

Mark Scheme (Results) Summer 2008

GCSE

GCSE Design & Technology: Graphic Products (1972) Paper 2H

1972 2H Mark Scheme

Question Number	Answer	Mark
1 (a)(i)	<p>Market</p> <p>Point: The cost of manufacturing the game should be low Reason: To maximise profits</p> <p>Point: The game should appear expensive / value for money Reason: To justify high price</p> <p>Point: The game should stand out from other games / be attractive Reason: To increase sales</p> <p>Point: Suit target audience Reason: Consumer satisfaction</p> <p style="text-align: right;">(2 x 1)</p>	(2)
1 (a)(ii)	<p>Environment</p> <p>Point: Minimum materials used Reason: Resource conservation</p> <p>Point: Made from recycled materials / Possible to be recycled Reason: Resource conservation / waste minimisation</p> <p>Point: The manufacture of the game should not cause pollution Reason: Protection of the environment</p> <p>Point: The game should display a recycle symbol Reason: Consumer awareness</p> <p style="text-align: right;">(2 x 1)</p>	(2)
1 (a)(iii)	<p>Quality</p> <p>Point: Any text should be easy to read / clearly printed Reason: Consumer satisfaction / brand reputation</p> <p>Point: The materials the game is made from should be durable /reliable Reason: Consumer satisfaction / brand reputation</p> <p>Point: The game should comply with relevant legal standards Reason: Moral and legal obligation</p> <p>Point: Fit for Purpose Reason: Consumer satisfaction / better sales</p> <p style="text-align: right;">(2 x 1)</p> <p><i>Some flexibility should be given as some points may cross over descriptions.</i></p>	(2)

<p>1 (b)(i)</p>	<p>Two reasons given</p> <p>Any two from:</p> <ul style="list-style-type: none"> • Has a smooth surface (1) • Can be printed on (1) • Is sufficiently tough / durable (1) • Is lightweight (1) • Low cost / cost effective (1) • Can be easily stuck/shaped to the playing board (1) • Flexible (1) • Enhances appearance (1) <p style="text-align: right;">(2 x 1)</p>	<p style="text-align: right;">(2)</p>
<p>1 (b)(ii)</p>	<p>Two reasons given</p> <ul style="list-style-type: none"> • Protection / more durable / makes it last longer / hard wearing / water resistant (1) • Easily cleaned / can be wiped over (1) • Enhances/maintains appearance (1) <p style="text-align: right;">(2 x 1)</p>	<p style="text-align: right;">(2)</p>
<p>1 (c)</p>	<p>Two properties and reasons given</p> <p>Any two from:</p> <ul style="list-style-type: none"> • Property: It is tough / durable / strong • Reason: The case will withstand use / protect cards • Property: It is hard / rigid • Reason: Will maintain shape / protect cards • Property: It is self coloured • Reason: Reduces production processes / looks attractive • Property: It is non toxic • Reason: It will be safe for the user • Property: It is lightweight • Reason: It will be easy to transport / store • Property: It is a thermoplastic • Reason: It can be injection moulded (<i>do not accept 'shaped' / 'formed'</i>) <p style="text-align: right;">(4 x 1)</p> <p>(Cost is not a valid property, but if a valid reason is linked to cost 1 mark)</p>	<p style="text-align: right;">(4)</p>
<p>1 (d)</p>	<p>Two quality control checks given</p> <p>Any two from:</p> <ul style="list-style-type: none"> • Ink density / colour (1) • Registration / alignment of colour separations (1) • Size (1) • Physical properties of material (1) <p style="text-align: right;">(2 x 1)</p>	<p style="text-align: right;">(2)</p>

1 (e)	<p>Any one from:</p> <ul style="list-style-type: none"> • The playing parts are simple shapes and this means the moulds will be easier / cheaper / quicker to manufacture. • The playing parts are hollow and this reduces the materials required / costs • The shapes do not have undercuts and this makes removal from the mould easier. <p style="text-align: right;">(2 x 1)</p>	(2)
1 (f)	<p>One method explained:</p> <p>Be safe for users:</p> <ul style="list-style-type: none"> • The contents do not have sharp edges and this means they cannot cut the user. • Some contents are small and this means they will not choke the user if swallowed. • Some contents are too big to be swallowed therefore no risk of choking. • The contents are made from inert materials/are easily cleaned and this means they will not poison the user/prove to be a health risk to the user. <p style="text-align: right;">(2 x 1)</p> <p>Be easy to store:</p> <ul style="list-style-type: none"> • The playing board folds this reduces the space / size / tessellate required for storage. • The box has a lid this means it will keep the contents within. • The tray holds the components separately this means you know where to put each bit. • Box is cuboid therefore it stacks well / tessellates • Contents fit in box therefore won't get lost <p style="text-align: right;">(2 x 1)</p>	(2)
Total for question		22

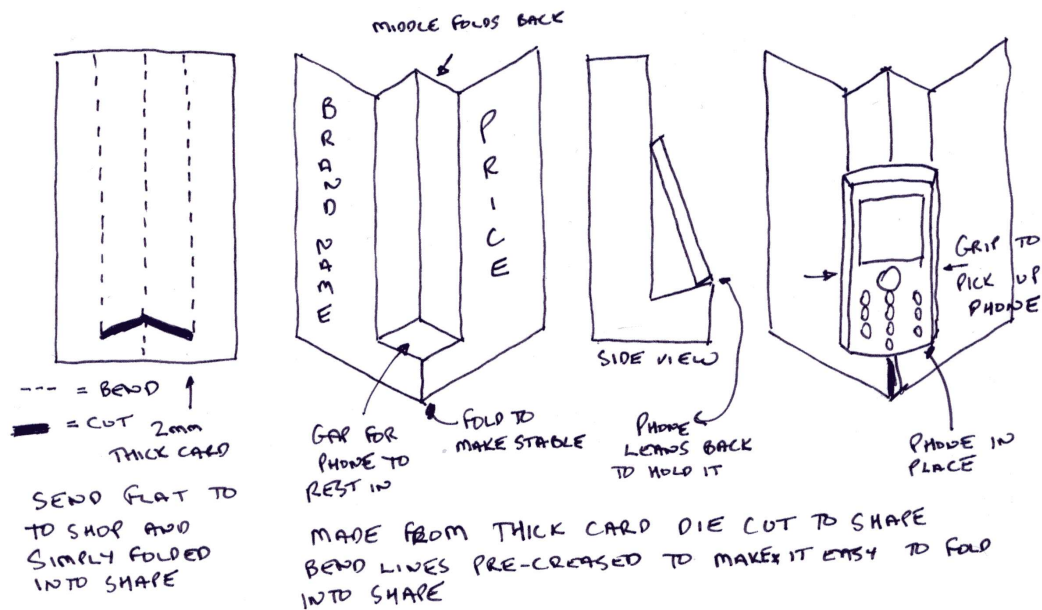
Question Number	Answer	Mark
2 (a)(i)	<p>One process named</p> <p>Any one from:</p> <ul style="list-style-type: none"> • Screen printing (1) • Thermal/iron on (1) • Stencilling (1) • Transfer (1) <p style="text-align: right;">(1 x 1)</p>	(1)
2 (a)(ii)	<p>One reason explained</p> <ul style="list-style-type: none"> • The glue in the glue stick is in a tube and this makes it quick / easy to apply/hold. • The glue stick is non toxic this makes it safe to use. • The glue stick is low cost this reduces production costs. • The glue stick is not strong this allows pieces to be moved. • The glue stick sets quickly this reduces production time. • The glue stick is not runny/messy so it keeps the work tidy / does not warp/distort the paper. <p style="text-align: right;">(2 x 1)</p>	(2)
2 (b)(i)	<p>One reason described</p> <ul style="list-style-type: none"> • Some production methods need digital inputs / use of a computer • Software allows manipulation of the image to change the appearance of the image. • Saves multiple drawing and reduces time. • The data is digitised and gives good quality/accurate copies. • Allows electronic communication due to a digital format. • Image not available from other source (1 mark for reason) <p style="text-align: right;">(2 x 1)</p>	(2)
2 (b)(ii)	<p>One description given</p> <ul style="list-style-type: none"> • The surface has holes/pits/recesses/engraved/cells that fill up with ink. • It is a flat sheet/cylinder of metal which has holes/pits/recesses in it. • It has an image on it which is made from holes/pits/recesses in the surface. • It is a piece of metal with a reverse/mirrored image <p style="text-align: right;">(2 x 1)</p>	(2)
2 (b)(iii)	<p>One reason explained</p> <ul style="list-style-type: none"> • Laminating will protect the poster and this will make it last longer / maintain its appearance / easier to clean. • Laminating will enhance the appearance of the poster and this will increase the number of sales / justify a higher retail price / increase manufacturer profits / increase readership <p style="text-align: right;">(2 x 1)</p>	(2)

2 (c)	<p>Two reasons given</p> <p>Any two from:</p> <ul style="list-style-type: none"> • To make sure it is safe (1) • To make sure it fits / not too big (1) • To make sure it is not too small (1) • To make sure it looks good (1) • To make sure it is durable (1) • Test stretch (1) • To make sure it is comfortable (1) • Make sure is colourfast (1) <p style="text-align: right;">(2 x 1)</p>	(2)								
2 (d)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Description of product</th> <th style="width: 50%;">Scale of production</th> </tr> </thead> <tbody> <tr> <td>Leaflets given away at a concert.</td> <td>Batch / Fixed quantity</td> </tr> <tr> <td>A magazine about the band sold at newsagents nationally.</td> <td>High Volume / Mass production / continuous / flow</td> </tr> <tr> <td>A custom made vinyl sign.</td> <td>One-off / bespoke / single run / jobbing</td> </tr> </tbody> </table> <p style="text-align: right;">(3 x 1)</p>	Description of product	Scale of production	Leaflets given away at a concert.	Batch / Fixed quantity	A magazine about the band sold at newsagents nationally.	High Volume / Mass production / continuous / flow	A custom made vinyl sign.	One-off / bespoke / single run / jobbing	(3)
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2 (e)(i)	<p>One advantage explained:</p> <ul style="list-style-type: none"> • Greater accuracy/quality therefore better quality products. • Repeatability of features/ copy & paste therefore faster production of designs. • Easy modifications therefore improved speed of production of designs / less skilled designers needed. • Quicker to store / retrieve / search therefore improved speed of production of designs. • Electronic transmission possible therefore quicker / cheaper. • Automatic design testing possible therefore improved performance / quicker optimisation of designs. <p style="text-align: right;">(2 x 1)</p>	(2)								
2 (e)(ii)	<p>One way described:</p> <ul style="list-style-type: none"> • Machines work quicker than people because they do not get tired/distracted/bored • Machines do not need breaks therefore products can be produced 24/7 • Machines are more reliable/efficient than people so less time is wasted <p style="text-align: right;">(2 x 1)</p>	(2)								
2 (e)(iii)	<p>One way described:</p> <ul style="list-style-type: none"> • The bar code links the item to a database and this can send a description/price of the product onwards • Calculations about numbers sold / stock check could trigger automatic re-ordering / be used to monitor company performance • Sales figures could be calculated and future projections / historic analysis made / allowing minimum stock levels to be maintained <p style="text-align: right;">(2 x 1)</p>	(2)								

2 (f)	<p>One advantage explained:</p> <ul style="list-style-type: none"> • Mailing lists are possible this means reduces the workload of sending information. • There are no postage costs this means reduced charges to members / greater profit. • Email arrives quicker than post therefore up to date information can be distributed. • Reduces physical materials used which reduces transport / storage space / resource costs. <p style="text-align: right;">(2 x 1)</p>	(2)
	Total for question	22

Question Number	Answer	Mark
3 (a)	<p>DESIGN IDEA 1</p> <p>Each point of specification has two marking points.</p> <p>1 mark should be awarded for evidence of each point of specification resolved in the design.</p> <p>For each specification point with both elements viably satisfied: 2 marks For each specification point with only one element viably satisfied: 1 mark Where the answer does not viably answer a specification point: 0 marks</p> <p>Candidates may answer any specification point in either graphical form or by annotation. No marks are awarded for quality of communication.</p> <p>Specification point 1</p> <ul style="list-style-type: none"> • Evidence to indicate that the display will hold the phone. (1) <i>e.g. The phone is supported on at its base and back.</i> • Evidence to indicate a method of removing the phone. (1) <i>e.g. There is space above the phone for fingers to grip the top of the phone.</i> <p>Specification point 2</p> <ul style="list-style-type: none"> • Evidence to indicate that some element of the display can be supplied as a flat pack. (1) <i>e.g. The display is a sheet of card that can be folded flat to transport.</i> • Evidence to indicate that the display can be assembled without tools. (1) <i>e.g. Shaping the stand only requires card to be folded into shape.</i> <p><i>Accept the use to tape / appropriate adhesives</i></p> <p>Specification point 3</p> <ul style="list-style-type: none"> • Evidence to indicate that there is space to display brand name (1) <i>e.g. A brand name is written on the display stand.</i> • Evidence to indicate that there is space to display the price (1) <i>e.g. Annotation indicates where the price will be written.</i> <p>Specification point 4</p> <ul style="list-style-type: none"> • Evidence to indicate one appropriate material for batch production. (1) <i>e.g. The drawing is annotated to show one part is made from card.</i> • Evidence to indicate one appropriate process for batch production. (1) <i>e.g. The drawing is annotated to show one part is cut using die cutter</i> 	

Possible graphical solutions:
Design Idea 1



(8)

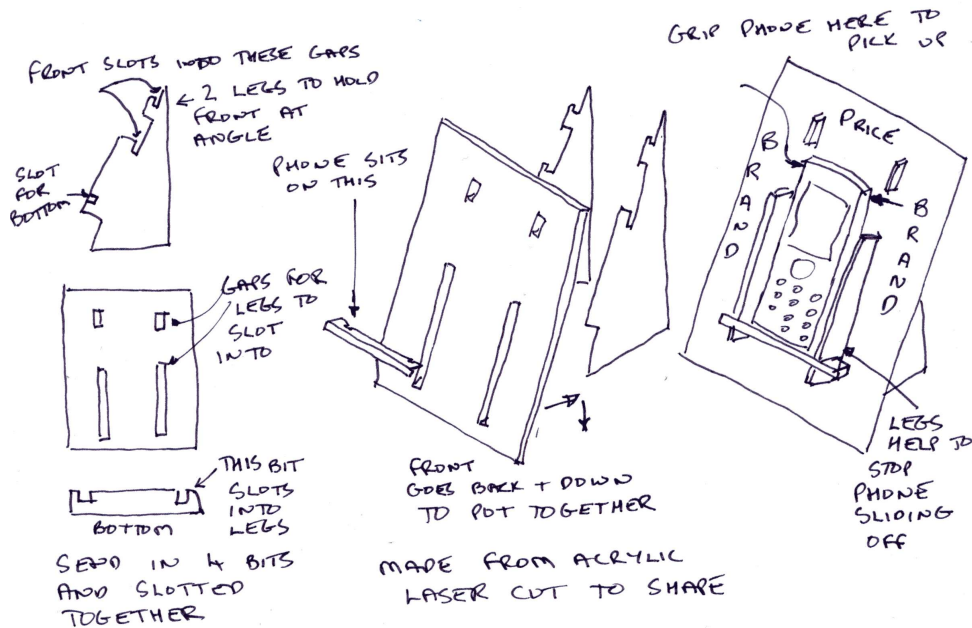
DESIGN IDEA 2

To score a mark for Design Idea 2, each specification point must be resolved again in the second design idea but the second design idea must be **technically / conceptually different in design and construction** from the first and not a simple variation on a theme to score the mark.

Use exactly the same criteria as design idea 1 to mark design idea 2.

- A different structure to hold the phone is indicated. (1) (Slot and Slope are different)
- A method to remove the phone is indicated. (1)
- A different method of being able to be flat pack is indicated. (1)
- A different method is indicated to assemble the flat pack without tools. (1)
- Evidence to indicate that there is space to display the brand name. (1)
- Evidence to indicate that there is space to display the price. (1)
- One different material for batch production is indicated. (1)
- One different process for batch production is indicated. (1)

Possible graphical solutions:
Design Idea 2



(8)

3 (b)

Each point clearly evaluated.

If a candidate has indicated design idea 1 and then evaluates design idea 2 for all or part of (i), (ii) & (iii) then the idea in greater evidence should be marked.

The evaluation of the design must contain reference to either positive or negative aspects not just simply a description of the design.

Award 1 mark for a correct evaluation / justification relating to each design feature and how it succeeds or fails. Repetition of original spec scores 0.

3(b)(i)

Evaluation of: Specification point 1

Positive or negative reasons relating to:

- Holding the mobile phone.
e.g. *The phone is not held very well because there is **nothing stopping it slipping forward** out of the display.*
- Removing the mobile phone.
e.g. *The phone is easy to remove because there is a **big gap** behind the phone to put fingers in to pick it up.*

(2 x 1)

(2)

3(b)(ii)	<p>Evaluation of: Specification point 2</p> <p>Positive or negative reasons relating to:</p> <ul style="list-style-type: none"> • Being supplied as a flat pack. <i>e.g. Card is easy to bend therefore it will be easy to flat pack.</i> • Being able to assembled with the use of tools. <i>There is only one part to the display therefore no bits need to be joined together.</i> <p style="text-align: right;">(2 x 1)</p>	(2)
3(b)(iii)	<p>Evaluation of: Specification point 4</p> <p>Positive or negative reasons relating to:</p> <ul style="list-style-type: none"> • One material suitable for batch production is used. <i>Card is produced in consistent quality.</i> • One processes suitable for batch production is used. <i>Die cutters last a for many cuts.</i> <p style="text-align: right;">(2 x 1)</p>	(2)
Total for question		22

Question Number	Answer	Mark
4 (a)(i)	<p>One advantage stated:</p> <p>Any one from:</p> <ul style="list-style-type: none"> • More attractive material (1) • More attractive finish (1) • Lower possible health risk (1) • Easier / quicker to work (1) (<i>do not accept 'easier' or "quicker" by itself</i>) • More flexible sizes (1) <p style="text-align: right;">(1 x 1)</p>	(2)
4 (a)(ii)	<p>One advantage explained:</p> <ul style="list-style-type: none"> • Lower equipment costs so money can be spent on other things. • No dependence on ICT meaning work can be done anywhere/ no work lost. • No software to impose constraints meaning greater flexibility in designs. • Some designers dislike using CAD this means they get greater satisfaction using drawing boards • Different skill set used this means greater ability of designer created. <p style="text-align: right;">(2 x 1)</p>	(2)
4 (b) (i)	<p>One reason given</p> <p>Any one from:</p> <ul style="list-style-type: none"> • It is transparent (1) • Waterproof (1) • It is tough / strong / durable enough / safe (1) • It is easy to cut to shape (1) • It can be fixed to the lid (1) <p style="text-align: right;">(1 x 1)</p>	(1)
4 (b) (ii)	<p>One reason explained</p> <ul style="list-style-type: none"> • It would provide more grip therefore it would be easier to remove the lid. • It would improve appearance therefore this would increase sales / satisfaction • To help partially sighted users locate the lid <p style="text-align: right;">(2 x 1)</p>	(2)

4 (c) (i)	<p>One reason given</p> <p>Any one from:</p> <ul style="list-style-type: none"> • Tough (1) • Durable (1) • Flexible / easily folded (1) • Easy to clean (1) • Lightweight (1) • Easily joined (1) • Easily cut (1) • Waterproof (1) • Strong (1) • Cost effective (1) <p style="text-align: right;">(1 x 1)</p>	(1)
4 (c)(ii)	<p>One problem described</p> <ul style="list-style-type: none"> • The ink will not dry / soak in and it will smudge / wipe off. • It will smudge and look bad <p style="text-align: right;">(2 x 1)</p>	(2)
4 (c) iii	<p>One advantage explained</p> <ul style="list-style-type: none"> • It would become tougher / stronger / more durable therefore it would protect the contents more / last longer. <p style="text-align: right;">(2 x 1)</p>	(2)
4 (d)	<p>One advantage explained</p> <ul style="list-style-type: none"> • Less resources consumed therefore preserving availability, reducing manufacturing pollution / reducing global warming/green house gases • Less waste to be disposed off therefore reducing landfill / pollution. <p style="text-align: right;">(2 x 1)</p>	(2)
4 (e)(i)	<p>Three advantages stated</p> <ul style="list-style-type: none"> • They will be able to identify safe products (1) • Good quality (1) • They will be able to identify high quality products (1) • They know accurate information will be available (1) • The product would be independently tested (1) • The product guarantees a degree of reliability (1) <p style="text-align: right;">(3 x 1)</p>	(3)
4 (e)(ii)	<p>One disadvantage described</p> <ul style="list-style-type: none"> • The testing of the products increases manufacturing costs; this is passed on to the consumer through higher prices for the products. • The testing of products takes time; this may delay the release of new products. <p style="text-align: right;">(2 x 1)</p>	(2)

4 (f)	<p>One disadvantage explained</p> <ul style="list-style-type: none"> • Computer systems / data could become damaged / accessed because of malicious viruses / hackers • Personal relationships may be compromised because of reduced face to face contact. • Money will be spent because of infrastructure hardware investment • Time may be wasted because of time spent dealing with spam • Alternative communication methods may become worse because of effort / money devoted to email. • Computers/infrastructure can be unreliable therefore time wasted. <p style="text-align: right;">(2 x 1)</p>	(2)
4 (g)	<p>One moral issue described</p> <ul style="list-style-type: none"> • Young people will be under pressure to buy new products; this can be expensive / lead to peer group issues. • Cost of advertising new products raises their selling price. • Unnecessary use/consumption of raw materials / production of waste materials which can damage the environment/deprive future generations of these resources <p style="text-align: right;">(2 x 1)</p>	(2)
Total for question		22
Total for Paper		88