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| **FURTHER EDUCATION AND TRAINING CERTIFICATE: INFORMATION TECHNOLOGY: SYSTEMS DEVELOPMENT**  **ID 78965 LEVEL 4 – 165 CREDITS** |
| **LEARNER WORKBOOK**  **SAQA: 14927**  **APPLY PROBLEM SOLVING STRATEGIES** |

**Learner Information:**

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| **Details** | **Please Complete this Section** |
| Name & Surname: | Mila Ngewu |
| Organisation: | Nelson Mandela Bay Ihub |
| Unit/Dept: | ICT |
| Facilitator Name: | Anneline Nombeko |
| Date Started: | 23 October 2023 |
| Date of Completion | 24 October 2023 |

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**OVERVIEW**

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| **About the Learner Workbook** | This Learner Exercise Workbook has been designed and developed to evaluate learners’ level of understanding of the  **APPLY PROBLEM SOLVING STRATEGIES.** It forms part of a series of Learner Workbooks that have been developed for **FURTHER EDUCATION AND TRAINING CERTIFICATE: INFORMATION TECHNOLOGY: SYSTEMS DEVELOPMENT ID 78965 LEVEL 4 – 165 CREDITS** | | |
| **Purpose** | The purpose of this Learner Exercise Workbook is to evaluate learners understanding on the specific outcomes and/or assessment criteria of the following SAQA Registered Unit Standards: | | |
| **US NO** | **US TITLE** | **LEVEL** | **CREDITS** |
| **14927** | **APPLY PROBLEM SOLVING STRATEGIES** | **4** | **4** |
| **Context** | This assessment represents the Formative Assessment component of the **FURTHER EDUCATION AND TRAINING CERTIFICATE: INFORMATION TECHNOLOGY: SYSTEMS DEVELOPMENT ID 78965 LEVEL 4 – 165 CREDITS** and should be completed in the classroom/training room. | | |
| **Resources** | The following are resources needed for this assessment:   1. Learner Guide; and 2. Assessment Preparation. | | |
| **Instructions to Facilitators** | Facilitators will be required to:   * Explain the completion of the workbook to each learner; and * Interview the learner on similar questions, should he/she not be able to write. | | |
| **Instructions to Learners** | Learners will be required to:   * Complete the workbook as per the instructions; * Ensure that all questions are completed; * Ensure that the completion of the workbook is their own work; * Ensure that all annexure are attached to the workbook and clearly referred to; | | |
| **Assessment Time** | Learners are required to complete this assessment within the allocated time frame of.... hours. | | |
| **Total Mark** | This formative assessment carries a total mark of **\_ points**. In order to meet the pass mark, learners are required to achieve a minimum of **80%** of the total marks. | | |
| **Equipment** | Learners are required to have the following equipment in order to complete this workbook:   * Pen and Pencil; * Ruler; and * Exam Pad – for additional paper. | | |

# **GENERAL INFORMATION**

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| **LEARNER DETAILS** | | | |
| **Learner Full Names** | | **Mila Mihlali Ngewu** | |
| **Learner ID No.:** | **9909106615084** | | |
| **Organisation:** | **Nelson Mandela Ihub** | | |
| **Unit/Dept:** | **ICT** | | |
| **Contact Details:** | **Telephone /Cell Numbers:** | | **Email Address:** |
| **0823655804** | | [**ngewumila007@gmail.com**](mailto:ngewumila007@gmail.com) |
| **WORKSHOP DETAILS** | | | |
| **Workshop Venue:** | **NMB iHUB** | | |
| **Facilitator Name:** | **Anneline Nombeko** | | |
| **Date Started:** | **23 September 2023** | | |
| **Date Completed:** | **24 September 2023** | | |

# **ASSESSMENT PREPARATION CHECKLIST**

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| **DESCRIPTION** | **YES** | **NO** | **COMMENTS/CONTINGENCY** |
| This assessment is a formative assessment and it is based on the outlined unit standard/s for the **Apply problem solving strategies** module. | ✔ |  |  |
| Your assessment evidence for **Apply problem solving strategies** module needs to be submitted on....... (day) of...............(month)...........(year) at the following address/place................................................................ | ✔ |  |  |
| You will be assessed based on the outlined Unit Standards. The assessment activities are linked to specific outcomes/assessment criteria of the outlined Unit Standards. | ✔ |  |  |
| To determine your competence level, the following are the methods to be used for this assessment:   1. ..................................................... 2. ..................................................... | ✔ |  |  |
| To be declared competent **Apply problem solving strategies** module (formative assessment), you should have obtained at least 80% of the total mark of this assessment. | ✔ |  |  |
| You will be provided with detailed feedback on your performance of this assessment as follows:   1. Written Feedback 2. Verbal Feedback | ✔ |  |  |
| Should you be declared “not yet competent” on this assessment, you will be entitled for re-assessment opportunity/ies. | ✔ |  |  |
| You will be required to re-submit evidence (only for areas) you were declared not yet competent. A date for re-submission will be agreed with the assessor. | ✔ |  |  |
| You will be entitled to lodge an appeal should you not be satisfied with the assessment decision of your assessment. | ✔ |  |  |
| You will be required to provide the assessor feedback on assessment procedure – this is to assist in improving the assessment practices. | ✔ |  |  |
| Your results of assessment and portfolio of evidence information will not be provided to any person without your written consent. | ✔ |  |  |

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| **Learner’s Declaration** | | | |
| I Mila Ngewu herewith declare that I am ready for the assessment, that we have reviewed the assessment preparation and plan, I understand the assessment process and I am happy that the assessment will be conducted in a fair manner. | | | |
| **Learner Signature:** | **Date:** | **Facilitator Signature:** | **Date:** |
|  | **23 October 2023** |  | **23 October 2023** |

**Learning Unit1**

**Apply problem solving strategies**

**UNIT STANDARD NUMBER :** 14927

**LEVEL ON THE NQF :** 4

**CREDITS :** 4

**FIELD :** Physical, Mathematical, Computer and Life Sciences

**SUB FIELD :** Construction Information Technology and Computer

Sciences

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| **PURPOSE:** | This unit standard is intended:  to provide fundamental knowledge of the areas covered  for those working in, or entering the workplace in the area of Business and Organisational Communication  as additional knowledge for those wanting to understand the areas covered  People credited with this unit standard are able to:  Define and analyse the problem  Evaluate solutions  Implement the solution  The performance of all elements is to a standard that allows for further learning in this area. |
| **LEARNING ASSUMED TO BE IN PLACE:** | |
| The credit value of this unit is based on a person having prior knowledge and skills to:  Demonstrate an understanding of fundamental mathematics (at least at NQF Level 3)  Demonstrate competence to communicate in English (at least at NQF Level 3) | |

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| **SESSION 1.**  **Define and analyse the problem.** |
| **Learning Outcomes** |
| * 1. The definition ensures that the problem is examined and identified in terms of problem type, problem parameters, and possible causes * 2. The definition ensures that facts are collected to meet the problem requirements * 3. The analysis ensures that problem components are identified to determine possible courses of action * 4. The analysis ensures that the problem is analysed for cross-cultural implications |

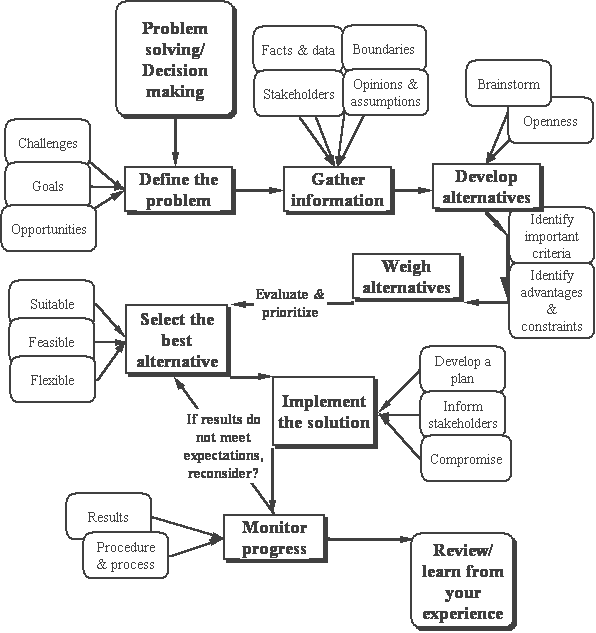
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| http://3.bp.blogspot.com/_0EodaYtqevU/TMun5XOj03I/AAAAAAAAAIU/lzrnWelQjgc/s1600/group-discussion.jpg | **Answer the following questions according to the instructions provided** |

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| **Activity** | **Questions Description** | **Mark** |
| **1** | **Identify causes of problems in the workplace** | **5** |

Problems in the workplace can have various causes, including:

* Poor Communication: Misunderstandings, lack of clear instructions, or communication breakdowns can lead to problems.
* Inadequate Training: Insufficient training for employees can result in errors and inefficiencies.
* Conflict: Personality clashes, disagreements, or power struggles among employees can disrupt the workplace.
* Unclear Expectations: When employees are unsure of their roles and responsibilities, it can lead to confusion and underperformance.
* Lack of Resources: Insufficient tools, equipment, or support can hinder productivity.
* Stress and Burnout: Overwork, tight deadlines, or a stressful work environment can lead to employee burnout.
* Inadequate Leadership: Poor management or ineffective leadership can negatively impact morale and productivity.
* Discrimination and Harassment: Workplace discrimination and harassment create toxic environments and legal issues.
* Health and Safety Issues: Unsafe working conditions can lead to accidents and injuries.
* Organizational Changes: Frequent reorganizations, mergers, or downsizing can cause uncertainty and disruption.

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| **Activity** | **Questions Description** | **Mark** |
| **2** | **Draw a Map showing the problem solving process** | **10** |



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| **Activity** | **Questions Description** | **Mark** |
| **3** | **List factors that can contribute to solving the problem** | **5** |

1. Clear Understanding: A thorough understanding of the problem is essential for finding the right solution.
2. Data and Information: Access to accurate and relevant data provides the basis for informed decision-making.
3. Diverse Perspectives: Involving people with different viewpoints and experiences can lead to more creative and comprehensive solutions.
4. Resources: Sufficient resources, such as time, money, and tools, are necessary for implementing solutions.
5. Expertise: Having access to subject matter experts or experienced individuals can guide problem-solving efforts.
6. Communication: Effective communication ensures that all stakeholders are informed and aligned throughout the process.
7. Problem-Solving Skills: Individuals with strong problem-solving skills can drive the process forward efficiently.
8. Supportive Environment: A workplace or environment that encourages innovation and risk-taking fosters effective problem-solving.
9. Flexibility: The ability to adapt and change course when necessary is crucial when initial solutions prove ineffective.
10. Feedback Loop: Continuous feedback and evaluation help refine and improve the chosen solution

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| **SESSION 2.**  **Evaluate solutions.** |
| **Learning Outcomes** |
| * 1. The evaluation identifies possible solutions to the problem by using a range of problem solving techniques * 2. The evaluation establishes criteria for evaluating solutions to match the type of problem * 3. Possible solutions are evaluated against established criteria * 4. The evaluation ensures that solutions are selected to meet established criteria and problem requirements |

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| **Activity** | **Questions Description** | **Mark** |
| **4** | **Outline the importance of evaluating *your resources and strengths* in solving the problem** | **3** |

evaluating your resources and strengths is a critical step in effective problem-solving, enabling you to make informed decisions, allocate resources efficiently, and leverage your unique advantages to find solutions that are both effective and sustainable.

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| **Activity** | **Questions Description** | **Mark** |
| **5** | **Demonstrate understanding of how to develop/weigh alternatives** | **7** |

Step 1: Generate Alternatives

1. Brainstorming: Gather a team or work individually to brainstorm possible solutions to the problem. Encourage creativity and diversity of ideas.
2. Research: Conduct research to explore existing solutions or best practices that may apply to your problem.
3. Consult Experts: Seek input from subject matter experts who can provide insights into potential alternatives.

Step 2: Evaluate Alternatives

1. Criteria Establishment: Define criteria for evaluating alternatives. These criteria should be relevant to the problem and aligned with your objectives.
2. Scoring: Assign scores or weights to each criterion based on their importance. This helps you prioritize what matters most.
3. Quantitative Analysis: If applicable, use quantitative data to compare alternatives. This could involve cost-benefit analysis, ROI calculations, or other relevant metrics.
4. Qualitative Assessment: Consider qualitative factors, such as feasibility, impact on stakeholders, and ethical implications, in your evaluation.
5. Risk Assessment: Assess the risks associated with each alternative. This includes potential obstacles, uncertainties, and unintended consequences.

Step 3: Compare and Rank Alternatives

1. Scoring: Evaluate each alternative against the established criteria and assign scores. These scores help in comparing alternatives objectively.
2. Weighted Scoring: Multiply the scores by the weights assigned to each criterion to calculate a total score for each alternative.
3. Ranking: Rank the alternatives based on their total scores. The alternative with the highest score may be the most favorable.

Step 4: Select the Best Alternative

1. Consider Trade-offs: Evaluate any trade-offs between alternatives. Some solutions may excel in certain criteria but fall short in others.
2. Stakeholder Input: Involve relevant stakeholders in the decision-making process, as their input and buy-in are important.
3. Final Decision: Make an informed decision based on the evaluation and ranking of alternatives. Choose the alternative that best aligns with your objectives and criteria.

Step 5: Implementation and Monitoring

1. Create an Action Plan: Develop a detailed plan for implementing the chosen alternative, including timelines, responsibilities, and resources needed.
2. Continuous Monitoring: Regularly monitor the implementation to ensure it is on track and meeting the expected outcomes. Be prepared to make adjustments if necessary.

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| **SESSION 3.**  **Implement the solution.** |
| **Learning Outcomes** |
| * 1. The implementation ensures that solutions are trialed and/ or monitored for effectiveness of problem solution * 2. The implementation ensures that solutions are reviewed and modified, and practices are standardised where required * 3. The implementation ensures that stakeholders are consulted during implementation |

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| **Activity** | **Questions Description** | **Mark** |
| **6** | **Describe how to implement the problem solving solution.** | **10** |

Step 1: Generate Alternatives

* Brainstorming: Gather a team or work individually to brainstorm possible solutions to the problem. Encourage creativity and diversity of ideas.
* Research: Conduct research to explore existing solutions or best practices that may apply to your problem.
* Consult Experts: Seek input from subject matter experts who can provide insights into potential alternatives.

Step 2: Evaluate Alternatives

* Criteria Establishment: Define criteria for evaluating alternatives. These criteria should be relevant to the problem and aligned with your objectives.
* Scoring: Assign scores or weights to each criterion based on their importance. This helps you prioritize what matters most.
* Quantitative Analysis: If applicable, use quantitative data to compare alternatives. This could involve cost-benefit analysis, ROI calculations, or other relevant metrics.
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Step 3: Compare and Rank Alternatives

* Scoring: Evaluate each alternative against the established criteria and assign scores. These scores help in comparing alternatives objectively.
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Step 4: Select the Best Alternative

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