Design and Technology
Advanced Subsidiary GCE
Unit F521/01/02: Advanced Innovation Challenge

Mark Scheme for June 2013
OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, Cambridge Nationals, Cambridge Technicals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today’s society.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners’ meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates’ scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

© OCR 2013
Outline initial thoughts, these are predictable/non-creative. | Outlines initial thoughts in some detail, some creative thinking. | Clearly outlines initial thoughts in detail, responding with an open mind showing unexpected and/or challenging ways of thinking. |
---|---|---|
Analyses the problem at a superficial level that lacks depth | Analyses some aspects of the problem. Identifies a user/market, resulting in a design brief. | Analyses problem in depth, responds in a way that allows scope for innovation. Identifies a user/market and results in a clear design brief. |
Some consideration of a user/market resulting in a design brief. | | |
Produces a basic or superficial specification that is vague/generic. | Produces an adequate specification that gives some basic requirements of the product. | Produces a detailed specification that identifies the key features of the product. |
Some evidence of evaluation of their design and shows limited consideration of the users/market. | | |
Records progress at various stages but limited detail and thought. | | |
Limited range of making skills apparent. | | |
Limited range of making skills and or complexity. | | |
Identifies a user/market, resulting in a design brief. | | |
F521/01/02 Mark Scheme June 2013

<table>
<thead>
<tr>
<th>Box 1,2</th>
<th>Box 1,2,3 &amp; 4</th>
<th>Box 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box 6</td>
<td>Box 6</td>
<td>Box 6,7 &amp; 8</td>
</tr>
<tr>
<td>Box 6,7,8,9 &amp;10</td>
<td>Box 11</td>
<td>Box 11, 12&amp;13</td>
</tr>
<tr>
<td>Box 14, 15, 16, 17, 18 and photos 1, 2 &amp; 3</td>
<td>Box 18</td>
<td>Box 18</td>
</tr>
<tr>
<td>Total /60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Two outline presentations to an expert/panel will be presented; answers will be in the form of written material supported by annotated sketches. (10 Marks each).

QWC is assessed in P and S.

P and S are annotated on script where found, the only other annotation that can be included is the use of a vertical line against anything that is completely irrelevant to question.

**P relevant points/issues raised**

*Up to 4 marks*

**Points must cover each bullet point within question and relate specifically to their product and the overriding question.**

| One bullet point or one relevant point | 1 mark |
| Two bullets points or one bullet point and one relevant point | 2 marks |
| All three bullets points or two bullet points and one relevant point | 3 Marks |
| All three bullets points and one further relevant point | 4 Marks |

**S supporting example and/or sketches**

*Up to 3 marks*

Must relate to the three bullet points

**QWC quality of written communication up to 3 marks (this is not annotated on paper as it is an overview of whole discussion)**

**QWC Level descriptors**

3 Marks: Presents information and arguments in a clear and concise manner, using appropriate technical phrases and high quality written communication skills.

2 Marks: Presents information and arguments in a reasonably clear and concise manner, with limited use of technical phrases and reasonable written communication skills.

1 marks: Presents information and arguments in a manner that lacks a clear and concise approach, with little or no use of technical phrases and basic written communication skills.

*Use the whole mark range, including maximum marks or zero where appropriate.*
Discussion may include, these points must be relevant to the product and **all three bullet points must be addressed:**

 Modifications could cover any of the following:
- environmental impact in use and of materials/attraction, obsolescence issues, energy used in production, life expectancy, disposal, carbon footprint
- use of recyclable components/materials, recycling issues. Six Rs – rethink, reuse, recycle, repair, reduce, refuse.
- LCA Cradle to grave - material selection, recyclable components/materials/environmental impact/attraction, obsolescence issues, recycling, energy used in production, energy during use, life expectancy - disposal/recycling issues.
- implications – cost, meeting legislation. Company image/customer perception, fashionable ethically sourced goods, use of eco materials, sustainable, costs would increase per unit, this can be discussed in relation to the above but discussion needs to relate specifically to their product, its materials etc. Transportation costs, use of flat pack etc, benefits of sourcing materials locally etc

A maximum of 2P's could be awarded for bullet point 1 in the case of a candidate discussing why their product is already sustainable. Supporting points can also be awarded, a maximum of 2S’s.

A maximum of one P for a knowledge of what life cycle analysis is, a discussion in terms of sustainability relating to material, energy during use etc is required for S or a second P where available

If cost is mentioned, just saying cost increases or decreases then no marks are awarded, what will specifically increase or decrease cost must be mentioned.

Discussion may include, these points must be relevant to the product and **all three bullet points must be addressed:**

- Specific product use and the feasibility of the product for particular identified markets. Some link to the retail environment where appropriate, use of company logos, branding, colour schemes etc
- The importance of visual impact to attract interest/sales - aesthetics, colour, form, texture, form and function, emotional response to products. Fashion trends, e.g eco design as a trend. Colour changes should be justified by relating to retail environment or specific fashion trends. Pricing and product placement. Product comparisons
- Details of chosen materials and manufacturing techniques specific to the product.
- Cost issues of materials and aesthetic changes. If cost is mentioned, just saying cost increases or decreases then no marks are awarded, what will specifically increase or decrease cost must be mentioned.

Discussion must relate specifically to the product and/or a retail environment, a maximum of one P and one S for generic discussion about fashion and aesthetics.