

Finding your way round the QCA consultation on level 3 mathematics

The QCA consultation is accompanied by a very considerable amount of paperwork, about 150 pages. There are no fewer than 5 questionnaires and associated subject criteria for 4 of them. The purpose of this document is to help teachers, and any others with an interest in mathematics at this level, to respond without getting completely snowed under.

Nearly all the documents may be downloaded in pdf form from the QCA website. http://www.qca.org.uk/qca_22191.aspx. For your convenience we have placed direct links to them, together with some other relevant documents, on the MEI site, at <http://www.mei.org.uk/qcaconsultation.shtml>. Notice, however, that QCA want the questionnaires to be filled in online.

The questionnaires are related and so we advise respondents to download all the information and think before completing any of them online. There may be times when information from one set of criteria will influence a response to another questionnaire.

Completing all the questionnaires will be time consuming and so respondents may want to prioritise them, and even the questions within them.

Quality of the consultation

Respondents should be aware that the questionnaires, and the accompanying information, are not of high quality.

- There are several situations where the meanings of questions, or the interpretations that will be put on responses, are not clear.
- The consultation is supposed to cover 6 models for AS and A Levels in Mathematics and Further Mathematics but only one of these (Model A) is described in any detail and so it is completely unclear what restrictions on content would apply to the other models.
- There are many serious questions, for example about possible loss of choice in applied mathematics, that should be asked and are not.

In their position statement relating to this consultation, the Royal Statistical Society say “The Society regrets to have to warn that it finds parts of the main questionnaire highly biased”. We agree.

This consultation follows on from a sequence of meetings at which QCA have sought expert advice, including from other government agencies. A feature of these meetings has been the strong and carefully argued majority advice against the sort of changes described in this consultation. Not only have QCA ignored the arguments (which are set out in our accompanying position paper) but in a number of cases key issues have been side-stepped.

In particular, no consideration is given to the underlying issue of whether there should be any change to mathematics AS and A Levels at about this time.

Although we expect that QCA’s analysis of the results of the survey will be mainly in terms of the proportions of respondents who favour various options, we feel sure that respondents will also find themselves making considerable use of the free response boxes. However, note that only some answers will allow access to the free response boxes in the online version of the questionnaire.

The overarching issues questionnaire

For most respondents the key questionnaire will be the one entitled “Level 3 mathematics qualifications overarching questionnaire”. QCA provide three sources of accompanying information.

- This questionnaire itself gives quite a lot of important information, some of which is not available anywhere else.
- There is also a page of background information on the QCA website: http://www.qca.org.uk/qca_21230.aspx .
- Further details, including syllabus content, of some, but by no means all, of the proposals are given in the four subject criteria documents.

The following comments refer to particular questions in this questionnaire.

Question 2a

This question has several unsatisfactory features.

- The question is worded as a general statement. It is not apparent that it is, in fact, a proxy for choice of Model A. None of the other models have appeared as yet in the questionnaire. Respondents should read question 2b and its accompanying text before considering how to respond to question 2a.
- It ignores a fundamental design flaw in attempting to separate Mathematics and Further Mathematics in this way. It is not possible to design coherent strands of applied mathematics for Model A. The reasons for this are described in our position paper. QCA are well aware of this problem but have chosen to make no mention of it here. The criteria for Mathematics include applied content but there is no indication in the criteria for Further Mathematics of how the applied units could be constructed to run in conjunction with it.
- The question reads as though the separation of Mathematics and Further Mathematics is the only significant feature of Model A, leaving other key issues untouched:
 - removal of choice in AS and A Level Mathematics;
 - the implications of a change to 4 modules;
 - fragmentation of applied content;
 - the likely effect on uptake of Mathematics and of Further Mathematics;
 - requiring teachers to teach topics from strands with which they may be completely unfamiliar;
 - whether the claimed benefits are important and indeed whether they would actually materialise.

Question 2b

If model A is rejected, this question asks respondents to choose between 5 further options for new AS and A Levels but it is not clear what a respondent is signing up to. The criteria are not given in any detail. It is not, for example, clear whether the subject cores for AS and A Level Further Mathematics given in the Further Mathematics criteria document apply to all models or just to Model A. Nor is it clear whether the applied units are the same as the ones in current specifications or different.

Thus for those respondents who want no change at this time, option D1 seems appropriate. However, it does not say that it is a no change model, leaving the way open for a large vote in favour of D1 to be interpreted as a large vote in favour of change.

Such ambiguity is, of course, deeply unsatisfactory. It is one of the worst aspects of poor practice in the design of this questionnaire. It is open to debate whether respondents who favour no change should opt for Model D1 or for "None of these". Our considered view is that it would be safest to answer "None of these" and explain why in the box underneath.

The two parts of question 2 provide the only serious opportunity in the whole consultation exercise for respondents to make their views known over the appropriate future shape of mathematics A levels. For most people they will thus be, by far, the most important questions in the whole consultation.

Question 3a

Respondents may wish to be aware that QCA called a meeting in the autumn of 2008 to consider possible subject cores for AS and A2 Further Mathematics. The overall response was that a core might be possible at AS, although there was no great enthusiasm for it, but that there should be no core at A2. This proposal runs against that advice.

The implication of an "Agree" response is that choice in the pure mathematics at this level would be greatly reduced along with scope for innovation. It is unclear whether agreeing to this question implies acceptance of the details of the core given on pages 5 - 7 of the Further Mathematics criteria document for all the models, or just for Model A. Some content that is in current FP2 syllabuses, for example hyperbolic functions, would no longer be allowed in the first two further pure modules.

Questions 4a, 4b and 4c

By now the questionnaire has moved away from AS and A Levels in Mathematics and Further Mathematics and on to the Use of Mathematics and Use of Statistics qualifications. The content proposed for each of these is given in the relevant criteria document. The strategic issues surrounding these "Use of ..." qualifications are quite different to those surrounding Mathematics and Further Mathematics.

Questions 5a and 5b

The next questions deals with the mathematics in the proposed Advanced Extended Diploma. Some respondents may feel they need more information about this qualification before they are in a position to make a judgement about this. At the moment, only limited information is available, for example at http://yp.direct.gov.uk/diplomas/questions_and_answers/glossary/ and <http://www.wired.gov.net/wg/wg-news-1.nsf/0/D4718D2CAEE0300F80257405004CD07E>.

Question 6a

This question asks whether the proposed set of Level 3 qualifications will provide a coherent set of pathways for the needs of all learners. There are several points that can be made about this.

- The issues raised here would be expected to be covered in the 2013 review of qualifications.
- National needs have not so far been well determined. (ACME is just starting a piece of work to describe and quantify them.)
- There are very different options within the proposals so there is no single answer to this question.

Question 7a

This question asks about the 2012 date for introducing changes to AS and A Level Mathematics. The only reason given for this date is that it follows on from the changes to GCSE in 2010. The way the question is worded could be taken to imply that this is the only reason why one would, or would not, support the 2012 date. However, as described in our position paper, there are many other issues involved, so respondents may not judge a simple “Agree” or “Disagree” answer to be appropriate.

Question 8a

The final question asks about the Advanced Extension Award. It suggests that, under the description of “Stretch and challenge”, the difficulty of the new A Levels will be increased to the point of making the AEA unnecessary. If so, this has considerable implications and these are discussed in our position paper.

The other 4 questionnaires

The other 4 questionnaires all follow the same standard format. Some respondents may feel that certain of the rather specialised questions do not sit comfortably within this general consultation. However, question 3 about content and questions 6 and 7 about structure and assessment should be relevant to almost all respondents.

Notice that question 2 of each of the questionnaires refers to the individual subject criteria alongside the AS/A Level qualification criteria. The latter can be found at http://www.ofqual.gov.uk/files/GCE_AS_and_A_level_qualification_criteria_Feb_07_final_version_2_.pdf and they differ from the criteria to which current AS and A Levels in mathematics were written. For example, a maximum total examining time is now specified.

The given criteria for Mathematics and those for Further Mathematics appear to apply only to Model A. There are no criteria for the other Models: B1, B2, C, D1 and D2. Respondents may feel that since they cannot comment on the criteria for all the options, to do so on those for Model A would invalidate their responses.

However, there is the danger that if only a few people respond to these 4 questionnaires, unrepresentative views may prevail. So we would encourage respondents to try to find the time to respond to them as well as the one covering overarching issues. That will ensure that final decisions are made in the knowledge of feedback from a large sample.