
A-LEVEL DESIGN AND TECHNOLOGY: PRODUCT DESIGN

7552/2 - Design and Making Principles
Report on the Examination

7552
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General Comments

This is the second series for this paper with a full cohort of candidates, the first being in 2019.

The paper is structured in two sections and totals 80 marks, making up 20% of the overall qualification.

Where students successfully responded to the command word in the question, they were able to access the higher mark bands.

Where students were given stimulus material, low level responses were typified by observations without greater depth of understanding or application to the context given.

Students find knowledge recall questions accessible, but often find application questions difficult, failing to bring in their material and process knowledge to explain impact on a given context.

Students are advised to show their working out when answering the maths questions, as this may allow them to access method marks for early calculations where the final answer may be inaccurate.

Question 1:

- Students were asked to compare two screwdrivers using a table of information provided.
- The majority of responses referred to this data.
- Low level responses quoted the data without expanding on the information or giving any insight as to the impact on the two screwdrivers.
- Where students performed well they showed insight into the impact of the given information on the screwdrivers shown.

Question 2:

- Students were asked to explain how different prototyping methods may be used in the development of a screwdriver handles.
- The majority understood the concept of prototyping and could discuss this in general terms; reference to rapid prototyping was a common response, with limited expansion beyond the term seen in lower level responses.
- Higher level responses explained the specific benefits of prototyping techniques relevant to the screwdriver handle context.

Question 3:

- Students were asked to calculate the mass of a screwdriver handle using volume and density data provided.
- The question was reasonably well attempted, although the conversion between mm^3 and cm^3 caused confusion, leading to a high proportion of answers that were out by a factor of 10 or 100.
- Students who failed to correctly identify the correct relationship between mass, density and volume found it difficult to access any marks within this question.

Question 4:

- Students were asked to explain how the Art Deco design style was influenced by historical styles and socio-economic factors.
- This was a well-received question with many students accurately referring to historical influences on the Art Deco design movement and showing the ability to identify key features of these influences within the work of the movement.
- References to socio-economic change were often present but linking these with key features tended to be more tenuous.
- In lower-level responses students often confused Art Deco with Arts and Crafts.

Question 5:

- Students were asked to outline the concept of eco-labelling and its impact on customer buying preferences.
- Responses to this question tended to refer to eco-labelling in very generic terms, often showing a lack of understanding of the term.
- When students performed well they were able to give specific examples of eco-labels and how their presence could assist a customer in product choice.

Question 6:

- Students were asked to plot the data shown on the table.
- The plotting of the data given was done well, with a preference by candidates for the triple bar chart and the triple line chart.
- Labelling of the axes was less common.

Question 7:

- Students were asked to discuss the issues associated with electric vehicles.
- High level responses were exemplified by students who recognised a range of issues and explained these with specific technical detail.
- Low level responses tended to rely on generalisations referring to cost and materials.

Question 8:

- Students were asked to fully dimension a given drawing.
- The majority of responses successfully dimensioned the key horizontal and vertical elements.
- The dimensioning of the circular element of the drawing caused some confusion, with many responses giving a diameter for the circle, but failing to use the official diameter symbol.
- Horizontal and vertical dimensions of the circle centre point were very rarely seen.
- Low level responses showed numerical dimensions but failed to include clear dimensioning lines.

Question 9:

- Students were asked to outline the ways a design team can reduce the time from idea conception to product release.
- Low level responses tended to give generic improvements such as employ more staff or regularly check in with teams. These generic points were not explained.
- Mid-level responses often gave more technical examples such as FEA/CFD and CPA, but relied on name dropping with limited explanation of how they reduced time.
- High level responses showed clarity of understanding regarding the terms referred to and how they would reduce time.

Question 10:

- Students were asked to state four of Dieter Rams' principles of good design.
- This was a well-received question with the majority of students recognising the principles of good design.

Question 11:

- Students were asked to explain why utility furniture was introduced after the second world war.
- High level responses showed a clear understanding of the purpose of utility furniture, often referencing the target market and the design principle of minimalistic designs using limited available materials.
- Low level responses showed confusion regarding the concept of utility furniture, but recognised the general need for furniture due to bomb damage following the second world war.

Question 12:

- Students were asked to state two stages of the product life cycle graph.
- The majority were able to access this question, recognising two of the key stages associated with the product life cycle graph.
- When students failed to access the question they tended to confuse the product life cycle graph with the life of a product stating stages from material extraction to product disposal.

Question 13:

- Students were asked to identify two different drawing types.
- This question was generally well answered with students successfully identifying both drawing types.
- Common misconceptions were seen when students failed to be specific by stating 3D or 2D.

Question 14:

- Students were asked to name two primary research methods
- This was a well answered question with students offering a wide range of appropriate primary research methods.

Question 15:

- Students were asked to compare two mobility aids using a table of information provided.
- The majority of responses referred to this data.
- Low level responses quoted the data without expanding on the information or giving any insight as to the impact on the two mobility aids.
- Where students performed well they showed insight into the impact of the given information on the mobility aids shown, referring to their suitability for the home and garden contexts.

Question 16:

- Students were asked to analyse and evaluate a water pump design for use in an isolated village.
- High level responses used all aspects of the information provided, relating each element to the isolated village context.
- Low level responses often referred to the information provided but failed to explain why this information was appropriate for a water pump in an isolated village.
- The most common misconception seen related to the open-sourced design, which many students assumed related to water being sourced from an open stream.

Question 17:

- Students were asked to explain the impact of a product recall on electrical goods manufacturers.
- High level responses showed a clear recognition of how a product recall would impact a manufacturer, referring to aspects such as specific costs, reputation and logistics.
- Low level responses were often limited to the cost implication with little explanation.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.