



Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

GCSE

DESIGN AND TECHNOLOGY: GRAPHIC PRODUCTS

Unit 1 Written Paper

Tuesday 21 June 2016

Afternoon

Time allowed: 2 hours

Materials

For this paper you must have:

- a black pen
- a pencil
- a ruler
- an eraser
- a pencil sharpener
- coloured pencils.

Instructions

- Use black ink or black ball-point pen. Use pencil and coloured pencils only for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this answer book. Cross through any work you do not want to be marked.

Information

- The marks for the questions are shown in brackets.
- The maximum mark for this paper is 120.
- Section A relates to the context given in the Preliminary Material that was previously issued.
- You are reminded of the need for good English and clear presentation in your answers. Quality of Written Communication will be assessed in Question 4.

Section A

Answer **all** questions in the spaces provided.

Section A is about designing

You are advised to spend about 35 minutes on this question.

Design Theme: Encouraging children to grow their own fruit and vegetables.

Look at the Design Brief and Design Criteria below.

Design Brief

A local community garden scheme wants to encourage young children to learn to grow their own fruit and vegetables by giving away the small garden fork and trowel gift set shown below.



Design Criteria

You have been asked to design the graphics for the promotional backboard which holds the free garden gift set.

The graphics must:

- include the product name 'Green Fingers' in a suitable letter style (typeface)
- show suitable relevant images of **fun** characters based on fruit and/or vegetables
- appeal to children.

- 1 (a)** In the spaces below, sketch **two** different letter styles (typeface) for the name 'Green Fingers'.

[4 marks]

Letter style 1



Letter style 2



- 1 (b)** In the space below sketch **four** different images of **fun** characters based on fruit and/or vegetables. Include an indication of colour for each character.

[6 marks]

Character 1	Character 2
Character 3	Character 4

Turn over ►

- 1 (c)** Using the design criteria below, produce a series of annotated sketches to show the development of your design ideas from page 3 for the graphics to go on the backboard of the garden gift set.

Design Criteria

The graphics must:

- include the product name 'Green Fingers' in a suitable letter style (typeface)
- show suitable relevant images of **fun** characters based on fruit and/or vegetables
- appeal to children.

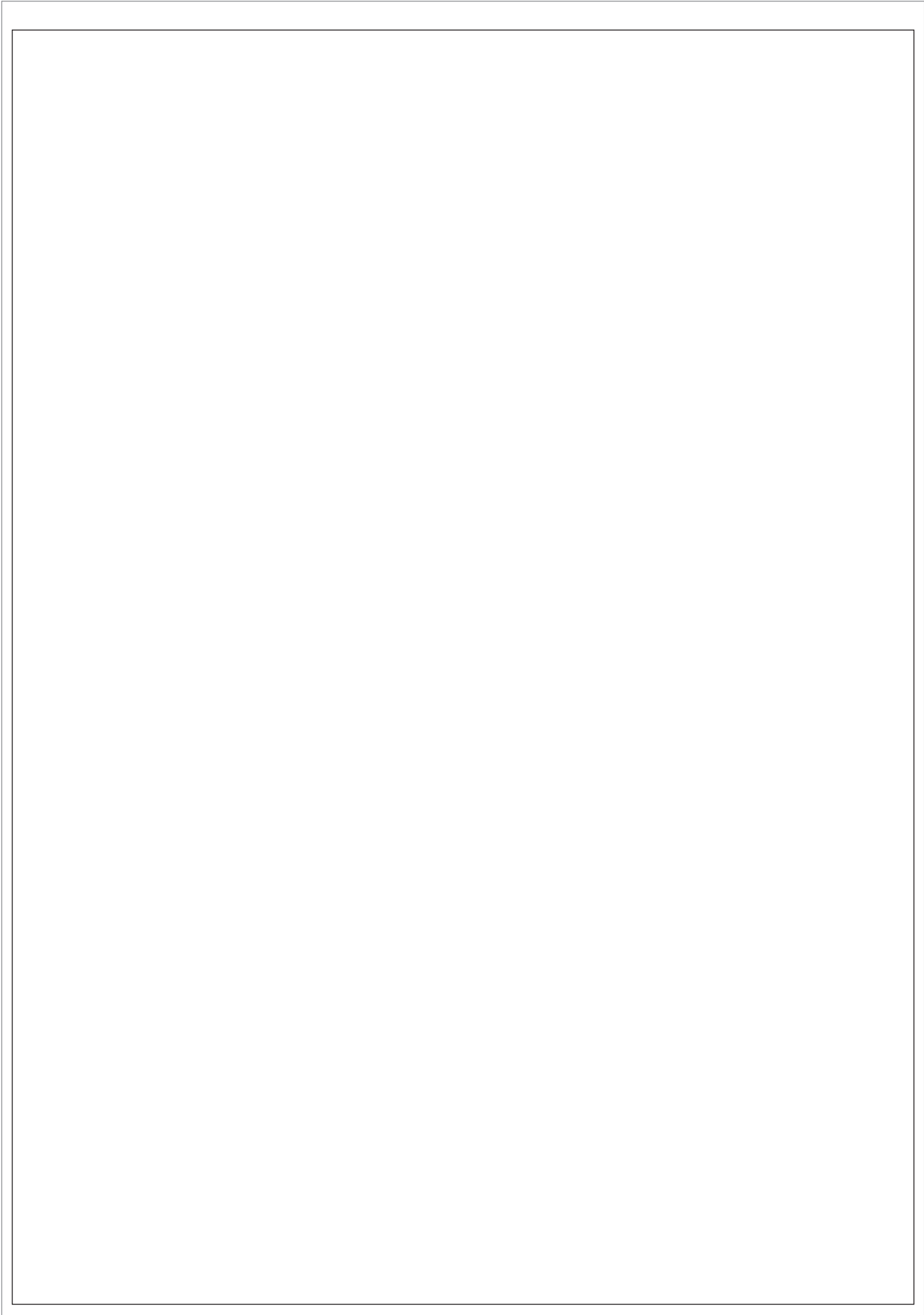
Marks will be awarded for:

- effective use of the design criteria
- creativity and quality of the development, including an indication of colour
- notes explaining your sketches.

[12 marks]

Use pages 4 and 5 to show your ideas.





Turn over ►

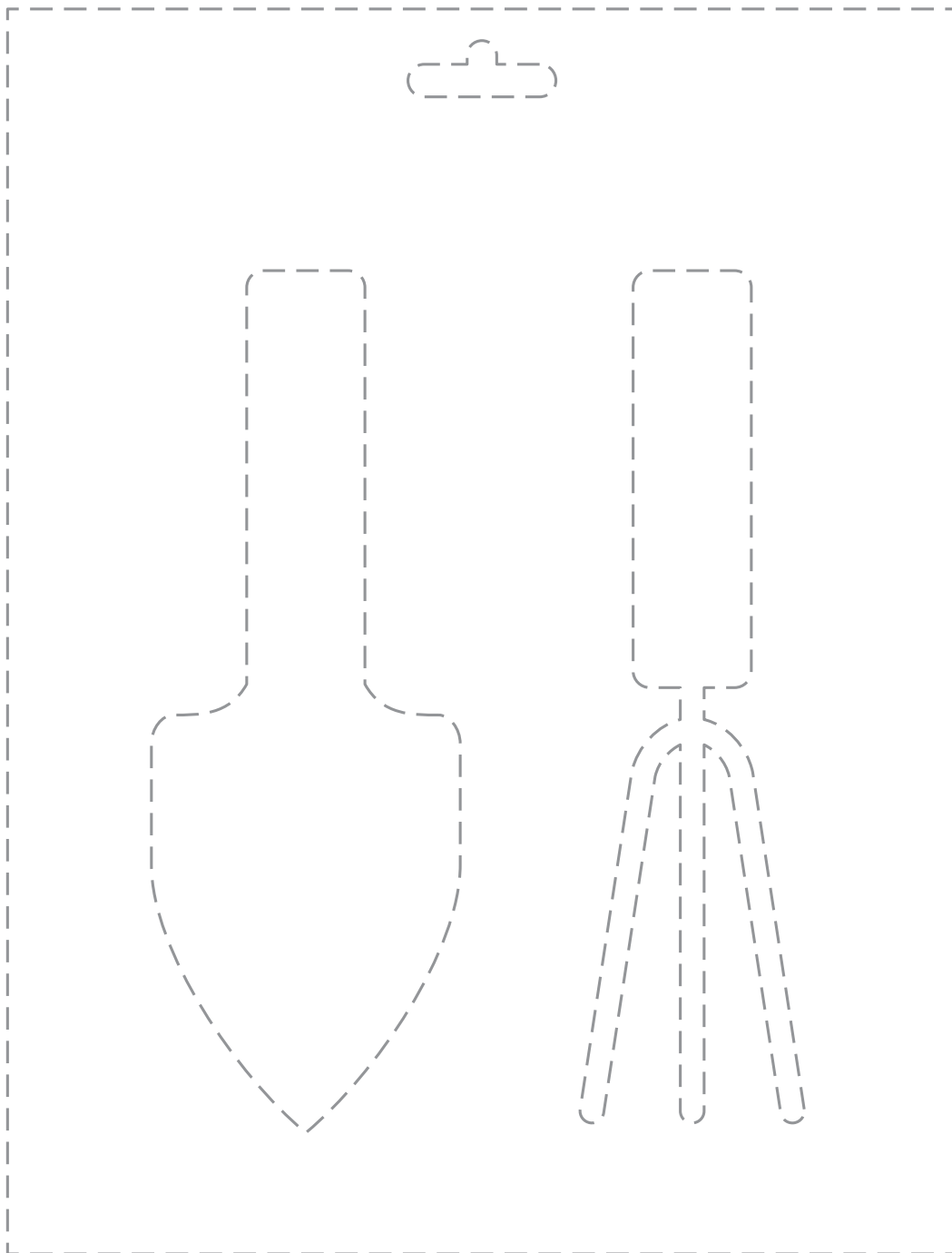
1 (d) The outline shape given below is the maximum size of card that can be used for the backboard.

The dotted lines show the positions of:

- the garden fork and trowel
- a euro slot.

On the outline shape produce a coloured presentation drawing of your final backboard for the garden gift set.

[10 marks]



Section B

Answer **all** questions in the spaces provided.






Question 2 is about adhesives.

You are advised to spend about 17 minutes on this question.

2 (a) Draw a straight line to match the adhesives in the table with the most suitable use.

You must match each adhesive to a different use.

[5 marks]

Adhesives		Use
	Glue stick	General purpose for paper, card, wood and foam board.
	PVA	Used for masking out areas when airbrushing.
	Epoxy resin	A two part adhesive. Creates a strong bond between most materials.
	Hot glue	Useful in model making or temporary joints.
	Polymer cement	Joining plastic to plastic.
		Solid glue. Bonds paper to paper.

2 (b) State **two** safety procedures to be followed when using spray adhesives in the graphics studio.

[2 marks]

1 _____

2 _____

2 (c) Below is an image of a fixative.



Complete the paragraph below by adding the missing words from the list below.

[4 marks]

staples

hairspray

pastels

fix

double sided tape

An aerosol spray is used to soft coloured pencils or
to paper or card.

A cheaper alternative fixative is

Other useful fixings include or

Turn over ►

- 2 (d) (i)** The packaging below holds a memory card. Name the specific type of packaging shown in the image.

[2 marks]



- 2 (d) (ii)** Use notes and sketches to show a suitable method of joining a clear moulded material to a backboard.

[4 marks]

Turn over for the next question.

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ANSWER IN THE SPACES PROVIDED**

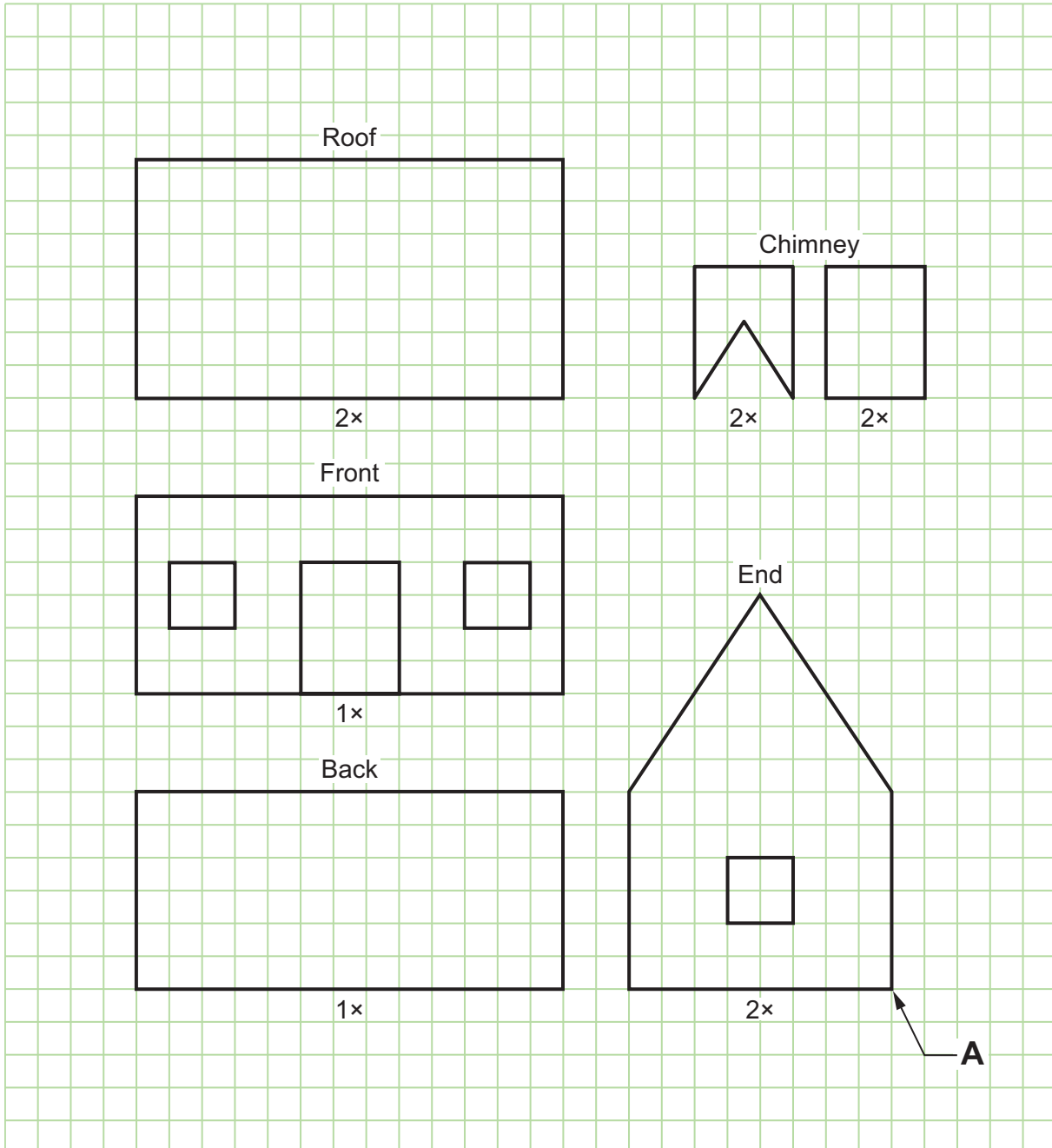
Turn over ►

Question 3 is about 3D sketching.

You are advised to spend about 15 minutes on this question.

3 The parts drawing below is of a model house.

Figure 1



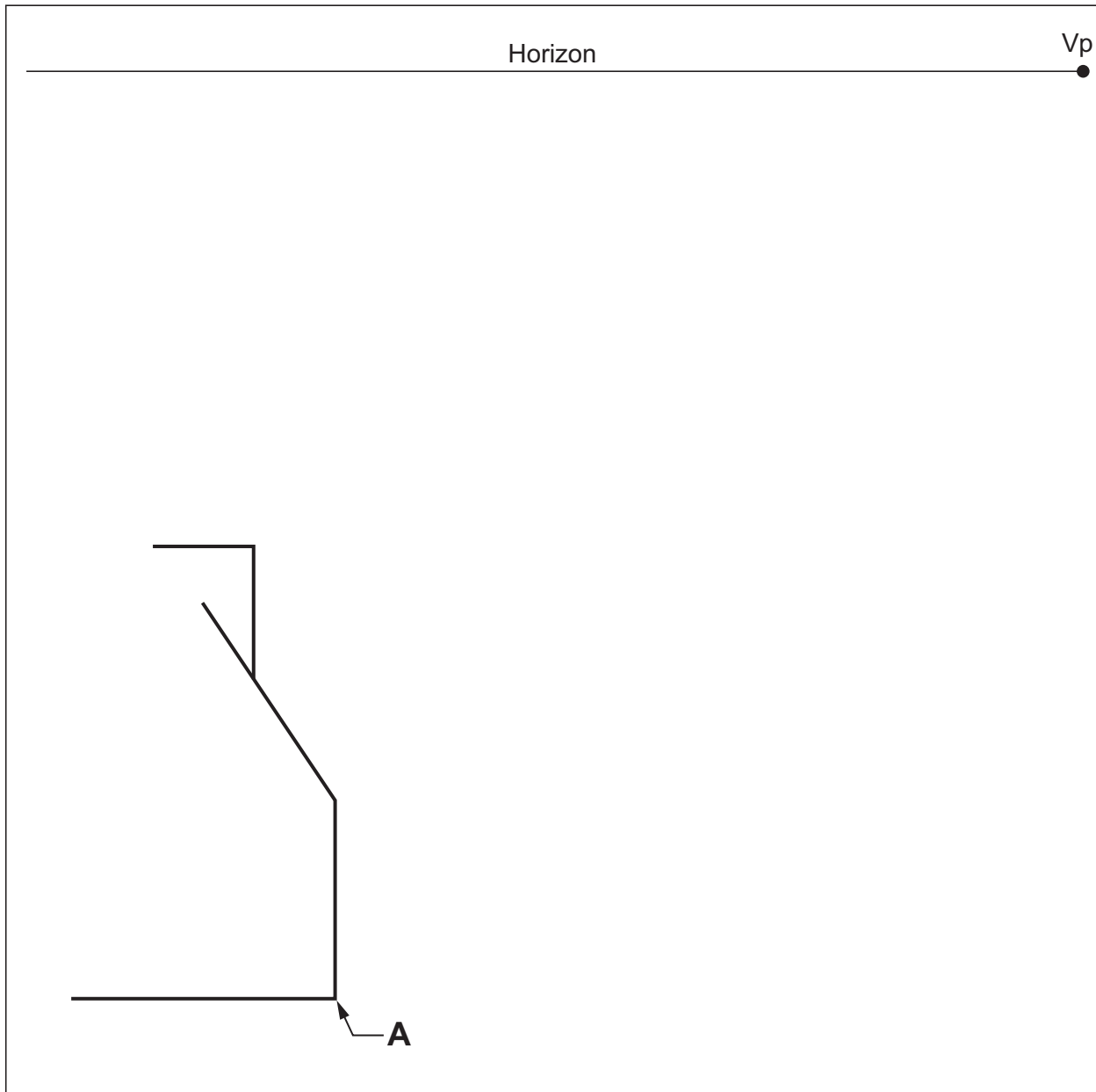
Use the 5mm square grid or use a ruler to measure the house.

Using the information in **Figure 1**, complete a full-size single point perspective drawing of the model house. Include the chimney.

[15 marks]

The front edge of the house has been drawn for you at point A in **Figure 2**.

Figure 2



15

Turn over ►

Question 5 is about presentation.

You are advised to spend about 15 minutes on this question.

- 5 (a)** Colour render (shade) the toy train to show the different materials used for the parts listed below.

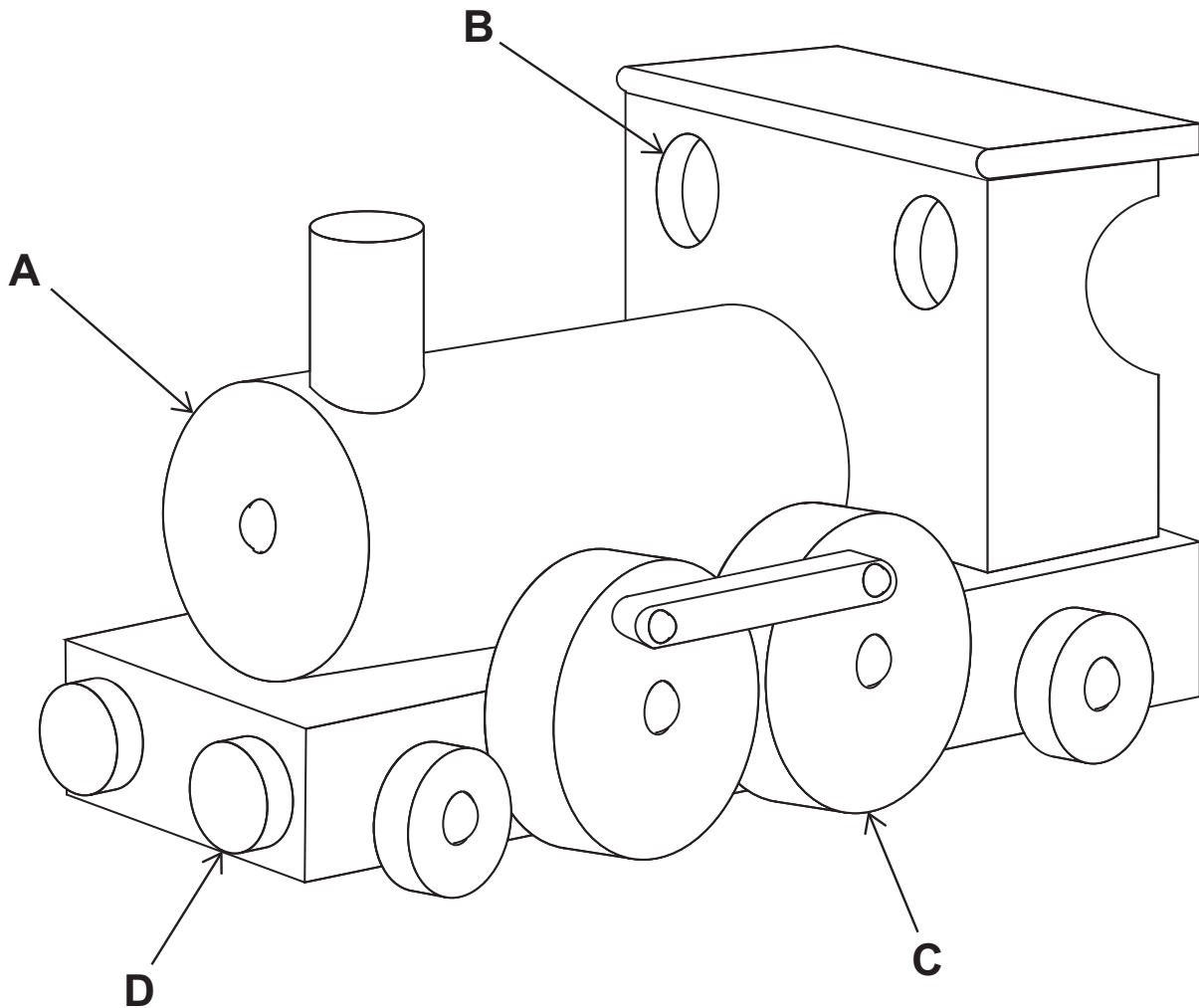
[8 marks]

Part A – The engine boiler should look like it is made from wood.

Part B – The two windows should look like they are tinted.

Part C – The two big wheels should look like they are made from shiny plastic.

Part D – The two buffers should look like they are made from foam.



- 5 (b)** Use thick and thin line emphasis technique on the drawing above to enhance the appearance of the train.

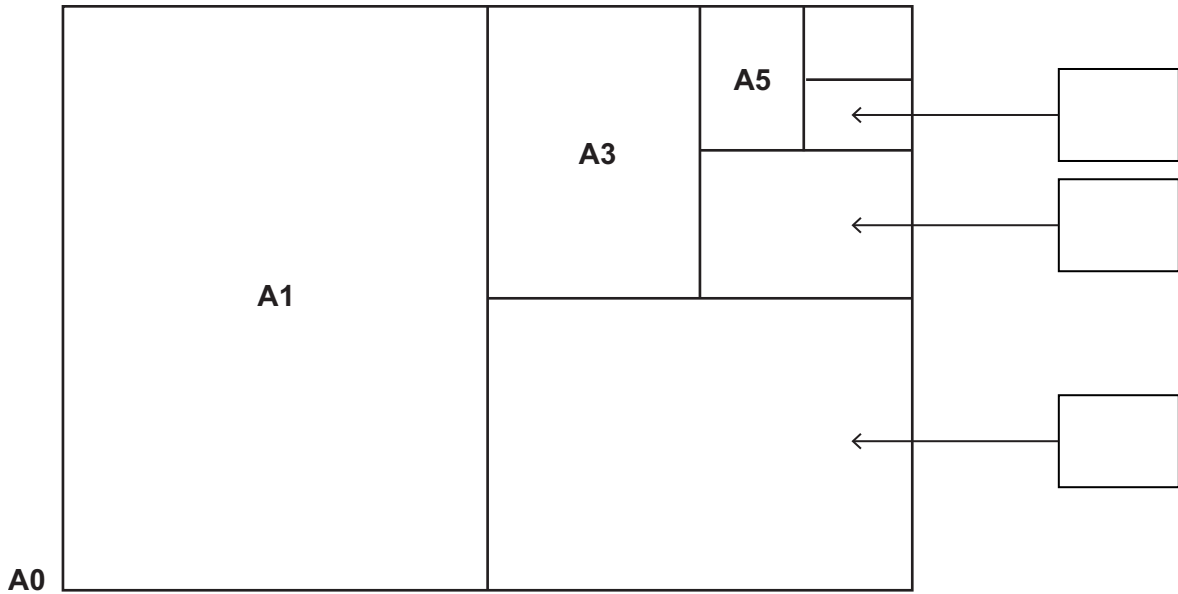
[3 marks]

Turn over ►

Question 6 is about materials.

You are advised to spend about 20 minutes on this question.

6 The most commonly available paper sizes are shown below.



6 (a) (i) Label the diagram above to complete the paper sizes.

[3 marks]

6 (a) (ii) Explain the relationship between the differences in sizes of the paper.

[2 marks]

6 (b) The prospectus folder shown below is made from card.



6 (b) (i) Evaluate the suitability of the material for this product.

[2 marks]

6 (b) (ii) There are five main print finishes which could be applied to the prospectus folder to improve its appearance.

Two of these have been completed for you.
List the other **three**.

[3 marks]

1. Die cutting
2. Embossing
3. _____
4. _____
5. _____

6 (b) (iii) The logo on the prospectus will be embossed. Explain this special printing effect.

[2 marks]

Turn over ►

6 (b) (iv) A local school needs to buy a large number of the prospectus folders shown below.

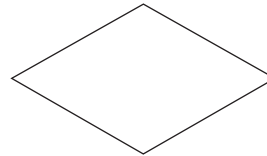


full colour printing
embossed logo

On the opposite page produce a flow chart describing how to make the folder shown above in quantity in industry. You must include a quality control stage.

Use the following symbols at the relevant stages.

[9 marks]



You may wish to use this space to plan your answer.

Start

Finish

21

Turn over ►

Question 7 is about smart and modern materials.

You are advised to spend about 10 minutes on this question.

7 (a) (i) Explain the meaning of the term 'smart material'.

[3 marks]

7 (a) (ii) A thermochromic thermometer is shown below.



Explain how a thermochromic thermometer works.

[4 marks]

7 (b) Modern materials are used in many different graphic products.

Explain why:

[6 marks]

7 (b) (i) holographic film is used on the front of concert tickets

7 (b) (ii) corn starch is used to make food packaging

7 (b) (iii) polymorph is used for modelling in design and technology.

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END OF QUESTIONS

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