

## Mathematics and Lifeskills Mathematics



This update contains information relevant to your subject and details of the support available to you.

We also publish updates on the new National Courses in the 'Updates and Announcements' section of the relevant [subject pages](#). I would encourage you to make regular use of our subject pages, where you will find support documents, answers to common questions, and links to other areas of interest. You can also sign up for 'My Alerts', SQA's e-mail update service, that notifies you whenever content you are interested in is added or updated on our website. Visit [www.sqa.org.uk/myalerts](http://www.sqa.org.uk/myalerts) to register.

I hope you find the following update helpful, and please contact me if you have any questions.

**Martin Brown**  
Qualifications Manager

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## The Qualifications Team

**Martin Brown**  
Qualifications Manager

**Hilary Cuthbertson**  
Qualifications Officer

**Lynn McKinlay**  
Qualifications Officer

## Key messages from Diet 2014–15

### Course Reports

We strongly recommend that you read the annual Course Reports for the subject(s) and levels you are teaching. These reports are produced following the annual diet of exams and are published by the end of October. The reports provide informed and valuable comment on the assessment for each Component in the Course, and include a summary of:

- candidate performance in the Course assessment
- areas in which candidates performed well
- areas which candidates found demanding

The reports also contain advice on preparing future candidates, and statistical data relating to grade boundaries. Course Reports are available from the relevant [subject pages](#) of our website.

### Verification Key Messages

Key messages from round 2 of verification in session 2014–15 were published over the summer. They are available from the relevant [subject pages](#), where you can access them from the 'Verification and Course Reports' heading in the 'Assessment Support' section.

## Documents and assessment support materials

It is important that you read the full suite of documents for your Course, as well as those relating to assessment, and that you refer to the latest versions.

Information on documents and assessment support materials for National 1 to Advanced Higher can be found at [www.sqa.org.uk/supportdocuments](http://www.sqa.org.uk/supportdocuments).

### National 3 to Higher Unit assessment support

In August 2015, we updated some Unit assessment support materials for National 3 to Higher. This follows feedback gathered from centres during session 2014–15.

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Please refer to the 'Notification of Changes' tables for your curricular area, as these provide a summary of the changes to each document and include details of the revised version numbers. These are available from [www.sqa.org.uk/cfesubjectchanges](http://www.sqa.org.uk/cfesubjectchanges).

The use of SQA-produced Unit assessments is not mandatory; however, if you are using them, we strongly encourage you to use the most up-to-date versions. Please note that you may continue to use existing versions of the Unit assessments until the end of session 2015–16 and both will be accepted for verification purposes.

The updated Unit assessment support materials are available from our secure website and you can arrange access to them through your SQA Co-ordinator.

Further information on the reasons for the changes to Unit assessment support, and guidance on the next steps to take, is provided below. This information was also communicated to centres in August 2015.

Subject	Description of change	Next steps for centres
National 3 Lifeskills Mathematics	<p><b>Managing Money and Data package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>• Record of achievement amended to allow assessment judgements to be made by Outcome.</li> <li>• Minor amendments to marking guidance.</li> <li>• Questions 5, 7 and 9 added.</li> </ul> <p><b>Shape, Space and Measure package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>• Amendments to record of achievement table to allow judgements to be made by Outcome.</li> <li>• Questions 3(c), 4(c) and 6 added.</li> <li>• Diagram in Question 3 amended.</li> </ul> <p><b>Managing Money and Data with Numeracy package 2: combined approach</b></p> <ul style="list-style-type: none"> <li>• Amendments to record of achievement table to allow judgements to be made by Outcome.</li> <li>• Minor amendments to marking guidance.</li> <li>• Task 1(d) added and Task 4 reworded.</li> </ul> <p><b>Shape, Space and Measure with Numeracy package 2: combined approach</b></p> <ul style="list-style-type: none"> <li>• Amendments to record of achievement table to allow judgements to be made by Outcome.</li> <li>• Minor amendments to marking guidance.</li> <li>• Mark allocation in question 1(e) amended.</li> <li>• Questions 2(b), 2(c)(ii), 3(a)(ii), 3(b)(iii), 3(c) added.</li> </ul>	Centres are advised to be aware of these changes.

National 3 Numeracy	<p><b>Numeracy package 1: Interdisciplinary context</b></p> <ul style="list-style-type: none"> <li>• ‘Overview of assessment’ section: summary table — Question 5 attributed to Assessment Standard 1.4.</li> <li>• Marking guidance relating to Questions 2(c), 3(d)(i) and 5(a) amended.</li> <li>• Appendix 1: Assessment information for candidates — Question 2: quantity of cooking chocolate amended from 200 g to 140 g.</li> </ul>	Centres are advised to be aware of these changes.
National 4 Lifeskills Mathematics	<p><b>Managing Finance and Statistics package 1 Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>• Record of achievement amended for Question 2.</li> <li>• Marking guidance relating to Questions 2 and 4 amended.</li> <li>• Appendix 1: marks reallocated in Question 2.</li> </ul> <p><b>Managing Finance and Statistics and Numeracy package 2: combined approach</b></p> <ul style="list-style-type: none"> <li>• Record of achievement — threshold for Managing Finance and Statistics Outcome 1 amended.</li> <li>• Marking guidance relating to strategy mark for Question 1(c) amended.</li> <li>• Appendix 1: diagram in Task 1(a) amended; Task 4 wording amended.</li> </ul>	Centres are advised to be aware of these changes.
	<p><b>Added Value Unit Test</b></p> <ul style="list-style-type: none"> <li>• ‘Assessment overview’ and ‘Assessment conditions’ sections revised.</li> <li>• Judging evidence table amended to include information about combined operational and reasoning skills.</li> <li>• ‘Guidance on judging evidence for sample assessments’ section updated.</li> <li>• ‘Part 2 — specific assessment guidelines’ revised to show marks as ♦ and #.</li> <li>• Candidate assessment record: amendments to overall totals.</li> <li>• Appendix 1: Instructions for candidates — marks amended throughout; Part 2 Question 5 — exemplified answer to part (b) amended.</li> </ul> <p><b>Added Value Unit Test — Additional questions</b></p> <ul style="list-style-type: none"> <li>• ‘Further assessment items and marking guidelines’ section amended to include ‘List of skills’ tables.</li> <li>• Questions 1 to 26 renumbered and headings amended.</li> <li>• Questions 27 to 59 added.</li> </ul>	Centres are advised to download new copies of the revised documents.

National 4 Mathematics	<p><b>Expressions and Formulae, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Marking guidance relating to Questions 5, 6, 7 and 10 amended: 'correct' removed.</li> </ul> <p><b>Relationships, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Marking guidance relating to Question 12(a) amended: degree symbol removed from the final answer.</li> </ul> <p><b>Added Value Unit Test</b></p> <ul style="list-style-type: none"> <li>Specific assessment guidelines relating to Part 1, Questions 4 and 5 and Part 2, Questions 2, 5, 6, and 8 amended.</li> <li>Candidate Assessment Record amended to reflect 60% threshold.</li> <li>Appendix 1: Instructions for candidates — Part 1, Question 5 amended; Part 2 Questions 6, 7(c) and 8 amended.</li> </ul> <p><b>Added Value Unit Test — Additional Questions</b></p> <ul style="list-style-type: none"> <li>Questions 11, 12, 26, 28, 29 and 46 re-designated as 'calculator neutral'.</li> <li>Questions 1 and 2: Numeracy Assessment Standard amended to 1.2.</li> <li>Question 13: mark allocations in the table above the question amended.</li> </ul>	Centres are advised to be aware of these changes.
National 4 Numeracy	<p><b>Numeracy, package 1A</b></p> <ul style="list-style-type: none"> <li>Marking guidance relating to Question 16 amended.</li> </ul>	Centres are advised to be aware of these changes.
National 5 Lifeskills Mathematics	<p><b>Managing Finance and Statistics, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Marking guidance relating to Questions 4(a) and 4(b) amended.</li> </ul> <p><b>Geometry and Measures, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Marking guidance relating to communication mark for Questions 4 and 7(b) amended.</li> </ul>	Centres are advised to be aware of these changes.
National 5 Mathematics	<p><b>Expressions and Formulae, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Question 1 — marking guidance: typographical error corrected on page 12.</li> </ul> <p><b>Applications, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Marking guidance relating to Questions 1, 3, 6, 7, 8, 9 and 12(c) amended.</li> </ul>	Centres are advised to be aware of these changes.

	<ul style="list-style-type: none"> <li>Appendix 1: Question 3 amended: 'Give your answer to the nearest degree' removed.</li> </ul> <p><b>Relationships, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>'Overview of assessment' section and judging evidence table relating to Assessment Standard 1.4 reworded to clarify the application of Pythagoras' theorem.</li> </ul> <p><b>Package 2: combined approach</b></p> <ul style="list-style-type: none"> <li>Appendix 1: Task 5(e) — typographical error in formula corrected.</li> </ul>	
Higher Mathematics	<p><b>Applications, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Amendment to notes in Questions 3, 8, 9 and 10.</li> </ul> <p><b>Expressions and Functions, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Marking guidance relating to Questions 10(b) and 13 amended.</li> </ul> <p><b>Package 2A: combined approach (Judging Assessment Standards for Outcome 1 by marks threshold)</b></p> <ul style="list-style-type: none"> <li>Expressions and Functions: Assessment Standard 1.3 — threshold amended to 9 out of 16.</li> <li>Marking guidance relating to Task A, Question 6 and Task C, Questions 8 and 9 amended.</li> <li>Appendix 1: Task A, Question 6 — mark allocation amended.</li> </ul> <p><b>Package 2B: combined approach (Judging Assessment Standards for Outcome 1 by sub-skills threshold)</b></p> <ul style="list-style-type: none"> <li>Marking guidance relating to Task A, Question 6 and Task C, Questions 8 and 9 amended.</li> <li>Appendix 1: Task A, Question 6 — mark allocation amended.</li> </ul> <p><b>Package 4: combined approach</b></p> <ul style="list-style-type: none"> <li>Judging evidence table: threshold amended for Assessment Standard 1.3 of the Expressions and Functions Unit.</li> <li>Marking guidance relating to Task C, Questions 5, 7 and 9 amended.</li> <li>Appendix 1: Task C, Question 6 — equation corrected.</li> </ul> <p><b>Additional Reasoning Questions</b></p> <ul style="list-style-type: none"> <li>A new document containing a bank of additional reasoning questions has been published.</li> </ul>	Centres are advised to be aware of these changes.

Unit assessment support materials are available from our secure website and you can arrange access to them through your SQA Co-ordinator.

To find out more about using our Unit assessment support packs, visit [www.sqa.org.uk/unitassessment](http://www.sqa.org.uk/unitassessment).

## Advanced Higher documents

In April and May 2015, we updated the mandatory documents and Course/Unit Support Notes for Advanced Higher. The following revisions were made:

Subject	Description of change	Next steps for centres
Mathematics	<p><b>Course Assessment Specification</b></p> <ul style="list-style-type: none"> <li>Further mandatory information on 'Course coverage' section clarified: amendments to second sub-skill for Assessment Standard 1.2 and description relating to second sub-skill for Assessment Standard 1.5.</li> </ul> <p><b>Specimen Question Paper</b></p> <ul style="list-style-type: none"> <li>Amendment to question 15(a) and related marking guidance.</li> </ul> <p><b>Applications in Algebra and Calculus; Geometry, Proof and Systems of Equations; Methods in Algebra and Calculus, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Minor amendments to marking guidance.</li> </ul>	Centres are advised to be aware of these changes.
Mathematics of Mechanics	<p><b>Course Assessment Specification</b></p> <ul style="list-style-type: none"> <li>'Further mandatory information on Course coverage' section — wording of Assessment Standards 1.1 and 1.2 under 'Mathematics of Mechanics: Mathematical Techniques for Mechanics (Advanced Higher)' heading amended.</li> </ul> <p><b>Force, Energy and Periodic Motion; Linear and Parabolic Motion; Mathematical Techniques of Mechanics, package 1: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Minor amendments to marking guidance.</li> </ul> <p><b>Linear and Parabolic Motion, package 2: Unit-by-Unit approach</b></p> <ul style="list-style-type: none"> <li>Minor amendments to questions and marking guidance.</li> </ul>	

Statistics	<b>Course/Unit Support Notes</b> <ul style="list-style-type: none"> <li>• ‘Further exemplification’ section: information about the purpose and function of the exemplars added. (There are two exemplars which illustrate a combined approach to the learning and teaching of the Statistical Inference and the Hypothesis Testing Units. They are both for illustration purposes only and must not be used as assessment instruments.)</li> </ul>	Centres are advised to be aware of these changes.
	<b>Data Analysis and Modelling; Hypothesis Testing, packages 1 and 2, Unit-by-Unit approach</b> <ul style="list-style-type: none"> <li>• Minor amendments to questions and marking guidance.</li> </ul>	
	<b>Statistical Inference, packages 1 and 2, Unit-by-Unit approach</b> <ul style="list-style-type: none"> <li>• Clarification to ‘Making assessment judgements’ column relating to Assessment Standard 1.1.</li> <li>• Assessor’s notes, marking guidance and candidate guidance for Outcome 2 replaced.</li> <li>• Minor amendments to question 5.</li> </ul>	
	<b>Specimen Question Paper</b> <ul style="list-style-type: none"> <li>• Minor amendments to the marking guidance.</li> </ul>	

You can also view the Notification of changes spreadsheets for National 3 to Higher, and Advanced Higher at [www.sqa.org.uk/cfesubjectchanges](http://www.sqa.org.uk/cfesubjectchanges).

Please also note that the following documents will be amended in due course. A description of each change is outlined below:

#### **Course Specification for Advanced Higher Mathematics and Advanced Higher Mathematics of Mechanics**

- A statement will be included to clarify the use of the formulae sheet.

#### **Course Assessment Specification and Course/Unit Support Notes for Advanced Higher Mathematics and Advanced Higher Mathematics of Mechanics:**

- A statement will be included to explain that the treatment of  $\tan x$  and  $\cot x$  are assessed at both Unit and Course level.
- Additional clarification will be provided about the treatment of volumes of revolution.

#### **Mathematics and Mathematics of Mechanics Specimen Question Papers**

- Amendments to the formulae sheets will be made to ensure consistency with the Advanced Higher Exemplar Question Papers.

#### **Advanced Higher Statistics data booklet**

- A new data booklet will be produced.

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## Advanced Higher Exemplar Question Papers

In December 2015, we will publish Exemplar Question Papers for all new Advanced Higher Courses that include a question paper as part of the Course assessment. These will follow the structure of the Specimen Question Papers and will illustrate how past paper questions can be amended to assess the new Advanced Higher Courses.

## Coming up in 2015–16

### Understanding Standards 2015–16

From the end of October 2015, we will publish further Understanding Standards packs for National 1 to Higher. These packs contain candidate evidence and commentaries for Unit assessment and internally assessed Components of Course assessment.

From November 2015 to January 2016, we will hold subject-specific Understanding Standards events for teachers and lecturers. The main focus of these events will be on Course assessment at Higher. Understanding Standards events for Higher Mathematics will take place on the following dates:

- 11 November 2015 — Aberdeen
- 1 December 2015 — Edinburgh
- 11 December 2015 — Glasgow

Understanding Standards events for National 5 Lifeskills Mathematics will take place on the following dates:

- 3 November 2015 — Glasgow
- 4 November 2015 — Edinburgh
- 5 November 2015 — Aberdeen
- 6 November 2015 — Inverness

Materials from the recent Nominee training events will also be published on our website.

For more information, visit [www.sqa.org.uk/understandingstandards](http://www.sqa.org.uk/understandingstandards).

Details of the Understanding Standards materials for each subject are available from the [subject pages](#).

### National 4 Added Value Units

You now have the option of developing your own National 4 Added Value Unit assessments for use with candidates.

Please note that this is not a requirement and you can continue to use SQA-produced Added Value Unit assessments. Most SQA-produced Added Value Unit assessments already allow

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considerable flexibility in the choice of a context for the assessment, while some provide a context that you can change.

If you choose to develop your own Added Value Unit assessment, we strongly advise submitting it to us for prior verification before using it with candidates.

Further information can be found at [www.sqa.org.uk/unitassessment](http://www.sqa.org.uk/unitassessment).

## Marker recruitment opportunities for 2016

We are now accepting Marker applications from teaching professionals to contribute to the 2016 examination diet. If you are interested in joining us as a Marker please visit the [appointee opportunities](#) section of our website where you will find a marker advert for all subjects and levels, with details of the role.

Our current Markers will confirm to you that the experience of marking helps increase their awareness of the demands of Course assessment and that marking is excellent professional and personal development.

Please check [www.sqa.org.uk/appointees](http://www.sqa.org.uk/appointees) regularly for other appointee opportunities which may be of interest to you.

### Contact us

For centre enquiries, please contact our Customer Support Team:

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