**Stage 2 Material Solutions**

**Design, Technology and Engineering**

School Assessment

**Assessment Type 1: Specialised Skills Task 2**

Purpose

Students develop knowledge and skills through specialised skills tasks. They apply the skills, processes and techniques in the chosen context. This informs the design development for a solution in Assessment Type 2. Students evaluate and assess the development of their own skills in this assessment task. They review how these processes and techniques may influence their solution.

Description of task

CAD software

Students will use a CAD Software such as Fusion 360, to create drawings of the joints and assembly created in Task 1 or negotiated drawings for possible solution in Assessment Type 2. The choice of CAD software will be negotiated with your teacher.

Students will be required to produce

* 4 completed 3D joint models or negotiated 3D possible solution drawing
* A render
* A 3rd angle orthogonal drawing as directed by the teacher
* A 3D scaled simple printed model of the frame or possible solution

Students will evaluate the CAD package in relation to creating renders, exporting geometry to 3D printers, and producing orthographic drawings and review their own skill development including problem solving and the new knowledge obtained in the process.

Assessment conditions

Evidence for this assessment type should be provided in multimodal form to a maximum of 3 minutes, 500 words in written form or a combination of these.

For this assessment type, students provide evidence of their learning in relation to the following assessment design criteria:

* Production (P1 & P2)
* Evaluation (E1)

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| Investigations and Analysis | | Design Development and Planning | Production | Evaluation |
| A | Comprehensive and insightful analysis of the design features of products, processes, materials, systems and/or production techniques  Purposeful research and critical analysis of ethical, legal, economic and/or sustainability issues | Insightful and comprehensive communication of design concepts using relevant technical language and visual representations  Insightful and thorough planning, development, testing and validation of design concepts and procedures | Highly proficient application of skills, processes, procedures and techniques to create a solution  Comprehensive development of solutions to technical problems that arise during the solution realisation | Comprehensive and insightful evaluation of the solution features and realisation process |
| B | Thoughtful and well-considered analysis of the design features of products, processes, materials, systems and/or production techniques  Detailed research and well-considered discussion of ethical, legal, economic and/or sustainability issues | Thoughtful and well-considered communication of design concepts using relevant technical language and visual representations  Well-considered planning, development, testing and validation of design concepts and procedures | Proficient application of skills, processes, procedures and techniques to create a solution  Thoughtful development of solutions to technical problems that arise during the solution realisation | Well-informed and detailed evaluation of the solution features and realisation process |
| C | Considered analysis of the design features of products, processes, materials, systems and/or production techniques  Research and some analysis of ethical, legal, economic and/or sustainability issues | Clear communication of design concepts using technical language and some visual representations  Competent planning, development, testing and validation of some design concepts and procedures | Competent application of skills, processes, procedures and techniques to create a solution  Development of solutions to technical problems that arise during the solution realisation | Considered evaluation of the solution features and realisation process |
| D | Identification of the design features of products, processes, materials, systems and/or production techniques  Some description of information about ethical, legal, economic and/or sustainability issues | Basic communication of design concepts using some technical language  Some planning and development of design concepts and/or procedures | Basic application of some skills, processes, procedures and techniques to create a solution  Some endeavour to develop solutions to technical problems that arise during the solution realisation | Some description of the solution features and realisation process |
| E | Attempted identification of the design features of products, processes, materials, systems and/or production techniques  Some accessing of information about ethical, legal, economic and/or sustainability issues | Superficial and simplistic communication of design concepts  Limited use of information to plan design concepts | Limited application of emerging skills  Attempted development of a solution to a technical problem | Emerging recognition of the solution features and realisation process |

Teacher comment:

Overall grade