



GCSE Reform Consultation Questions

June 2013

The Responses and Comments of The Mathematical Association



The Mathematical Association
Supporting Mathematics in Education



June 2013

Ofqual/13/5292

Annex 1: All questions

This consultation is about the regulatory aspects of proposed changes to GCSEs taken by students in England.

We would like to know your views on the proposals before we put in place regulatory requirements for reformed GCSEs.

We will publish the evaluation of responses to the consultation later this year. In order for us to evaluate responses properly, we need to understand who is responding and in what capacity. Therefore, however you respond, we will only be able to consider your responses to the consultation questions if you complete the information page.

Details on how to respond are given below.

Please note we may publish all or part of your response unless you tell us in your answer to the confidentiality question below that you want us to treat your response as confidential.

The Department for Education (DfE) is running a parallel consultation¹ on the content of the reformed GCSEs. If you have views on the draft content you should respond to the DfE's consultation. If you do include in your response to this Ofqual consultation comments that should have been directed to the DfE we may copy these to the DfE unless you state that your response is confidential.

The deadline for responses to this consultation is **17.00 on 3rd September 2013**.

How to respond to this consultation

Please respond to the consultation questions using one of these methods.

Complete the online response form at <http://comment.ofqual.gov.uk/gcse-reform-june-2013/category/respond/>

Email your completed response document to consultations@ofqual.gov.uk – please include the consultation title in the subject line of the email and be clear who is responding and in what capacity.

Post your response to **GCSE Reform consultation – June 2013**, Ofqual, Spring Place, Coventry Business Park, Herald Avenue, Coventry, CV5 6UB.

¹ <https://www.gov.uk/government/consultations/gcse-subject-content-and-assessment-objectives>

Information pages

About you*

Your details:

Name:	Dr Chris Pritchard
Position:	Immediate Past Chair of Teaching Committee
Name of organisation or group (if applicable):	The Mathematical Association
Address:	259 London Road, Leicester LE2 3BE.
Email:	chrispritchard2@aol.com
Telephone number:	01877 330037

The Mathematical Association is the country's oldest subject association. It supports good mathematics learning and teaching through interaction with decision makers, by organising conferences and by publishing books and journals. The responses provided here have been put together by the Association's Teaching Committee on behalf of its Council. Only the questions of most relevance to mathematics education have been answered.

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

Yes No

Are the views expressed on this consultation an official response from the organisation you represent or your personal view?*

Personal views

Official response from an organisation/group (complete the type of responding organisation)

If you ticked 'personal views', are you a ...

Student

Parent/carer

- Teacher (but not responding on behalf of a school)
- Other (including general public) (please state capacity) _____

If you ticked 'official response from an organisation or group', please respond accordingly,

Type of responding organisation*

- Awarding organisation for 14–19 general qualifications
- Awarding organisation for 14–19 vocational qualifications
- Awarding organisation for vocational and/or professional qualifications
- Awarding organisation for other kinds of qualifications
- School/college (please complete the next question)
- Private training provider
- Higher education institute
- Employer
- Government body/organisation (national and local)
- Other representative group/interest group (please skip to type of representative group/interest group)

School/college type

- Academy and/or free school
- Comprehensive
- State selective
- Independent
- Special school
- Further education
- Sixth form college
- None of the above (please state what) _____

Type of representative group/interest group

- Group of awarding organisations
- Union
- Sector skills council
- Academy chain
- Employer/business representative group
- Equality group
- Other voluntary or community group
- None of the above: Subject Association

Nation*

- England
- Wales
- Scotland
- Northern Ireland
- Other EU country (please state which) _____
- Non-EU country (please state which) _____

*Denotes mandatory fields

Consultation questions

Section 1 Scope, purpose and context of the consultation

1. The proposed primary purposes of the reformed GCSEs will be to provide evidence of students' achievements against demanding and fulfilling content and a strong foundation for further academic and vocational study and for employment. The reformed GCSEs should also provide a basis for schools to be held accountable for the performance of all their students. These proposed purposes are consistent with the purposes set out in the Secretary of State's letter². To what extent do you agree with these propositions?

Strongly agree

Agree

Disagree

Strongly disagree

Don't know/no opinion

2. Do you have any comments to make on these propositions?

Section 2 Key design features – tiering

3. To address concerns that tiering can limit students' ambitions we propose to apply the principle that qualifications should only be tiered if:
- manageable assessments cannot be designed that would both allow students at the lower end of the ability range to demonstrate their knowledge, skills and understanding in a subject, *and* that would stretch the most able students; and
 - content that would be exclusive to the higher tier can be identified.

To what extent do you agree with this proposition?

Strongly agree

² www.ofqual.gov.uk/files/2013-02-07-letter-from-michael-gove-reform-of-ks4-qualifications.pdf

- Agree
- Disagree
- Strongly disagree
- Don't know/no opinion

We have applied this principle on tiering to the following subjects: English language, English literature, mathematics, biology, chemistry, physics, double award science, geography and history. As such:

4. The reformed GCSE in mathematics should be **tiered**. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion

Comment

As the consultation document notes, there are some perverse incentives associated with tiering. However, these are really caused by the interaction of the accountability framework (specifically the inappropriately high emphasis on the C grade, in the current system) and tiering. What this means is that the tiering model and the accountability framework have to be designed alongside one another, to avoid such perverse incentives. We do acknowledge that the reform of the accountability procedures should reduce the effect of opportunity being limited by unduly cautious school examination entry policies relating to the maximisation of C grades.

We share the concerns of the authors of the consultation document about the danger of limiting ambition by putting pupils into a lower tier who would be capable of succeeding at a higher tier. But there is also a danger of putting pupils of limited capability into a higher tier, or not having tiering at all, and trying to get them to learn material that is too abstract for them, so that they are put off the subject altogether, and so do not learn even that which they usefully could learn. It is much better for them to learn some useful skills and knowledge, in lessons they can enjoy because they can master the material.

These comments notwithstanding, we strongly agree that in a subject such as Mathematics in which we differentiate by content, not only by outcome, tiering is appropriate.

5. The reformed GCSEs in science (biology, chemistry, physics and double award) should be **tiered**. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
6. The reformed GCSE in English language should be **untiered**. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
7. The reformed GCSE in English literature should be **untiered**. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
8. The reformed GCSE Geography should be **untiered**. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion

9. The reformed GCSE History should be **untiered**. To what extent do you agree with this proposition?

() Strongly agree

() Agree

() Disagree

() Strongly disagree

() Don't know/no opinion

10. Where tiering is used, which of the following models – adjacent levels, core and extension, overlapping tiers – would you prefer? Please rank the options in order of your preference (1–3).

(1) Adjacent levels

(3) Core and extension model

(2) Overlapping tiers

Why do you prefer the model you have ranked as 1?

Comment

Tiering should contain a ladder of papers (or sets of papers) with candidates taking two adjacent papers with their better performances counting. There might be some hurdle to prevent a high grade despite poor performance on the more elementary paper but care needs to be taken that this does not lead to over-concentration on the more elementary material. So long as the number of tiers is greater than in the current restrictive model, tiering should allow students to target their outcome at a level most appropriate to them.

We are aware that a 3-tier model has worked well in Scotland. It is a model which sees the vast majority of the candidates tackle two tiers, either the hardest and the middle range or the middle range and the easiest. In both cases, they aspire to success on the harder of the two tiers being tackled but those who perform poorly have to settle for a grade from the lower of the two tiers. A small proportion of the cohort is allowed to tackle just the least difficult tier.

11. Do you have any additional comments to make on tiering?

Section 3: Key design features: assessment arrangements

12. The default position should be that the reformed GCSEs are assessed by way of externally set and marked examinations, except where subject content cannot be validly assessed in this way. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
13. Where the final grade is based on externally set and marked exams only, there should be a minimum total exam time (the total time could be divided between different papers). To what extent do you agree with this proposition? See page 37.
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
14. The proposal is for a minimum total exam time of 3.5 hours for subjects where the final grade is based on externally set and marked exams only. That is English language, English literature, mathematics, geography and history.
- Is 3.5 hours ...
- Too much
 - About right
 - Too little
15. For subjects in the first tranche, where there are **other forms of assessment** in addition to exams (biology, chemistry and physics) there should be a minimum number of hours of exam time (the total exam time could be divided between

different papers). To what extent do you agree with this proposition? See page 37.

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/no opinion

16. For subjects in the first tranche where there are other forms of assessment undertaken in addition to exams the proposal is for 3 hours as the appropriate minimum amount of exam time. See page 37.

Is 3 hours ...

- Too much
- About right
- Too little

17. Reformed GCSEs will be linear; with all exams taken at the end of the course (non-exam assessments may be completed at different times). To what extent do you agree with this proposition?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/no opinion

18. All reformed GCSEs will include an element of synoptic assessment. To what extent do you agree with this proposition?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/no opinion

19. Externally set and marked assessments should normally only be taken at one point during the year – in May and June. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
20. An exception should be made to the provision that exams should only be taken in May and June, so that students may re-sit mathematics and English language in November. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
21. November re-sits should be restricted to students in Year 12 and above. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion

Comment

The November session should only be for Year 12s, either as resits or for those Year 12s who were not ready/well in June of their Year 11. If age discrimination legislation precludes the November sitting being restricted to year 12 age, then we believe that the current abuses with regard to early and repeated entry should make its discontinuation essential.

22. In the reformed GCSEs in English literature, geography and history we propose 5 per cent of the marks should be allocated to spelling, punctuation and grammar, as for current GCSEs in these subjects. To what extent do you agree with these propositions?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/no opinion

23. In the reformed GCSEs in English language, 20 per cent of the marks should be allocated to spelling, punctuation and grammar. To what extent do you agree with this proposition?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/no opinion

24. If marks are to be allocated for spelling, punctuation and grammar in English literature, geography and history, are 5 per cent of the marks the right amount? And in English language are 20 per cent of the marks for spelling, punctuation and grammar the right amount? Please indicate by ticking one column per row.

	Too much	About right	Too little
English literature 5% is			
Geography 5% is			
History 5% is			
English language 20% is			

25. Do you have any comments on the proposed assessment arrangements for the reformed GCSEs?

Section 4: Key design features: reporting student performance

26. Student performance in the reformed GCSEs should be reported using grades (rather than marks, scaled scores or percentile scores). To what extent do you agree with this proposition?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/no opinion

27. If grades were **not** used, which of the alternatives would you prefer?

- Marks
- Scaled scores
- Percentile scores
- Other

28. Grades could be used alongside marks, scaled scores or percentile scores. Would you like to see grades and more granularity of reporting as well?

- Grades alone
- Grades with marks
- Grades with scaled scores
- Grades with percentile scores
- Other combination of approaches
- Don't know/no opinion

29. Eight grades would allow for sufficient differentiation of performance between students. To what extent do you agree with this proposition?

- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
30. The number of grades at the higher and middle performance range should be increased to allow for greater differentiation. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
31. The number of grades at the lower end of the performance range should be reduced. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
32. Grades should be described using a new system to differentiate them from current GCSEs. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
33. Grades should be described using numbers. To what extent do you agree with this proposition?

- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
34. If grades are described using numbers, the highest numbered grade should signify the highest level of achievement. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
35. What information would students and users of qualifications find valuable in addition to the overall grade about students' performance?
-
-
-
-
36. How would any additional information about students' performance be used by students and users of qualifications?
-
-
-
-
37. If more detailed information about student performance in a subject was to be provided, it would result in significantly more assessment and higher costs. Would these greater resource implications be justified?
- Yes
 - No
38. Do you have any other comments about reporting student performance?

Section 5: Full and short course GCSEs

39. The time it will typically take a student to complete a course of study for one of the reformed GCSEs should be the same as or similar to the time required for one of the current GCSEs (double award science will be the same as or similar to two current GCSEs). This means, as is the case with current GCSEs, that students would normally study reformed GCSEs over two years. To what extent do you agree with this proposition?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/no opinion

Comment

On the assumption that those two years are Years 10 and 11, we strongly agree. However, this curriculum will take the same time as a double Science or double English, and consideration should be given to reflecting this in the value placed on it in accountability systems. If it is to have equal status with English and Science, schools prioritise mathematics differently if students are getting two GCSEs.

40. Awarding organisations should be able to offer stand-alone short courses of the reformed GCSEs which will not contribute to a full GCSE. To what extent do you agree with this proposition?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don't know/no opinion

Section 6: Regulating the reformed GCSEs

41. Awarding organisations will be required to use and assess the subject content requirements as set out by the Department for Education in the development of reformed GCSEs (for those subjects for which the Department for Education consults on and publishes subject content requirements). To what extent do you agree with this proposition?

Strongly agree

Agree

Disagree

Strongly disagree

Don't know/no opinion

42. Exam boards should be required to develop assessment strategies for their reformed GCSEs. To what extent do you agree with this proposition?

Strongly agree

Agree

Disagree

Strongly disagree

Don't know/no opinion

43. Exam boards should be required to review systematically the effectiveness of their assessments for each of their reformed GCSEs. To what extent do you agree with this proposition?

Strongly agree

Agree

Disagree

Strongly disagree

Don't know/no opinion

44. The Apprenticeships, Skills, Children and Learning Act 2009, requires us to consult before we impose an accreditation requirement on exam boards. Do you agree that the reformed GCSEs should be subject to an accreditation requirement, that is, that they must be checked by Ofqual before they can be made available?

Yes

No

45. Do you have any other comments on the regulation of the reformed GCSEs?

Section 7: Subject-specific features of the reformed GCSEs

46. Please indicate whether you have read the Department for Education’s subject content consultation document and associated documentation by ticking one box per row:

Subject	I have read the DfE subject content	I have not read the DfE subject content
English language		
English literature		
Mathematics	✓	
Sciences (biology, chemistry, physics and double award science)		
Geography		
History		

Please note, we are not consulting at this time on reformed GCSEs in modern foreign languages or ancient languages, although the DfE is consulting on the content for these subjects.

English language

47. The Department for Education’s draft English language content includes a spoken language assessment which **cannot** be assessed by an external written exam. To what extent do you agree with this proposition?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don’t know/no opinion

48. The outcome of the spoken language assessment should be reported separately on the certificate, and not form part of the overall grade. To what extent do you agree with this proposition?

- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
49. Some disabled students may be granted an exemption from the spoken language assessment because of their disability, for example, deaf or hearing impaired students. Should this exemption be shown on the certificate or should the certificate just include the grade from the exams?
- Exemption reported on certificate
 - Exemption not reported on the certificate
50. Do you have any comments – other than about the detailed syllabus, which is being dealt with through the Department for Education's consultation – about the proposed design requirements for the reformed GCSEs in English language?

English literature

51. The Department for Education's draft English literature content **can** be assessed by externally assessed written exams only. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don't know/no opinion
52. Do you have any comments – other than about the detailed syllabus, which is being dealt with through the Department for Education's consultation – about the proposed design requirements for the reformed GCSE in English literature?

Mathematics

53. The Department for Education’s draft mathematics content **can** all be assessed by externally assessed written exams only. To what extent do you agree with this proposition?

Strongly agree

Agree

Disagree

Strongly disagree

Don’t know/no opinion

54. Do you have any comments, other than about the detailed syllabus, which is being dealt with through the Department for Education’s consultation, about the proposed design requirements for the reformed GCSEs in mathematics?

- We are not at all clear that proposed design requirements have entered the public domain, so we are being asked to guess/devise what should have been piloted, refined, and specified before the consultation.
- Some kind of double award is essential. It has been the policy of The Mathematical Association to champion the Linked Pair, a position which is consistent with our support for ACME’s *Raising the Bar*. However, if a decision has already been taken to abandon the Linked Pair, then a model in which there are two GCSEs, one for all and a second that is additional to the first, would be preferable to a model in which there were two alternative GCSEs.
- We have some concern that the use of the word ‘fluency’ will lead to teachers and schools interpreting it as ‘death by repetition’; clarification is required. Where sets of exercises are being used, it is important that we promote those with increasing depth of understanding and complexity of concept; see, for example:

Watson, Anne and Mason, John (2006) ‘Seeing an Exercise as a Single Mathematical Object: Using Variation to Structure Sense-Making’, *Mathematical Thinking and Learning*, 8: 2, 91-111.

Hewitt, D., Fluency: The Nature of Practice and the Role of Subordination, *For the Learning of Mathematics*, 16: 2 (June 1996), 28-35.

The sciences (biology, chemistry, physics and double award science)

55. The Department for Education’s draft content for science GCSEs includes practical elements. These practical elements **cannot** be assessed **only** by an external written exam. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don’t know/no opinion
56. The practical science element should be assessed by teachers in accordance with exam board requirements. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don’t know/no opinion
57. The practical science assessment element should contribute 10 per cent to the student’s overall marks for the GCSE science qualifications. To what extent do you agree with this proposition?
- Strongly agree
 - Agree
 - Disagree
 - Strongly disagree
 - Don’t know/no opinion
58. Do you have any comments, other than about the detailed syllabus, which is being dealt with through the Department for Education’s consultation, about the proposed design requirements for the reformed GCSEs in sciences?
-
-
-
-

Geography

59. The Department for Education’s draft geography GCSE content includes a fieldwork element. The outcomes in the draft content **can** all be assessed by an external written exam **only**. To what extent do you agree with this proposition?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don’t know/no opinion

60. Do you have any comments – other than about the detailed syllabus, which is being dealt with through the Department for Education’s consultation – about the proposed design requirements for the reformed GCSEs in geography?

History

61. The Department for Education’s draft history GCSE content **can** all be assessed by external written exam **only**. To what extent do you agree with this proposition?

- Strongly agree
- Agree
- Disagree
- Strongly disagree
- Don’t know/no opinion

62. Do you have any comments – other than about the detailed syllabus, which is being dealt with through the Department for Education’s consultation – about the proposed design requirements for the reformed GCSEs in history?

Section 8: Equality impact assessment

63. We have identified a number of ways the proposed requirements for the reformed GCSEs may impact (positively or negatively) on persons who share a protected characteristic. Are there any other potential impacts we have not identified?

Yes

No

If so, what are they?

64. Are there any additional steps we could take to mitigate any negative impact on persons who share a protected characteristic resulting from these proposals?

Yes

No

Please comment on the additional steps we could take to mitigate negative impacts.

65. Taking into the account the purpose of qualifications, could the proposed design of the reformed GCSEs be changed to better advance equality of opportunity between persons who share a protected characteristic and those who do not?

Yes

No

If so, what changes to the design of the reformed GCSEs would you suggest to better advance equality of opportunity?

66. Have you any other comments on the impacts of the proposals on persons who share a protected characteristic?

Contact

Would you be happy for us to contact you again in relation to this consultation response? () Yes () No

Email address of key contact person to whom we may speak with about your response to this consultation*

chrispritchard2@aol.com

Additional information

How did you find out about this consultation?

- () Ofqual's newsletters or other communications
- () From Ofqual's website
- () Media/press
- () Via internet search
- () Via another organisation (please state which) _____
- () Other (please state how)

As a subject association, we routinely monitor all activity relevant to mathematics education arising from the work of governmental and non-governmental bodies, so that we can engage in consultation processes.

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

- () Yes
- () No

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

No

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Any enquiries regarding this publication should be sent to us at:

Office of Qualifications and Examinations Regulation	
Spring Place	2nd Floor
Coventry Business Park	Glendinning House
Herald Avenue	6 Murray Street
Coventry CV5 6UB	Belfast BT1 6DN
Telephone 0300 303 3344	
Textphone 0300 303 3345	
Helpline 0300 303 3346	