Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mark: /24

Year 12 Essential 2021Practical Application 2 (Garden Design) marking rubric

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | A 4 marks | B 3 marks | C 2 marks | D 1 mark | E 0 mark |
| Interpret the task and gather the key information | Identifies relevant information from multiple sources or within concentrated sources.  *Evidence/requirement in introduction of the following:*   * *Costings* * *Plan (scale drawing) complete with detailed geometric conventions, scale, key and other references (pool)*   *To enable accurate costings students will need to state the requirement for:*   * *Area of lawn* * *Area of patio area* * *Area or volume of garden beds* * *Pythagoras to calculate correct dimensions for access to raised patio* * *Area of path from patio to house* * *Area of shaded area* | Identifies and links more than one piece of information.  *Evidence/requirement in introduction of the following:*   * *Statement that identifies at least 4 of the A grade points* * *Plan (scale drawing) does not have all the geometric conventions and includes scale and/or key* | Identifies relevant information and chooses the appropriate mathematics to solve a problem in straightforward or familiar situations.  *Evidence/requirement in introduction of the following:*   * *Statement that identifies at least 3 of the A grade points* * *Plan (scale drawing) does not have all the geometric conventions or key or scale missing* | Identifies some relevant information in straightforward or familiar situations.  *Evidence/requirement in introduction of the following:*   * *Statement that identifies at least 2 of the A grade points* * *Plan (scale drawing) does not have all the geometric conventions or scale and key missing* | * *Restates problem* * *No sketch provided* |
| identify the mathematics which could help to complete the task | Chooses the appropriate mathematical techniques to solve a range of problems in unstructured situations.   * *Demonstrates a systematic approach to include, measure and costs all of the ‘must haves” ( seating, BBQ, shed, lawn, beds, washing line, patio, shaded.* * *Uses Pythagoras accurately to calculate dimensions for materials needed for access to raised patio area* | Chooses the appropriate mathematical and techniques to solve problems in mostly familiar and sometimes unstructured situations.   * *Includes, measures and costs most of the ‘must haves” ( seating, BBQ, shed, lawn, beds, washing line, patio, shaded.* * *Begins to use Pythagoras accurately to calculate dimensions for materials needed for access to raised patio area* | Plans the solution of real problems in Practical applications when an overview of the mathematical thinking process has been provided.   * *Includes, measures and/or costs most of the ‘must haves” ( seating, BBQ, shed, lawn, beds, washing line, patio, shaded. May have some mistakes/missing steps* | Sometimes chooses the appropriate mathematics to solve a problem in straightforward or familiar situations.   * *Includes, measures or costs most of the ‘must haves” ( seating, BBQ, shed, lawn, beds, washing line, patio, shaded. May have some mistakes/missing steps* | No measurements or costings |
|  | A 4 marks | B 3 marks | C 2 marks | D 1 mark | E 0 mark |
| analyse information and data from a variety of sources | Incorporates information from multiple sources and demonstrates a systematic approach to accurately solve multi-step problems, including those from unfamiliar situations.   * *References (all aspects of design sourced)* * Step-wise calculations that is clear for reader to follow (use of sub headings) * Details of brands/type of materials included | Applies information and calculates mostly accurate solutions for multi-step problems.   * *Most aspects of designed referenced* * *Step-wise calculations that are mostly accurate and mostly clear to follow* * *Most of the materials selected have details/brand noted in report* | Applies information and calculates mostly accurate solutions for problems in familiar situations involving one or more steps.   * *Some aspects of designed referenced* * *Calculations included but are unclear or steps missing* * *Some of the materials selected have details/brand noted in report* | Applies information and calculates some accurate solutions for routine and practised problems with one or more steps.   * *No sources accessed* * Limited calculations that are unclear | * *No sources accessed* * No calculations included |
|  | A 8 marks | B 6 marks | C 4 marks | D 2 marks | E 0 mark |
| apply existing mathematical knowledge and strategies to obtain a solution. | Modifies calculated results or conclusions when conditions are changed.   * *Correct area calculations for lawn, patio, BBQ area, shaded area, searing area* * *Correct volume for garden beds* * *Applies area calculations to accurately calculate amount/cost of tiles needed in various areas* * *Correct Pythagoras calculations for access to raised patio* * *Complete costings contained in report in a step wise manner* * *Calculates multiple other costs, e.g. decking, feature stones, outdoor shower, running costs, chemicals, pumps etc* * *Includes clear and correct side elevation of ramp and connecting this with Pythagoras calculation to find length of ramp.* * *The dimensions of the chosen items match and are correctly drawn to scale* | Applies appropriate graphing techniques and determines appropriate scales based on the data.  Incorporates some changed conditions when solving problems in familiar situations.   * Minimal errors in A grade area/volume/Pythagoras calculations * *Begins to apply area calculations to accurately calculate amount/cost of tiles needed* * *Most costings contained in report in a step wise manner* * Calculates other costs for backyard eg decking * *Includes a side elevation of ramp but may not clearly connect this with Pythagoras calculation to find length of ramp.* | Applies appropriate graphing techniques.  Rounds to an appropriate level for everyday contexts.   * Errors or gaps in A grade area/volume/Pythagoras calculations * *Uses estimations techniques to calculate costings or material amounts* * *Most of the chosen materials dimensions match on scale drawing and are correctly drawn to scale.* | Uses appropriate graphing techniques with support.   * *Does not accurately calculate* A grade area/volume/Pythagoras calculations * *Disjointed estimations techniques to calculate costings or material amounts* | No calculations included |
|  | A 4 marks | B 3 marks | C 2 marks | D 1 mark | E 0 mark |
| verify the reasonableness of the solution | Verifies the reasonableness of solutions and adjusts when necessary.   * *Calculations referred to/summarised within report* * *Report contains a detailed reflection on what part of the Mathematical Thinking Process could be improved if this task were to be replicated* | Checks calculated results and adjusts where necessary.   * *Calculations referred to/summarised within report* * *Report contains a reflection on what part of the Mathematical Thinking Process could be improved if this task were to be replicated* | Seldom checks results in the light of the original problem.   * *Calculations referred to/summarised within report*   *OR*   * *Report contains a reflection on what part of the Mathematical Thinking Process could be improved if this task were to be replicated* | Rarely, checks results. | No conclusion supplied |
|  | A 4 marks | B 3 marks | C 2 marks | D 1 mark | E 0 mark |
| communicate findings in a systematic and concise manner. | Uses accurate mathematical language and expressions to communicate methods and solutions to multi-step problems.  Accesses a comprehensive range of mathematical concepts to validate conclusions which are related to the original question or context.   * *Concise, systematic Mathematical Thinking Process layout* | Accesses a range of mathematical concepts to communicate solutions and justify conclusions which relate to the original question or context, including for some non-routine problems.   * *Clear, systematic Mathematical Thinking Process layout* | Shows working, including intermediate steps and/or expressions entered into a calculator or spreadsheet.  Provides short statements based on straightforward observations which are related to the original question or context.   * *Has concluded findings* * *Neat/Clear structure* | Shows limited working, including some intermediate steps and/or expressions entered into a calculator or spreadsheet.  Provides short statements which may not be related to the original question or context.   * *Findings lack a clear structure* | No report |