GUIDANCE

Functional skills mathematics

April 2021

ofqual

Contents

Introduction

This document is part of a suite of documents which outlines our guidance for awarding organisations offering functional skills qualifications in mathematics.

This guidance comes into effect at 00.01am on Friday 29 June 2018 and applies to the following functional skills qualifications in mathematics –

- qualifications awarded to all learners registered on or after 1 September 2019
- all qualifications awarded on or after 1 August 2021

This guidance supports both the General Conditions of Recognition and the Functional Skills Subject Level Conditions and Requirements for Mathematics.

This document constitutes guidance for the purposes of section 153 of the Apprenticeships, Skills, Children and Learning Act 2009 (the '2009 Act'), Conditions FSM 1.1(c), FSM4.2 and FSM5.2.

An awarding organisation has a legal obligation under the 2009 Act to have regard to this guidance in relation to each functional skills qualification in mathematics that it makes available or proposes to make available. Conditions FSM1.1(c), FSM4.2 and FSM5.2(b) impose the same obligation in respect of the guidance below which is issued under those conditions.

An awarding organisation should use the guidance in this document to help it understand how to comply with the General Conditions of Recognition, as they apply to functional skills qualifications in mathematics, and the Subject Level Conditions and associated requirements for such qualifications.

An awarding organisation must also have regard to the Guidance to the General Conditions of Recognition which applies to all qualifications. However, in the event of any inconsistency between that guidance and the guidance contained in this document, an awarding organisation must have regard to the guidance in this document.

Revisions to this document

This document was republished in April 2021 to implement the outcome of our consultation on a change to the regulation end date for legacy Functional Skills qualifications from 31 August 2020 to 31 July 2021.

Guidance for Functional Skills qualifications in mathematics

Guidance on interpretation of the subject content

The subject content for functional skills qualifications in mathematics is set out in the Department for Education's 'Subject content functional skills: Mathematics', document reference DFE-00046-2018 (the 'Content Document').

Condition FSM1.1(c) requires awarding organisations to interpret the Content Document in line with any requirements, and having regard to any guidance, published by Ofqual.

We set out our guidance for the purposes of Condition FSM1.1(c) below.

Assessing content statements at the appropriate level

We expect the Level of Demand of questions and tasks in relation to all content statements, and what they expect of Learners, to be appropriate to the level of the qualification.

Guidance on problem solving

The Content Document states that functional skills qualifications in mathematics need to provide assessment of Learners' underpinning skills – defined as 'the ability to do maths when not as part of a problem'[1] – as well as their ability to apply mathematical thinking to solve problems.[2]

It is the curriculum intention that questions or tasks that test problem solving 'should not seek to obscure or add additional mathematical complexity beyond the level of the qualification'.[3]

The Content Document goes on to set out a list of six generic attributes that may serve to indicate whether or not a particular question or task tests problem solving. It is our expectation that, at all levels, all questions and tasks that test problem solving will be likely to have both attributes A and C –

[1] Content Document, fn. 1, p. 3.

[2] Content Document, p. 4.

[3] Content Document, p. 19.

> A. Tasks that have little or no scaffolding: there is little guidance given to the student beyond a start point and a finish point. Questions do not explicitly state the mathematical process(es) required for the solution.
>
> […]
>
> C. The information is not given in mathematical form or in mathematical language; or there is a need for the results to be interpreted or methods evaluated, for example, in a real-world context.

However, the presence or absence of each of the other four attributes will depend upon the nature and level of the question or task –

> B. Tasks that provide for multiple representations, such as the use of a sketch or a diagram as well as calculations.
>
> […]
>
> D. Tasks have a variety of techniques that could be used.
>
> E. The solution requires understanding of the processes involved rather than just application of the techniques.
>
> F. The task requires two or more mathematical processes or may require different parts of mathematics to be brought together to reach a solution.

It may be that apart from attributes A and C, a problem-solving question or task has none of the other attributes.

We expect problem solving questions and tasks to involve the type of cognitive operations and processes typically encountered in everyday life. The context within which a question or task is set should be relevant and not superfluous to the question or task.

The expectations as to what problem-solving questions and tasks should entail – such as the number of steps involved – as well as general expectations around Learners' abilities are set out in the introductory paragraphs to the relevant 'solving mathematical problems and decision making' section for each level. These are summarised in Table 1 below.

Table 1

	Learners should be able to		The context within which each question or task is set
	recognise and obtain	**address individual problems**	
Entry 1	a solution to a **simple** problem, i.e. one which requires working through **one** step or process	each of which draws upon knowledge and/or skills from **one** of the three areas from the subject content	should be **familiar** to all students and **easily described**
Entry 2	a solution to a **simple** problem, i.e. one which requires working through **one** step or process	each of which draws upon knowledge and/or skills from **one** of the three areas from the subject content	should be **familiar** to all students and **easily described**
Entry 3	a solution to a **simple** problem, i.e. one which requires working through **one** step or process	each of which draws upon knowledge and/or skills from **one** of the three areas from the subject content	should be **familiar** to all students
Level 1	a solution or solutions to a **straightforward** problem, i.e. one that requires students to **either** work through **one** step or process, or to work through **more than one** connected step or process	some of which draw upon a combination of **any two** of the three areas from the subject content and require students to **make connections** between those content areas	will require some **comprehension** in order to independently identify and carry out an appropriate mathematical approach
Level 2	a solution or solutions to a **complex** problem, i.e. one which requires a **multistep** process, typically requiring planning and working through **at least two** connected steps or processes	some of which draw upon a combination of **all three** areas from the subject content and require students to **make connections** between those content areas	will require **interpretation and analysis** in order to independently identify and carry out an appropriate mathematical process or processes

Specific expectations as to the abilities that Learners must demonstrate in relation to problem solving are set out in the bullets in the 'solving mathematical problems and decision making' section for each level.

In our requirements under Condition FSM4.1, we state that in the assessment(s) for a functional skills qualification in mathematics, an awarding organisation must sample as much of the subject content as practicable. As part of this, in each assessment or pair of assessments, we expect an awarding organisation to cover a reasonable balance of the problem-solving abilities set out in the bulleted list for each level.

Guidance on assessing underpinning skills

Questions or tasks assessing underpinning skills may be presented either in a given context or in the abstract, without a context.

Where a question or task assessing underpinning skills is presented in a context, an awarding organisation should ensure that the context does not undermine the targeting of the relevant skills. For example, an unduly long or complex context could be a test of the Learner's comprehension of that context rather than a valid test of the relevant skills.

Guidance on assessment availability

We have not set any requirements with respect to when an awarding organisation must conduct assessments for a functional skills qualification in mathematics that it makes available.

This means that an awarding organisation may choose its own approach to when assessments are taken. It may, for example, choose to set a number of assessment windows each year, and/or it may offer 'on-demand' assessments which can be taken by a Learner at any time.

Whatever approach an awarding organisation adopts to the availability of assessments, it must ensure that it meets the requirements in the General Conditions of Recognition in relation to the maintenance of standards, comparability and avoiding predictability.[4]

Different approaches to assessment availability will give rise to different risks with respect to these issues and, as outlined in our requirements for the qualification, we will expect an awarding organisation to set out in its assessment strategy how it has sought to identify and deal with such risks.

[4] For example, Conditions D1, G1, G9, H2 (where applicable) and H3.

Guidance on notifying Ofqual of proposal to make qualification available

Condition FSM3.1(a) states that an awarding organisation must 'promptly' inform Ofqual that it proposes to make available a functional skills qualification in Mathematics.

We expect an awarding organisation to provide notification to us promptly following a firm business decision to develop the qualification and make it available. The purpose of this notification is to allow Ofqual to plan its technical evaluation of the qualification before it is made available.

Guidance on standard setting for functional skills qualifications in mathematics

Condition FSM5.2(b) allows us to specify requirements and guidance in relation to the setting of specified levels of attainment for functional skills qualifications in mathematics.

We set out below our guidance for the purposes of Condition FSM5.2(b).

Condition FSM5.3 states that in setting the specified levels of attainment for a functional skills qualification in mathematics which it makes available, an awarding organisation must have regard to an appropriate range of qualitative and quantitative evidence.

Condition FSM5.4 states that such evidence will only be appropriate if it includes evidence of –

- (a) the Level of Demand of the assessments for that qualification,
- (b) at Levels 1 and 2, the level of attainment demonstrated in those assessments by –

    (i) an appropriately representative sample of Learners taking that qualification, or

    (ii) individuals (whether Learners or otherwise) as part of robust technical pre-testing of those assessments,
- (c) at the entry levels, the level of attainment, where available, demonstrated in those assessments by –

    (i) an appropriately representative sample of Learners taking that qualification, or

    (ii) individuals (whether Learners or otherwise) as part of robust technical pre-testing of those assessments,
- (d) where available, the level of attainment demonstrated by Learners taking that qualification in a –

    (i) prior assessment (which was not for that qualification), whether or not that assessment was for a regulated qualification, or

    (ii) prior qualification, whether or not that qualification was a regulated qualification, and

- (e) following the first time that a Component designed in line with these Subject Level Conditions is awarded, the level of attainment demonstrated by Learners who have previously been awarded that Component

Without prejudice to any requirements that Ofqual may set in relation to the weight to be given to evidence in the first awards, examples of the evidence that may be used by an awarding organisation in setting the specified levels of attainment for a functional skills qualification in mathematics which it makes available may include –

- question papers/tasks and final mark schemes
- senior Assessor input into decisions, for example comments on how the assessments have worked or are likely to work, and recommendations for the setting of specified levels of attainment
- technical information about how the assessments, and/or any similar assessments previously and concurrently available, have functioned, for example mark distributions, mean marks, standard deviations, item-level statistics
- samples of current Learners' work selected from a range of Centres and assessed/Moderated by Assessors/moderators whose work is known to be reliable
- details of changes in entry patterns and choices of options
- archive Learners' work exemplifying specified levels of attainment in previous assessments for the qualification, together with the relevant question papers/tasks and mark schemes
- inter-awarding organisation evidence for functional skills qualifications in mathematics
- pertinent material deemed to be of equivalent standard from similar qualifications or other relevant qualifications
- information on Learners' performance in previous assessments for the qualification

In addition, in setting the specified levels of attainment for a functional skills qualification in mathematics that it makes available, we expect an awarding organisation to have regard, as appropriate, to the level of attainment demonstrated by Learners who have taken a pre-reform functional skills qualification in mathematics.

We expect the weight placed on such evidence to decrease over time as the awarding organisation builds an archive of evidence of the level of attainment demonstrated by Learners in the reformed qualification.

In determining whether it has sufficient evidence of the level of attainment demonstrated, or likely to be demonstrated, in the assessments for a functional skills qualification in mathematics by an appropriate percentage of the Learners taking that qualification, an awarding organisation should consider whether the marks on its system, or the equivalent information it has available, reflect –

- all possible routes through the qualification and/or Component
- a representative proportion of Learners' marks for, or likely to be achieved in, the qualification and/or Component

In setting the specified levels of attainment for a functional skills qualification in mathematics that it makes available, we expect an awarding organisation to use the appropriate balance of evidence for –

- its assessment approach
- the cohort taking the assessment

For example, in a sessional award and where prior attainment data is available for many or most Learners, an awarding organisation might combine –

- senior Assessor judgement regarding the Level of Demand of the relevant assessment
- qualitative and quantitative evidence of Learners' actual attainment in the assessment
- information regarding Learners' prior attainment in other assessments

In an on-demand award and where there is little or no prior attainment data available for Learners, an awarding organisation might –

- when an assessment is first introduced, place greater weight on senior Assessor judgement regarding its Level of Demand, using a robust and recognised technical methodology
- incorporate consideration of qualitative and quantitative evidence of Learners' actual attainment in that assessment, and/or other versions of that assessment, once that evidence becomes available, and before results are issued

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