



Applications of Mathematics: Shape, Space and Measures (National 3)

SCQF: level 3 (6 SCQF credit points)

Unit code: HV80 73

Unit outline

The general aim of this Unit is to enable learners to apply their skills, knowledge and understanding of shape, space and measures in real-life contexts. Learners will build on their mathematical and numerical skills by using measures and elementary geometry to tackle real-life situations.

Learners who complete this Unit will be able to:

- 1 Use shape and space in basic real-life contexts
- 2 Use measures in basic real-life contexts

This Unit is a mandatory Unit of the National 3 Applications of Mathematics Course and is also available as a free-standing Unit. The Unit Specification should be read in conjunction with the *Unit Support Notes*, which provide advice and guidance on delivery, assessment approaches and development of skills for learning, skills for life and skills for work. Exemplification of the standards in this Unit is given *in Unit Assessment Support*.

Recommended entry

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- ◆ National 2 Lifeskills Mathematics Course or its component Units

In terms of prior learning and experience, relevant experiences and outcomes may also provide an appropriate basis for doing this Unit.

Equality and inclusion

This Unit Specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence. For further information, please refer to the *Unit Support Notes*.

Standards

Outcomes and assessment standards

Outcome 1

The learner will:

1 Use shape and space in basic real-life contexts by:

- 1.1 Calculating and using the perimeter and area of a regular 2D shape
- 1.2 Calculating and using the volume of a cuboid
- 1.3 Giving or following directions
- 1.4 Working with simple patterns

Outcome 2

The learner will:

2 Use measures in basic real-life contexts by:

- 2.1 Selecting and using appropriate units of measurement
- 2.2 Stating and using simple formulae expressed in words or symbols
- 2.3 Interpreting simple scale drawings
- 2.4 Applying a basic scale factor
- 2.5 Calculating time intervals to manage activities

Evidence Requirements for the Unit

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their learners, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used. They should ensure that there is sufficient evidence of competence in shape, space and measures from the Outcomes and Assessment Standards to allow a judgement to be made that the learner has achieved the Unit.

Assessors should use their professional judgement to give learners credit for an appropriate degree of accuracy. This may mean giving credit for incomplete or numerically incorrect solutions which show correct methodology, therefore demonstrating required knowledge and understanding of the shape, space and measures involved.

Evidence may be presented for individual Outcomes or it may be gathered for the Unit as a whole through integrating assessment in a single activity. If the latter approach is used, it must be clear how the evidence covers each Outcome.

A calculator or equivalent technologies may be used.

For this Unit, learners will be required to produce evidence as follows.

For Outcome 1, learners will be required to produce evidence of using shape and space in given, basic real-life contexts. Learners must provide evidence of:

- ◆ calculating and using the perimeter and area of a regular 2D shape, such as a rectangle or square
- ◆ calculating and using the volume of a cuboid, such as a box or a container
- ◆ giving or following directions to a place, such as a room or a street
- ◆ working with simple patterns, such as repeating, continuing, or creating patterns involving shape

For Outcome 2, learners will be required to produce evidence of using measures in given, basic real-life contexts. Learners must provide evidence of:

- ◆ selecting and using appropriate units of measurement for at least two of the following: length/weight/volume/temperature
- ◆ stating and using simple formulae expressed in words or symbols for area or volume
- ◆ interpreting simple scale drawings involving 2D composite shapes or simple maps
- ◆ applying a basic scale factor to increase or decrease the size of a shape
- ◆ calculating time intervals to manage activities using the 24-hour clock

Exemplification of assessment is provided in *Unit Assessment Support*. Advice and guidance on possible approaches to assessment is provided in the *Unit Support Notes*.

Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this Unit. The skills that learners will be expected to improve on and develop through the Unit are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and drawn from the main skills areas listed below. These must be built into the Unit where there are appropriate opportunities.

2 Numeracy

- 2.1 Number processes
- 2.2 Money, time and measurement
- 2.3 Information handling

5 Thinking skills

- 5.2 Understanding
- 5.3 Applying

Amplification of these is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills should be at the same SCQF level as the Unit and be consistent with the SCQF level descriptor. Further information on building in skills for learning, skills for life and skills for work is given in the *Unit Support Notes*.

Administrative information

Published: October 2017 (version 2.0)

Superclass: HD

History of changes to National Unit Specification

Version	Description of change	Authorised by	Date
2.0	Lifeskills Mathematics changed to Applications of Mathematics	Qualifications Manager	October 2017
2.0	Lifeskills Mathematics changed to Applications of Mathematics	Qualifications Manager	October 2017

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Note: readers are advised to check SQA's website: www.sqa.org.uk to ensure they are using the most up-to-date version of the Unit Specification.

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