

# **Analysis of Responses to our Consultation on Requirements and Guidance for GCSE Mathematics**



June 2015

Ofqual/15/5719

# **Contents**

Executive summary .....	2
1. Introduction .....	3
Background .....	3
2. Who responded?.....	4
3. Approach to analysis.....	5
Data presentation .....	5
4. Views expressed – consultation response outcomes.....	6
Other issues .....	8
Appendix A: List of organisational consultation respondents.....	10

## **Executive summary**

Our consultation about revised requirements and guidance for GCSE mathematics took place between 21st May 2015 and 18th June 2015.

The consultation questions were available either to complete online or to download. A copy of the consultation is available at [www.gov.uk/government/consultations/gcse-reform-regulations-for-mathematics](http://www.gov.uk/government/consultations/gcse-reform-regulations-for-mathematics).

There were 30 responses to the consultation – 19 from individuals and 11 from organisations. Twenty-six responses were in a form that matched or broadly followed the layout of the online consultation.

Respondents broadly supported our proposal to allow exam boards limited flexibility to deviate from the prescribed assessment objective weightings in a single exam series. Some respondents suggested that slightly more flexibility might be needed.

Respondents also broadly supported our proposed revised guidance on mathematical problem-solving, commenting that it was helpful. Some respondents, however, felt that further guidance was needed for schools and teachers.

## **1. Introduction**

This report is a summary of the views expressed by those who responded to our consultation on requirements and guidance for GCSE mathematics, which took place between 21st May 2015 and 18th June 2015.

### **Background**

Reformed mathematics GCSEs are being introduced in England, and will be taught in schools from September 2015.

We published Conditions, requirements and guidance for new mathematics GCSEs in April 2014. Exam boards used these rules and guidance to develop specifications and sample assessment materials for the new GCSE and we accredited these between September 2014 and January 2015.

While all specifications that we accredited met our requirements, during accreditation we identified some aspects that we believed could be improved.

This consultation focused on the additional subject-specific requirements and guidance that we proposed to put in place to ensure more effective assessment of mathematical problem-solving in new mathematics GCSEs.

## 2. Who responded?

We received a total of 30 responses to our consultation.<sup>1</sup> There were 19 responses from individuals and 11 responses from organisations. All of the responses were from individuals or organisations based in England or Wales.

**Table 1: Breakdown of consultation responses**

Personal / Organisation response	Respondent type	Number
Personal	Teacher	16
Personal	Educational specialist	2
Personal	Other / Not stated	1
Organisation	Subject association / Learned society	4
Organisation	Exam board	2
Organisation	School	2
Organisation	Headteachers' association	1
Organisation	Union	1
Organisation	Other / Not stated	1

---

<sup>1</sup> Where responses were received in hard copy we entered them into the online platform.

### **3. Approach to analysis**

We published the consultation on our website. Respondents could choose to respond using an online form, by email, or by posting their answers to the consultation questions to us. The consultation included five questions.

This was a consultation on the views of those who wished to participate and while we made every effort to ensure that as many respondents as possible had the opportunity to reply, it cannot be considered as a representative sample of the general public or of any specific group.

#### **Data presentation**

We present the responses to the consultation questions in the order in which they were asked.

The consultation asked five questions and each had a different focus. Respondents could choose to answer all or just some of the questions.

Where responses did not match or broadly follow the layout of the online consultation, we have considered the issues raised under the relevant questions or under 'Other issues' below.

During the analysis phase we reviewed every response to each question.

## **4. Views expressed – consultation response outcomes**

In this section we report the views, in broad terms, of those who responded to the consultation document. We have structured this around the questions covered in the consultation document and provide analysis of the data broken down by stakeholder.

A consultation is not the same as a survey and the responses only reflect the views of those who chose to respond. Typically these will be those with strong views and/or particular experience or interest in a topic. What follows is a fair reflection of the views expressed by respondents to the consultation.

A list of the organisations that responded to the consultation is included in Appendix A.

<b>Question 1 – Do you have any comments on our proposal to allow limited flexibility in assessment objective weightings for new mathematics GCSEs?</b>
---

We proposed that exam boards should have limited flexibility to deviate from the specified assessment objective weightings in a single exam series (up to  $\pm 3$  per cent deviation), but that the specified weightings should be achieved in each consecutive two-year period.

Fifteen respondents (12 individuals, three organisations) did not comment on this question.

All the respondents who did comment welcomed the additional flexibility for exam boards, commenting that it was sensible and should allow for better assessment design. However, some respondents also raised some concerns.

Four respondents (two individuals, two organisations) commented that the requirement to achieve specific weightings over a two-year period could constrain exam boards unduly in the future. One respondent suggested that the requirement should specify that the desired weightings should be achieved over the shortest possible period of time.

Two respondents (one individual, one organisation) suggested that greater flexibility ( $\pm 5$  per cent deviation) might be better.

**Question 2 – Do you have any comments on the additional guidance on assessment objective AO3 for new mathematics GCSEs?**

This question referred to our draft guidance on mathematical problem-solving, which we proposed should replace existing guidance.

Fifteen respondents (12 individuals, three organisations) did not comment on this question.

Eight respondents (three individuals, five organisations) supported our proposed guidance, commenting that it was helpful.

Two (both organisations) expressed concerns that the structure of our guidance (which divides the assessment objective into strands and elements) could encourage an ‘atomised’ approach to question setting, rather than true multi-step problem-solving. One of these respondents suggested that a greater proportion (two-thirds rather than one-third) of problem-solving questions should target multi-step problems.

Two (both individuals) commented that problem-solving would be difficult to assess in an exam, particularly across the full range of abilities.

Two (both individuals) suggested that more guidance for schools and teachers would be helpful.

**Question 3 – We have not identified any ways in which our additional requirements and guidance for new mathematics GCSEs would impact (positively or negatively) on persons who share a protected characteristic.<sup>2</sup> Are there any potential impacts we have not identified?**

Twenty-seven respondents (18 individuals, nine organisations) did not comment on this question.

One respondent (an individual) commented that some students might not achieve a classified grade at all.

One (an organisation) noted that the contexts chosen for problem-solving questions could unintentionally disadvantage students with visual (and/or auditory) impairments. This might happen because students with such disabilities have

---

<sup>2</sup> ‘Protected characteristic’ is defined in the Equality Act 2010. For the purposes of the public sector equality duty, it means disability, racial group, age, religion or belief, pregnancy or maternity, sex, sexual orientation and gender reassignment.



different 'real-life' experiences, and might therefore be less familiar with certain contexts than students without disabilities.

One (an organisation) noted they had not identified any additional impacts.

**Question 4 – Are there any additional steps we could take to mitigate any negative impact resulting from these proposals on persons who share a protected characteristic?**

Twenty-seven respondents (17 individuals, ten organisations) did not comment on this question.

One respondent (an individual) suggested that there should be sufficient questions for all students to achieve at least a grade 1.

One (an individual) suggested monitoring of exams before they go live.

One (an organisation) suggested that those involved in adapting exams for visually impaired students should undertake specialist training.

**Question 5 – Have you any other comments on the impacts of the proposals on students who share a protected characteristic?**

Twenty-eight respondents (18 individuals, ten organisations) did not comment on this question.

Both respondents (one individual, one organisation) commented on issues outside the scope of the consultation. We have analysed these comments under 'Other issues' below.

**Other issues**

Some respondents also commented on issues outside the scope of the consultation.

Two (one individual, one organisation) commented that these changes are being introduced close to the planned introduction of new GCSE courses, and that the uncertainty around sample assessment materials was making it difficult for schools to design teaching courses. These respondents suggested deferring the introduction of the reformed mathematics GCSE by a year.

One (an organisation) suggested alternative approaches to the design of the qualification, including a common exam used by all exam boards, greater use of trialling of questions, and making greater use of expert input when designing questions.

One (an individual) suggested that mathematics GCSE should use three separate tiers for assessments.

## **Appendix A: List of organisational consultation respondents**

When completing the questionnaire, respondents were asked to indicate whether they were responding as an individual or on behalf of an organisation.

Below we list those organisations that submitted a response to the consultation. We have not included a list of those responding as an individual. However, all responses were given equal status in the analysis.

Advisory Committee on Mathematics Education

ASCL

Association of Teachers of Mathematics

Dean Close School, Cheltenham

Independent Schools Association

Mathematical Association

Mathematics Assessment Resource Services

Mathematics in Education and Industry

New College, Worcester

OCR

Pearson

We wish to make our publications widely accessible. Please contact us at [publications@ofqual.gov.uk](mailto:publications@ofqual.gov.uk) if you have any specific accessibility requirements.



© Crown copyright 2015

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit <http://nationalarchives.gov.uk/doc/open-government-licence/version/3> or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: [publications@ofqual.gov.uk](mailto:publications@ofqual.gov.uk).

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is available at [www.gov.uk/ofqual](http://www.gov.uk/ofqual).

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

Office of Qualifications and Examinations Regulation

Spring Place  
Coventry Business Park  
Herald Avenue  
Coventry CV5 6UB

2nd Floor  
Glendinning House  
6 Murray Street  
Belfast BT1 6DN

Telephone 0300 303 3344

Textphone 0300 303 3345

Helpline 0300 303 3346