



## Bideford College Technology Faculty: Engineering Key Stage 4 Progress Matrix

| In order to get a <b>grade G</b> at GCSE you must be able to :   | In order to get an <b>F-E</b> Grade at GCSE you must be able to:                                 | In order to get a <b>D-C grade</b> at GCSE you must be able to:   | In order to get a <b>B-A grade</b> at GCSE you must be able to:   | In order to get a <b>A*grade</b> at GCSE you must be able to  |
|--|--|---|---|---|
| Er1.1: recall at the main material groups. Metal, plastic, composite materials and engineered timbers. | Er2.1: recall the main materials groups and their subdivisions. Describe their basic properties. | Er3.1: recall a wide range of materials and explain why their basic properties make them a suitable choice. | Er4.1: recall and explain in detail the complete range of engineering materials, apply relevant knowledge.  | Er5.1: apply relevant knowledge of the complete range of engineering materials and their properties.        |
| Er1.2: with assistance produce a simple production plan using the basic information.                   | Er2.2: produce a production plan using the information from the product specification.           | Er3.2: independently produce a comprehensive production plan that can be used by a third party.             | Er4.2: produce a comprehensive production plan that includes H&S measures and QC checks.                    | Er5.2: explain in detail the reasons for the processes using correct engineering and technical language.    |
| Er1.3: describe a single aspect of a new technology.   | Er2.3: describe how a CNC operation could be carried out   | Er3.3: describe several aspects of new technology including investigating an engineering product.           | Er4.3: describe the impact of a range of new technologies, critically investigating I engineering products. | Er5.3: describe and explained the advantages of CNC operations that have been carried out.                  |
| Er1.4: generate ideas with guidance.   | Er2.4: generate and evaluate a basic design idea and develop a simple design solution.           | Er3.4: generate and evaluate alternative design ideas with evidence of testing and modifications.           | Er4.4: produce alternative design ideas with detailed evidence of testing and modifications.                | Er5.4: produce a detailed analysis explaining the client's requirements and justifying the key features.    |
| Er1.5: demonstrate limited evidence of testing against the specification.                              | Er2.5: show some reasoning for testing without modification of proposed solution.                | Er3.5: conduct testing and explain the reasons for choice using appropriate technical language.             | Er4.5: demonstrate testing against a specification, using appropriate scientific principles and modelling.  | Er5.5: explain in detail the reasons for choices using correct engineering and technical language.          |
| Er1.6: use, with guidance, appropriate processes, tools and equipment to make their product.           | Er2.6: work safely with some skill.  | Er3.6: independently select and use processes, tools and equipment to make products.                        | Er4.6: explain why alternative processes, tools and equipment could have been used.                         | Er5.6: work safely & competently. The finished product complies within the standards required.              |
| Er1.7: present coursework sheets with a title.   | Er2.7: finish a product which complies with the main requirements of the specification.          | Er3.7: use a range of engineering drawings that conform to sector-specific standards.                       | Er4.7: ensure coursework sheets are coherent and developed in terms of research and product development.    | Er5.7: present information clearly, logically and organised using an appropriate form and style throughout. |
|  | Er2.8: present coursework sheets tidily and in a consistent format.                              | Er3.8: produce coursework sheets (research and development) which are annotated and explained.              | Er4.8: recall, select and communicate sound knowledge and understanding of engineering.                     | Er5.8: recall, select and communicate detailed knowledge and thorough understanding of engineering.         |