre and 0.25 metre of blue fabric at £12.00 per metre to make one top.
- (i) Calculate the total cost of fabric needed to make a batch of 4000 tops. [3]
Show all calculations.
- (ii) The bias binding for the sleeves and neckline costs 75p for each top. Calculate the percentage increase to the nearest whole number in the cost of materials for the batch of 4000 tops when the bias binding is added. [2]
Show all calculations.
- (c) The whole area of the rocket is embroidered onto the front of the top. The embroidery uses 80 mm of thread for every 10 mm stitched. Calculate how much thread is needed to stitch the rocket shown in the diagram. [5]

	Science	Maths		AO3		AO4					Total
				2a	2b	1a	1b	1c	2a	2b	
(a)						4					4

Candidates should demonstrate knowledge and awarded 1 mark.

No response or an inappropriate response – 0 marks

- Bias binding could have been used as a decorative technique [1]
- Using bias binding as a decorative technique to add interest to the neck and sleeve - could be a contrasting colour or print [1]
- The neckline and sleeves are both curved. Using bias binding is a good way of finishing an edge with a curve because the binding has been cut along the bias [1]
- Neck and sleeve edges are enclosed in the bias binding so that they do not fray [1]

(b)		5						5			5
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Candidates should demonstrate knowledge and understanding and its application in this context to be awarded up to 5 marks.

- (i) Calculate the total cost of fabric needed to make a batch of 4000 tops.

$£11.50 \times 4000 = 46,000$ **1 mark**

$£12.00 \text{ divided by } 4 = £3.00 \times 4000 = 12000$ **1 mark**

$46,000 + 12,000 = £58,000$ is the total cost of fabric needed to make a batch of 4000 tops **1 mark**

Accept other methods of calculation.

All calculations need to be shown for full marks.

- (ii) The bias binding for the sleeves and neckline costs 75p for each top. Calculate the percentage increase to the nearest whole number in the cost of materials for the batch of 4000 tops when the bias binding is added.

$$0.75\text{p} \times 4000 = \text{£}3,000$$

1 mark

$$\text{£}3,000 \text{ divided by } 58,000 \times 100 = 5\% \text{ increase in the total cost of materials}$$

1 mark

Accept other methods of calculation.

All calculations need to be shown for full marks.

(c)

5

5

5

A rocket is embroidered onto the front of the top. The embroidery uses 80 mm of thread for every 10 mm stitched.

Calculate how much thread is needed to stitch the rocket shown in the diagram.

Candidates should demonstrate knowledge and understanding and its application in this context to be awarded up to **5** marks.

No response or an incorrect response – 0 marks

$$4 \times 4 = 16 \text{ divided } 2 = 8 \text{ cm}^2 \text{ (Area A)}$$

$$8 \times 4 = 32 \text{ cm}^2 \text{ (Area B)}$$

$$1.5 \times 4 \text{ divided } 2 = 3 \text{ cm}^2 \text{ (Area C)}$$

$$1.5 \times 4 \text{ divided } 2 = 3 \text{ cm}^2 \text{ (Area D)}$$

1 mark

$$8 + 32 + 3 + 3 = 46\text{cm}^2 \text{ (total area of rocket)}$$

1 mark

$$46 \times 10 = 460 \text{ mm}^2 \text{ (cm into mm)}$$

1 mark

$$460 \text{ divided by } 10 = 46 \text{ (how many 10mm of thread stitched)}$$

1 mark

$$46 \times 80 = 3680 \text{ mm of thread needed to stitch the rocket}$$

1 mark

Accept other methods of calculation.

All calculations need to be shown for full marks.

Question 5

The skirt shown below has been made from satin weave polyester which has been cut out on the bias.

- (a) Explain what is meant by cutting the material on the 'bias' and give the reason for this. [5]
- (b) Discuss the use of a satin weave polyester for the skirt shown above. [5]

	Science	Maths		AO3		AO4					Total
				2a	2b	1a	1b	1c	2a	2b	
(a)	✓					1	4				5

Candidates should demonstrate knowledge and understanding and awarded up to 5 marks.

No response or an inappropriate response – 0 marks

Responses should be based on:

- Cutting a material on the 'bias' means to cut on the diagonal [1]
- Bias cut fabric hugs the body [1]
- Bias cut fabric has good drape [1]
- Bias cut fabric has good stretch [1]
- The skirt will move with the body due to the fabric being cut on the bias [1]

Credit other appropriate responses.

(b)						1	4				5
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Candidates should demonstrate knowledge and understanding and awarded up to 2 marks.

No response or an inappropriate response – 0 marks

Responses should be based on:

- Satin weave has good drape [1] which is suitable for the skirt shown [1]
- Polyester has good sheen [1] is affordable [1] and is easy to care for [1] for example, it washes well and dries quickly [1]

Credit other appropriate responses.

Question 6

A design specification will include measurable performance criteria to ensure a successful product.

Describe the importance of including measurable performance criteria in a design specification.

Include specific examples in your answer.

[5]

	Science	Maths		AO3		AO4					Total
				2a	2b	1b	1c	2a	2b	2c	
									5		5

Candidates should demonstrate an understanding of design and make principles and awarded up to 5 marks.

No response or an inappropriate response – 0 marks

Responses should be based on:

- Examples such as; the jacket must have 3 pockets measuring 30cms by 25cms. [1]
- Examples such as; the jacket pockets will need to hold x amount of weight [1]
- Measurable criteria can be tested and is specific to the design [1]
- You can test measurable criteria to see if the product passes or fails [1]
- Design/product is accurate and measured [1]

Credit any other appropriate response.

Question 7

A designer might use reverse engineering/disassembly as part of the iterative process of design.

- (a) Analyse the benefits of reverse engineering/disassembly to the designer. [6]
 (b) Evaluate the use of secondary research when analysing existing products. [6]

	Science	Maths		AO3		AO4					Total
				2a	2b	1b	1c	2a	2b	2c	
(a)	✓			4			2				6

Candidates should show evidence of logical reasoning or deconstruct information and apply this to technical principles to be awarded up to 6 marks.

Responses should be based on:

- Disassembly/reverse engineering involves taking a product apart in order to see how the product is constructed [1]
- Designers and manufacturers use disassembly/reverse engineering to analyse a product in detail. [1]
- By disassembling a product, the designer can see details such as the quality of the fibres, [1] fabrics and manufacturing [1]: e.g., how adequate are the stitches, fastenings and seam allowance [1] what is the quality of the product? Have facings, linings been used and where [1]
- This will help the designer to develop ideas for new and improved products. [1]

With a banded mark scheme for AO3s evaluate and analyse questions just bullet point list, indicative content that should be credited.

Credit any other appropriate response.

Band	Marks	AO3 2a	Marks	AO4 1c
2	3-4	Good analysis of disassembly/reverse engineering. A sound discussion, which deconstructs information and provides adequate connections and reasoning. Generally well-considered and relevant factors used as a context for the discussion	2	Applies a sound knowledge and understanding of technical principles in the context of disassembly/ reverse engineering.
		There is a line of reasoning which is generally coherent, mainly relevant and with some evidence and structure.		
1	1-2	Limited analysis of disassembly/ reverse engineering. Little evidence of deconstructing information and limited connections are made. Few factors are identified.		Applies a basic knowledge and understanding of technical principles in the context of disassembly/ reverse engineering.
		There is limited evidence of relevant examples or structure.		
	0	No response or work that is worthy of a mark.		

	Science	Maths		AO3		AO4				Total	
				2a	2b	1b	1c	2a	2b		2c
(b)	✓				4					2	6

Candidates should show clear evidence of appraisal and/or make judgements and apply this to designing and making principles to be awarded up to 6 marks.

Responses should be based on:

- Quick way to gather information [1]
- Information is easily obtained [1]
- Many sources of secondary information [1]
- Not always reliable [1]
- Information may be bias [1]
- Information may be incorrect or out of date [1]

Credit any other appropriate response.

Band	Marks	AO3 2b	Marks	AO4 2c
2	3-4	Good evaluation of secondary research. A sound discussion which appraises and/or makes judgements about secondary research. Generally well-considered, relevant issues used as a context for the discussion.	2	Applies a sound knowledge and understanding of design and make principles in the context of secondary research. Generally well-considered, relevant issues identified.
		There is a line of reasoning which is generally coherent, mainly relevant and with some evidence and structure.		
1	1-2	Limited evaluation of secondary research. Little evidence of appraising or making judgements about the secondary research.	1	Applies a basic knowledge and understanding of design and make principles in the context of secondary research.
		There is limited evidence of relevant examples or structure.		
	0	No response or work that is worthy of a mark.		

Question 8

Designers are now expected to produce eco-friendly products that are morally and ethically acceptable.

Analyse the ethical and sustainable factors that designers and manufacturers should consider when producing a new product. [9]

	Science	Maths		AO3		AO4				Total	
				2a	2b	1b	1c	2a	2b		2c
					6		3				9

Candidates should provide evidence of appraisal and/or make judgements on technical principles to be awarded up to 9 marks based on:

Candidates need to show an understanding of sustainable and ethical design and should be based on:

- Working conditions [1]
- Fair trade [1]
- Sustainable sources [1]
- Impact of waste [1]
- Global manufacturing on product miles [1]
- Using alternative energy [1]
- 6 R's of design [1] reduce [1] reuse [1] recycle [1] refuse [1] repair [1] rethink [1]
- Aftercare of the product [1]
- Longevity/durability of the product [1]

Accept other examples where candidates put forward links and explain the impact.

Band	Marks	AO3 2b	Marks	AO4 1c
3	5-6	Excellent evaluation of the use of ethical and sustainable factors. A thorough discussion which appraises and/or makes judgements about sustainability. Well-considered, relevant wider issues used as a context for the discussion.	3	Applies a thorough knowledge and understanding of the technical principles of sustainability. Well-considered, relevant wider issues identified.
		There is a sustained line of reasoning which is coherent, relevant, substantiated and logically structured.		
2	3-4	Good evaluation of the use of ethical and sustainable design. A generally sound discussion which appraises and/or makes judgements about sustainability. Generally well-considered, relevant issues used as a context for the discussion.	2	Applies a generally sound knowledge and understanding of the technical principles of sustainable design. Generally well-considered, relevant issues identified.
		There is a line of reasoning which is generally coherent, mainly relevant and with some evidence and structure.		
1	1-2	Limited evaluation of sustainable design. Little evidence of appraising or making judgements about sustainability.	1	Applies a basic knowledge and understanding of technical principles of sustainability.
		There is limited evidence of relevant examples or structure.		
	0	No response or work that is worthy of a mark		

Question 9

Finishes are often applied to fabrics to ensure they are fit for purpose.

Evaluate the use of different mechanical finishes that are applied to fabrics to enhance their aesthetic qualities. [9]

	Science	Maths		AO3		AO4					Total
				2a	2b	1a	1b	2a	2b	2c	
	✓			6						3	9

Candidates should provide evidence of either deconstructing information, find connections and/or logical chains of reasoning and apply it appropriately to design and make principles to be awarded up to 9 marks based on:

- Mechanical finishes use heat, pressure, and rollers to impart a particular finish to the fabric [1] dry processes that are applied physically without the use of water or chemicals [1]
- Mechanical finishes aim to improve either its appearance or its handle [1]
- Mechanical finishes include brushing/raising, calendaring, embossing, heat-setting and stone washing [1]
- Calendaring of textiles is a finishing process used to smooth, coat, or thin a fabric. [1] modify the surface of a fabric [1]
- A brushed or raised finish produces a nap and traps air [1] for example on cotton fabrics [1] and makes a fabric softer and warmer to wear [1] but this also makes the cotton more flammable [1]

Credit any other appropriate response.

Band	Marks	AO3 2a	Marks	AO4 2c
3	5-6	Excellent analysis of mechanical finishes. A thorough discussion, which deconstructs information and demonstrates logical connections and reasoning throughout. Well-considered, relevant examples used to support the discussion.	3	Applies a thorough knowledge and understanding of designing and making principles to illustrate, with well-considered, relevant examples, of mechanical finishes.
		There is a sustained line of reasoning which is coherent, relevant, substantiated and logically structured.		
2	3-4	Good analysis of mechanical finishes. A generally sound discussion, which deconstructs information and provides adequate connections and reasoning throughout. Generally well-considered, relevant examples used to support the discussion.	2	Applies a generally sound knowledge and understanding of designing and making principles to illustrate, with generally well-considered examples, of mechanical finishes.
		There is a line of reasoning which is generally coherent, mainly relevant and with some evidence and structure.		
1	1-2	Limited analysis of mechanical finishes. Little evidence of deconstructing information and limited connections are made. Few examples used to support the discussion.	1	Applies a basic knowledge and understanding of designing and making principles to partly demonstrate, with limited exemplification, of mechanical finishes.
		There is limited evidence of relevant examples or structure.		
	0	No response or work that is worthy of a mark.		

Question 10

Designers use anthropometric and ergonomic data to ensure that a product is comfortable and safe for use.

Explain how anthropometric and ergonomic data is used when designing a life jacket. [12]

	Science	Maths		AO3		AO4					Total
				2a	2b	1a	1b	1c	2b	2c	
	✓						8		4		12

Candidates should demonstrate knowledge and understanding **and** apply it to designing and making principles and technical principles to be awarded up to 12 marks based on:

- The shape of the jacket needs to be considered so that the person can feel comfortable [1]
- The size of the jacket needs to be considered so that it is suitable for the range of sizes and heights which it has been designed for [1]
- Anthropometric data will be used in conjunction with ergonomics to allow the user to inflate the life jacket easily under pressure [1]
- The life jacket will need to be comfortable when inflated and deflated [1]
- The size and shape of the jacket needs to be suitable for safety considerations [1]
- The jacket might need to be transported so weight and ease of movement will need to be considered as well as storage [1]
- The jacket will have to be adjustable for a range of sizes [1]
- The shape of the jacket needs to be considered for ease of movement for the wearer [1]

Accept other viable appropriate suggestions.

Band	Marks	AO4 1b and 1c	Marks	AO4 2b and 2c
3	6-8	Demonstrates and applies a thorough knowledge and understanding of how anthropometric and ergonomic data is used when designing a life jacket. Well-considered, relevant wider issues identified.	4	Demonstrates and applies a thorough knowledge and understanding of designing and making, and technical principles in the context of how anthropometric and ergonomic data is used when designing a life jacket drawing upon well-considered, relevant examples.
		There is a sustained line of reasoning which is generally coherent, relevant, substantiated and logically structured.		
2	3-5	Demonstrates and applies a generally sound knowledge and understanding of how anthropometric and ergonomic data is used when designing a life jacket. Generally well-considered, relevant issues identified.	2-3	Demonstrates and applies a generally sound knowledge and understanding of designing and making, and technical principles in the context of how anthropometric and ergonomic data is used when designing a life jacket. Generally well-considered examples are provided.
		There is a line of reasoning which is generally coherent, mainly relevant and with some evidence and structure.		
1	1-2	Demonstrates and applies a basic knowledge and understanding of how anthropometric and ergonomic data is used when designing a life jacket. Few issues are identified.	1	Demonstrates and applies a basic knowledge and understanding of designing and making principles and technical principles in the context of how anthropometric and ergonomic data is used when designing a life jacket. Few examples are provided.
		There is limited evidence of relevant examples or structure.		
	0	No response or work that is worthy of a mark		