# Assessment Mapping (for streamlined units from new Training Packages)

*This document is used to demonstrate content validity of the assessment tool*

Table 1 Main details

| Details | Unique description |
| --- | --- |
| **Unit Code, name and release number** | MSS024016 - Process and present environmental data (1) |
| **Skills Team** |  |
| **Region/Campus** |  |
| **SkillsPoint (owned by)** | Innovative Manufacturing, Robotics and Science |

*NOTES:*

* *Event columns can be added or deleted as required*
* *Rows for elements and performance criteria, etc. can be added or deleted as required*
* *Each component of the unit must be mapped to at least* ***one assessment criteria*** *or* ***question*** *in one or more assessment events*
* *Do NOT delete the section labelled Foundation Skills. If the Foundation skills ARE EXPLICIT in the performance criteria, they do not need to be listed. However, if the Foundation skills ARE NOT incorporated in the performance criteria they must be listed and mapped.*
* *Dimensions of Competency must be considered when selecting assessment types to ensure that the range of tasks you have chosen cover the following:*
  + *Task Skills*
  + *Task Management Skills*
  + *Contingency Planning Skills*
  + *Job Role Environment Skills*

## Unit component mapping to assessment event/s

Table 2 Unit component mapping to assessment event/s

| Element number | Element name | Performance criteria number | Performance criteria description | Student Workbook | Knowledge Assessment 1 | Knowledge Assessment 2 | Assignment – Data in the workplace |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Retrieve and check environmental data | 1.1 | Read and interpret workplace procedures for processing data | Topic 2-Storing data, Retrieving data | - | - | Part 2, Q 3 |
|  |  | 1.2 | Store and retrieve data using appropriate files and application software | Topic 2-Storing data, Retrieving data | - | - | Part 1 |
|  |  | 1.3 | Verify the quality of data using workplace procedures | Topic 2-Checking data | Part 2 Q1, Q2, Q3, Q4 | - | Part 1 (step 6)  Part 2 |
|  |  | 1.4 | Rectify errors in data using workplace procedures | Topic 3-Rectifying errors | - | - | Part 2 |
| 2 | Calculate scientific quantities | 2.1 | Calculate statistical values for given data | Topic 4-Descriptive statistics | - | Part 1 Q7 (a-g)  Part 1 Q1 | Part 3 |
|  |  | 2.2 | Calculate scientific quantities using given formulae and data and estimate uncertainties | Topic 3-Calculating scientific quantities | Part 3 Q5 (a, b, c)  Part 3 Q14, Q15, Q16, Q17 | - | Part 3, Part 5 |
|  |  | 2.3 | Ensure calculated quantities are consistent with estimations and expectations | Topic 3-Calculating scientific quantities | - | - | Part 3 |
|  |  | 2.4 | Report all calculated quantities using the appropriate units and correct number of significant figures | Topic 3-Calculating scientific quantities | Part 3 Q2 (a-f) | - | Part 3, Part 4 |
| 3 | Present data | 3.1 | Present data in clearly labelled tables, charts and simple maps | Topic 5-Presenting data | - | Part 1 Q6,  Part 2 Q4, Q5 | Part 6 |
|  |  | 3.2 | Graph data using appropriate scales to span the range of data or display trends | Topic 5-Presenting data | - | Part 1 Q6  Part 2 Q6 | Part 6 |
|  |  | 3.3 | Report all data using the appropriate units and number of significant figures | Topic 3-Calculating scientific quantities | Part 3 Q5a,b,c | - | Part 3, Part 5 |
| 4 | Read and interpret data variations and trends | 4.1 | Compare data with reference values or expected ranges | - | - | - | Part 2 |
|  |  | 4.2 | Recognise and report significant variations and trends in data | Topic 5 -Presenting data | - | Part 3 Q1 | Part 6 Qu 4, 5, 6 |
|  |  | 4.3 | Interpret significant features of graphs, including gradients, intercepts, maximum and minimum values, and limit lines | Topic 5 -Presenting data | - | Part 2  Q6, Q10  Part 3 Q2, Q3, Q4 | Part 6 |
| 5 | Keep accurate written records and maintain confidentiality | 5.1 | Transcribe information accurately | Topic 1-Error in analytic measurement | Part 1 Q1 | - | Part 1 |
|  |  | 5.2 | Verify the accuracy of records | Topic 2-Checking data | - | - | Part 2 |
|  |  | 5.3 | File and store workplace records in accordance with workplace procedures | - | - | - | Part 1 |
|  |  | 5.4 | File all reference documents logically and keep them up-to-date and secured | - | - | - | Part 1 |
|  |  | 5.5 | Observe workplace confidentiality standards | Introduction | - | - | Part 4 |

## Foundation skills NOT explicit in the performance criteria

Table 3 Foundation skills NOT explicit in the performance criteria

| Foundation skills | Description | Learning resources | Knowledge Assessment 1 | Knowledge Assessment 2 | Assignment – Data in the workplace |
| --- | --- | --- | --- | --- | --- |
| *Foundation Skills essential to performance are explicit in the performance criteria of this unit of competency.* | | | | | |

## Performance evidence

Table 4 Performance evidence

| Performance evidence | Description | Learning resources | Knowledge Assessment 1 | Knowledge Assessment 2 | Assignment – Data in the workplace |
| --- | --- | --- | --- | --- | --- |
|  | There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and: |  |  |  |  |
| PE1 | Retrieved, coded, recorded and checked environmental data and calculated scientific and statistical quantities with or without a calculator or computer software, including at least 8 of the following items: | All topics | - | - | Part 1 to Part 6 |
| PE1.1 | * converting units involving multiples and submultiples | Topic 3-Metric unit conversions | Part 3 Q13 (a-f) | - | Part 5A, Q 3 & 6 |
| PE1.2 | * scientific notation, significant figures, round off, estimate and approximate | Topic 3-Significant figures, and  Topic 3-Scientific notation | Part 3 Q1  Part 3 Q2  (a-f)  Part 3 Q4  (a-e)  Part 3 Q5  (a-c) | - | Part 5B, Q 1-4 |
| PE1.3 | * transposing and evaluating formulae | Topic 3-Transposition | Part 3 Q3 (a-e), Q4 | - | Part 5A, Q1 |
| PE1.4 | * fractions, decimals, proportions and percentages | Topic 3-Percentage calculations | Part 3 Q9, Q10, Q11, Q12 | - | Part 5A. Q1 to Q6 |
| PE1.5 | * percentage and absolute uncertainties in measurements and test results |  |  |  |  |
| PE1.6 | * statistical values of data, including mean, median, mode and standard deviation | Topic 4-Descriptive statistics | - | Part 1 Q7  (d, e, f, g) | Part 3 |
| PE1.7 | * perimeters, angles, areas (m2) and volumes (mL, L, m3) of regular shapes | Topic 3-geometric calculations | - | - | Part 5A, Q1-6 |
| PE1.8 | * dose (mg), average mass, mass percentage, density, specific gravity, moisture, relative and absolute humidity, viscosity and permeability | - | - | - | Part 5A, Q1to Q6  Part 5b, Q1-4  Part 5C Q1-2 |
| PE1.9 | * ratios | Topic 3-Chemistry related calculations | Part 3 Q6  (a-c), Q7 Q8, Q9 Q10 Q11, Q12 | - | Part 5A |
| PE1.10 | * concentration | Topic 3-Chemistry related calculations | Part 3 Q10, Q11, Q12, Q14 | - | Part 5A, 5B, 5C |
| PE1.11 | * average count, colonies per swab surface and cell counts | - | - | - | - |
| PE1.12 | * variables | - | - | - | - |
| PE1.13 | * biological oxygen demand (BOD), chemical oxygen demand (COD) and total organic carbons (TOC) | - | - | - | - |
| PE1.14 | * % content of moisture, sulphur dioxide and trace metals | - | - | - | - |
| PE2 | Prepared and presented accurate results in the required format and included data in at least 1 of the following forms: |  |  |  |  |
| PE2.1 | * tables, graphs, histograms, pie charts, bar charts, maps | Topic 5-Presenting data | - | Part 2 Q1, Q2, Q3, Q6(a, b), Q7, Q8, Q9 | - |
| PE3 | Interpreted data to identify: |  |  |  |  |
| PE3.1 | * significant data points | Topic 6-Interpreting data | - | - | Part 6 Q4, Q5, Q6 |
| PE3.2 | * variations | Topic 6-Interpreting data | - | Part 2  Q10 | Part 6 Q4, Q5, Q6 |
| PE3.3 | * trends | Topic 5-Presenting data | - | Part 2 Q1, Q2, Q3, Q6(a, b), Q7, Q8, Q9, Q10 | - |
| PE3.4 | * anomalies. | Topic 6-Interpreting data | - | - | Part 6 Q4, Q5, Q6 |

## Knowledge evidence

Table 5 Knowledge evidence

| Knowledge evidence | Description | Learning resources | Knowledge Assessment 1 | Knowledge Assessment 2 | Assignment – Data in the workplace |
| --- | --- | --- | --- | --- | --- |
|  | There must be evidence the candidate has knowledge of: |  |  |  |  |
| KE1 | Scientific and technical terminology relevant to job role | All topics | - | Part 1,  Q1 to Q7  Part 2,  Q1 | - |
| KE2 | Procedures for coding, entering, storing, retrieving and communicating data | Introduction-Following workplace procedures | - | - | Part 1, 2 |
| KE3 | International system of units (SI) | Topic 1-The International metric system, Base units, Derived units | Part 1 Q4, Q5, Q6 | - | - |
| KE4 | Concepts of metrology, including: | Topic 1-Metrology | Part 1 Q1, Q2, Q3, Q10 | - | - |
| KE4.1 | * all measurements are estimates | Topic 1-Uncertainty in measurement | Part 1 Q7 | - | - |
| KE4.2 | * repeated measurements belong to a sample of the measured parameter | Topic 1-Metrology | Part 1 Q1, Q2, Q3, Q10 | - | - |
| KE4.3 | * repeatability, precision, accuracy, significant figures | Topic 1-Accuracy and precision | Part 1 Q8 Q12,  Part 3 Q2  (a-f) | - | Part 5E |
| KE4.4 | * sources of error, uncertainty associated with measurement steps | Topic 1-Error in analytical measurement | Part 1 Q9, Q13 | - | - |
| KE4.5 | * traceability | Topic 1-Traceability | Part 1 Q11 | - | - |
| KE5 | Procedures for verifying data and rectifying mistakes | - | - | - | Part 2 |
| KE6 | Procedures for maintaining and filing records, and maintaining security of data | Topic 1-Regulatory metrology in Australia, Topic6-Record keeping and confidentiality | - | - | Part 1 to Part 6 |
| KE7 | Variations and trends in data (including seasonal, diurnal, location and non-conformance). | Topic 6-Interpreting data | - | Part 3 Q1, Q2, Q3, Q4, | - |

## Assessment conditions

Table 6 Assessment conditions

| Assessment conditions | Description | Learning resources | Knowledge Assessment 1 | Knowledge Assessment 2 | Assignment – Data in the workplace |
| --- | --- | --- | --- | --- | --- |
|  | Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit: |  |  |  | Part 1 to Part 6 |
| AC1 | Use of facilities, equipment and resources, including: |  |  |  |  |
| AC1.1 | * calculator, computer and relevant software or laboratory information system |  | Part 1, 2 &3 | Part 1, 2 &3 | Part 1 to Part 6 |
| AC1.2 | * environmental data sets and records |  |  |  | Part 1 to Part 6 |
| AC1.3 | * documentation, including user manuals; workplace procedures for recording, processing, storing and reporting environmental data; test or survey methods. |  |  |  | Part 1 to Part 6 |
| AC2 | Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors. | Maintained by People @TAFE | | | |