

## **GCSE**

### **Design and Technology: Product Design**

Unit **A552**: Designing and making innovation challenge

General Certificate of Secondary Education

### **Mark Scheme for June 2015**

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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.

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|  |  |   |   |   |   |  |   |  |   |    |    |
|--|--|---|---|---|---|--|---|--|---|----|----|
| Development of Design Evolution through making | Initial Thoughts   | Limited outline of initial thoughts. Work is predictable/non creative | 1   | Outlines initial thoughts giving some detail, work shows some potential | 1   | Clearly outlines initial thoughts giving detail. Ideas show potential /some creative elements. | 1 | Clearly outlines initial thoughts giving detail. Initial thoughts show creative thinking | 1 | 0  |    |
|  |  |   |   |   |   |  |   |  |   | 1  |    |
|  |  |   |   |   |   |  |   |  |   | 2  |    |
|  |  |   |   |   |   |  |   |  |   | 3  |    |
|  |  |   |   |   |   |  |   |  |   | 4  |    |
|  | Brief  | Possible briefs are clear   | 1   | Final design brief has scope for creativity                             | 1   |  |   |  |   | 5  |    |
|  | Use/ clients/ users  | Intended user(s) and/or client(s) is identified                       | 1   | User requirements are positively reflected within design work           | 1   |  |   |  |   | 6  |    |
|  |  |   |   |   |   |  |   |  |   | 7  |    |
|  |  |   |   |   |   |  |   |  |   |    | 8  |
|  |  |   |   |   |   |  |   |  |   |    | 9  |
| Specification                                  | Specification is vague/generic. Points based upon 'given' information. | 1   | Specification gives some basic requirements for product | 1   | Specification is detailed key features of the product are identified. | 1  |   |  |   |    | 10 |
|  |  |   |   |   |   |  |   |  |   |    | 11 |
|  |  |   |   |   |   |  |   |  |   |    | 12 |
|  |  |   |   |   |   |  |   |  |   | 13 |    |
|  |  |   |   |   |   |  |   |  |   | 14 |    |
|  |  |   |   |   |   |  |   |  |   | 15 |    |
|  |  |   |   |   |   |  |   |  |   | 16 |    |
|  |  |   |   |   |   |  |   |  |   | 17 |    |
|  |  |   |   |   |   |  |   |  |   | 18 |    |
|  |  |   |   |   |   |  |   |  |   | 19 |    |
|  |  |   |   |   |   |  |   |  |   | 20 |    |
|  |  |   |   |   |   |  |   |  |   | 21 |    |
|  |  |   |   |   |   |  |   |  |   | 22 |    |
| Response to Design Problem                     | Limited consideration or response to given design problem              | 1   | Design problem considered/ addressed                    | 1   | Design problem fully considered/ addressed                            | 1  |   |  |   |    |    |
|  |  |   |   |   |   |  |   |  |   |    |    |
|  |  |   |   |   |   |  |   |  |   |    |    |

|   |                                 |  |   |   |   |  |   |   |   |   |
|---|---------------------------------|--|---|---|---|--|---|---|---|---|
| Communicating information through sketches, writing and photographs   | Quality of Communication Skills | Use of sketches/images is limited                      | 1 | Use of sketches/images is satisfactory                                | 1 | Use of sketches/images is good   | 1 | Uses a variety of techniques to enhance design communication e.g. rendering, swatch | 1 | 0 |
|   |                                 | Written communication (clarity of message) is limited  | 1 | Written communication is satisfactory                                 | 1 | Written communication is good  | 1 | Written communication is clear and succinct. Technical vocabulary is used           | 1 | 1 |
| Materials, Components, Processes, Techniques, and Industrial practice | Material Selection              | Choice of materials and components limited             | 1 | Considered choice of materials and components                         | 1 | Appropriate joining methods identified/detailed                                | 1 |   |   | 0 |
|   |                                 | Use of Material  | 1 | Some adept use of materials but with inconsistencies.                 | 1 | Adept use of materials   | 1 | Making skills demonstrate a range of techniques/complexity                          | 1 | 1 |
|   | Making Skills                   | Product modelling attempted - substantially incomplete | 1 | Model mainly complete. Reasonable standard of making skills evidenced | 1 | Model mainly complete. Good standard of making skills demonstrating accuracy   | 1 | Model(s) complete with a high standard of making skills                             | 1 |   |
|   |                                 | Model reflects some aspects of the developed design    | 1 | Model accurately reflects most features of the developed design       | 1 | Reviews manufacturing progress, producing clear plans for next stage of making | 1 |   |   |   |
|   |                                 |  |   |   |   |  |   |   |   |   |
|   |                                 |  |   |   |   |  |   |   |   |   |

|  |                         |   |   |   |   |  |   |   |   |                            |
|--|-------------------------|---|---|---|---|--|---|---|---|----------------------------|
| Analysis of ideas, models and prototypes | Analysis and Evaluation | Analysis and evaluation limited   | 1 | Analysis and evaluation satisfactory. Evident throughout design work and in box 17 and 18 | 1 | Analysis and evaluation good. <b>Some</b> justification given. Information given about future product. | 1 | Justified analysis and evaluation throughout Suggested Improvements identified and/or use of technical terminology. | 1 | 0<br>1<br>2<br>3<br>4<br>5 |
|  | Peer Evaluation         | Limited Plan and recording of feedback for reflect & record activity        | 1 | Clear plan for reflect and record. Records peer feedback and possible modifications       | 1 |  |   |   |   | 6<br>7<br>8<br>9           |
|  | Development of ideas    | Shows some development of ideas from ' <b>initial thoughts</b> ' Box 1 to 5 | 1 | Shows clear development. <b>Initial thoughts</b> have been expanded. Box 1 to 5           | 1 | Identifies strengths and weaknesses of design or design ideas  | 1 | Explains rejection of ideas in favour of ones that are worthy of further development                                | 1 | 10<br>11<br>12             |
|  |                         |   |   |   |   | Clear evidence of development of ideas. Some design issues unresolved.                                 | 1 | Fully develops ideas. No outstanding design issues  | 1 |                            |
| Reflection                               | Reflection              | Basic comments / observations relating to the product design.               | 1 | Reflection focuses on 'design issues' specific strengths and weaknesses identified        | 1 | Quality analysis/creative design improvements suggested  | 1 |   | 1 | 0<br>1<br>2<br>3<br>4      |
|  |                         |   |   | Alterations/refinements to the 'design' are specified/suggested                           | 1 |  |   |   |   |                            |

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