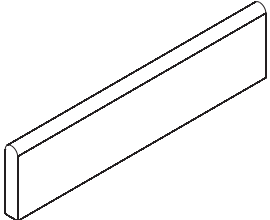
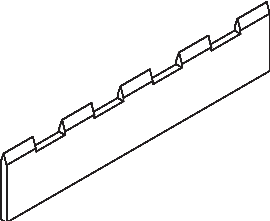
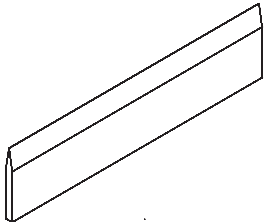
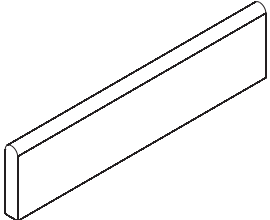
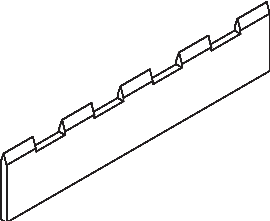
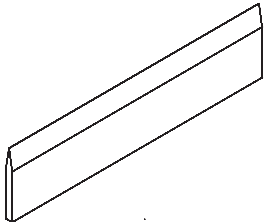
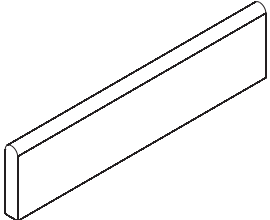
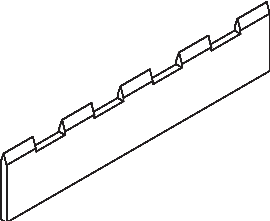
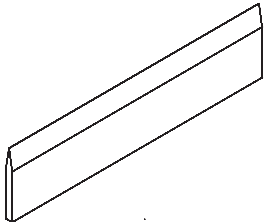


Mark Scheme (Results) Summer 2008

GCSE

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

1972 2F Mark Scheme

Question Number	Answer	Mark								
1 (a)	<p>Name: Scissors / Shears (1) Use: Cutting / scoring / curling / creasing / trimming (1)</p> <p>Name: Safety/cutting/Maun rule / rule / ruler (1) Use: Guiding / measuring / folding / protecting / protection / holding down (1)</p> <p>Name: Pen / Marker / board marker / felt tip / highlighter / magic marker / Tippex / correction pen/ eraser / rubber / glue pen / fine liner(1) Use: Applying colour / drawing / writing / highlighting / correcting / erasing / rubbing out / gluing/ joining (1)</p> <p>Name: Computer / PC / desktop / monitor / keyboard / processor / CPU / workstation / VDU /display / TFT / screen (1) Use: Office tasks / internet / CAD/CAM / downloading / research / writing / word processing / communicating / e-mailing / DTP / entertainment / playing/burning CDs /messaging / homework / viewing / editing / marking / browsing / surfing the net/web (1) <i>(Do not accept 'laptop')</i></p> <p>Name: Trimmer / Rotatrim / roller cutter / paper/card/vinyl cutter (1) Use: Cutting / trimming(1) <i>(Do not accept 'guillotine')</i></p> <p style="text-align: right;">(10 x 1)</p>	(10)								
1 (b) i	<p>Three names of blades given:</p> <table border="1"> <thead> <tr> <th>Type of blade</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>  </td> <td style="text-align: center;">Creasing blade</td> </tr> <tr> <td>  </td> <td style="text-align: center;">Perforating blade</td> </tr> <tr> <td>  </td> <td style="text-align: center;">Cutting blade</td> </tr> </tbody> </table> <p style="text-align: right;">(3 x 1)</p>	Type of blade	Name		Creasing blade		Perforating blade		Cutting blade	(3)
Type of blade	Name									
	Creasing blade									
	Perforating blade									
	Cutting blade									

1 (b) (ii)	<p>Two reasons given:</p> <p>Any two from:</p> <ul style="list-style-type: none"> • Accuracy (1) • Fewer production errors (1) • Fast / quick (1) • Reduced production costs (1) (<i>do not accept 'cheaper' by itself</i>) • High demand for product (1) • Cutter can be used many times (1) <p style="text-align: right;">(2 x 1)</p>	(2)
1 (c)	<p>Two advantages given</p> <p>Any two from:</p> <ul style="list-style-type: none"> • Less waste / fit more in (1) • Lower material costs (1) • Faster processing (1) (<i>Do not reward 'faster' unqualified.</i>) • Less storage space required for materials (1) • Less waste disposal costs (1) • Less card used (1) <p style="text-align: right;">(2 x 1)</p>	(2)
1 (d)	<p>Two advantages given</p> <p>Any two from:</p> <ul style="list-style-type: none"> • Quicker (1) • Automatic re-ordering (1) • Up to date information available (1) • Remote access possible (1) • Less space required for records (1) • Automatic calculations possible (1) • Direct links to suppliers (1) • Consumer access to stock data (1) • More accurate (1) • More reliable (1) • Less staff required (1) <p style="text-align: right;">(2 x 1)</p> <p style="text-align: center;"><i>(do not accept 'cheaper' or "easier" by themselves)</i></p>	(2)
1 (e)	<p>Three advantages given</p> <p>Any three from:</p> <ul style="list-style-type: none"> • Faster / quicker (1) • Reduced labour costs (1) (<i>do not accept 'cheaper' by itself</i>) • Reduced materials costs / bulk buying discounts / cost effective (1) (<i>do not accept 'cheaper' by itself</i>) • Product available from stock (1) • Reduced set up times (1) • Product is consistent (1) • Possibility of adapting existing designs (1) • Re-prints available (1) • The size of the batch can be increased / decreased (1) <p style="text-align: right;">(3 x 1)</p>	(3)
Total for question		22

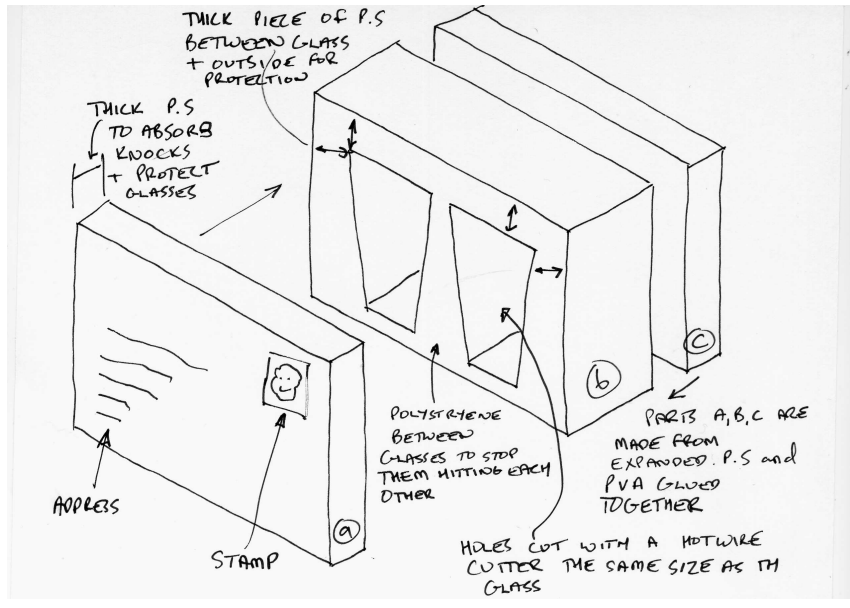
Question Number	Answer	Mark
2 (a)(i)	<p>One property given</p> <p>Any one from:</p> <ul style="list-style-type: none"> • See through / transparent (1) • Non toxic / inert / does not taint (1) • Flexible / can be folded (1) • Lightweight (1) • Tough (1) • Impermeable / acts as a barrier (1) • Prevents contamination (1) • Prevents it drying out (1) • Prevents tampering (1) • Waterproof (1) <p style="text-align: right;">(1 x 1)</p>	(1)
2 (a)(ii)	<p>Three reasons given</p> <p>Any three from:</p> <ul style="list-style-type: none"> • Can be printed onto (1) • Flexible / can be folded (1) • Can be cut / torn / opened (1) • Prevents contamination (1) • Recyclable / biodegradable (1) • Low cost / cheap (1) • Lightweight (1) (<i>do not accept 'easy' by itself</i>) • Easy to join (1) • Can be coated (1) • Strong enough for long enough (1) • Hygienic / clean (1) <p style="text-align: right;">(3 x 1)</p>	(3)
2 (a)(iii)	<p>One advantage explained</p> <p>The box would become stronger/stiffer/tougher/more durable and this would protect the sandwich more/longer/ protect freshness / make it easier to hold/keeps shape.</p> <p style="text-align: right;">(2 x 1)</p>	(2)
2 (b)(i)	<p>One material given</p> <p>Any one from:</p> <ul style="list-style-type: none"> • PS / polystyrene (1) • PET / Polyethylene Terephthalate (1) • HDPE / high density polyethylene (1) • PVC / polyvinyl chloride (1) <p style="text-align: right;">(1 x 1)</p>	(1)
2 (b)(ii)	<p>One description given</p> <p>Any one from:</p> <ul style="list-style-type: none"> • The shape will change and it will become smaller / flatter • The shape will become smaller and flatten out. <p style="text-align: right;">(2 x 1)</p>	(2)

2 (c)(i)	<p>Two disadvantages stated</p> <p>Any two from:</p> <ul style="list-style-type: none"> • It will be heavier (1) • It can rust (1) • It will deform easier (1) • It will not be as attractive (1) • It will require painting / plating / finishing (1) • Sharp edges will have to be removed (1) • It conducts heat (1) • More expensive (1) <p style="text-align: right;">(2 x 1)</p>	(2)
2 (c)(ii)	<p>One disadvantages stated</p> <p>Any one from:</p> <ul style="list-style-type: none"> • More complicated to manufacture / takes longer to make (1) • More expensive (1) • More health hazards during production (1) <p style="text-align: right;">(1 x 1)</p>	(1)
2 (d)(i)	<p>One advantage given</p> <p>Any one from:</p> <ul style="list-style-type: none"> • So they know what is in it (1) • Allergic reactions can be avoided (1) • Diets can be planned (1) • Personal choice (1) <p style="text-align: right;">(1 x 1)</p>	(1)
2 (d)(ii)	<p>One advantage given</p> <p>Any one from:</p> <ul style="list-style-type: none"> • So they can contact the manufacturer (1) • So they know where it was made (1) • So they can complain / feedback (1) <p style="text-align: right;">(1 x 1)</p>	(1)
2 (d)(iii)	<p>One way described</p> <p>The carton will change colour / show when its cold and the consumer will know when to drink it.</p> <p style="text-align: right;">(2 x 1)</p>	(2)
2 (e)(i)	<p>Two advantages given</p> <p>Any two from:</p> <ul style="list-style-type: none"> • Less pollution / litter (1) • Less landfill (1) • Less incineration (1) • Use less resources / resources last longer (1) <p style="text-align: right;">(2 x 1)</p>	(2)

2 (e)(ii)	<p>One reason explained</p> <p>The use of symbols does not depend on being able to read a particular language therefore the consumers in any country will be able to follow the instructions / because the symbol is an international language.</p> <p>It will be recycled (1 mark for reason)</p> <p style="text-align: right;">(2 x 1)</p>	(2)
2 (f)	<p>Two ways given</p> <ul style="list-style-type: none"> • Quicker / easier / faster editing (1) • Using clip art (1) • Standard nets (1) • Email for communication (1) • Reduced consumables (1) • Remote working (1) • Reduce storage/office space (1) • Less staff needed (1) • Designs can be adapted (1) • Testing / simulation (1) <p style="text-align: right;">(2 x 1)</p>	(2)
Total for question		22

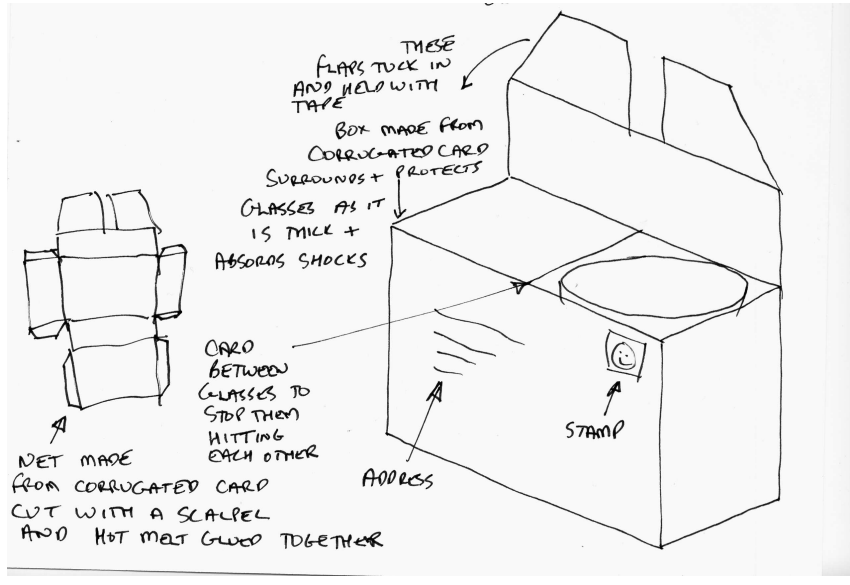
Question Number	Answer	Mark
3 (a)	<p>DESIGN IDEA 1 Each point of specification has two marking points.</p> <p>1 mark should be awarded for evidence of each point of specification resolved in the design.</p> <p>For each specification point with both elements viably satisfied 2 marks</p> <p>For each specification point with only one element viably satisfied 1 mark</p> <p>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.</p> <p>No marks are awarded for quality of communication.</p> <p>Specification point 1</p> <ul style="list-style-type: none"> • evidence to indicate that both glasses are protected from external damage. (1) <i>e.g. The glasses are surrounded by a material that offers protection from impact by absorbing forces e.g. expanded polystyrene.</i> • evidence to indicate that both glasses are protected from each other. (1) <i>e.g. The glasses separated by a material that offers protection from impact by absorbing forces e.g. expanded polystyrene.</i> <p>Specification point 2</p> <ul style="list-style-type: none"> • evidence to indicate that the package can be closed. (1) <i>e.g. The structure of the package shows how different parts join together to close.</i> • evidence to indicate that the package is sealed securely. (1) <i>e.g. The drawing is annotated to show how the parts of the package can be glued together.</i> <p>Specification point 3</p> <ul style="list-style-type: none"> • evidence to indicate that there is space to display the postal address. (1) <i>e.g. Writing that resembles an address is drawn on the package.</i> • evidence to indicate that there is space to display the postage stamp. (1) <i>e.g. Graphics that resembles a stamp are is drawn on the package.</i> <p>Specification point 4</p> <ul style="list-style-type: none"> • evidence to indicate that one material indicated is suitable for a school workshop. (1) <i>e.g. The drawing is annotated to show one part is made from polystyrene.</i> • evidence to indicate that one process indicated is suitable for a school workshop. (1) <i>e.g. The drawing is annotated to show one part is cut using a hot wire cutter.</i> 	

Possible graphical solutions:
Design Idea 1



(8)

Design Idea 2



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 method** is indicated that both glasses are protected from external damage. (1)
- **A different method** is indicated that **both** glasses are protected from **each other**. (1)
- **A different method** is indicated that the package can be closed. (1)
- **A different method** is indicated that the seal will be secure. (1)
- Evidence to indicate that there is space to display the postal address. (1)
- Evidence to indicate that there is space to display the postage stamp. (1)
- **A different material** indicated that is suitable for a school workshop. (1)
- **A different process** indicated that is suitable for a school workshop. (1)

(8)

<p>3 (b)</p>	<p>Each point clearly evaluated.</p> <p>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.</p> <p>The evaluation of the design must contain reference to either positive or negative aspects not just simply a description of the design.</p> <p>Award 1 mark for a correct evaluation / justification relating to each design feature and how it succeeds or fails.</p> <p>Repetition of original spec scores 0.</p>	
<p>3(b)(i)</p>	<p>Evaluation of: Specification point 1</p> <p>Positive or negative reasons relating to:</p> <ul style="list-style-type: none"> • One / both glasses are protected from external damage (1) • The glasses are protected from each other (1) <p><i>E.g. They are protected from damage because they are surrounded by polystyrene. They are protected from each other because there is a thick section between each glass.</i></p> <p style="text-align: right;">(2 x 1)</p>	<p style="text-align: right;">(2)</p>
<p>3(b)(ii)</p>	<p>Evaluation of: Specification point 2</p> <p>Positive or negative reasons relating to:</p> <ul style="list-style-type: none"> • The package can be closed (1) • That the closure will be secure (1) <p><i>E.g. The package can be closed because the tree pieces join together with no gaps. This will be secure because PVA will glue the parts together strongly.</i></p> <p style="text-align: right;">(2 x 1)</p>	<p style="text-align: right;">(2)</p>
<p>3(b)(iii)</p>	<p>Evaluation of: Specification point 4</p> <p>Positive or negative reasons relating to:</p> <ul style="list-style-type: none"> • Appropriate materials are used (1) • Appropriate processes are used (1) <p style="text-align: right;">(2 x 1)</p> <p><i>E.g. Polystyrene is a suitable material to make the package from because it is safe to use in schools. Hotwire cutters don't cost very much therefore they are suitable use in a school.</i></p>	<p style="text-align: right;">(2)</p>
	<p>Total for question</p>	<p>22</p>

Question Number	Answer	Mark
4 (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)
4 (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)
4 (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>4 (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>4 (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 • Easily cleaned / can be wiped over • Enhances/maintains appearance <p style="text-align: right;">(2 x 1)</p>	<p style="text-align: right;">(2)</p>
<p>4 (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>4 (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>

4 (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)
4 (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
Total for paper		88