DEMONSTRATE NUMERACY SKILLS

UNIT CODE: SES/OS/CS/BC/02/5/A

UNIT DESCRIPTION

This unit covers the competencies required to demonstrate numeracy skills. it involves calculating with whole numbers and familiar fractions, decimals, and percentages for work estimating, measuring, and calculating with routine metric measurements for work, using routine maps and plans for work, interpreting, drawing and constructing 2D and 3D shapes for work, interpreting routine tables, graphs and charts for work, collecting data and constructing routine tables and graphs for work and using basic functions of calculator.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function.	**PERFORMANCE CRITERIA** These are assessable statements which specify the required level of performance for each of the elements. ***Bold and italicized terms are elaborated in the Range.***
1. Calculate with whole numbers and familiar fractions, decimals and percentages for work	1.1 Mathematical information that may be partly embedded in routine workplace tasks and texts is selected and interpreted as per SOPs 1.2 Whole numbers and routine or familiar fractions, decimals and percentages including familiar rates are interpreted and comprehended as per SOPs 1.3 Calculations which may involve a number of steps are performed as per SOPs 1.4 Calculations done with whole numbers and routine or familiar fractions, decimals and percentages as per SOPs 1.5 Conversion between equivalent forms of fractions, decimals and percentages is done as per SOPs 1.6 Order of operations is applied to solve multi-step calculations as per SOPs 1.7 Problem solving strategies are appropriately applied as per SOPs 1.8 Estimations are made to check reasonableness of problem solving process, outcome and its appropriateness to the context and task as per SOPs 1.9 Formal and informal mathematical language and symbolism are used to communicate the result of the task as per SOPs.
2. Estimate, measure, and calculate with routine metric	2.1 Measurement information in workplace tasks and texts are selected and interpreted in accordance with workplace requirements 2.2 Appropriate routine measuring equipment are

measurements for work	identified and selected in accordance with workplace requirements 2.3 Measurements are estimated and made using correct units as per measurement manuals. 2.4 Estimations and calculations done as per routine measurements 2.5 Conversions performed routinely as per metric units 2.6 Problem solving processes are used to undertake the tasks as per workplace procedures. 2.7 Estimations are made to check reasonableness of problem solving process, outcome and its appropriateness to the context and task as per workplace procedures 2.8 Information is recorded using mathematical language and symbols appropriate to discuss the task as per workplace procedures.
3. Use routine maps and plans for work	3.1 Features are identified in routine maps and plans as per SOPs 3.2 Symbols and keys in routine maps and plans are clearly explained as per SOPs 3.3 Orientation of map to North is identified and interpreted as per SOPs 3.4 Understanding of direction and location is clearly demonstrated as per SOPs 3.5 Simple scale is applied to estimate length of objects, or distance to location or object as per SOPs 3.6 Directions are given and received using both formal and informal language as per SOPs
4. Interpret, draw and construct 2D and 3D shapes for work	4.1 Two dimensional shapes and routine three dimensional shapes identified in everyday objects and in different orientations in accordance with job specifications 4.2 The use and application of shapes elaborately explained as per SOPs 4.3 Formal and informal mathematical language and symbols used to describe and compare the features of two dimensional shapes and routine three dimensional shapes as per workplace procedures. 4.4 Common angles identified in accordance with SOPs 4.5 Common angles in everyday objects are appropriately estimated as per SOPs 4.6 Formal and informal mathematical language are used to describe and compare common angles as per workplace procedures. 4.7 Common geometric instruments used to draw two dimensional shapes as per SOPs 4.8 Routine three dimensional objects constructed from

	given nets as per SOPs.
5. Interpret routine tables, graphs and charts for work	5.1 Routine tables, graphs and charts identified in predominately familiar texts and contexts as per tables and graph manuals 5.2 Common types of graphs and their different uses identified as per SOPs 5.3 Features of tables, graphs and charts identified as per workplace procedures 5.4 Information in routine tables, graphs and charts located and interpreted as per workplace procedures 5.5 Calculations are perform to interpret information as per SOPs 5.6 How statistics can inform and persuade interpretations is explained as per SOPs 5.7 Misleading statistical information is identified as per workplace procedures. 5.8 Information relevant to the workplace is discussed as per workplace procedures.
6. Collect data and construct routine tables and graphs for work	6.1 Features of common tables and graphs identified as per SOPs 6.2 Uses of ***different tables and graphs*** identified as per job specifications 6.3 Data and variables to be collected are determined as per workplace procedures. 6.4 The audience is determined as per the workplace procedures 6.5 Method of data collection is select as per job requirement 6.6 Data is collected as per SOPs 6.7 Information is collated in a table as per SOPs 6.8 Suitable scale and axes determined as per job specifications 6.9 Graph to present information is drafted and drawn as per SOPs 6.10 Data checked to ensure that it meets the expected results and context as per workplace procedures 6.11 Information is reported or discussed using formal and informal mathematical language as per workplace procedures
7. Use basic functions of calculator	*7.1* Keys are identified and used for ***basic functions on a calculator*** as per SOPs 7.2 Calculation is done using whole numbers, money and routine decimals and percentages as per SOPs 7.3 Calculation done with routine fractions and percentages as per SOPs 7.4 Order of operations is applied to solve multi-step calculations as per SOPs 7.5 Results are interpreted, displayed and recorded as per workplace procedures

	7.6 Estimations are made to check reasonableness of problem solving process, outcome and its appropriateness to the context and task as per workplace procedures 7.7 Formal and informal mathematical language and appropriate symbolism and conventions used to communicate the result of the task as per workplace procedures.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
1. Use basic functions of calculator may include but not limited to:	• Addition • Multiplication • Calculate ratios • Conversion of ratios into percentages
2. Different tables and graphs may include but not limited to:	• Bar Graphs • Flow Charts • Pie Charts • Pictograph • Line Graphs • Time Series Graphs • Stem and Leaf Plot • Histogram • Dot Plot • Scatter plot

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skills:

- Measuring
- Logical thinking
- Computing
- Drawing of graphs

- Applying mathematical formulas
- Analytical

Required knowledge

The individual needs to demonstrate knowledge of:

- Types of common shapes
- Differentiation between two dimensional shapes / objects
- Formulae for calculating area and volume
- Types and purpose of measuring instruments
- Units of measurement and abbreviations
- Fundamental operations (addition, subtraction, division, multiplication)
- Rounding techniques
- Types of fractions
- Different types of tables and graphs
- Meaning of graphs, such as increasing, decreasing, and constant value
- Preparation of basic data, tables & graphs

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of Competency	Assessment requires evidence that the candidate: 1.1 Calculated correctly with whole numbers and routine or familiar fractions, decimals and percentages 1.2 Estimated, measured and calculated with routine metric measurements 1.3 Applied simple scale to estimate length of objects or distance to location or object 1.4 Used formal and informal mathematical language to describe and compare common angles 1.5 Used common geometric instruments to draw two dimensional shapes 1.6 Collected data and constructed routine tables and graphs 1.7 Used basic functions of calculator correctly
2. Resource Implications	The following resources should be provided: 2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 2.2 Materials relevant to the proposed activity or tasks
3. Methods of Assessment	Competency may be assessed through: 3.1 Observation

	3.2 Oral questioning 3.3 Written test 3.4 Portfolio of Evidence 3.5 Interview 3.6 Third party report
4. Context of Assessment	Competency may be assessed in: 4.1 On the job 4.2 Off the job 4.3 Industrial attachment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.