

## **GENERAL EDUCATION AND TRAINING CERTIFICATE**

## **NQF LEVEL 1**

## **AET LEVEL 4 SITE-BASED ASSESSMENT**

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| **LEARNING AREA** | **:** | **MATHEMATICS AND MATHEMATICAL SCIENCES** |
| **CODE** | **:** | **MMSC4** |
| **TOOL** | **:** | **PROJECT** |
| **DURATION** | **:** | **3 WEEKS** |
| **MARKS** | **:** | **50** |

**This assessment tool consists of 4 pages.**

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| **INSTRUCTIONS AND INFORMATION FOR THE TEACHER** |  |  |

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| 1. | This task is set on unit standard: US 7464  : US 7452 |  |  |

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| 2. | This project must be completed over a period of THREE weeks. |  |  |

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| 3. | It is important that class discussions be held and the progress of the learners is monitored at regular intervals |  |  |

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| 4. | In this project learners will use their own measurements to calculate the areas. |  |  |

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| 5. | Teachers are expected to provide pamphlets from the hardware store. |  |  |

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| 6. | Learners must be able to use the theorem of Pythagoras. |  |  |

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| 7. | Activity 1 is marked using a rubric and Activity 2 using a memorandum. |  |  |

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| **ACTIVITY 1** |

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| |  |  |  |  | | --- | --- | --- | --- | | Levels of taxonomy | | | | | LEVEL |  | LEVEL |  | | 1 | Knowing | 3 | Complex procedures | | 2 | Routine procedure | 4 | Reasoning | |  |  |

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| Marking rubric for ACTIVITY 1.1–1.6 |

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| **CRITERIA** | **LEVEL** | | | | **MARKS** |
|  | **MARKS 5-4** | **MARKS 3** | **MARKS 2-1** | **MARKS 0** |  |
| Planning | Thorough planning, sketch creatively presented and to scale. Fit chosen theme | Sufficient planning, classroom sketch indicate dimensions of classroom provided | Evidence of some planning, a sketch of the classroom is included | No planning, no sketch of classroom |  |
| Research | Sufficient research, enough quotations, enough samples are included, samples are well presented | Sufficient research, enough quotations, enough samples are included | Research insufficient, some enough quotations, enough | No research done, no quotations, no samples |  |
| Budget | Budget exceeds immediate requirements. Used diagrams, graphs to illustrate costs | Budget correctly and appropriately done. Calculations and estimations are correct | Budget included but with minor errors in calculations | No budget is included |  |
| Mathematical reasoning | Proper logical reasoning. Identifies more than one strategy/method. Good use of mathematical language | Able to reach a consistent conclusion without contradiction. Consistent analyses and appropriate explanations | Same explanations or arguments are incorrect, ineffective or unclear. Inconsistent analysis and interpretation | No logical reasoning |  |
| Context | Clear understanding of the context in which the problem is situated. Identifies social and economic issues and address them with creativity | A good grasp of social and economic values. Good motivation regarding choice of required items | Some aspects of context are comprehended. Motivations for choice of required items. | No comprehension of the context |  |

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| **ACTIVITY 2** |

C

B

4 cm

4 cm

4 cm

A

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| 2.1 | 🗸🗸🗸 | | Correct drawing of equilateral triangle  Correct axes of symmetry  Correct measurement of 4 cm | (3) |
| 2.2  A  4 cm | C  B  M  2 cm  2 cm  4cm  🗸🗸 | | Correct perpendicular line AM  Correct base BM and MC | (2) |
| 2.3(a)  (b) | Theorem of Pythagoras🗸  🗸  🗸  By measurement 🗸  They are the same (almost the same) 🗸 | | Correct reason  Correct substitution  Correct squaring  Correct answer  Correct measurement on drawing.  They are the same | (4)  (2) |
| 2.4 | 🗸  🗸 | | Correct formula  Correct substitution  Correct answer  Correct units | (4) |
| 2.5 | Total surface area of octahedron = area of eight triangle faces  🗸  🗸 | | Correct formula or substitution  Correct answer | (2) |
| 2.6 | 2.6.1 | 🗸  🗸  🗸  the left-hand side right-hand side(the sides do not form a right-angled triangle)🗸 | Correct substitution  Correct squaring  Correct answer  Correct statement | (4) |
|  | 2.6.2 | 🗸  🗸  🗸  the left-hand side right-hand side (the sides do not form a right-angled triangle)🗸 | Correct substitution  Correct squaring  Correct answer  Correct statement | (4)  **[25]** |

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| **TOTAL:** |  | **50** |