



Reformed Functional Skills Maths Levels 1 and 2 Senior Examiner's Report February 2020

Overall learner performance

Although there has been a wide range of ability in candidates undertaking Reformed Functional Skills maths assessments, overall performance at both Level 1 and Level 2 has been poor. In particular those areas of maths that represent new subject content under the reforms have seen the worst performance by candidates, suggesting, that this new content has not been taught, or has not been taught sufficiently well. Such content includes:

- Level 1: finding areas of composite shapes, order of precedence of operators, drawing 3d shapes etc.
- Level 2: estimated mean of grouped data, compound interest, finding area and circumference of circles, percentage change and original value before percentage change etc.

There is also evidence that significant numbers of candidates do not have sufficient skills to enable them to solve multi-step problems. Candidates performed better on underpinning skill questions within the calculator section, but did not demonstrate the same performance when these skills were part of multi-step problems.

Poor performance in the non-calculator section suggests that learners do not have sufficient strategies for calculating using paper-based methods, or adequate mental calculation skills.

Drawing of charts and graphs shows reasonable performance both at Level 1 and Level 2, however marks are lost due to inadequate labelling, in particular a lack of title.

Learners show good performance when calculating using percentages at Level 1 and Level 2, however the more complex percentage subject content at Level 2 shows poor performance.

Areas causing concern for weaker learners

There is evidence that candidates are not reading questions thoroughly enough. Key information is missed, such as 'give a reason for your answer', or 'estimate' which is costing marks.

There is also evidence that candidates are not understanding the problem they are being asked to solve and are unable to break down the problem into methodical steps.

The subject content areas causing the most difficulty for weaker candidates are:

Level 1:

SC7 – Follow the order of precedence of operators

This is an area of poor performance in both higher and lower ability candidates. It should be noted by centres that scientific calculators are not permitted and that includes calculators that use BIDMAS (Brackets, Indices, Division, Multiplication, Addition, Subtraction). Candidates should be taught BIDMAS and how it applies to the order in which calculations are approached.

SC11 – Add, subtract, multiply and divide decimals up to 3 decimal places

Although there is some success when this is tested in the calculator section of the assessment, performance is poor when this is tested in the non-calculator section, particularly when part of a problem-solving context.

SC16 - Recognise and calculate equivalences between fractions, decimals and percentages

Candidates are far more proficient at recognising and calculating equivalences between decimals and percentages than they are when using fractions. There is a reliance on 'knowing' the equivalence with common fractions, but performance is poor when a calculation is required.

SC25 – Interpret plans, elevations and nets of simple 3d shapes

Candidates should have experience of a wide variety of 3d shapes and explore both nets and elevations, as well as gain an understanding of what a plan view is.

SC26 – Use angles when describing position and direct and measure angles in degrees

This subject content is largely tested using the idea of bearings; however, candidates should be familiar with both 'clockwise' and 'anticlockwise' when describing turns, as well as have familiarity with compass points and calculating degrees.

SC28 – Group discrete data and represent grouped data graphically

Candidates appear to understand the concept of grouping data, particularly where some scaffolding is provided in the form of an incomplete table. However, they are less familiar with the concept of evenly spaced groupings and this then has implications when trying to represent this data in graphs and charts.

Level 2

SC6 – Calculate percentage change and original value after percentage change

Many candidates are unfamiliar with the method needed to calculate percentage change, or the original value after percentage change. In the main they resort to a straight forward calculation of percentage, followed by adding or subtracting the amount. Candidates should be given plenty of opportunity to firstly understand the concept and then practice the skill.

SC10 - Multiply and divide decimals up to three decimal places.

Although this is often tested as underpinning skill, it can appear in the non-calculator section and candidates need to have reliable paper-based methods they can use when tackling these questions.

SC11 – Calculate using ratios, direct proportion and inverse proportion

Candidates are much more proficient at calculating ratios and direct proportion than they are at calculating inverse proportion, but this part of the subject content is tested just as much as ratio and direct proportion. Candidates should be given opportunities to practice and understand the skills needed to answer these questions.

SC13 – Calculate compound interest

This is new subject content and as such candidates have not performed well.

SC15 – Calculation using compound measures include speed and density and rates of pay

Although candidates are very familiar with rates of pay as a compound measure, they are much less familiar with speed and even less so of density. Formulae is given for how to calculate speed and density, however candidates need to be able to use these formulae and in particular understand the units in their final answers.

SC16 – Calculate areas and perimeters of 2d shapes including triangles and circles

The main issue with this subject content is the fact that very few candidates are familiar with the formulae for calculating area and circumference of circles. These are not given to candidates and have to be memorised.

SC24 - Estimate the mean of a grouped frequency distribution from discrete data

This is new subject content and a significant majority of candidates are unable to answer questions relating to this subject content. Many will attempt to calculate the mean of something, but they fail to find the midpoints of the groupings and have no knowledge of the method needed to find the estimated mean. When asked as part of a problem solving scenario, the testing of this subject content can be a high tariff question, so it is important that this subject content is properly taught.

Advice for centres

In summary the main advice for centres is to ensure that all the new subject content at both Level 1 and Level 2 is sufficiently taught, as these are the areas that show the poorest performance to date.

Centres should look at the subject content statements and ensure that they teach to the challenging end of each statement, as it is an Ofqual requirement that assessments are both robust and challenging and most areas of the assessment will cover the subject content statement at the challenging end.

Candidates should be given plenty of opportunity to solve problems in a variety of contexts and with several steps to unpick.

Candidates should be reminded and encouraged to read questions carefully.

Chrissy Thomas, Senior Examiner

Department for Education. Subject Content functional skills maths document
<https://www.gov.uk/government/publications/functional-skills-subject-content-mathematics>

Scope of Study – pages 13-18 of the above document.

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