

U31501:**Perform measurements and calculations**

This unit deals with the skills and knowledge required to effectively carry out measurements and calculation of work to required tolerance.

ELEMENT	PERFORMANCE CRITERIA
1. Obtain measurement	<p><i>To be competent you must achieve the following</i></p> <p>1.1 Accurate measurements are obtained to job instruction using appropriate measuring devices.</p> <p>1.2 Instruments are selected and are read to the limit of accuracy of the tool.</p> <p>1.3 Measurements are correctly identified/recorded without error.</p> <p>1.4 Quality Assurance requirements associated with enterprise's work operations are recognized and adhered to.</p>
2. Perform simple calculations	<p>2.1 Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks.</p> <p>2.2 Knowledge of the mathematical relationships between various quantities is demonstrated.</p> <p>2.3 Calculations are performed accurately using established formulae and the results are applied to work activities.</p> <p>2.4 Basic statistical calculations are performed using given data.</p> <p>2.5 The functions of a calculator are used to perform workplace tasks.</p> <p>2.6 Numerical information is self-checked and corrected for accuracy.</p>
3. Estimate approximate quantities	<p>3.1 Quantities of materials and resources required to complete a work task are estimated.</p>

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| 4. | Interpret drawings, layouts and graphs | 3.2 | Measurements or quantities are estimated (approximately) on worksite or from job instructions . |
| | | 3.3 | The time needed to complete a work activity is estimated. |
| | | 3.4 | Accurate estimates for work completion are made. |
| | | 4.1 | Information extracted from drawings, layouts and graphs are correctly interpreted. |
| | | 4.2 | Information presented in symbols, diagrams and pictorial representations is recognized, interpreted and used to complete workplace tasks. |

RANGE STATEMENT

You must cover the items below:

A. Measurements (at least 2)

- (i) linear quantities
- (ii) sound pressure levels
- (iii) weight
- (iv) angular dimensions
- (v) volume

B. Measuring devices (at least 4)

- (i) rule
- (ii) tape measure
- (iii) square
- (iv) stop clock
- (v) meters
- (vi) scale
- (vii) plumb line

C. Materials (at least 2)

- (i) cloth
- (ii) paper
- (iii) wood
- (iv) metal
- (v) liquids
- (vi) chemicals
- (vii) cable
- (viii) gels

D. Job instruction: (at least 1)

- (i) verbal direction/instruction
- (ii) written instruction
- (iii) provision of job drawing and details

UNDERPINNING KNOWLEDGE

1. Drawings and specifications.
2. Materials relevant to the work process.
3. Mathematical operations in geometry, measurement and calculations.
4. Costing relevant to the work activity.
5. Units of measurements.
6. Relationship between quantities.
7. Measuring devices and equipment.
8. Application of mathematical procedures including addition, subtraction, multiplication, division, percentages and fractions.
9. Metric and where required, imperial measurement systems.
10. Use dial, scale and digital readouts.
11. Calculating devices.
12. Organizational policies and procedures.
13. Occupational Health and Safety requirements.
14. Read and interpret drawings/instructions.
15. Measure and calculate manually.
16. Record measurements.
17. Operate electronic calculating devices.
18. Manipulate formulae.
19. Using measuring devices and equipment safely.

EVIDENCE GUIDE

(1) Critical Aspect of Evidence

You must provide evidence that shows you have done this over a sufficient period of time for your assessor to consider that you are competent. You have to prove that you can meet all of the performance criteria on at least two (2) occasions. This evidence must come from working in the Entertainment and Events Technology.

It is essential that competence be observed in the following aspects:

- communicate effectively to enable accurate calculations and measurements
- demonstrate safe and effective use of measuring devices
- accurate measurements taken and recorded
- select appropriate mathematical process and perform calculations to specifications
- estimate quantities and costs to requirements
- interpret drawings, layouts and graphs
- locate, interpret and apply relevant information
- maintain workplace records

(2) Method of Assessment

Assessment methods must confirm consistency of performance over time and in a range of workplace relevant contexts. Assessment should be by direct observation of tasks and/or samples of work and questioning on underpinning knowledge.

- direct observation
- oral questioning
- written test
- testimonials from clients
- evaluation of qualifications/portfolio/awards/resume/workplace documents
- authenticated assessments and/or assignments from relevant training courses
- supporting statement from supervisor or previous employer

Assessment methods should closely reflect workplace demands and the needs of particular groups (e.g. people with disabilities, and people who may have literacy or numeracy difficulties).

(3) Context of Assessment

Assessment may take place on the job, off the job or a combination of both of these. However, assessment of this unit would most effectively be undertaken on the job due to the specific workplace environment requirements. Off the job assessment must be undertaken in a closely simulated workplace environment.