



Examiners' Report Principal Examiner Feedback

Summer 2025

Pearson Edexcel GCE
In Design & Technology (1DT0)
1B: Papers & Boards

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Introduction

This is the fifth full cohort of candidates that has taken the reformed (9-1) GCSE Design Technology.

There are six different material specialist papers on offer, each with a common core in Section A which was worth 40 marks and a Section B worth 60 marks based on one of the six material areas; Metals, Papers and Boards, Polymers, Systems, Textiles, and Timbers.

Section A

Question 1 (a)(i) The most common answers were soft alongside warm and insulator of heat. Where candidates did not score a mark they generally referred to durable or insulator on its own as opposed to a heat insulator.

It is important to stress here that these opening four small questions are about the properties of materials in the context of the product or component given in the table and therefore generic properties will not be accepted. Candidates often stated characteristics of materials or products instead of properties. A clearer understanding of the difference between these is needed.

Question 1 (a)(ii) This question was quite well answered with a large proportion of candidates referring to the material being hard or rigid. Common mistakes or non-awarded answers were responses such as wont rust or non-corrosive suggesting the candidates probably didn't recognise the material as a polymer

Question 1 (a)(iii) Generally not well answered, good insulator of heat was the most common correct answer observed with recyclable, lightweight and foldable being the frequently observed incorrect answers.

Question 1 (a)(iv) Generally not well answered. Corrosion resistant was observed as the most frequently observed correct response but a lot of incorrect answers mostly to do with hardness, durability or easy to polish, shiny.

Question 1 (b)(i) A generally well answered question but many candidates did not justify the property correctly. Most common answer observed was hard with reference to walking and / or furniture being placed or moved. Many candidates referred to the aesthetics of oak.

Question 1 (b)(ii) The first of the maths based questions. Many candidates were able to correctly calculate the cost of the material at £40. Those candidates who

did not score full marks on the question tended to multiply £57.6 by 1.44, rather than divide the two numbers

Question 2 (a) The majority of candidates were able to provide a response related to how easy the paper was to fold. Frequent incorrect responses observed related to being able to recycle the paper or that it was malleable.

Question 2 (b) The majority of candidates were able to provide a response related to being better for the environment however candidates often failed to provide a correct linked justification.

Question 2 (c) Many candidates displayed some knowledge relating to SMAs but struggled to offer context specific responses to animating parts of the rabbit, instead focusing on general descriptions of how SMAs worked. "Move" was a common but vague response. Many candidates got confused and discussed animation on the computer using CAD software. Many candidates were aware of how heat is used but few identified the features that could be animated. The best answers fully understood SMAs and that they provide 'animation of ears' when activated to make them appear to twitch.

Question 2 (d) Those candidates who understood the question were able to work out the calculation and were awarded 4 marks. Some candidates calculated the area used by mistake calculating 71%. A number of candidates rounded ineffectively.

Question 3 (a) This question presented more of a challenge with fewer than anticipated candidates being able correctly identify the component as a resistor.

Question 3 (b) Many candidates were able to identify one advantage of making the circuits in batches with reference to cost, waste and efficiency of time. A number of candidates recognised that changes could be made to the next batch based on feedback. The most common incorrect answer referred to the manufacturer having stock ready to send to a customer.

Question 3 (c) Overall answered well by most candidates. Answers were dependent on whether candidates were able to calculate that 32 boards could be obtained from one larger sheet.

Question 3 (d) A generally well answered question, mostly due to the portable nature that batteries did not require any wires /to be plugged in / use of cables. A few candidates were confused as to whether batteries are good for the environment, and easy to recycle.

Question 3 (e) Candidates generally performed well on this question, often answering the first part, but lacking a correct and linked justification. Many candidates discussed the colour of the HIPS and how sustainable it is. Other correct and frequent responses observed related to 'lightweight', 'impact resistance', and 'not break / get damaged'.

Question 4 (a) Many candidates identified that stainless steel does not rust, but explanations often lacked clarity, depth or a fully correct linked justification. When they did so in relation to not rusting, linked justifications often made reference to not contaminating the salt. Where candidates referenced hardness as a property, the linked justifications relating to withstand abrasive wear from the salt was frequently observed.

Candidates frequently use terms such as 'strong' and 'durable' as a catch all. References to strong are often not qualified in any way such as torsional strength in this context for example and durable is frequently offered for any material in any context. Most common incorrect answers were lightweight and cheap.

Question 4 (b) Generally very well answered with many candidates offering the correct answer of 54 grams. Some candidates possibly mis-read the question and gave 216 grams which equates to 80% of the material, not 20%.

Question 4 (c) Many candidates completed this question on one page only failing to be aware that there was additional space on the following page. Candidates generally answered this question well when they talked about 'finding the best parts and faults' of a product or 'improving' designs. Candidates also discussed using products as a form of 'inspiration' and would occasionally discuss the materials and manufacturing processes. Many candidates misunderstood the question and focused on disassembly for recycling rather than a design tool.

Section B

Question 5 (a)

The question focussed on a shelving unit to display collectable figures. On the whole, candidates answered this question with logical adaptations that fulfilled the criteria, putting detail into their sketches with well communicated annotation that met the requirements of the specification.

Many candidates were able to correctly modify and understand the principle that extra spaces of equal size were required. Most considered providing some form of locking system to prevent theft and almost all named a suitable material to use as a door or screen for the cabinet.

The main aspect that was often missing was detail related to the lighting and also making sure that the products couldn't be stolen.

You could see in many cases where students had ticked or marked the specification points as they answered which is good practice. Good, creative solutions were pleasantly common, in particular for stopping the figures falling forward, lighting and security.

Question 5(b)

Most candidates correctly talked about the play set having enough pieces to enable play, and also the clarity of the printing.

However, where candidates discussed health and safety, the storage bag or potential choking hazards, these responses could not be awarded any credit as they had no relation to the question regarding whether the set met or failed to meet the criterion of being able to help teach users about maths.

Question 6(a)

Candidates commonly referenced the impact resistance of corrugated cardboard, which is irrelevant to the product in the question. Most common correct answers were in relation to the cost and availability of corrugated card. It is important for candidates to remember to look at the materials in the context of the product when choosing their answer.

Question 6(b)

Generally, clear diagrams and annotation were used in response to the question. Most responses successfully included application of an adhesive and the positioning of the panels. Some marks were occasionally missed as further details such as removal of air bubbles and drying time were not included. The response of cleaning the surface was rare. A variety of gluing methods were suggested.

Question 6(c)

Most were able to identify the smoothness of copier paper but often no justification was provided.

Question 6(d)

The most commonly seen assembly methods here were Gluing and Taping.

Many candidates identified glue as a method and followed with correct justification as it will form a strong/permanent bond. However, not many candidates were able to give another justified response.

Explanations of each method were very poor with candidates focusing on the advantages of each rather than how they are used.

A large number of answers featured joining techniques suitable for the other material papers such as finger joints, wood joints and screws/nails.

Question 7 (a)

The majority of candidates correctly identified a craft knife/scalpel. However, there were some wrong answers including 'carving knife' and 'surgical scalpel'

Question 7(b)

Most marks were gained here from the availability and cost of using stock materials - however a significant number of candidates did not seem to have any understanding of the term.

Question 7(c)

Many candidates were able to calculate the correct cost of parts 1,2 and 3. Steps 4 and 5 were not always answered correctly as most missed the opportunity to convert the units. However, most candidates were able to give the correct response or the '£1760 or £17.60' response with the calculations to support.

Most candidates did attempt this question, but it was hard to decipher some of the working out. Most did a conversion at some point gaining a mark. Some candidates were overcomplicating matters and bringing the thickness of the material into the calculation instead of this being a way of distinguishing between the material types.

It is worth encouraging candidates to carry out a 'sense check' in terms of the answer. "It is likely that the cost for the material to make this item is £1760?". This answer was observed with some frequency and is arrived at because candidates did not convert mm into metres.

Question 7(d)

Candidates were often able to describe the glossy, shiny quality provided by the varnish which would make the product aesthetically pleasing, however, the candidates missed the opportunity to give the second linked justification point. Another common answer highlighted the additional protection it would offer.

Some candidates misunderstood the name of the varnish, and focussed their answer around protection against sunlight / UV rays.

Question 8(a)

Many candidates talked about the thickness of bonded paper and correctly surmised that it would therefore hold the shape of the pop up better.

Question 8(b)

Most candidates made an attempt at this question, but many candidates provided generic answers, e.g. not environmentally friendly or causes pollution with no consideration of the ecological footprint. Where correct ecological impacts were

identified, most were able to expand upon this with at least one linked justification.

Question 8(c)

A significant number of candidates were unclear about what a tolerance means in a design and manufacturing context. Those who did understand often described what a tolerance is but not discuss the specific tolerance factors relating to the pop-up book.

Most candidates were able to talk about the size and closing of the book, with the majority of marks achieved for allowing the book to close without damaging the pop-up features or protruding from the edge of the book.

Many answers showed a misconception in the vocabulary by making reference to the product being suitable for children and being suitable for people of a range of ethnicities and religions.

Question 8(d)

A high proportion of candidates appeared to assume this question was about the environmental factors and sustainability, mis-reading the question and missing the cost aspect. Candidates were very knowledgeable about carbon footprint and inter-relating arguments associated with this but did not link their points to the impact on the cost of the product.

As often happens with this question, candidates appear to use the facts in figure 18 too much and repeat them, limiting their argument to discuss the real cost factors. Marks were generally gained through discussion around the cost of the materials, and transportation costs, with most missing the opportunity to discuss how the book was to be manufactured with the many factors and steps which add to the costs such as cut accurately.

Candidates didn't really write in any depth about any of the issues and conclusions were quite brief giving more of a list of facts than an interrogation/appraisal.

Paper Summary

Overall, the paper provided questions that gave candidates the opportunities to demonstrate their knowledge of Design and Technology via a range different context based questions, including several maths based questions but in a DT context. The paper offered a range of differentiated questions that candidates could answer in differing degrees and a full range of marks were observed across the whole cohort.