

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Candidate Number				

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Wednesday 18 June 2025

Morning (Time: 1 hour 45 minutes) **Paper reference** **1DT0/1E**

Design and Technology
COMPONENT 1: Textiles

You must have:
calculator, ruler, HB pencil, protractor, pair of compasses

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Calculators may be used.
- Any diagrams may NOT be accurately drawn, unless otherwise indicated.
- You must **show all your working out** with **your answer clearly identified** at the **end of your solution**.

Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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SECTION A

Core

Answer ALL questions. Write your answers in the spaces provided.

- 1 (a) The materials that products are made from are chosen because of their properties.

Figure 1 shows a table of products.

For each of the products shown, give a property of the material it is made from that makes the material suitable for the product.

The first one has been done for you.

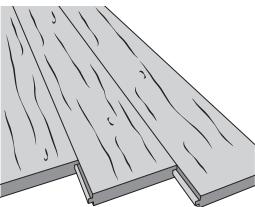
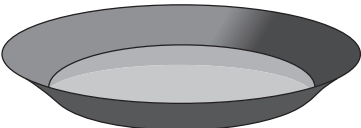
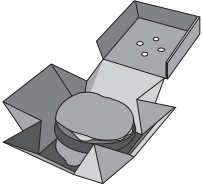
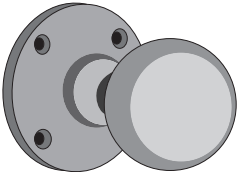
Picture of product	Material and product	Property
	Oak floorboards	Tough
	Wool gloves	(1) (i)
	Urea formaldehyde picnic plate	(1) (ii)
	Corrugated board takeaway burger box	(1) (iii)
	Brass door knob	(1) (iv)

Figure 1



The oak floorboards are tough.

- (b) (i) Explain **one other** property of oak that makes it a suitable choice of material for the floorboards.

(2)

- (b) (ii) The oak floorboards cost £57.60 and cover an area of 1.44 m^2 .

Calculate how much the oak floorboards cost per m^2 .

(2)

Answer £

(Total for Question 1 = 8 marks)



2 Origami is a folded paper art form.

Figure 2 shows an origami rabbit. It has been manufactured from copier paper.

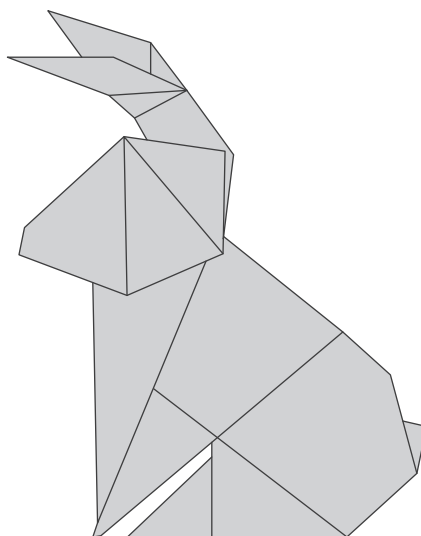


Figure 2

- (a) Give **one** property of copier paper that makes it an appropriate choice of material for the origami rabbit.

(1)

- (b) Explain **one** advantage of using recycled copier paper to manufacture the origami rabbit.

(2)

- (c) Explain **one** way that shape-memory alloys (SMAs) can be used to animate a feature of the origami rabbit.

(2)

Before it is folded, the starting shape of paper for the origami rabbit is a square. The square is cut out from a standard sheet of A4 copier paper.

A standard sheet of A4 copier paper measures 29.7 cm $\times$ 21.0 cm.

- (d) Calculate the percentage of waste paper if the starting shape of paper for the origami rabbit measures 21.0 cm $\times$ 21.0 cm.

Give your answer to the nearest whole number.

(4)

Answer %

(Total for Question 2 = 9 marks)



P 7 8 7 8 6 A 0 5 2 8

- 3 Figure 3 shows an electronic circuit for a voice recorder and a specific electronic component used in the circuit.

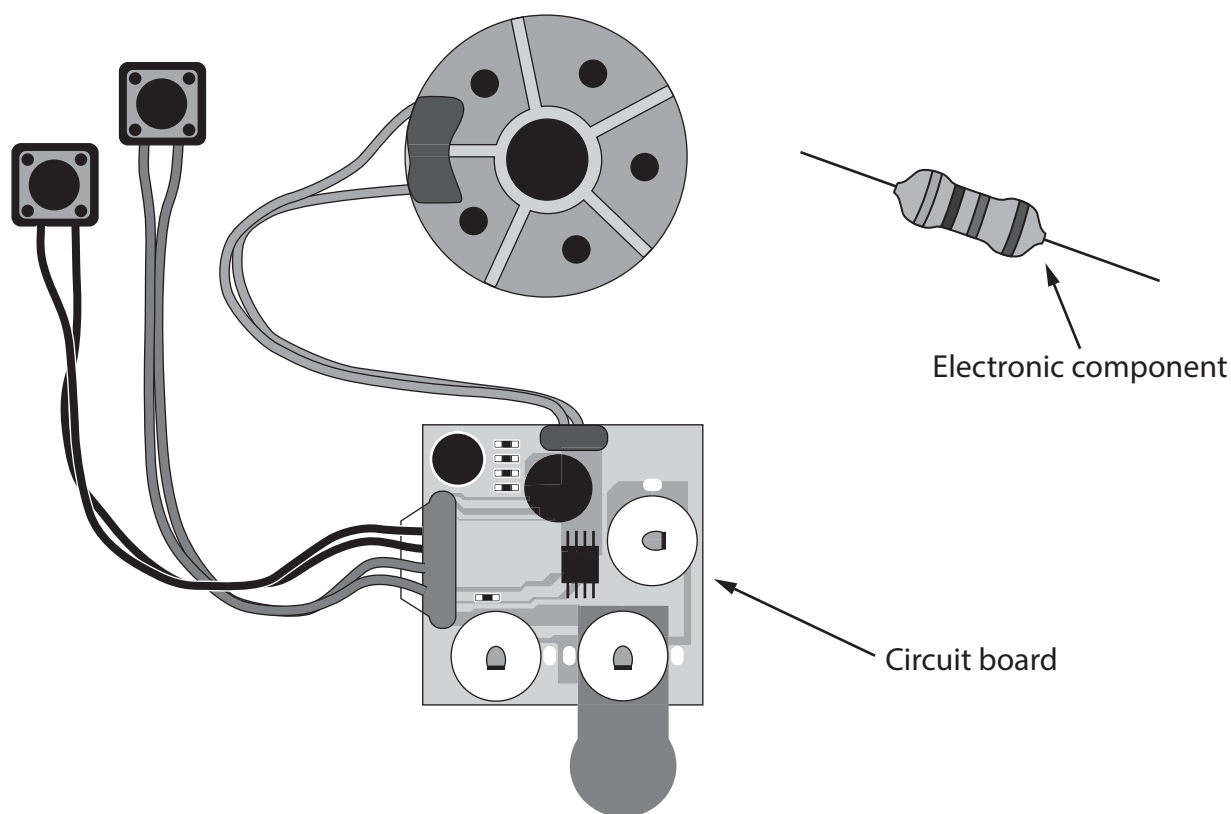


Figure 3

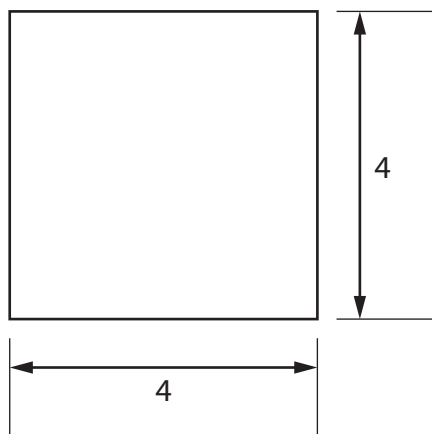
- (a) Name the specific type of electronic component shown in Figure 3.

(1)

- (b) Explain **one** advantage for the manufacturer of making the electronic circuit for the voice recorder in batches of 1,000.

(2)

Figure 4 shows the dimensions of the circuit board that is used in the voice recorder.



All dimensions in cm

Diagram not to scale

Figure 4

The circuit boards are cut from a larger sheet of material that costs £3.20.

The larger sheet of material measures 32 cm × 16 cm.

- (c) Calculate the cost of each circuit board that can be cut from the larger sheet of material.

You do not have to make any allowance for the width of the cut.

(2)

Answer £

The voice recorder is powered by batteries.

(d) Explain **one** advantage of using batteries to power the voice recorder.

(2)



Figure 5 shows a Sing Along Box. The voice recorder is fitted inside.

The case for the Sing Along Box is manufactured from high impact polystyrene (HIPS).

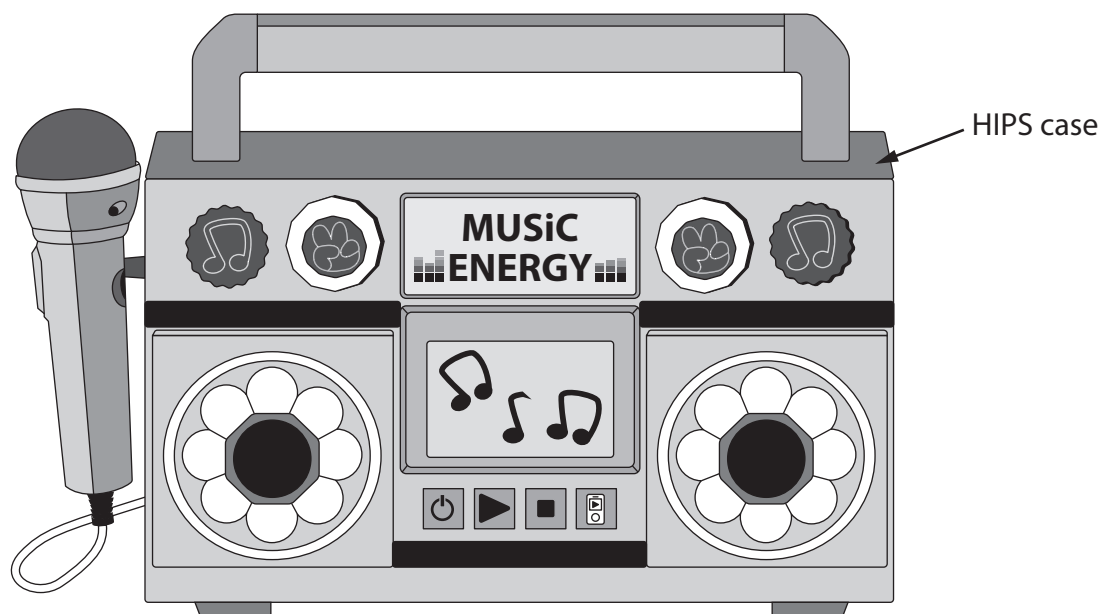


Figure 5

(e) Explain **two** benefits of using HIPS for the case of the Sing Along Box.

(4)

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(Total for Question 3 = 11 marks)

4 Figure 6 shows a salt pot.

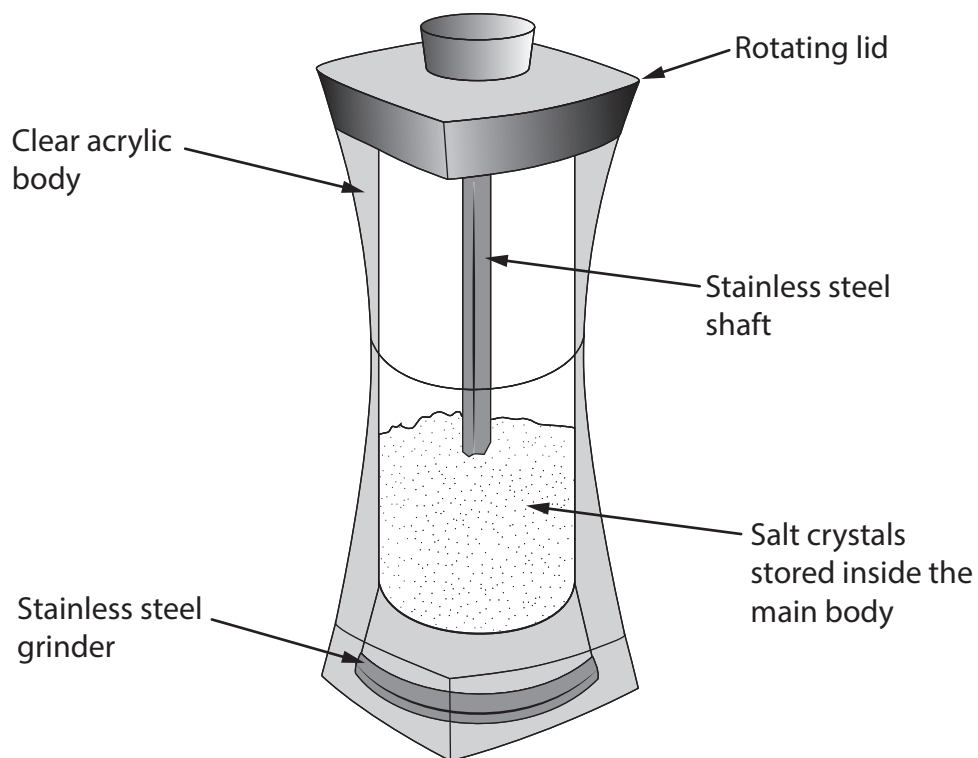


Figure 6

(a) Explain **two** working characteristics of stainless steel that makes it an appropriate material for the shaft and grinder of the salt pot.

(4)

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The salt pot can be easily taken apart at the end of its useful working life so that the different materials can be separated and recycled.

The materials for one salt pot weigh 270 grams.

80% of the materials can be recycled.

(b) Calculate the weight of materials that **cannot** be recycled for one salt pot.

(2)

Answer grams



A designer carried out product disassembly of existing products when developing design ideas for the salt pot.

- (c) Discuss why designers carry out product disassembly of existing products when developing design ideas.

(6)



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TOTAL FOR SECTION A = 40 MARKS



SECTION B

Textiles

Answer ALL questions. Write your answers in the spaces provided.

- 5 Figure 7 shows a design solution for a vest that a primary school child can wear when out on a trip together with some additional information.



Additional information

Average chest size of a child:	
5–6 yrs	58 cm
7–8 yrs	64 cm
9–10 yrs	71 cm

Figure 7

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(a) The vest needs to be improved to include the following specification points.

The vest must:

- be highly visible and provide extra warmth for wearing outside
- be easy to care for and include a way to show which school the child attends
- fit children of different ages and include a method for fastening.

Use notes and sketches to show how the vest could be modified to include these three specification points.

You will be marked on how you apply your understanding of design and technology, not your graphical skills.

Use the outline of the original design solution to show your modifications.

(6)



(b) Figure 8 shows a number play set for a young child.

Embroidered felt discs

Storage bag

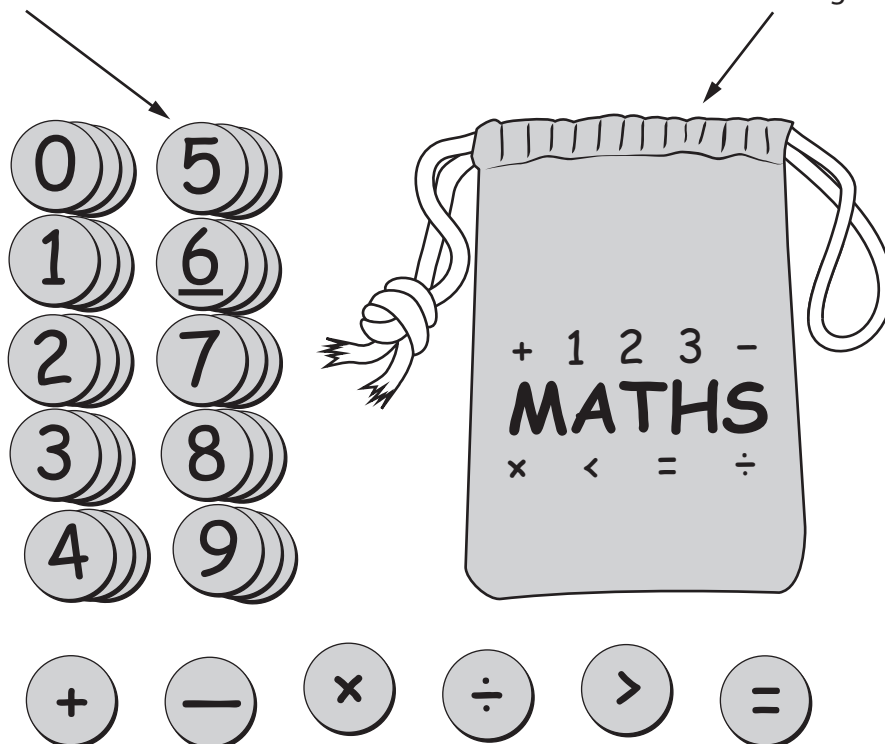


Figure 8

Explain **two** ways that the number play set meets, or fails to meet, the criterion of providing a method to help teach young children about maths.

(4)

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(Total for Question 5 = 10 marks)

6 Figure 9 shows a pair of walking trousers made from plain woven polyester fabric.



Figure 9

(a) Explain **two** reasons for using polyester fibres for the fabric of the walking trousers.

(4)

1

2

(b) The walking trousers have an elasticated waist.

Use notes and sketches, in the space below, to show how an elasticated waist would be manufactured in school.

You will be marked on how you apply your understanding of design and technology, not your graphical skills.

(4)



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(c) Explain **one** physical characteristic of a plain weave that makes it an ideal fabric to use for the walking trousers.

(2)



- (d) Give **two** different manufacturing methods that could be used to make the side seams of the trousers weatherproof.

Explain **one** reason for using each manufacturing method.

(6)

Method 1

Explanation

Method 2

Explanation

(Total for Question 6 = 16 marks)



- 7 Figure 10 shows a wall hanging plant holder and a machine that is used during its manufacture.

The plant holder has been manufactured from stock materials.

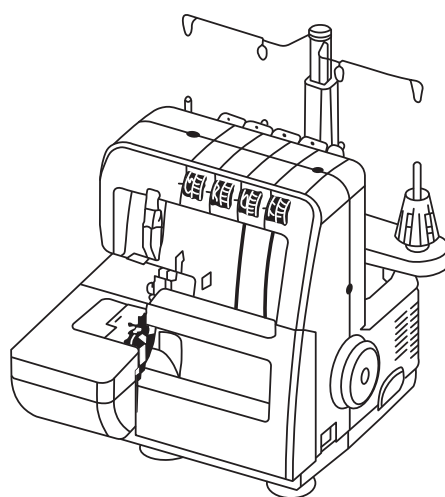
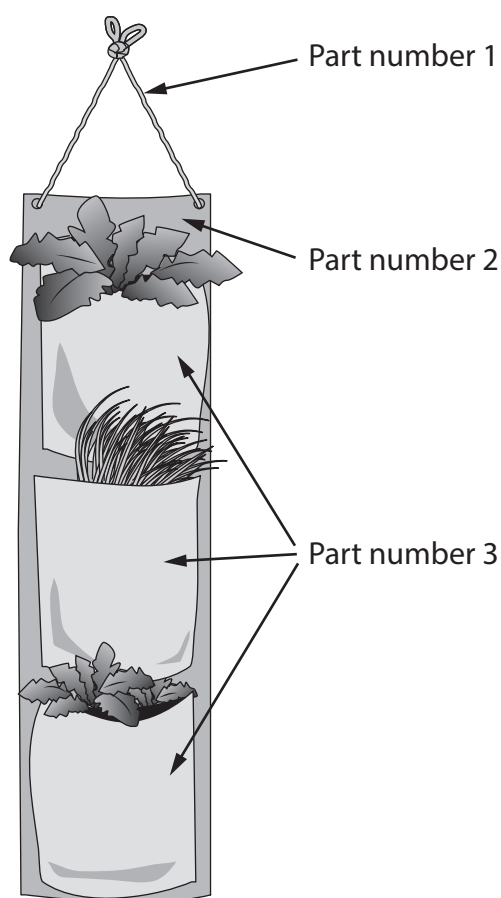


Figure 10

- (a) Name the specific type of machine shown in Figure 10.

(1)

(b) Explain **two** benefits for the manufacturer of using stock materials to manufacture the wall hanging plant holder.

(4)

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Figure 11 shows a table of parts required for the wall hanging plant holder.

Part number	Number required	Length	Width
1	1	200	4 mm diameter
2	1	500	120
3	3	100	100

Figure 11

All dimensions in mm

The 4 mm diameter nylon cord costs £2.80 per metre.

The 120 mm wide fabric costs £3.30 per metre.

The 100 mm wide fabric costs £2.80 per metre.

(c) Calculate the total cost of the materials to make one wall hanging plant holder. (5)

Answer £



The fabric for the wall hanging plant holder has a laminated finish.

(d) Explain **two** benefits of using a laminated finish on the fabric of the plant holder.

(6)

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(Total for Question 7 = 16 marks)



8 Figure 12 shows a tie-dyed denim jacket.

The denim is made from cotton fibres.



Figure 12

- (a) Explain **one** physical characteristic of denim that makes it an appropriate fabric from which to make the jacket.

(2)

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(b) Explain **one** issue associated with the ecological footprint of using cotton for the jacket.

(3)

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(c) Explain **two** reasons for manufacturing the jacket to a tolerance.

(4)

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(d) The tie-dyed denim jacket is manufactured in the United Kingdom.

Figure 13 shows some additional information about the tie-dyed denim jacket.

Source of cotton	Pakistan
Country of manufacture	United Kingdom
Potential market	Craft fairs and online
Scale of production	Batch

Figure 13

Analyse the information in Figure 13.

Evaluate the denim jacket with reference to cost factors including:

- quality of material
- manufacturing processes
- treatments.

(9)

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(Total for Question 8 = 18 marks)

TOTAL FOR SECTION B = 60 MARKS
TOTAL FOR PAPER = 100 MARKS

