

Marking Grid

BTEC Level 1 / Level 2 Tech Award

Engineering

Component 3: Responding to an Engineering Brief

(21141K)

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General marking guidance

- All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.
- Mark grids should be applied positively. Learners must be rewarded for what they have shown they can do, rather than be penalised for omissions.
- Examiners should mark according to the mark grid, not according to their perception of where the grade boundaries may lie.
- All marks on the mark grid should be used appropriately.
- All the marks on the mark grid are designed to be awarded. Examiners should always award full marks if deserved. Examiners should be prepared to award zero marks, if the learner's response is not rewardable according to the mark grid.
- Where judgement is required, a mark grid will provide the principles by which marks will be awarded.
- When examiners are in doubt regarding the application of the mark grid to a learner's response, a senior examiner should be consulted.

Specific marking guidance

The mark grids have been designed to assess learners' work holistically.

When using a levels-based mark grid, the 'best fit' approach should be used.

- Examiners should first make a holistic judgement on which band most closely matches the learner's response and place it within that band. Learners will be placed in the band that best describes their answer.
- The mark awarded within the band will be decided based on the quality of the answer in response to the assessment focus/outcome and will be modified according to how securely all bullet points are displayed at that band.
- Marks will be awarded towards the top or bottom of that band depending on how they have evidenced each of the descriptor bullet points.

Part 1

Activities 1a, 1b and 1c require the use of two sets of data. Responses that use only one set of data will be limited to the marks from Band 1 in each marking grid.			
Activity 1a – Results and observations (6 marks)			
Band 0	Band 1	Band 2	Band 3
0	1–2	3–4	5–6
No rewardable content.	<p>The results demonstrate a limited understanding of testing procedures, including:</p> <ol style="list-style-type: none"> 1. data recorded with limited precision and consistency, and may use inappropriate units 2. results that may be insufficient or at inappropriate increments 3. simple and generic observations recorded about the testing process. 	<p>The results demonstrate some understanding of testing procedures including:</p> <ol style="list-style-type: none"> 1. data recorded with consistency and using the appropriate units but may lack precision 2. sufficient results at appropriate increments for some of the testing process 3. some detailed observations about the testing process but are not always relevant. 	<p>The results demonstrate a comprehensive understanding of testing procedures, including:</p> <ol style="list-style-type: none"> 1. data recorded with precision and consistency using the appropriate units 2. sufficient results at appropriate increments throughout the testing process 3. a range of relevant and detailed observations recorded about the testing process.

Responses that use only one set of data will be limited to the marks from Band 1 in each marking grid.			
Activity 1b – Processing results (8 marks)			
Band 0	Band 1	Band 2	Band 3
0	1–2	3–5	6–8
No rewardable content.	<p>Demonstrates limited understanding of data representation techniques by plotting graphs with significant inaccuracies. Graphs include:</p> <ol style="list-style-type: none"> 1. inappropriate annotation of headings and units 2. choice of scaling is inappropriate to the data and used inconsistently 3. plots of tabulated data that include significant inaccuracies 4. insufficient data plotted to represent results and to produce appropriate lines/curves. 	<p>Demonstrates some understanding of data representation techniques by plotting graphs with minor inaccuracies. Graphs include:</p> <ol style="list-style-type: none"> 1. appropriate annotation of headings and units 2. choice of scaling is appropriate to the data but is not used consistently 3. plots of tabulated data that include minor inaccuracies 4. sufficient data plotted to represent results but inappropriate lines/curves produced. 	<p>Demonstrates comprehensive understanding of data representation techniques by plotting accurate graphs. Graphs include:</p> <ol style="list-style-type: none"> 1. appropriate annotation of headings and units 2. choice of scaling is appropriate to the data and used consistently 3. accurate plots of tabulated data 4. sufficient data plotted to represent results and to produce appropriate lines/curves.

Responses that use only one set of data will be limited to the marks from Band 1 in each marking grid.			
Activity 1c – Conclusions (8 marks)			
Band 0	Band 1	Band 2	Band 3
0	1–2	3–5	6–8
No rewardable content.	1. Attempts to describe the patterns in the tables and graphs but is superficial or does not reflect results. 2. Draws limited conclusions not specifically based on a comparison between patterns in the tables and graphs, with minimal reference to data.	1. Mostly accurate description of the patterns in the tables and graphs, with some reference to data. 2. Draws mostly valid conclusions based on a comparison between patterns in the tables and graphs, supported by some reference to data.	1. Accurate description of patterns in the tables and graphs with detailed reference to data. 2. Draws valid conclusions based on a comparison between patterns in the tables and graphs, supported by detailed reference to data.

Responses that use only one set of data will be limited to the marks from Band 1 in each marking grid.			
Activity 1d – Evaluation (8 marks)			
Band 0	Band 1	Band 2	Band 3
0	1–2	3–5	6–8
No rewardable content.	1. Demonstrate a limited understanding of problems with the testing method used/results obtained. 2. Demonstrate a limited understanding of how the process of testing could be improved.	1. Demonstrate some understanding of problems with the testing method used/results obtained 2. Demonstrate some understanding of how the process of testing could be improved.	1. Demonstrate a comprehensive understanding of problems with the testing method used/results obtained 2. Demonstrate a comprehensive understanding of how the process of testing could be improved.

Part 2

Learners may provide evidence through annotation on the diagram or written prose in the answer space. Neither method is preferred. Evidence must be credited if the marking criteria have been met.			
Activity 2a – Evaluation (8 marks)			
Band 0	Band 1	Band 2	Band 3
0	1–2	3–5	6–8
No rewardable content.	1. Produce a superficial evaluation of the existing product that: 2. identifies issues with the existing design that are not entirely relevant 3. demonstrates limited understanding of issues in relation to the brief.	1. Produce a reasoned evaluation of the existing product that: 2. identifies mostly relevant issues with the existing design 3. Demonstrates some understanding of issues in relation to the brief.	1. Produce a developed and reasoned evaluation of the existing product that: 2. identifies relevant issues with the existing design 3. Demonstrates comprehensive understanding of issues in relation to the brief.

Activity 2b – Redesign (10 marks)			
Band 0	Band 1	Band 2	Band 3
0	1–3	4–7	8–10
No rewardable content.	1. Basic ideas that partially address the brief and offer minimal improvement on the original. 2. Limited justification for the chosen design solution. 3. Limited justification for the chosen processes.	1. Ideas that address the brief and offer partial improvement on the original. 2. A reasoned justification for the chosen design solution. 3. A reasoned justification for the chosen processes.	1. Ideas that fully address the brief and show an improved design approach to the original. 2. A developed and reasoned justification for the chosen design solution. 3. A developed and reasoned justification for the chosen processes.

Activity 3 – Drawing conclusions (12 marks)				
Band 0	Band 1	Band 2	Band 3	Band 4
0	1–3	4–6	7–9	10–12
No rewardable content.	<p>1. Provides a limited interpretation of the resource material with minimal reference to the data.</p> <p>2. Attempts to identify some issues associated with the problem but these may not be relevant.</p> <p>3. Demonstrates a limited understanding of the causes of the issues.</p> <p>4. Suggestions, if present, are not valid or supported and may not link to the issues or potential causes.</p>	<p>1. Provides a partially valid interpretation of the resource material with some reference to the data but this will lack detail.</p> <p>2. Identifies some relevant issues associated with the problem.</p> <p>3. Demonstrates some understanding of the causes of the issues but may lack detail.</p> <p>4. Gives partially valid suggestions about how the issues could be resolved with an attempt to make logical links to the potential causes.</p>	<p>1. Provides a mostly valid interpretation of the resource material with some detailed reference to the data.</p> <p>2. Identifies some issues associated with the problem.</p> <p>3. Demonstrates some detailed understanding of the causes of the issues.</p> <p>4. Gives mostly valid suggestions about how the issues could be resolved by making some logical links with the potential causes.</p>	<p>1. Provides a valid interpretation of the resource material with detailed reference to the data.</p> <p>2. Comprehensively identifies relevant issues associated with the problem.</p> <p>3. Demonstrates a comprehensive and detailed understanding of the causes of the issues.</p> <p>4. Gives valid suggestions about how the issues could be resolved by making logical links with the potential causes throughout.</p>