

Domain
Title:
Level: 1

CARPENTRY
Perform calculations

Unit ID: 1579

Credits: 4

Purpose

This unit standard specifies the competencies required to perform calculations related to Carpentry operations. It includes obtaining measurements, using and converting the different scales of measuring instruments used, performing estimations and performing basic calculations.

This unit standard is intended for those who work as carpenters.

Special Notes

1. Entry information:

Prerequisite:

- *1157-Demonstrate basic knowledge of workplace health and safety or demonstrated equivalent knowledge and skills.*

2. This unit standard is to be delivered and assessed in the context of carpentry operations and should be assessed in conjunction with other relevant technical unit standards selected from this domain.

3. To demonstrate competence, evidence is required of solving mathematical and scientific problems related to the:

- calculation of the mass and weight of different objects of different shapes and dimensions
- calculation of the mass and weight of liquids of different containers of different shapes and dimensions
- reading and interpretation of the measurement scales of the measuring instruments used.

4. Materials may include but are not limited to different solids and liquids used in Carpentry.

5. Glossary of terms:

- *'estimation'* means an approximate calculation of quantity, extent, weight, size or degree
- *'calculation'* means determining the dimensions, quantity, or capacity of an object by applying mathematical methods
- *'measurement'* means to ascertain the dimensions, quantity or capacity of an object using a measuring device.

6. Calculations include but are not limited to length, area, weight, height, width, depth, volume, mass, perimeter, quantity, percentages, addition, subtraction, multiplication and division of regular and irregular shapes.
7. Regular and irregular shapes may include but are not limited to rectangles, squares, circles, triangles and cubes that represent objects to be calculated.
8. Assessment evidence may be collected from a real workplace or simulated workplace in which carpentry operations is carried out.
9. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' and company guidelines, instructions, and reasonable flat rate time.
10. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act, No. 11, 2007 as amended;
 - Occupational Health and Safety Regulations No. 18, 1997 and all subsequent amendments.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on www.namqa.org and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1: Obtain measurements

Performance criteria

- 1.1 Method of obtaining the measurement is selected and applied.
- 1.2 Measurements are obtained, accurate to 1 mm, using a ruler or tape measure.
- 1.3 Measurements are confirmed and recorded.

Element 2: Use and convert the different scales of measuring instruments used

Performance criteria

- 2.1 Measurement scales used on different measuring instruments are identified and explained.
- 2.2 Different scales on measuring instruments are converted, transferred and used to calculate the true dimension, mass and volume of objects.
- 2.3 Measurements technique used are explained.

2.4 Results of the calculations are confirmed and recorded.

Element 3: Perform estimations

3.1 Estimation of measurements of objects and liquids are explained.

3.2 Estimates are confirmed in line with workplace procedures.

Element 4: Perform basic calculations

Performance criteria

4.1 Standard metric units of the measurement of length and surface area are explained and used.

4.2 Conversions of different units of measurement of length and area are demonstrated.

4.3 Surface area of different shapes and objects are calculated using standard formulae.

4.4 Material size, weight, volume and quantity for work task are correctly calculated

4.5 Results of the calculations are recorded, validated and confirmed.

Registration Data

Subfield:	General Construction
Date first registered:	08 June 2016
Date this version registered:	08 June 2016
Anticipated review:	2021
Body responsible for review:	Namibia Training Authority