

# **Design & Technology (Product Design)**

General Certificate of Secondary Education **GCSE J901**

General Certificate of Secondary Education (Short Course) **GCSE J900**

## **Mark Scheme for the Components**

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**June 2008**

**J900/J901/MS/R/08**

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## Mark Scheme B802 Designing and Making Innovation Challenge

Development of Design Evolution through making 22 Marks	Initial Thoughts	Initial thoughts are creative showing unexpected and/or challenging ways of thinking	4
	Brief	Final design brief has scope for creativity	2
	Use/ clients/ users	User requirements are positively reflected within design work	2
	Specification	Specification is detailed key features of the product are identified.	3
	Ideas	Ideas are innovative and creatively sustained Ideas fully explained showing details of construction/materials	6
	Supplementary Information	Supplementary information fully incorporated into design work Innovation and creativity demonstrated	5

Communicating information through sketches, writing and photographs  10 marks	Quality of Communication skills	Sketches/images are clear, confident, incisive and to the point	4
		Written communication is of a high level, clear and succinct	4
		Extensive use of innovative and creative communication techniques	2
Materials, Components, Processes, Techniques, and Industrial practice  12 Marks	Material Selection	Considered choice of materials and components	2
	Use of Material	Creative use of Materials	4
	Making Skills	Model(s) complete to a high standard  Making skills demonstrate a range of techniques/ complexity	6
Analysis of ideas, models and prototypes	Analysis and Evaluation	Detailed analysis and evaluation with justification. Suggested Improvements/Use of technical terminology	4

12 Marks	Peer Evaluation	Clear plan for reflect and record. Records peer feedback and possible modifications	2
	Development of ideas	Justifies rejection of ideas in favour of ones that are worthy of further development Fully develops ideas. No outstanding design issues	6
Reflection 4 Marks	Reflection	Quality analysis/creative design improvements suggested	4

## Mark Scheme B804 Designing Influences

Expected Answer	Mark	Additional information
<p><b>1</b> <b>(a)</b> Lightweight, modern looking, attractive (good looking), easy to use (ergonomics), multi- function, e.g. camera, music player, emailing, internet connection, calculator. screen, speakers, buttons, on off switch, personalise, slim / thin, easy to fit in pocket/bag, games, compact, rechargeable, sim card, battery</p>	<b>[3]</b>	<p>One word answers might be acceptable form the list on the left. Otherwise clarification / qualification is needed Do not accept (unless clarified): size, colour, numbers, modern, light, small, portable, latest technology, strength Accept additional features such as: flip phones Accept simple layout because it refers to ease of use “Ergonomic” on its own do not reward (see part (b)) – look for a specific point made e.g. size of buttons</p>
<p><b>(b)</b> <b>(i)</b> Products which are designed with the human in mind. A design to enable the user to work most efficiently</p>	<b>[2]</b>	<p>1 mark for how it affects the user / ease of use. Plus 1 mark for a point given: size, weight, shape, comfort, rounder corners, arrangement / layout of (keys), colour contrast, texture, measurement Examples of answers: <i>[0] Ergonomics is designing for what consumers need</i> <i>[1] Comfortable to hold</i> <i>[1] Designed with user in mind</i> <i>[1] Easy to use {1} and carry around [Repeat point so no additional mark</i> <i>[2] How the product fits in with the human {1} the size fits the hand {1}</i> <i>[2] Something that has the human body in mind {1} made <u>adaptable</u> to use {1}</i></p>
<p><b>(ii)</b> Any two relevant physical measurements: percentiles of hand width, finger size, thumb size, distance between ear and mouth.</p>	<b>[2]</b>	<p>Do no accept anything that does not relate to human hand, face, Examples: <i>[0] Sizes of buttons – relates to phone not human</i> <i>[0] fits into pocket / bag,</i> <i>[0] finger pressure</i></p>

<b>(c)</b>	<p>Planned obsolescence relates to products becoming “out of date” as a result of deliberate design changes or technological developments.</p> <p>1 mark for each <b>different</b> point up to 2 marks plus 1 mark for the reference to effect on consumer.</p>	<b>[3]</b>	<p>Relevant points up to two marks (1 point each). Answers should relate to <b>specific</b> developments in: technology, fashion, continually changing services only available to new phones</p> <p>As a result customers feel “compelled” / “feel they have to / need to” purchase the new model even though the existing ones still function perfectly satisfactorily</p>
	<b>Total</b>	<b>[10]</b>	



Expected Answer	Mark	Additional information
<p><b>2</b> <b>(a)</b> Strength / strong, toughness, impact resistance, durability, rust resistance, stainless, easy to clean, ability to be shaped / formed, quality surface finish, withstands abrasion - 1 mark for each.</p>	<b>[2]</b>	<p>Accept: Long lasting, hard wearing = durable Do not accept hard / hardness</p>
<p><b>(b)</b> Rack and pinion correctly labelled - 1 mark for each part correctly identified.</p>	<b>[2]</b>	<p>Where only one label has been used give a maximum of 1 mark if both parts correctly identified If the label is used more than once i.e. rack to two different components do not award any marks even if one of the labels is correct. Label must go to the actual pinion and not the pivot</p>
<p><b>(c)</b> Explanation could include: desirability, recognisable, image, fashion, style and elegance, 'keeping up with the Jones', perceived quality, better designed, better made, better materials, status symbol, collectability, peer pressure, celebrity endorsements, consumer confidence, reliability.</p> <p>1 mark for each <b>different</b> point up to 2 marks plus 1 mark for the reference to effect on consumer.</p>	<b>[3]</b>	<p>Relevant points up to two marks (1 point each). [1] People pay more for designer products because they are better</p> <p>Explanation must include a justification impact upon consumer choice <b><u>This must be present for three marks to be awarded.</u></b> An example of this might be: ... the name or brand is attractive to the consumer</p>
<p><b>(d)</b> Patent, copyright protection, registered trade mark, use of holograms e.g. football shirts</p> <p>1 mark any of the above each plus 0-2 marks for detailed explanation. <b>OR</b> 1 mark for up to two of the above plus 1 for explanation</p>	<b>[3]</b>	<p>Detailed explanation would follow: 1 mark for identification 1 mark for explanation of what it is with 1 mark for the <u>legal</u> protection Examples: [1] .....by making the product copyright [2] ...though copyright {1} which prevents people form making products that look similar but do not function as well {+1} [3] ...can patent {1} their designs and have a copyright{1}. This means that they can prevent people from copying their ideas and.....{1}</p>
<b>Total</b>	<b>[10]</b>	

Expected Answer	Mark	Additional information
<p><b>3</b> <b>(a)</b> More efficient, takes up less space, flexible, easier to use, more tamperproof / tamperproof, hygienic, resalable, easier to carry, handle, screw cap, square shape, more compact volume, variety of sizes, shatterproof / impact resistance, safer</p>	<b>[3]</b>	<p>Ergonomic – easier to carry, pour The square shape gives two distinct advantages: 1 it takes up less space, 2 greater capacity / volume for the height Do not reward “lightweight” given in question.</p>
<p><b>(b)</b> An explanation of <b>two different</b> points that justify the choice in part (a) <b>One mark</b> for a simple explanation such as: easy to hold <b>Two marks for a detailed explanation</b> such as: by adding a handle to the bottle it is now easier to hold and carry</p>	<b>[4]</b>	<p>If the point given is incorrect e.g. cheap, but a clear explanation is given the marks can be awarded accordingly. The explanation requires a point plus a reason why the feature is successful. For example: [2] Point: Handle. Plastic can be moulded quickly {1} and can mould handles that are sturdy and easy to hold {1} [1] Point: Screw top. .... Means that the milk will stay fresher longer {1}</p>
<p><b>(c)</b> See through – people can see contents, gives the appearance of being high quality, looks better, traditional, standardised for a range of products, more easily recyclable, re-useable, does not taint, plastic may deteriorate over time / exposure to sun, carcinogenic fears, high pressure containers, less affected by heat, more rigid – protects contents, pierce resistant, used for storage for longer periods.</p> <p>1 mark any of the above each plus 0-2 marks for detailed explanation. <b>OR</b> 1 mark for up to two of the above plus 1 for explanation</p>	<b>[3]</b>	
<b>Total</b>	<b>[10]</b>	


**Question 4 overarching comments:**


Irrespective of what “tick” response candidates have done, positively reward the content of 4 (a) and 4(b)


Question 4 (a) and 4(b) may be different era or trend-setters.


N.B. Trend setter / iconic product must be selected from the list given in question i.e. not trend- setter / iconic product of their own or from a previous OCR Product Design Theme.

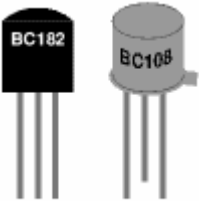
**Avoid giving credit for information gleaned from the examination paper, e.g. Mackintosh designed chairs in the Art Nouveau style.**


<p><b>4a</b></p>	<p><b>Only one trend-setter must be referred to.</b> View parts (a) and parts (b) a whole and reward: Up to 3 marks for three different points plus 1 mark for explanation of one of the points <b>OR</b> 2 different points (0-2) both explained (0-2) [4] Reward content even if no trend-setter or incorrect trend-setter identified.</p>	
<p><b>4a</b></p> <p><b>Charles Rennie - Mackintosh 1868 – 1928</b></p> <p><b>Art Nouveau</b></p> 	<p style="text-align: center;"><b>Points</b></p> <p>Trained as an Architect. Ambitious, promoted himself through exhibitions, reviews, lectures and magazine articles. He argued for greater freedom and encouraged other architects to be more experimental.</p> <p>Also attended Art School. Worked hard, winning prizes. Saw himself as an artist. Interest in Japanese and Pre-Raphaelite influences.</p> <p>No boundaries to his designing: using glass, wood, metal and fabrics, he designed jewellery, panels, prints, clocks, furniture, and complete interiors.</p>	<p style="text-align: center;"><b>Legacy / impact</b></p> <p>He designed commercial properties, public buildings and private homes. He turned away from the ornate and historical associations of the Victorian style towards a formal purity, decorated with organic and geometrical motifs. He used much symbolism in the decoration; His work was complex and playful. It may take time for the observer to appreciate the clever details of his work. Many of his buildings are now considered classics of their time, especially <b>The Glasgow School of Art</b> and the <b>Glasgow Tea Rooms</b>.</p> <p>He was one of the first to embrace the Art Nouveau style and he was a pioneer of the Arts and Crafts Movement. He greatly influenced Vienna Secession and pointed the way to Art Deco and Bauhaus.</p> <p>He wanted people to look at everyday objects as pieces of art rather than objects. He moved <b>away</b> from form follows function. Much of his furniture, with flowing, feminine lines, elongated forms and geometric grids look like sculptured works of art. Every mark, every line, every surface, every space has a purpose or meaning; nothing in his work is arbitrary.</p>

	World-wide design movements: his work was clever, original and inventive.	His work has been widely copied, and is always in demand. He has influenced subsequent design movements. His influence can still be seen today in modern products, such as jewellery, glass, furniture and architecture. Major influence towards Glasgow achieving status of European City of Culture.
<b>4b</b>	3 different points clearly explained: 1 mark for each point 1 mark for each justification. [6]	Only <u>one</u> product must be referred to. Trend setter and iconic product can differ from 4a to 4b. Iconic Product can be different from 4a but answer must relate to chosen product. Must explain <b>impact</b> of the iconic product, not merely describe the product. Reward good justification even if the point is relevant but not worthy of credit.
<b>4 b</b> <b>Macintosh Chair</b> 	He created <b>many</b> unique designs for chairs as part of a wider interior design.  Tall, straight / flowing lines. Shiny and black.  Incorporated motifs.  Oriental influence  Decorative rather than functional. Often found to be uncomfortable.	Horizontal / vertical lines. Floral/organic motifs and square holes. First seen in the 1890's when designs were still overly ornate.  Still popular today, widely reproduced, exhibited in museums and collections throughout the world, able to see influences in the work of modern designers. At the end of the Nave in Wells Cathedral, just below the famous Scissor Arch, is a modern set of <b>6 feet high</b> Altar Chairs.  Use of glass, black japanning (ebonising), and white and silver colouring.  Functional, but was a statement of "Form before Function" for example the chair is symbolic of a throne (used at a ceremonial event). Looks like a piece of sculpture: interplay of light and space and shadow.


<p>4a</p>	<p><b>Only one trend-setter must be referred to.</b>                  View parts (a) and parts (b) a whole and reward:                  Up to 3 marks for three different points plus 1 mark for explanation of one of the points  <b>OR</b>                  2 different points (0-2) both explained (0-2) [4]                  Reward content even if no trend-setter or incorrect trend-setter identified.</p>	
<p>4a</p> <p><b>Raymond Loewy</b></p> <p>30, - 60's</p> 	<p>Known as:                  The Father of Industrial Design.                  Commercial product design, transport, industrial design.                  Domestic products.</p> <p>Designs not restricted to one discipline.</p> <p>Graphics:                  Simplification of designs for logos.                  Clear typography.                  Use of White Space.</p> <p>Voted as one of the most important American of the 20<sup>th</sup> century</p>	<p>Era of air travel. Designs look like aeroplanes, Became known as "streamlining". Influenced designs: bull nosed fridges, the classic coke bottle, car body shapes, locomotives, aeroplane (Airforce 1), Greyhound bus, and the jukebox. He argued, that the egg is the perfect streamlined shape.                  "Between two products equal in price, function and quality, the better looking will outsell the other."                  "His products and services touched almost everyone in the US."                  Improved people's lives.</p> <p>Magazine illustration, fashion design, architecture, and furniture.                  He designed interiors for Concorde, NASA Skylab, and NASA Space Station.</p> <p>Taking 3D objects and breaking them down into simplest forms.                  Use of primary, bold, few colours.                  e.g. Shell logo, Lucky Strike, Pepsodent, Hoover, Exxon.                  Now in purest form, no need to change – they are at their minimal-optimum.                  Typography was spaced out to improve visual impact.                  Use of white space: no visual clutter.                  Modern yet timeless. Graphic designs were simplified and easily recognised: this gave brand identity to the products and the company.</p> <p>The continued use of streamlining in industrial and domestic product design, the reductionist approach to the design of modern company logos, and the enormous industry associated with product branding, are all a result of Loewy's influence.</p>


<p>4b</p>	<p>3 different points clearly explained: 1 mark for each point 1 mark for each justification. [6]</p>	<p>Only <u>one</u> product must be referred to. Trend setter and iconic product can differ from 4a to 4b. Iconic Product can be different from 4a but answer must relate to chosen product. Must explain <b>impact</b> of the iconic product, not merely describe the product. Reward good justification even if the point is relevant but not worthy of credit.</p>
<p>4b</p> <p><b>Shell logo</b></p> 	<p>Simple design using primary colours. Easy to remember (instantly recognisable). Subliminal recall. Uncluttered. Uncomplicated. Symmetrical.</p> <p>Can be photocopied and used in black and white</p>	<p>Initially developed for California. Used Hispanic flag colours. Looks like a crown, demands attention. Psychology of perception and memory. Psychological significance of red and yellow. Rising sun. New day. Sunrise. The future. Now used throughout the world. Design reduced to its perfect form. Spaced out lettering then removed. Has stood the test of time, since 1971 and has not been changed except colours made brighter. Influenced many other designs such as McDonald's logo. When enlarged / reduced does not lose impact or identity.</p>


<p>4a</p>	<p><b>Only one trend-setter must be referred to.</b>                  View parts (a) and parts (b) a whole and reward:                  Up to 3 marks for three different points plus 1 mark for explanation of one of the points  <b>OR</b>                  2 different points (0-2) both explained (0-2) [4]                  Reward content even if no trend-setter or incorrect trend-setter identified.</p>	
<p>4 a</p> <p><b>Transistors</b>                  DoB: 23/12/1947                  50's</p> 	<p>Some discrete, most now found in integrated circuits, microchips, chips.</p> <p>Semiconductor technology. Enabled smaller, lighter weight, more portable, stand-alone products.</p> <p>Low cost, flexible, reliable, physically rugged, long life, insensitive to shock or vibration.</p>	<p>Amplify signal/ switch signal. Fundamental building block of computers and key active component in all modern electronic devices.                  Digital computers led to digital information: TV, radio, newspapers                  Considered the greatest invention of 20<sup>th</sup> Century.</p> <p>Chip the size of a fingernail contains 50 billion transistors.</p> <p>Less power required so development of battery-powered products followed.                  Huge increase in technological obsolescence.</p> <p>Electronic control of appliances and machines, including aeroplanes, tube.                  Improved warning systems and safety. Greater efficiency in manufacturing.                  Led to the development of telephony, communication: social benefits such as medical, internet, travel, communications.</p>


<p><b>4b</b></p>	<p>3 different points clearly explained: 1 mark for each point 1 mark for each justification. [6]</p>	<p>Only <u>one</u> product must be referred to. Trend setter and iconic product can differ from 4a to 4b. Iconic Product can be different from 4a but answer must relate to chosen product. Must explain <b>impact</b> of the iconic product, not merely describe the product. Reward good justification even if the point is relevant but not worthy of credit.</p>
<p><b>4b</b></p> <p>Bush TR82 transistor radio. 1959</p> 	<p>The first really portable radio. Reliable. Good reception.</p> <p>Relatively low cost. Iconic shape – appeals to young.</p> <p>Modern looking. Streamlined. Available in different colours.</p>	<p>Made radios accessible to many more people because prior to this, radios were items of furniture. Battery operated, allowing freedom of use anywhere. Used in cars, which led to the development of in-car entertainment systems. Work patterns changing: more time spent in cars.</p> <p>Very popular with younger generations: beginning to have more money. The time of popular music culture: birth of rock and roll, Radio Luxemburg. No warm up time needed compared to valve sets. Listen under the blankets.</p> <p>Radios that followed were influenced by that design. Still available today as a reproduction item.</p>



<p>4a</p>	<p><b>Only one trend-setter must be referred to.</b> View parts (a) and parts (b) a whole and reward: Up to 3 marks for three different points plus 1 mark for explanation of one of the points <b>OR</b> 2 different points (0-2) both explained (0-2) [4] Reward content even if no trend-setter or incorrect trend-setter identified.</p>	
<p>4a</p> <p><b>Mary Quant</b></p> <p>60's</p> 	<p>Opened a boutique in 1955 in London. Challenged the British retailing system. Broke the hold of traditional made to measure tailoring. Went into mass production. Opened shops in North America and Europe. Awarded OBE in 1966.</p> <p>Took a leading role in the sixties revolution.</p> <p>She created clothing and accessories that were different. Cheap separates.</p> <p>Short skirts, hot pants, knee length boots, tights, and plastic mac. Bold and flamboyant colour combinations</p> <p>Regarded as the mother of sixties fashion design, which made London the design capital of the world for a decade.</p>	<p>Offered young shoppers fun clothes, individual attention from trendy, young staff, with hip music and artistic lighting. Window displays were stunningly creative. Many clothing shops <b>now</b> have younger fashion conscious staff, with disco lighting and pop music. Fashion <b>has</b> become the province of the young. Women want to be younger. 40 is the new 30.</p> <p>Young women had greater freedom (e.g. the pill) and more money. They wanted to be different from their mums. Quant challenged conventional design thinking and moral attitudes. Women's rights, less formal, less conservative, justified freedom. More women into higher education and into careers.</p> <p>She frequently used her own "Daisy" logo, and the "A" line dress.</p> <p>She capitalised on the Op Art and Pop Art of the time with bright, bold colours, often black and white contrasting checkerboard patterns. She re-worked successful features of Coco Chanel by adding contrasting borders to garments. She capitalised on the new materials available. Fine denier nylon for patterned stockings. PVC as an alternative to leather. Corfam for boots. Made items more colourful, more varied and more affordable. She designed for comfort and function.</p> <p>Inspired other designers such as Christian Dior. Her work is still exhibited worldwide and studied by up-and-coming fashion students.</p>

<p><b>4b</b></p>	<p>3 different points clearly explained: 1 mark for each point 1 mark for each justification. [6]</p>	<p>Only <u>one</u> product must be referred to. Trend setter and iconic product can differ from 4a to 4b. Iconic Product can be different from 4a but answer must relate to chosen product. Must explain <b>impact</b> of the iconic product, not merely describe the product. Reward good justification even if the point is relevant but not worthy of credit.</p>
<p><b>4b</b></p> <p><b>Mini Skirt.</b></p> 	<p>Daring design. Caused a sensation. A statement about the freedom of women to express their sexuality. Named after her favourite car of the time.</p>	<p>Icon of the generation – encapsulated whole ethos of the 1960's – sexual freedom – statement about femininity – ability receptivity whilst looking “attractive”. Changed people's attitudes toward dress, changed convention. Moved from conservative to freedom to express themselves. More comfortable, more manoeuvrable Quote: Now women can run for buses.</p>

<p>4 a</p>	<p><b>Only <u>one</u> trend-setter must be referred to.</b> View parts (a) and parts (b) a whole and reward: Up to 3 marks for three different points plus 1 mark for explanation of one of the points <b>OR</b> 2 different points (0-2) both explained (0-2) [4] Reward content even if no trend-setter or incorrect trend-setter identified.</p>	
<p>4a</p> <p><b>Processed Food</b></p> <p>70's</p> 	<p>Foods that have been altered from their original state for safety or convenience. Or profit. Capable of being stored for long periods.</p> <p>Lifestyle changes, more women at work, more time watching TV.</p> <p>New Technologies:</p> <ul style="list-style-type: none"> <li>• freeze drying</li> <li>• freezing</li> <li>• refrigeration</li> <li>• chill cook process</li> <li>• dehydration</li> <li>• use of additives</li> <li>• preservatives</li> <li>• aseptic packaging</li> <li>• canning</li> </ul>	<p>Changed shopping habits. The big weekly shop rather than every day. Less time at home for domestic activities, e.g. cooking. For the food manufacturer it creates add-on value to the basic price for the food.</p> <p>Taken to or used in areas where no facilities to refrigerate. Expeditions. Desiccated / dried / and re-constituted with just water.</p> <p>Led the way for convenience foods and ready meals, (meaning easier, quick preparation, labour saving for consumer).</p> <p>Some foods are considered fine, e.g. milk and fruit juice, or frozen peas. Many processed meats are considered a health risk.</p> <p>Has ultimately contributed to obesity, and behavioural problems.</p> <p>Paper, polythene and aluminium.</p>
<p>4b</p>	<p>3 different points clearly explained: 1 mark for each point 1 mark for each justification.[6]</p> <p>Only <u>one</u> product must be referred to. Trend setter and iconic product can differ from 4a to 4b. Iconic Product can be different from 4a but answer must relate to chosen product. Must explain <b>impact</b> of the iconic product, not merely describe the product. Reward good justification even if the point is relevant but not worthy of credit.</p>	

<p><b>4b</b></p> <p><b>Pot Noodle.</b></p> 	<p>Simple to prepare. Quick / little effort. No washing up. Same pot.</p> <p>Formally “instant Noodle” Bulking properties. Starch / carbohydrate. Very tasty.</p> <p>Brand image.</p>	<p>Social changes: more people living on own, more student populations, divorce, therefore responding to consumer opportunities. Staple diet of those with limited resources / time</p> <p>Ability to capitalise on population issues such as: part of breakaway movements “take away” Indian / Chinese / Italian, more overseas travel demanded newer “tastes”. Low in fat 5% No artificial colours or preservatives. 100% suitable for vegetarians.</p> <p>Love / hate relationship, “cult” status Paved the way for similar products such as cup a soup, bean feast.</p>
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5a	<p>One mark for each key specification point – no marks awarded for points identified in the question. (0-4)</p> <p style="text-align: right;"><b>[4]</b></p>	<p>Specification point is a positive statement about the form, the function, the user requirements, or the constraints of the situation.</p> <p>Together with the design need, the specification points should inform the design activity.</p>
5b	<p><b>Initial ideas</b></p> <p>Only one sketched solution with no accompanying notes (1)</p> <p>One sketched solution with notes <b>OR</b> range of solutions with no notes (2)</p> <p>More than one sketched solution with notes (3)</p> <p>A range of different ideas that address at least two specification points (4)</p> <p>A creative approach to designing (5)</p> <p style="text-align: right;"><b>[5]</b></p>	<p>For Fridge Alarm responses reward according to mark scheme even if an electronic system not shown.</p> <p>For Processed Meal accept each course as a separate idea if that is the candidate approach.</p>

<p><b>5c</b></p>	<p><b>Development of ideas – <u>must</u> reflect the product focus</b></p> <p>One sketched solution showing an idea from the initial ideas with some development - no notes (1)</p> <p>One developed idea with notes (2)</p> <p>Development of an idea evidenced with supporting sketches/notes (3)</p> <p>Clear development of an idea with notes that link to at least two specification points (4)</p> <p>A range of developed sketches with notes that link to at least three specification points (5)</p> <p style="text-align: right;"><b>[5]</b></p>	<p>In this part candidates must address the requirements of the “<i>design need in the situation</i>”. For example the 1970’s influence must be seen in the development.</p> <p>Candidates should draw upon specific subject material knowledge, and focus their design thinking towards the specification.</p> <p>Where there are no creditable specification points in 5a maximum marks available are 2.</p> <p>To move beyond 2 marks there must be evidence on the page of developmental activity/decision making To obtain full marks candidates must consider their own specification.</p> <p>For Fridge Alarm responses a system must be shown, and no marks to be awarded for aesthetic developments.</p>
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<p><b>5d</b></p>	<p><b>final proposal</b></p> <p>A simple solution with limited detail/notes (1)</p> <p>A solution with details of all components/parts (2)</p> <p>Notes/clear sketches showing how the design meets their specification point 1 (1)</p> <p>Notes/clear sketches showing how the design meets their specification point 2 (1)</p> <p>Notes/clear sketches showing how the design meets their specification point 3 (1)</p> <p>Notes/clear sketches showing how the design meets their specification point 4 to include some manufacturing details (1)</p> <p style="text-align: right;"><b>[6]</b></p>	<p>Candidates should show relevant <b>details</b> for manufacture:</p> <ul style="list-style-type: none"> <li>• materials/ingredients/components.</li> <li>• sizes / dimensions / quantities,</li> <li>• methods / joining / mixing techniques,</li> <li>• tools / equipment,</li> </ul> <p>Evidence of <b>detail</b> may be taken from 5c and/or 5d, but <b>not</b> 5b</p> <p><b>Accept</b> justified points related to the candidates’ <b>own specification</b>, even if not rewarded in 5(a), and / or any points given to the candidates in the <b>design need</b> of the actual question. <i>E.g. 1970’s nutritionally balanced meal.</i></p>
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# Grade Thresholds

GCSE Product Design (Specification Code J900/901)  
June 2008 Examination Series

## Unit Threshold Marks

Unit		Maximum Mark	a*	a	b	c	d	e	f	g	u
<b>B801 (01)</b>	Raw	90	83	69	55	41	35	29	24	19	0
	UMS	120	108	96	84	72	60	48	36	24	0
<b>B801 (02)</b>	Raw	90	83	69	55	41	35	29	24	19	0
	UMS	120	108	96	84	72	60	48	36	24	0
<b>B802</b>	Raw	60	50	43	36	30	26	22	19	16	0
	UMS	80	72	64	56	48	40	32	24	16	0
<b>B803 (01)</b>	Raw	90	76	64	52	41	34	27	21	15	0
	UMS	120	108	96	84	72	60	48	36	24	0
<b>B803 (02)</b>	Raw	90	76	64	52	41	34	27	21	15	0
	UMS	120	108	96	84	72	60	48	36	24	0
<b>B804</b>	Raw	60	45	38	31	24	20	16	12	8	0
	UMS	80	72	64	56	48	40	32	24	16	0

## Specification Aggregation Results

Overall threshold marks in UMS (i.e. after conversion of raw marks to uniform marks)

	Maximum Mark	A*	A	B	C	D	E	F	G	U
<b>J900</b>	200	180	160	140	120	100	80	60	40	0

	Maximum Mark	A*	A	B	C	D	E	F	G	U
<b>J901</b>	400	360	320	280	240	200	160	120	80	0

The cumulative percentage of candidates awarded each grade was as follows:

	A*	A	B	C	D	E	F	G	U	Total No. of Cands
<b>J900</b>	0.5	6	24	46	63	77	88	97	100	1249
<b>J901</b>	1	9	34	60	77	88	95	99	100	2794

Statistics are correct at the time of publication

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