

The Mathematical Association's Response

AS and A Level Mathematics and Further Mathematics consultation on Conditions and Guidance

How to respond to this consultation

The closing date for responses is 11 January 2016.

Please respond to this consultation in one of three ways:

- Complete the online response at www.surveygizmo.com/s3/2461563/as-and-a-level-mathematics-and-further-mathematics-conditions-and-guidance.
- Email your response to consultations@ofqual.gov.uk – please include the consultation title (AS and A Level Maths Consultation 2015) in the subject line of the email and make clear who you are and in what capacity you are responding; or
- Post your response to: AS and A Level Maths Consultation 2015, Ofqual, Spring Place, Herald Avenue, Coventry, CV5 6UB, making clear who you are and in what capacity you are responding.

Evaluating the responses

To evaluate responses properly, we need to know who is responding to the consultation and in what capacity. We will therefore only consider your response if you complete the information page.

Any personal data (such as your name, address and any other identifying information) will be processed in accordance with the Data Protection Act 1998 and our standard terms and conditions.

We will publish our evaluation of responses. Please note that we may publish all or part of your response unless you tell us (in your answer to the confidentiality question) that you want us to treat your response as confidential. If you tell us you wish your response to be treated as confidential, we will not include your details in any published list of respondents, although we may quote from your response anonymously.

Please respond by 11 January 2016.

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Responding to the consultation

Your details

To evaluate responses properly, we need to know who is responding to the consultation and in what capacity. We will therefore only consider your response if you complete the following information section.

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Please answer all questions marked with a star*

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Would you like us to treat your response as confidential?*

If you answer yes, we will not include your details in any list of people or organisations that responded to the consultation.

Yes No

Is this a personal response or an official response on behalf of your organisation?*

Personal response (please answer the question 'If you ticked "Personal response"...')

Official response (please answer the question 'If you ticked "Official response"...')

If you ticked "Personal response", which of the following are you?

Student

Parent or carer

Teacher (but responding in a personal capacity)

Other, including general public (please state below)

If you ticked "Official response", please respond accordingly:

Type of responding organisation*

Awarding organisation

Local authority

School or college (please answer the question below)

Academy chain

Private training provider

University or other higher education institution

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- Employer
- Other representative or interest group (please answer the question below)

School or college type

- Comprehensive or non-selective academy
 - State selective or selective academy
 - Independent
 - Special school
 - Further education college
 - Sixth form college
 - Other (please state below)
-

Type of representative group or interest group

- Group of awarding organisations
 - Union
 - Employer or business representative group
 - Subject association or learned society
 - Equality organisation or group
 - School, college or teacher representative group
 - Other (please state below)
-

Nation*

- England

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Wales

Northern Ireland

Scotland

Other EU country: _____

Non-EU country: _____

How did you find out about this consultation?

Our newsletter or another one of our communications

Our website

Internet search

Other

May we contact you for further information?

Yes No

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Questions

Question 1: To what extent do you agree or disagree that the proposed assessment objectives are appropriate for AS and A level mathematics and further mathematics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

Question 2: To what extent do you agree or disagree that the proposed weightings of the assessment objectives are appropriate for AS mathematics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

The Mathematical Association believes that the suggested weightings for AS mathematics are appropriate and offer a suitable spread of marks.

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Question 3: To what extent do you agree or disagree that the proposed weightings of the assessment objectives are appropriate for A level mathematics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

We would suggest that the same weightings should be used for both AS and A level maths alongside the italic text. Without this change we feel that lower attaining candidates will be disadvantaged.

Question 4: To what extent do you agree or disagree that the proposed weightings of the assessment objectives are appropriate for AS further mathematics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

The Mathematical Association believes that the suggested weightings for AS further mathematics are appropriate and offer a suitable spread of marks.

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Question 5: To what extent do you agree or disagree that the proposed weightings of the assessment objectives are appropriate for A level further mathematics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

As with A level Mathematics we would suggest that the same weightings should be used for both AS and A level maths alongside the italic text. Without this change we do feel that lower attaining candidates will be disadvantaged.

Question 6: To what extent do you agree or disagree that we should introduce a Condition which requires exam boards to comply with the relevant subject content – including the two proposed new appendices – and assessment objectives?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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Question 7: To what extent do you agree or disagree that we should introduce guidance which clarifies that awarding organisations should explain and justify in their assessment strategies how their qualification design reflects the 'Overarching themes' and 'Use of technology' sections of the subject content?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

Question 8: To what extent do you agree or disagree that we should introduce guidance which clarifies how awarding organisations should interpret our assessment objectives?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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Question 9: To what extent do you agree or disagree that we should allow the first exams for new mathematics A levels in summer 2018 (at the end of the first year of teaching)?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

This will be essential for candidate completing A level Mathematics and A level Further Mathematics in some school/college situations where Mathematics is completed in advance of Further Mathematics. It will allow schools/colleges to deliver content in a similar organisational set up as at present and ensure that a suitable amount of Mathematics is covered in order to begin and complete the Further Mathematics courses, with time to fully prepare for examinations.

Question 10: To what extent do you agree or disagree with our proposed approach to regulating the sampling of subject content in AS and A level mathematics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

It is essential to not to allow predictability to creep in with topic coverage.

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Question 11: To what extent do you agree or disagree with our proposed approach to regulating the use and assessment of large data sets in AS and A level mathematics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

The content published by the DfE contains a radical reform, it is vital that this is successfully implemented. The A Level Mathematics Working Group report includes no exemplar for assessing large data sets which suggests the challenge presented by this new element of A level and highlights the need for quality CPD in this area.

It is essential that the practicalities of assessing large data sets is carefully and thoroughly thought through. This needs to be made clear to all concerned rather than try and continue with reforms that result in an inadequate fix.

Question 12: To what extent do you agree or disagree with our proposed approach to regulating non-core content in AS and A level further mathematics?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Please explain your reasons:

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A level playing field should not emphasise over-easy topics, but allow different strands to develop to suit different student/educational needs. Hence the regulation is necessary and welcome.

Question 13: Do you have any comments on our proposed Conditions and requirements for AS and A level mathematics?

Yes No

Question 14: Do you have any comments on our proposed Conditions and requirements for AS and A level further mathematics?

Yes No

Question 15: Do you have any comments on our proposed guidance for AS and A level mathematics?

Yes No

Question 16: Do you have any comments on our proposed guidance for AS and A level further mathematics?

Yes No

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Question 17: Do you have any comments on DfE's proposed new appendices to the subject content for mathematics and further mathematics?

Yes No

1.15 *Replace 'the set of positive integers and 0' with 'the set of non-negative integers'*

3.7 *So that $\sqrt{0}$ is defined, this should be 'the non-negative square root of a'.*

3.9 *$0! = 1$ should be included.*

10.1 *Angular frequency is incorrect. We would strongly favour replacing it with 'angular speed'. Although ω is sometimes referred to as the angular velocity, it is a scalar (and pedagogically it is unhelpful to have a scalar called a vector) and it is only the magnitude of the true angular velocity vector, $\omega = \omega \hat{\omega}$ where $\hat{\omega}$ is the unit vector parallel to the axis of rotation (with the rotation about it in an anti-clockwise sense), which students may encounter subsequently.*

Question 18: We have not identified any ways in which the proposals for AS and A level mathematics and further mathematics would impact (positively or negatively) on persons who share a protected characteristic.¹ Are there any potential impacts we have not identified?

Yes No

¹ 'Protected characteristic' is defined in the Equality Act 2010. Here, it means disability, racial group, age, religion or belief, pregnancy or maternity, sex, sexual orientation and gender reassignment.
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Question 19: Are there any additional steps we could take to mitigate any negative impact resulting from these proposals on persons who share a protected characteristic?

Yes No

Question 20: Have you any other comments on the impacts of the proposals on students who share a protected characteristic?

Yes No

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Accessibility of our consultations

We are looking at how we provide accessible versions of our consultations and would appreciate it if you could spare a few moments to answer the following questions. Your answers to these questions will not be considered as part of the consultation and will not be released to any third parties.

We want to write clearly, directly and put the reader first. Overall, do you think we have got this right in this consultation?

Yes No

Do you have any comments or suggestions about the style of writing?

Yes No

Do you have any special requirements to enable you to read our consultations? (for example, screen reader, large text, and so on)

Yes No

Which of the following do you currently use to access our consultation documents? (select all that apply)

Screen reader / text-to-speech software

Braille reader

Screen magnifier

Speech-to-text software

Motor assistance (blow-suck tube, mouth stick, and so on)

Other

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Which of the following document formats would meet your needs for accessing our consultations? (select all that apply)

- A standard PDF
- Accessible web pages
- Large-type PDF (16 point text)
- Large-type Word document (16 point text)
- eBook (Kindle, iBooks, or similar format)
- Braille document
- Spoken document
- Other

How many of our consultations have you read in the last 12 months?

- 1
- 2
- 3
- 4
- 5
- More than 5