



Unit Assessment Support

H224 74 Lifeskills Mathematics: Geometry and Measures (National 4)

Package 1: Unit-by-Unit approach

Live assessment: this material needs to be kept confidentially and securely

Valid from August 2013

This edition: July 2014 (version 1.3)

The information in this publication may be reproduced to support SQA qualifications. This publication must not be reproduced for commercial or trade purposes. **This material is for use by assessors.**

Please refer to the note of changes at the end of this document for details of changes from previous version (where applicable).

© Scottish Qualifications Authority 2014

Contents

Introduction	1
What this pack covers	2
Assessment	3
Evidence	7
Re-assessment arrangements	17
Example of recording documentation	18
Appendix 1: Assessment information for candidates	22
Appendix 2: Copyright acknowledgements	28

Introduction

This assessment support is for assessors and is designed to meet the requirements of the Unit Outcomes and Assessment Standards as specified in the 'What this pack covers' section. It sets out a possible assessment approach which is in line with the standards that must be met. It is designed to be as open and flexible as possible.

Where assessments are suggested, these can be used to assess your candidates, adapt for your own assessment programmes or help you develop your own assessments.

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their candidates, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

Evidence can take a number of different forms and may be a combination of practical, written, oral and/or recording evidence, as appropriate to the assessment activity and the needs of the individual candidate.

Equality and inclusion

This assessment has been designed to ensure that there are no unnecessary barriers to assessment. Assessments have been designed to promote equal opportunities while maintaining the integrity of the qualification.

For guidance on assessment arrangements for disabled candidates and/or those with additional support needs, please follow the link to the Assessment Arrangements web page: www.sqa.org.uk/sqa/14977.html.

Guidance on inclusive approaches to delivery and assessment in this Unit is provided in the *Unit Support Notes*.

What this pack covers

Unit title

Lifeskills Mathematics: Geometry and Measures (National 4)

Outcomes and Assessment Standards

Outcome 1

The candidate will:

1 Use reasoning skills and measurement skills linked to straightforward real-life contexts by:

- 1.1 Interpreting a situation involving measurement and identifying an appropriate strategy
- 1.2 Using appropriate mathematical processes and/or calculations to determine a solution
- 1.3 Explaining a solution in relation to the context

Outcome 2

The candidate will:

2 Use reasoning skills and geometric skills linked to straightforward real-life contexts by:

- 2.1 Interpreting a situation involving geometry and identifying an appropriate strategy
- 2.2 Using appropriate mathematical processes and/or calculations to determine a solution
- 2.3 Explaining a solution in relation to the context

Assessment

Purpose

The purpose of this assessment is to generate assessment evidence for all the Outcomes and Assessment Standards in this Unit, by means of problem solving tasks. Candidates will apply their knowledge and understanding of geometry and measures associated with this Unit.

The general aim of this Unit assessment is to provide evidence that the candidate can use mathematical strategies, process and communication skills to manage geometry and measures in real-life contexts.

Overview of assessment

Assessment should take place when candidates are ready to be assessed. It is the assessor's responsibility to ensure appropriate learning and teaching, and to provide support for candidates, including opportunities for appropriate consolidation and remediation of learning both before and, if necessary, after any summative assessment.

This Unit assessment exemplar provides evidence for the Assessment Standards in Outcome 1 and Outcome 2 of the Unit through the use of problem solving tasks. Each task requires the candidate to interpret a given situation, identify an appropriate strategy, use appropriate mathematical processes and communicate a solution in relation to the context.

Candidates are required to provide evidence for each Assessment Standard linked to managing geometry and measures by drawing on the following sub-skills:

For Outcome 1: solving a basic problem involving time management; calculating a quantity based on a related measurement; constructing a scale drawing with a given scale; planning a basic navigation course; carrying out container packing using a first-fit algorithm; investigating the need for tolerance in a measurement.

For Outcome 2: determining the gradient of a slope; investigating a situation involving perimeter; investigating a situation involving area; investigating a situation involving volume; solving a problem involving the use of Pythagoras' theorem; using a scale factor on the dimensions of a shape.

The tasks cover the sub-skills for Outcome 1 and Outcome 2. Centres are encouraged to adapt the tasks to allow personalisation and choice. For example, centres could adapt this exemplar by altering the context, activities, titles, scales and units.

E-learning can play an important role in the delivery and formative assessment of Units and Courses, supporting integration, collaborative working and

personalisation and choice. Many candidates will access learning resources through online learning environments and may also use the e-assessment resources provided by these systems for formative assessment purposes.

The assessment for candidates is provided in Appendix 1 and may be detached and given to the candidate. It may also be used as a template for developing an alternative assessment, for example by altering quantities or scales, or by adapting, changing or replacing questions to suit the needs of candidates and their ability to fully understand and access the assessment. Wording can be customised to appropriate levels of literacy; questions can be placed in familiar contexts or use familiar content, or relate to topics covered in other learning and teaching programmes; and assessment could also include appropriate, relevant other activities.

Assessment conditions

Assessors must exercise their professional responsibility in ensuring that evidence submitted by a candidate is that candidate's own work.

Time will be required for candidates to develop knowledge, understanding and skills before attempting assessment. This is likely to happen naturally as part of ongoing learning and teaching activities and this should not contribute to the formal assessment process. Assessment should only take place when candidates are ready to be assessed. Prior to any assessment, candidates should be made aware of the amount, quality and nature of evidence required to demonstrate that they have met the relevant Assessment Standards. Candidates should know that their work will or may be assessed, and know the standards against which it will be judged.

The tasks or questions in a Unit assessment can be undertaken in any order and on separate assessment occasions as appropriate to the candidate's programme of learning, teaching and assessment. Candidates should be given sufficient time to complete the question or task. Time restrictions are not a feature of Unit assessment and it is inappropriate to judge evidence on any criteria other than those associated with Assessment Standards.

There is flexibility in how questions or tasks can be presented. For example, they can be presented to candidates in writing, electronically or orally, or if appropriate a mixture of these. However, effective measures have to be taken, and professional judgement applied, to ensure that standards are being applied and maintained and that there is a consistent quality of assessment decision-making throughout all assessments.

Assessors can customise questions, tasks, contexts or content to suit the needs of candidates and their ability to understand and fully access assessments: for example, by customising assessment contexts to familiar topics, situations or actual physical artefacts, objects or environments. Literacy skills are not a feature of this assessment and should not present a barrier to achievement. If an assessment is adapted to meet the needs of individual candidates, for example by using oral questioning, the details of the assessment, responses and basis on which assessment decisions have been made all have to be recorded. Examples of recording documents are given in this pack.

The standards and conditions of assessments should be made clear to candidates at the outset of the assessment process. Although candidates are to work independently when undertaking assessment — according to Assessment Standards and Evidence Requirements defined in the *Unit Specification* — they must also be supported throughout the process. Assessors can therefore clarify the wording, context or instructions of a question or task for candidates.

Assessors can clarify how to approach the assessment and guide candidates in producing their response. Assessors may also prompt candidates where appropriate to clarify the content, detail or requirements of the assessment

question or task, but should not direct them to any specific response. Assessors should not provide specific advice on how to improve responses or provide direct guidance in how to answer a question or undertake a task.

Where the assessment task or the preparation for the assessment task involves group activity, centres should ensure that candidates are individually able to provide evidence that they have met the Assessment Standards.

A calculator may be used in this Unit assessment. Candidates should have used the calculator in their learning and teaching activities and be fully familiar with, and know how to operate, the calculator.

Formulae can be provided by the assessor where they involve new learning at this level and are needed to complete the questions in this Unit assessment.

Evidence

Evidence to be gathered

Assessors must ensure that the evidence they have gathered demonstrates that the candidate has achieved the Unit Outcomes and Assessment Standards. This evidence must be retained for quality assurance purposes.

Evidence may be generated using the assessment activities suggested in this Unit assessment support pack over a period of time, or by means of other discrete assessment activities, or could naturally occur during learning and teaching.

Assessment evidence can be drawn from a variety of activities and presented in a variety of formats. Assessors should use their professional judgement, subject knowledge and experience, and understanding of their candidates, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

In the case of assessment by observation or oral questioning, evidence should include assessors' comments and other relevant evidence that shows clearly the basis on which assessment judgements have been made.

Assessors should use their professional judgement to give candidates credit for an appropriate degree of accuracy. This may mean giving credit for incomplete or numerically incorrect solutions which show correct methodology.

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their candidates, to determine the most appropriate ways to generate evidence. There should be sufficient evidence for the assessor to make a judgement that the candidate has achieved the Unit.

Assessors should keep accurate records of the evidence gathered and the assessment decisions made.

Judging evidence

Assessors should use their professional judgement to make a decision about achievement of the Unit as a whole. In making an assessment decision, sufficient evidence must be presented so that the assessor is confident that the candidate can do what is required in the Outcomes and Assessment Standards.

The judging evidence table in this section describes how the Assessment Standards could be met using this exemplar.

Different assessment approaches may be expected to generate different types of evidence, but the same Assessment Standards will apply.

The final column provides commentary on the evidence that may be generated using the assessment for candidates (Appendix 1).

Assessors should ensure that candidates are assessed only on whether they have met the Assessment Standards and not the quality of, for example, their writing, drawing, presentation, planning or ICT skills, unless these are required by the Assessment Standards.

In all cases where calculations are involved, assessors should use their judgement to give candidates credit for an appropriate degree of accuracy. This may mean giving credit for incomplete or numerically incorrect solutions which show correct methodology. Working subsequent to an error must be followed through, with possible credit for the subsequent working, provided that the level of difficulty is approximately similar.

Judging evidence for Geometry and Measures (National 4)

In this Unit assessment support pack, candidates have to demonstrate that they can use their skills, knowledge and understanding of geometry, measures to tackle real-life contexts.

The candidate can be deemed to have achieved the Unit where it is clear that the candidate has met the criteria in the 'Making assessment judgements' section of the table below.

The assessment for candidates in Appendix 1 provides questions designed to generate evidence for all of the Assessment Standards of this Unit.

A supplementary recording document is provided in this section to help assessors record achievement when using the assessment for candidates (Appendix 1), and so determine when each Assessment Standard has been met.

Outcomes	Assessment Standards	Making assessment judgements	Assessment for candidates (Appendix 1): commentary on assessment judgements
1 Use reasoning skills and measurement skills linked to straightforward real-life contexts by:	1.1 Interpreting a situation involving measurement and identifying an appropriate strategy	Identified appropriate methods and/or approaches, eg theorem or formula to solve given problems or answer questions in at least half of the measurement opportunities available in the specific assessment guidelines.	The record of achievement table below shows which questions or question parts relate to each Assessment Standard, and how to meet the Assessment Standards using these questions.
	1.2 Using appropriate mathematical processes and/or calculations to determine a solution	Used the appropriate steps and/or techniques, eg BODMAS, add, subtract, multiply or divide, to solve given problems or answer the questions. Processes must be correct or followed through correctly in at least half of the measurement opportunities available in the specific assessment guidelines. Working subsequent to an error must be followed through, with possible credit for subsequent working, provided that the level of difficulty is similar.	
	1.3 Explaining a solution in relation to the context	Communicated mathematical information and/or solutions in a meaningful way in at least half of the measurement opportunities available in the specific assessment guidelines. Examples include rounding, giving a valid reason or using appropriate units.	The record of achievement table below shows which questions or question parts relate to each Assessment Standard, and how to meet the Assessment Standards using these questions.

2 Use reasoning skills and geometric skills linked to straightforward real-life contexts by:	2.1 Interpreting a situation involving geometry and identifying an appropriate strategy	Identified appropriate methods and/or approaches, eg theorem or formula to solve given problems or answer questions in at least half of the geometric opportunities available in the specific assessment guidelines.	The record of achievement table below shows which questions or question parts relate to each Assessment Standard, and how to meet the Assessment Standards using these questions.
	2.2 Using appropriate mathematical processes and/or calculations to determine a solution	Used the appropriate steps and/or techniques, eg BODMAS, add, subtract, multiply or divide, to solve given problems or answer the questions. Processes must be correct or followed through correctly in at least half of the geometric opportunities available in the specific assessment guidelines. Working subsequent to an error must be followed through, with possible credit for the subsequent working, provided that the level of difficulty is similar.	
	2.3 Explaining a solution in relation to the context	Communicated mathematical information and/or solutions in a meaningful way in at least half of the geometric opportunities available in the specific assessment guidelines. Examples include rounding, giving a valid reason or using appropriate units.	The record of achievement table below shows which questions or question parts relate to each Assessment Standard, and how to meet the Assessment Standards using these questions.

Geometry and Measures (National 4): record of achievement using assessment for candidates (Appendix 1)

Candidate name: _____

Class/group: _____

This table is provided to help assessors record achievement, when using the assessment for candidates (Appendix 1), by recording in the appropriate **unshaded cell** the number of marks for strategy, process or of communication that were correct for that question or question part. This record can then be used in one of the following two ways:

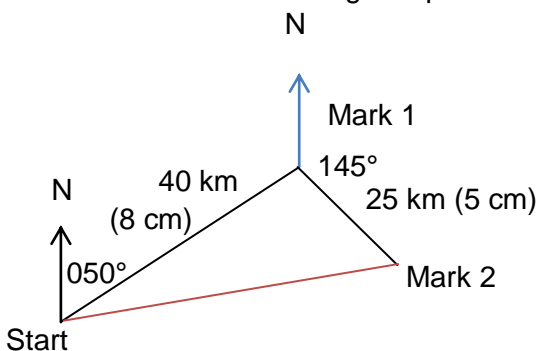
- ◆ to determine whether each Assessment Standard has been met, according to the requirements indicated in the sixth bottom row of the table
- ◆ to determine whether each Outcome has been met, according to the requirements indicated in the fourth bottom row of the table

This table may be used as an alternative to the candidate assessment record in the ‘Examples of recording documentation’ section, or to supplement it.

Record of achievement

Question	Assessment Standards: Geometry and Measurement											
	1.1		1.2		1.3		2.1		2.2		2.3	
	Marks available	Marks gained	Marks available	Marks gained	Marks available	Marks gained	Marks available	Marks gained	Marks available	Marks gained	Marks available	Marks gained
1 (a)	1		1		-							
1 (b)	-		1		1							
2 (a)	-		2		1							
2 (b)	-		1		1							
3 (a)	1		4		-							
3 (b)	-		-		1							
4	-		1		1							
5 (a)							1		2		-	
5 (b)							1		1		1	
6 (a)							1		3		1	
6 (b)							1		-		1	
7 (a)							2		2		-	
7 (b)							-		1		-	
7 (c)							-		-		1	
7 (d)							-		1		-	
7 (e)							1		1		-	
Required to meet AS	At least 1/2		At least 5/10		At least 3/5		At least 4/7		At least 6/11		At least 2/4	
AS met (✓) individually												
Threshold	At least 10/17						At least 13/22					
Outcome met (✓)												
Re-assessment												

Marking guidance

Question	Points of strategy and process and of communication in assessment for candidates (Appendix 1)	
	Generic scheme	Illustrative scheme
1 (a) (b)	<p>Strategy: evaluate formula</p> <p>Process: convert to hours and minutes</p> <p>Process: evidence of 'subtracting' time</p> <p>Communication: state time in any format</p>	<ul style="list-style-type: none"> • $T = 25 \times 4 + 35 = 135$ mins • = 2 hours 15 mins • 3:15 pm – 2 hrs 15 mins • Beef into oven at 1300 or 1 pm
2 (a)	<p>Process: construct angles</p> <p>Process: construct sides</p> <p>Communication: scale drawing complete and annotated</p> 	<ul style="list-style-type: none"> • Angles of 050° and $145^\circ (\pm 2^\circ)$ • 40 and 25 km (± 2mm) • Including bearings and distances
(b)	<p>Process: evidence of measuring final leg</p> <p>Communication: conversion to km stated with units</p>	<ul style="list-style-type: none"> • 9 cm accept an error tolerance of ± 2 mm on scale drawing • $9 \times 5 = 45$ km

<p>3 (a)</p> <p>(b)</p>	<p>Strategy: demonstrate how to find the number of stacking DVDs horizontally</p> <p>Process: number of stacks</p> <p>Process: number in each stack</p> <p>Process: total horizontally</p> <p>Process: repeat for vertically</p> <p>Communication: answer with a reason</p>	<p>Horizontally</p> <ul style="list-style-type: none"> • Know to find no. of stacks, number in each stack and multiply • Each stack $80 \div 20 = 4$ stacks • $20 \div 1.5 = 13$ • Total $13 \times 4 = 52$ and $5 \times 52 = \mathbf{260}$ <p>Vertically</p> <ul style="list-style-type: none"> • $80 \div 1.5 = 53$ 53 DVDs per shelf Total $5 \times 53 = \mathbf{265}$ • Vertically gives the most storage.
<p>4</p>	<p>Process: calculate tolerance limits</p> <p>Communicates: state answer with reason</p>	<ul style="list-style-type: none"> • Limits = $40 - 2 = 38$ and $40 + 2 = 42$ • Boxes with 43 and 44 as they are outside range of $38 - 42$
<p>5 (a)</p> <p>(b)</p>	<p>Strategy: know to use Pythagoras' theorem</p> <p>Process: start to process height</p> <p>Process: calculate height using Pythagoras' Theorem</p> <p>Strategy: know and start to use formula for gradient</p> <p>Process: calculate gradient</p> <p>Communication: conclusion including a numerical comparison</p>	<ul style="list-style-type: none"> • $410^2 = 400^2 + h^2$ • $168\,100 - 160\,000 = 8100$ • $h = \sqrt{8100} = 90$ cm • gradient = $90 \div 400$ • 0.225 • The ramp satisfies the new regulations because $0.225 < 0.26$.

<p>6 (a) (b)</p>	<p>Strategy: know and start to use formula for volume of a cuboid Process: calculate volume Process: convert litres to cm^3 Process: number of candles Communication: round and state number of candles</p> <p>Strategy: apply scale factor Communication: state number of candles</p>	<ul style="list-style-type: none"> • $V = lbh = 5 \times 5 \times 12$ • $5 \times 5 \times 12 = 300 \text{ cm}^3$ • 10 litres = 10 000 cm^3 • $10\ 000 \div 300 = 33.3$ • 33 candles can be made (unrounded must be shown for this mark to be awarded) • $V = 600 \text{ cm}^3$ • 16 candles (accept alternative strategies) <p>If length is doubled leading to volume of 2400 and 4 candles, award mark 2 only.</p>
<p>7 (a) (b) (c) (d) (e)</p>	<p>Strategy: know and start to calculate area Process: calculate area of walls Strategy: know to subtract area of door and window Process: calculate total area of walls Process: calculate amount of paint needed Communication: state number of tins Process: calculate cost Strategy: know and start to calculate perimeter Process: calculate perimeter</p>	<ul style="list-style-type: none"> • $\text{Area} = l \times b = 7 \times 2.5$ or 5×2.5 • $2(7 \times 2.5) + 2(5 \times 2.5) = 60 \text{ m}^2$ • Evidence of subtracting 4 • $= 56 \text{ m}^2$ • $56/16 = 3.5$ litres • 4 tins • $4 \times \text{£}8.50 = \text{£}34$ • $7 \text{ m} + 5 \text{ m} + 5 \text{ m} + 6 \text{ m}$ • $7 \text{ m} + 5 \text{ m} + 5 \text{ m} + 6 \text{ m} = 23 \text{ m}$

Re-assessment arrangements

SQA's guidance on re-assessment is that normally there should be one or, in exceptional circumstances, two re-assessment opportunities. Re-assessment should be carried out under the same conditions as the original assessment.

Centres may create re-assessments of a similar standard for the purpose of re-assessment.

Candidates need only be re-assessed in those Assessment Standards which have not been achieved.

In all cases of re-assessment, the assessment must be of equal demand to the original assessment.

Assessors should keep accurate records of all assessment decisions.

Example of recording documentation

The documentation that follows can be used to record candidates' evidence and to reference it against the Outcomes and Assessment Standards. Assessors may use or adapt the suggested templates, or use any other appropriate methods of recording candidates' achievement and evidence, but it must be clearly referenced against the Outcomes and Assessment Standards of the Unit.

In the case of assessment by observation or oral questioning, evidence should include assessors' comments and other relevant supporting evidence that shows clearly the basis on which assessment judgements have been made.

It is recommended that all evidence be identified with the candidate's name and date of production. Since one item of evidence may be used as evidence that several Assessment Standards have been met, each piece of evidence should be identified in such a way that it can be referenced on more than one occasion.

A choice of candidate recording documents is provided in this pack. The first is designed to facilitate recording of results in the assessment for candidates in Appendix 1, showing when Assessment Standards have been met, and can be found in the 'Judging evidence' section. Should other methods be used to determine that Assessment Standards have been met, including observation or oral questioning, the recording document below will be more useful.

Candidate assessment record: Geometry and Measures (National 4)

Candidate name: _____

Class/group: _____

Candidate number: _____

Centre: _____

In the case of assessment by observation or oral questioning, evidence should include assessors' comments and other relevant supporting evidence that shows clearly the basis on which assessment judgements have been made.

An alternative or supplementary recording document is included in the 'Judging evidence' section above.

Outcome	Assessment Standard	Description of evidence and date	Evidence reference	Assessor's comments	Result	Assessor and date
1 Use reasoning skills and measurement skills linked to straightforward real-life contexts by:	1.1 Interpreting a situation involving measurement and identifying an appropriate strategy					
	1.2 Using appropriate mathematical processes and/or calculations to determine a solution					
	1.3 Explaining a solution in relation to the context					

Outcome	Assessment Standard	Description of evidence and date	Evidence reference	Assessor's comments	Result	Assessor and date
2 Use reasoning skills and geometric skills linked to straightforward real-life contexts by:	2.1 Interpreting a situation involving geometry and identifying an appropriate strategy					
	2.2 Using appropriate mathematical processes and/or calculations to determine a solution					
	2.3 Explaining a solution in relation to the context					

Class summary record of attainment: Geometry and Measures (National 4)

Class/group: _____

Centre: _____

Candidate name	Outcome 1			Outcome 2		
	1.1	1.2	1.3	2.1	2.2	2.3

Appendix 1: Assessment information for candidates

This assessment applies to the following Unit Outcomes and Assessment Standards:

Outcome 1

1 Use reasoning skills and measurement skills linked to straightforward real-life contexts by:

- 1.1 Interpreting a situation involving measurement and identifying an appropriate strategy
- 1.2 Using appropriate mathematical processes and/or calculations to determine a solution
- 1.3 Explaining a solution in relation to the context

Outcome 2

2 Use reasoning skills and geometric skills linked to straightforward real-life contexts by:

- 2.1 Interpreting a situation involving geometry and identifying an appropriate strategy
- 2.2 Using appropriate mathematical processes and/or calculations to determine a solution
- 2.3 Explaining a solution in relation to the context

Your assessor will let you know how the assessment will be carried out and any required conditions for doing it.

This assessment is a set of problem solving tasks. You must attempt to complete all of the tasks.

You can use a calculator, ruler and protractor.

Remember to show all of your working.

Candidate name: _____

Date: _____

- 1 Richard is cooking a 4 kg joint of beef for a dinner party.
The formula for calculating the cooking time is:

$$T = 25w + 35$$

w = weight in kg

T = time in minutes

- (a) How long, in hours and minutes, will it take for the beef to cook? **(2)**
- (b) The beef must be cooked by 1515 hours.
At what time should he put the beef in the oven? **(2)**
- 2 A sailing club is planning a competition route as shown below:

From the start:

sail 40 km on a bearing of 050° to Mark 1

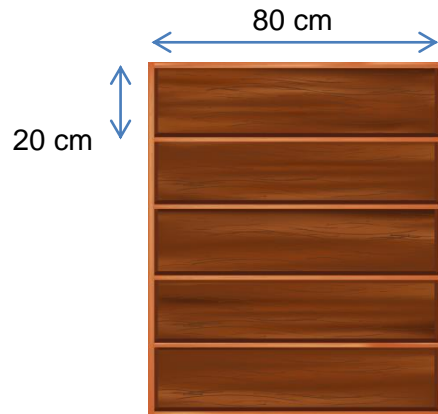
then

sail 25 km on a bearing of 145° to Mark 2



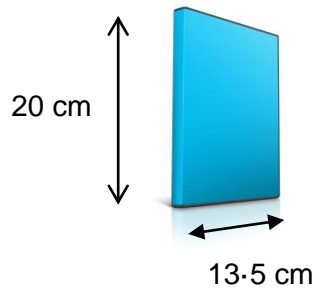
- (a) Using the scale '1 cm represents 5 km' make a scale drawing of the route. **(3)**
- (b) The boats return directly to the start from Mark 2.
How far would the boat need to sail on this section of the route? **(2)**

- 3 Anwar has bought a bookcase to store his DVDs. The bookcase has 5 shelves. Each shelf measures 80 cm long by 20 cm high.



He has a collection of DVDs he wants to put into the bookcase.

Each DVD measures 13.5 cm by 20 cm by 1.5 cm (spine width).



Anwar can stack them in two different ways:



Horizontally



Vertically

- (a) Work out the maximum number of DVDs he can put in the bookcase:
- (i) Horizontally
 - (ii) Vertically **(5)**
- (b) Explain to Anwar the best way of putting the DVDs in the bookcase so that the maximum number can be stored. **(1)**

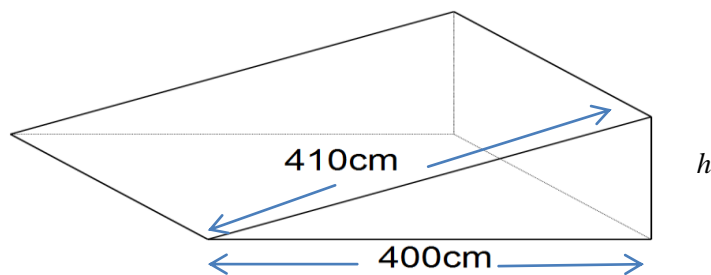
- 4 A sample of six boxes contains the following number of nails per box:

43 39 41 40 39 44

Which of these boxes of nails would be outside a tolerance of 40 ± 2 nails per box? **(2)**

- 5 Regulations state that the gradient of ramps for wheelchairs must not exceed 0.26.

An existing ramp is 410 cm long and has a horizontal distance of 400 cm, as shown:

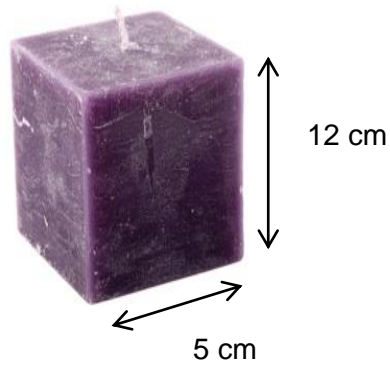


- (a) Calculate the vertical height, h . **(3)**

- (b) Does this ramp satisfy the regulations? Give a reason for your answer. **(3)**

- 6 Keira has started a small business making wax candles.

Each candle has a square base of 5 cm and a height of 12 cm, as shown.

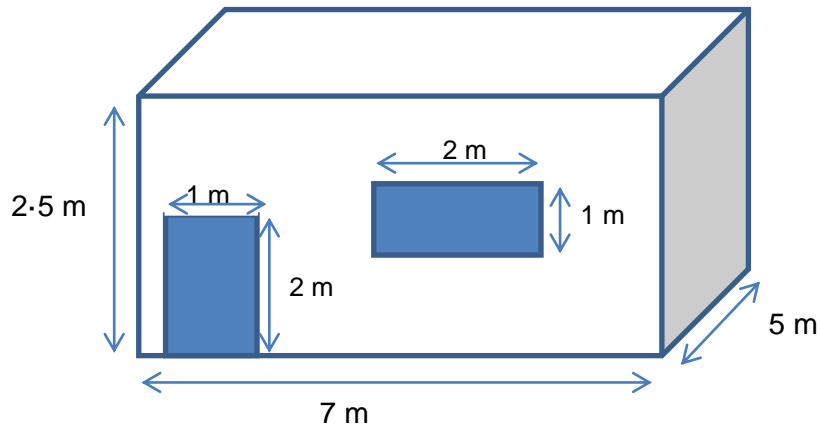


She buys wax in 10 litre tubs.

- (a) How many candles can she make from one tub of wax? **(5)**
(1000 cm³ = 1 litre)
- (b) If Keira doubles the volume of her candles, how many candles will she be able to make with one tub of wax? **(2)**

7 Emily plans to paint her bedroom walls.

The bedroom is in the shape of a cuboid, with dimensions as shown.



Paint: 1 litre tin covers 16 m^2

- (a) What is the total area of the bedroom walls? **(4)**
- (b) What volume of paint must Emily buy to paint the walls of her bedroom? **(1)**
- (c) Paint is sold in 1 litre tins.
How many tins of paint will Emily need to buy? **(1)**
- (d) Each tin costs £8.50.
What will be the cost of painting her bedroom? **(1)**
- (e) New skirting boards need to be fitted around the walls of the bedroom at floor level (excluding the door). Calculate the total length of skirting board needed. **(2)**

Appendix 2: Copyright acknowledgements

Page 23: Copyright Shutterstock

Yacht: ID 55824310

Page 24: Copyright Shutterstock

Bookcase: ID 71068927

Blank DVD case: ID 107092241

Horizontal DVD cases: ID 43212010

Vertical DVD cases: ID 74468983

Page 26: Copyright Shutterstock

Candle: ID 59168230

Page 27: Copyright Shutterstock

Spilt paint and brush: ID 63648238

Administrative information

Published: July 2014 (version 1.3)

Superclass: RB

History of changes

Unit details	Version	Description of change	Authorised by	Date
	1.1	Changes to wording to clarify meaning. Changes to judging evidence table, guidance on judging evidence and assessment for candidates sections for clarification and consistency.	Qualifications Development Manager	August 2013
	1.2	Third round of revisions for version 1.2 edited.	Qualifications Development Manager	October 2013
	1.3	Amendments to questions 1, 2 and 7. Threshold scores added to record of achievement. Marking guidance amended where appropriate. Marks added to questions.	Qualifications Manager	July 2014

Security and confidentiality

This document can be used by practitioners in SQA approved centres for the assessment of National Units and not for any other purpose.

This document may only be downloaded from SQA's designated secure website by authorised personnel.

Copyright

This document may be reproduced in whole or in part for assessment purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged. If it needs to be reproduced for any purpose other than assessment, it is the centre's responsibility to obtain copyright clearance.

Re-use for alternative purposes without the necessary copyright clearance may constitute copyright infringement.

© Scottish Qualifications Authority 2014