

GCSE (9-1) Design and Technology

Mocks Marking Training
18OAT04





Getting to know you

Poll 1 - what is your experience of teaching the new GCSE (9-1) in Design and Technology?

Shared chat - what are the key questions you hope will be answered in today's training?
Please post these in the chat window



Aims and Objectives

- Understand the assessment requirements of the new specification
- Explore the new types of questions within the papers
- Review student responses to questions and understand how to accurately apply the mark scheme
- Understand how we can support you
- Be able to ask questions and share good practice



Agenda

Getting to know each other

New assessment requirements for GCSE Design and Technology

Marking Section A - Core

Marking Section B - Material Specialisms

Common Issues

Q & A

Support available

Evaluation

Assessment Requirements of the New GCSE Specification





Changes to the assessment requirements of the qualification

The key change to the assessment requirements of the qualification is that the examination is now worth 50% of the total mark, with the controlled assessment part also being 50%.

There are no longer specialist papers for Resistant Materials, Graphic Products, Electronic Products, or Textiles Technology.

Candidates now will be assessed through a single examination that has a common **core** section of 40 marks, and a **material specialism** which is worth 60 marks.

Both sections of the paper must be completed during the examination.

The examination is 1 hour and 45 minutes in duration.

Structure of the examination paper





Structure of the examination - component 1

Written examination: 1 hour and 45 minutes

50% of the qualification

100 marks

The paper consists of two sections. **Section A** is assessed on the **core** content and **Section B** is assessed on the **material specialism** chosen.

1DT0/1A – Metals

1DT0/1B – Papers and boards

1DT0/1C – Polymers,

1DT0/1D – Systems

1DT0/1E – Textiles

1DT0/1F – Timbers

Please complete Poll 2 to
indicate which of the
material specialisms that
are being delivered in your
centre



Structure of the examination - component 1

Section A: Core

This section is 40 marks and contains a mixture of different question styles, including open-response, graphical, maths based questions and extended-open-response questions. There will be 10 marks of maths based questions in Section A.

Section B: Material Specialisms

This section is 60 marks and contains a mixture of different question styles, including open-response, graphical, maths based questions and extended-open-response questions. There will be 5 marks of maths based questions in Section B.

Questions in both Sections of the examination paper will be related to contexts. Candidates are allowed to use calculators in the examination and should be encouraged to take in a protractor, compass and a ruler.

The purpose of mocks marking training





The reasons for mock marking training

When marking examinations it is important that there is consistency between how the mark scheme is applied by the Principle Examiner and all other examiners who are marking.

Mocks marking training is intended to provide you with the knowledge of how Pearson's examiners interpret the mark schemes for a range of questions, including short open responses, extended written responses and calculations.

This will give you guidance of how to interpret mark schemes for both sample assessment materials and also, in the future, past papers. In turn, you will then be able to provide your students with more accurate marks for their mock examinations and be able to use these more effectively to set targets and estimate grades.

Section A

CORE










Sample Responses, and how the mark scheme is applied to them

1. Examples for the CORE SECTION have been taken from a range of scripts from candidates across a range of specialisms.
2. We will look at examples of different types of question in Section A, examples of candidate responses to these questions, and how the mark scheme is applied to them.
3. For each type of question there will be one 'walk through' example and a second example that you will mark either individually or discuss.



Question 1(a) - 'Give' question

Picture of Product	Description of product	Property
	Urea formaldehyde mains voltage plug	Insulator of electricity
	A beech chopping board	<i>Strong Hardwood so it isn't chopped in (i) half.</i>
	Wool socks	<i>(ii) warm - heat insulator</i>
	A corrugated board pizza box	<i>Thin layer of plastic on inside so (iii) pizza can stay fresh.</i>
	Copper plumbing pipe	<i>won't go rusty (iv) from water.</i>

0 marks - strong is not a specific enough for any product






1 mark - Bullet point 1

0 marks - the answer is not describing a property

1 mark - Bullet point 4



Question 1(a) - exercise

Picture of Product	Description of product	Property
	Urea formaldehyde mains voltage plug	Insulator of electricity
	A beech chopping board	(1) tough (i) <u> durable </u>
	Wool socks	(1) (ii) <u> durable </u>
	A corrugated board pizza box	(1) (iii) <u> impact resistant </u>
	Copper plumbing pipe	(1) (iv) <u> Corrosion resistant </u>



Question 1(b) - 2 mark 'explain'

(b) Mains electricity in the UK is supplied at 230 V.

Explain **one** disadvantage of mains electricity.

The high voltage of mains electricity is bad because there is a high risk of death if touched.

1 mark - a disadvantage has been provided, but this does not have a linked justification.



Question 1(b) exercise

(b) Mains electricity in the UK is supplied at 230 V.

Explain **one** disadvantage of mains electricity.

Not the right / appliance
voltage for everything
(2)

if a problem occurs within in it
then the ^{whole} mains electricity system
will be effected. The 230v is
also an extremely dangerous amount
of electricity.

(c) Figure 2 shows a table of average daily costs related to running two types of



Question 2(a)(iii) - describe

(iii) Describe the effect on the movement of the bird if the cam shown in Figure 3 is replaced by a drop (snail) cam.

(2)

The bird would still move backwards
and forwards, but ^{there} ~~it~~ would ^{be} ~~have~~ a
sudden ~~drop~~ movement at the end.

1 mark for recognition of the 'sudden movement at the end'



Question 2(a)(iii) exercise

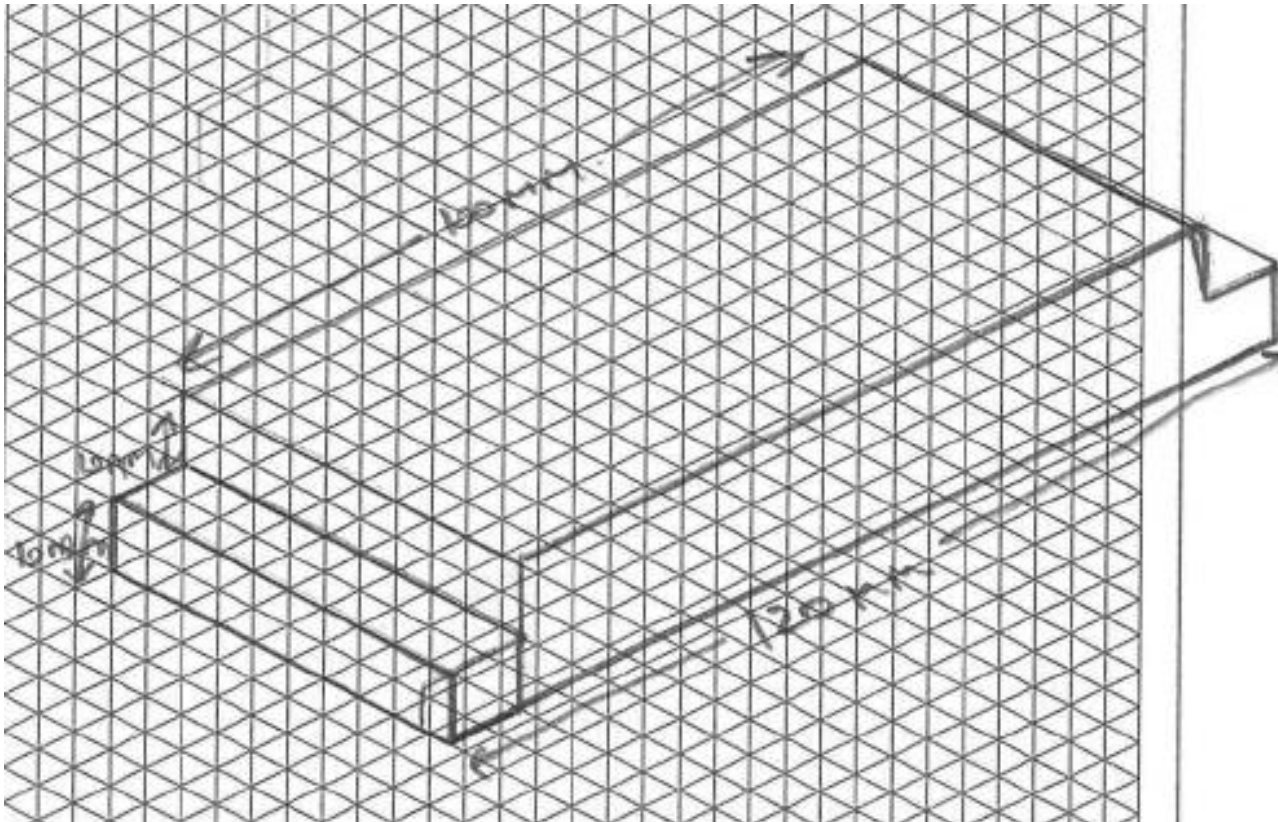
(iii) Describe the effect on the movement of the bird if the cam shown in Figure 3 is replaced by a drop (snail) cam.

(2)

The bird would go up smoothly then drop suddenly.



Question 2(b) - 'draw' question

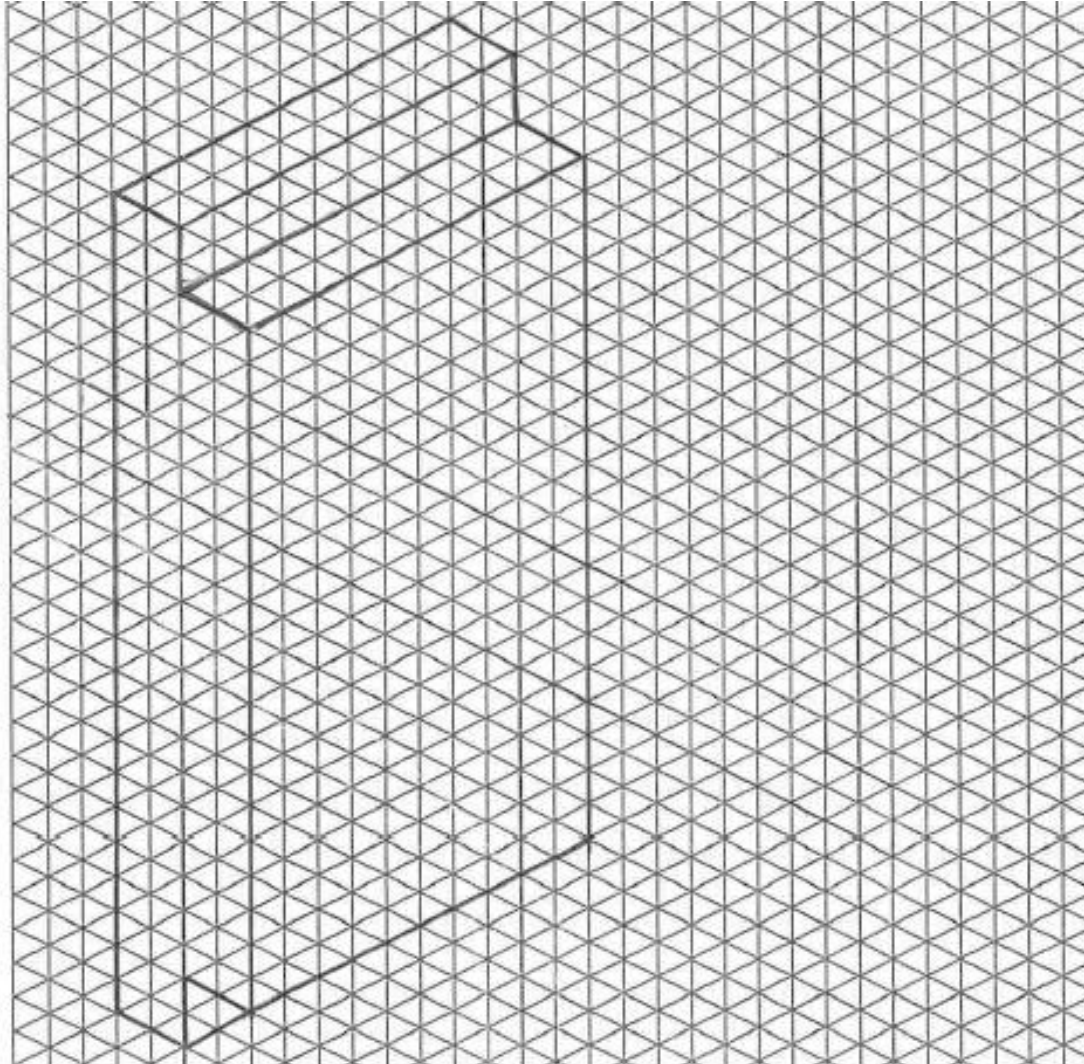


2 marks.

Marks have been awarded for setting out and correct dimensions of the rebate.



Question 2(b) exercise





Question 4(b) - 'calculate'

Give your answer to two decimal places.

$$18 + 38 = 56$$

$$18 : 38$$

$$22 \div 56 = \frac{11}{28}$$

$$\frac{11}{28} \times 18 = \frac{44}{14} = 7.0714285 \approx 7.1$$

Answer = 7.1 Million tonnes

1 mark - correct ratio but final is not to two decimal places.



Question 4(b) exercise

Calculate how much recycled aluminium was used in the packaging industry.

Give your answer to two decimal places.

(2)

$$\cancel{25 + 45 + 35 + 22 + 24} = \cancel{151}$$

$$15 + 38 = 53$$

$$22 \div 56 = \frac{11}{28}$$

$$\frac{11}{28} \times 18 = \frac{198}{28} = \frac{99}{14}$$

Answer = ~~7.0~~ 7.07×10^{-6} Million Tonnes
OR
7.07 Tonnes,

$$\frac{99}{14} = 7.07142 \approx 7.07$$

$$7.07 \div 1000000 = 7.07 \times 10^{-6}$$



Levels Descriptors - Question Q4c

Level	Mark	Descriptor
	0	
Level 1	1 - 2	<ul style="list-style-type: none">• Attempts to interrogate and deconstruct information but connections and logical chains of reasoning are flawed.• An unbalanced appraisal of the information/issues, containing judgements that show a limited awareness of the interrelationships between factors or competing arguments.
Level 2	3 – 4	<ul style="list-style-type: none">• Interrogates and deconstructs information and provides some connections and logical chains of reasoning.• A balanced appraisal of the information/issues, containing judgements that show an awareness of the interrelationships between factors or competing arguments.
Level 3	5 - 6	<ul style="list-style-type: none">• Interrogates and deconstructs information and provides sustained connections and logical chains of reasoning.• A well-balanced appraisal of the information/issues, containing judgements that show a thorough awareness of the interrelationships between factors or competing arguments.



Question 4(c) - 'discuss'

one good economic ~~the~~ impact for aluminium is that ~~the manufacturing~~ ^{the manufacturing} it provides jobs to surrounding communities which gives money to the local area. However one bad impact of manufacturing aluminium is that it costs money to manufacture and if it isn't in great demand then some countries can look out on a prophet.

Manufacturing metal is not good for the environment it gives off a lot of

bad smoke and gas which can endanger animals. However because some countries, such as China, need it ~~badly~~ then it for objects such as take away tins ~~then~~ and cars then they will mass manufacture it which ~~with~~ is bad for the environment.

A positive social impact is that factories that manufacture aluminium will need workers therefore ~~small~~ social communities will be provided with jobs ~~for~~ ⁱⁿ the local area which will benefit the social community especially in countries like China where there is mass production.

2 marks - level 1 - bit of crossover and lack of clarity in thinking
- some repetition. Attempt to interrogate and deconstruct. A lot of what the candidate is written lacks technical accuracy.



Question 4(c) exercise

one economic issue is that China is extremely rich and they make too much money off of selling aluminium products to the other countries.

one social issue is that the way they produce it is in horrible factories by poor Chinese people who barely get paid. All the money China produces and they still can't give the hard factory workers ~~anymore~~ ~~enough~~ pay.

An environmental issue is that all the factories create pollution in the

process so the pollution affects the people of China, as they have to breathe the pollution in. the pollution is very scary and that's why some Chinese people ~~also~~ always wear a mouth cover.

Section B

MATERIAL SPECIALISMS





Question 5(a) - Timbers



3rd
Specification
point

1st
Specification
point

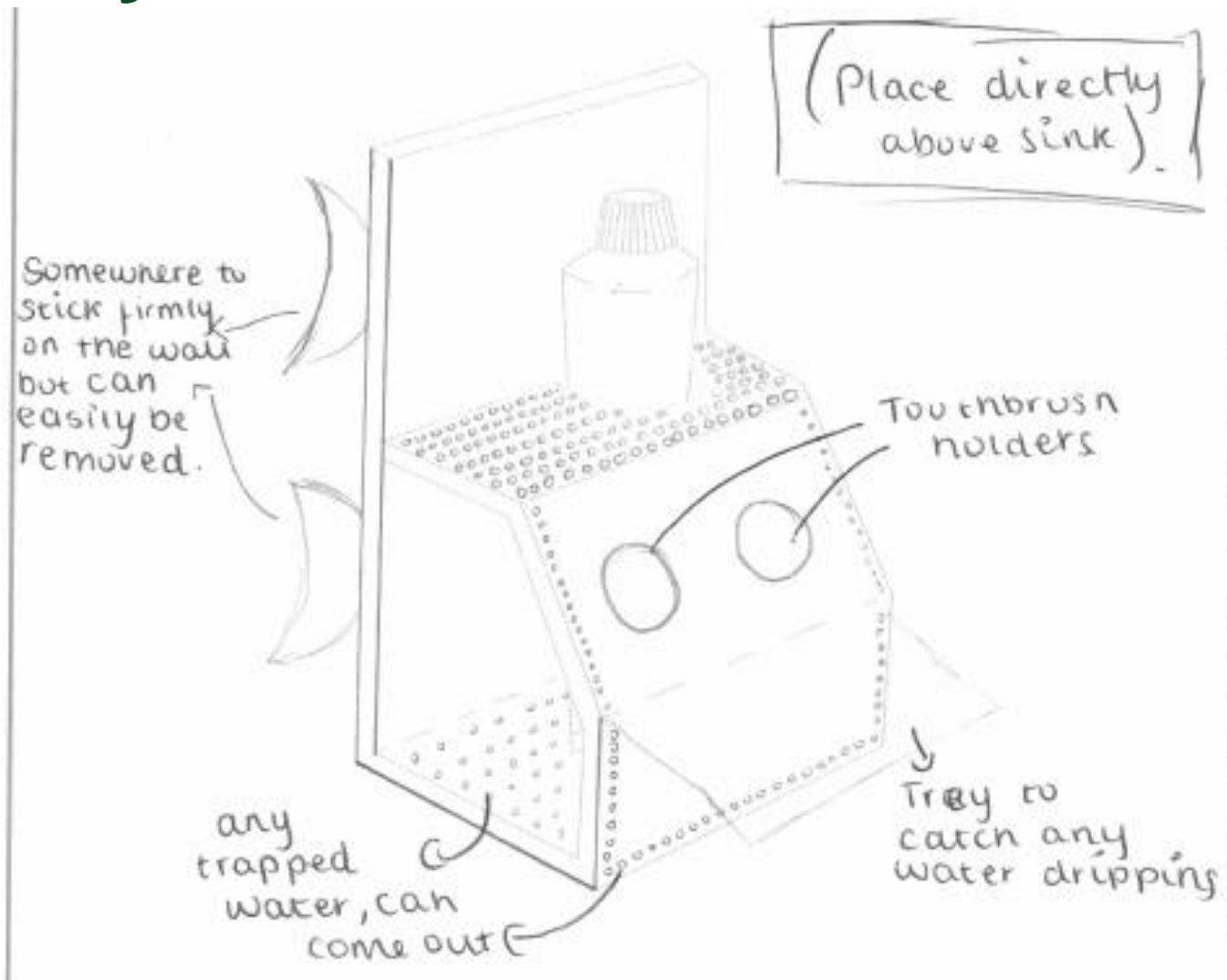
2nd
Specification
point

6 marks

- Each of the three bullet points have been addressed and justified and explained
- The approach is clear and well laid out using a combination of both graphical means and the written word.



Question 5(a) - exercise - Polymers





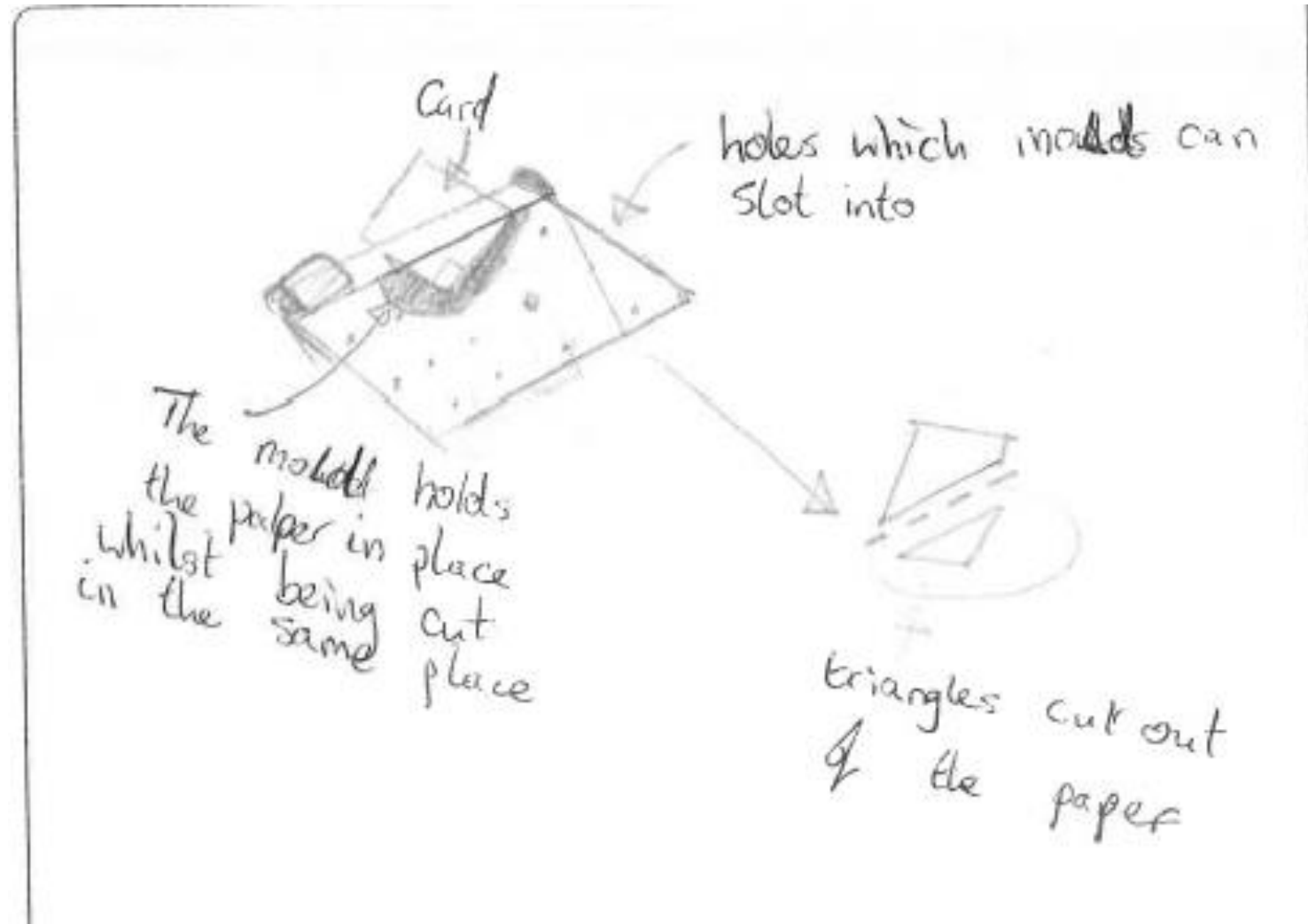
Question 6(b) - annotated sketch - Timbers



zero marks. The sketch lacks the detail that would be expected to be awarded marks.



Question 6(b) exercise - Papers and board





Question 8(a)(ii) - 3 mark 'explain' - Polymers

(ii) Explain **one** property of expanded polystyrene that makes it suitable for the user of the cycle helmet.

(3)

~~It has high impact~~
expanded polystyrene has high impact strength
meaning if the child hits there head
~~when~~ if they fall off the bike the
helmet will ~~absorb~~ take the impact.

2 marks
1 for 'high impact strength'
1 for 'hit there head'.



Question 8(a)(ii) exercise - Systems

Explain the function of the relay in this circuit.

(3)

It switches on and off (SPDT)



Level Descriptors - Question 8c

Level	Mark	Descriptor
	0	
Level 1	1 - 3	<ul style="list-style-type: none">• Attempts to interrogate and deconstruct information but connections and logical chains of reasoning are flawed.• An unbalanced appraisal of the information/issues, containing judgements that show a limited awareness of the interrelationships between factors or competing arguments.• A conclusion may be presented but it is likely to be generic assertions rather than supported by relevant judgements.
Level 2	4 – 6	<ul style="list-style-type: none">• Interrogates and deconstructs information and provides some connections and logical chains of reasoning.• A balanced appraisal of the information/issues, containing judgements that show an awareness of the interrelationships between factors or competing arguments.• A conclusion is presented that is partially supported by relevant judgements.
Level 3	7 - 9	<ul style="list-style-type: none">• Interrogates and deconstructs information and provides sustained connections and logical chains of reasoning.• A well-balanced appraisal of the information/issues, containing judgements that show a thorough awareness of the interrelationships between factors or competing arguments.• A conclusion is presented that is fully supported by relevant judgements.



Question 8(c) - Evaluate - Textiles

Warm winter

The pyjamas have a large picture of a teddy bear on them which would probably appeal to younger children in many different countries instead of say a phrase written in a language that may not be understood. The teddy bear may not appeal to older children as they may find the image quite childish.

The style of the pyjamas looks like they would be most suited to being worn in the winter months when it is colder as the top has a high neck and long sleeves and the pyjama bottoms are long. The fabrics used are also more suited to being worn in colder weather as the knit-knitting and raised cotton fabric would naturally trap air and insulate the wearer.

The style of the pyjamas with the elastic waist and stretchy top will also mean that as the child grows the pyjamas will be able to be worn for a fairly long period as they will not grow out of them too quickly.

In conclusion I believe that the pyjamas set will be very popular with younger children in many countries during the winter months.

Level 2 Response - 6 marks



Question 8(c) exercise - Papers and board

As it is aimed for a primary school audience it has to be bright and colourful so the 3-8 year olds enjoy it. If there is a theme in a classroom of a certain colour or place different designs of the clock could expand to a larger target audience. The clock may be popular if it is durable and may last a long time, also if the clock is too big or too small it might not fit or be seen in a room which could affect the popularity. The laminating finish on one of the clock may be a good manufacturing idea for popularity and the

target audience as smaller children may want to touch it or get closer to it so a laminating finish may provide another layer stopping finger prints and it getting dirty.

Common Issues





- Encourage candidates to make sure that answers are focussed and relevant to the context of the question or product. Avoid generic terms.
- Explain questions, both 2 and 3 mark type, must have linked responses to gain full marks.
- Maths based questions could be answered in a number of alternative ways - a correct answer should always gain full marks, however follow through rules should be applied for arithmetic errors.

Any questions not yet
answered?





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