

Functional Skills maths level and level 2 Chief examiner report

**Paper-based
assessments**

**Original release date of
September 2020**

Functional Skills maths level 1 and level 2

Functional Skills maths standards were reformed in September 2019 and since then there has been considerable variation in the responses seen in the assessments at both levels. This report details the chief examiner's findings for the reform standards for Functional Skills mathematics qualifications at level 1 and level 2 for the paper-based assessment variants initially available during September 2020.

The assessments have comprised a variety of suitable topics that are aimed at engaging learners of all ages and abilities and are considered to be accessible by a range of learners of all abilities. Assessment scripts are available as large print and as a braille copy, enabling accessibility to all learners.

Evidence has been seen in assessments to indicate that some learners were clearly capable of completing the tasks in the assessments to a high standard, resulting in achievement of the qualification with a high pass mark and, in a very small number of cases, with 100%. These learners had demonstrated both their ability to use the required underpinning skills and the ability to transfer these skills to problem solving tasks at both levels and to multi-step tasks at level 2. However, for some learners, they were clearly not at the level being assessed and this was evident in the marks then awarded.

In addition, some learners had shown weak underpinning skills and limited ability in some examples to transfer these skills to problem solving tasks, but just achieved enough marks to be awarded the level undertaken. Some learners were very close to achieving the assessment but were 1 or 2 marks away from the required pass mark. In some of these cases, marks were not awarded due to errors in either final answers or through learners not giving a response to a decision task.

In some assessments, learners had only looked at the first task and then not attempted any further tasks, which is a concern. There were also examples seen of learners only attempting one section when both sections are required to be completed. It was also evident from some assessments seen that some learners had clearly struggled with the non-calculator section but then performed well in the calculator section.

Furthermore, there were also some assessments where the learners had not attempted any of the tasks in the assessment, even straightforward tasks that may have involved one calculation or extraction of one piece of data from a given table or chart.

Specific details for each task in the 2 assessment variants for September 2020 are detailed below.

Level 1

Level 1 pass mark	38/60
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P001371**Section A****Questions**

1(a) Typical errors for this task included learners not giving a response to the question 'Is she correct?' This requires the learners to state either Yes or No or a comparable comment that clearly answers the question.

1(b) Errors seen in this question include incorrect conversions between the given units

1(c) Typical errors here include learners not adding the 2 parts of the ratio together and only dividing by 15 instead of 16.

1(d) This task is generally completed well by learners.

1(e) A commonly seen error for this task is learners not calculating the cost of Offer A for 6 adverts to compare like for like with Offer B.

1(e) Learners often seem to struggle with completing frequency tables. Headings are often incorrect or do not give any accurate indication of what the data is about. For this task, a suitable heading for the left-hand column could be 'Pet food takings', 'Takings', or 'Takings in £s'. Learners often write 'number' or just 'money'.

Section B**Questions**

2(a) A typical error seen for this task is that learners do not use the indices correctly, with many learners calculating 5×2 instead of 5×5 .

2(b) This task is generally completed well by learners.

2(c) Many learners complete this task well, but a typical error seen is that the learners omit adding the interest onto the amount borrowed to find a total cost to be repaid, so their answer given is just the interest due.

2(d) A typically seen error for this task is that learners do not round the values as requested in the task, so complete a calculation showing 3.8×2.6 . A further error is in the calculation of either of the missing lengths.

2(e) A commonly seen error here seems to be that learners possibly misread the question so actually find $1/5$ of £85 instead of calculating $£85 \times 5$.

2(f) This task is generally completed well, with any errors seen usually being in the addition of times and then calculating a finish time.

3(a) This task is generally completed well, with any common errors being in the calculations. For tasks such as this, learners could be encouraged to check that their calculated values, when added together, would total back to £700.

3(b) Most learners complete this task well, but commonly seen errors include the scale not starting at zero, inconsistent scale being given, and Y axis label not clearly indicating what the scale relates to (for example, temperature or temp).

3(c) Generally completed well by learners, with a small number of learners unsure as to how to calculate a mean, with range and mode being seen in some responses.

3(d) Many learners complete this task well, with commonly seen errors involving incorrect conversions between the given units (for example, $23\text{kg} = 2300\text{g}$ or $18400 = 184.00\text{kg}$). In addition, some learners omit working out the difference between the 2 values or give their answer in grams instead of the requested kilograms.

3(e) Generally completed well by learners.

3(f) Generally completed well by learners.

3(g) Generally completed well by learners, but with the commonly seen error of learners not rounding their final value to 2 decimal places.

4(a) Generally completed well by learners, with some spelling mistakes, although these are condoned if the meaning is clear.

4(b) Generally completed well by learners.

4(c) Generally completed well by learners.

4(d) Generally completed well by learners.

4(e) Generally completed well by learners, with common errors including inconsistent scale that does not start at 0, not including the Y axis label, and not clearly indicating what the scale is showing.

4(f) Generally completed well by learners, although some errors seen whereby learners have calculated the mean of the data set instead of the range.

4(g) Many learners have completed this task well, with some converting accurately to decimals to work out the comparison and some using the same value to work out each fraction (for example, using 300 and working out $1/10$, $1/5$ and $1/3$ for their comparison).

4(h) Task generally completed well by learners.

4(i) Task generally completed well by learners, although with a commonly seen error in not calculating the new value but only calculating the percentage difference.

Level 2

Level 2 pass mark	37/60
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P001372**Section A****Questions**

1(a) Task is generally completed well, but with the commonly seen error of incorrect totals for calculations through possible 'slip ups' in addition.

1(b) Combined probability is an area where learners do tend to struggle, and this was evident in many responses to this task, with many learners giving $\frac{1}{3}$ as their response.

1(c) This task is generally completed well, with typical errors being incomplete drawings or learners re-drawing the original image instead of the plan.

1(d) This is a task that some learners have clearly struggled with; a commonly seen response is 54×5 .

1(e) Some learners have completed this well, and several learners seemed to have struggled to recall the required formula to use with circle measurements – the common error seen being $800 \times 800 \times 3014$.

1(f) Tasks involving the use of scatter diagrams is a commonly seen problematic area for many learners, with a line of best fit often not drawn for learners to identify a valid value from.

1(g) Commonly seen errors in this type of question include learners not ordering the given values first, prior to calculating a median value.

Section B**Questions**

2(a) Tasks of this nature are sometimes seen poorly completed, with learners struggling to relate the fraction element to the ratio, with $\frac{1}{8}$ being seen as 1:8.

2(b) Typical errors in this question are involving the use of indices, with learners often incorrectly multiplying the value by 2 instead of by itself.

2(c) Presentation of co-ordinates is a weak area for many learners, with the x and y values often seen in the wrong place and the use of colons and semicolons instead of just a comma or a space between the 2 values.

2(d) Learners generally attempt this task well, and the common errors seen are in learners using $\frac{3}{7}$ or $\frac{3}{12}$ for their fraction and then in the conversion from fraction to decimal.

2(e) Use of compound measures is often seen as problematic for some learners, with some learners clearly not understanding the calculations required to complete the task accurately.

2(f) Tasks involving the use of circle measurements is a problematic one for learners now that they are required to remember the formulae required to complete the task. Typical errors here involve learners showing $5 + 5 \times 3.14$ instead of $5 \times 5 \times 3.14$

2(g) Use of scale is often seen as problematic for learners and common errors in this task include the learners not doubling the width and length either before or after applying the scale.

3(a) Generally completed well by learners.

3(b) Calculation of values from data in pie charts is sometimes poorly completed, particularly when working with larger numbers as in this task. In addition, learners sometimes omit to work out the difference between the 2 values to correctly answer the question.

3(c) This task is a task that learners have often found difficult, with many learners only achieving part marks by dividing the total raised by £10 instead of £10.25.

3(d) Task is generally completed well by learners.

3(e) Calculation of an estimated mean for group frequency is an area that many learners still find problematic, with many not accurately finding the midpoints of the groupings and dividing by the number of groups (for example, 4 in this task, instead of 300). In addition, learners often forget to include a Yes or No response to the task.

3(f) Generally completed well by learners.

4(a) Most learners complete this task well, with the commonly seen error of not giving the final answer to 1 decimal place.

4(b) This task is often poorly completed, with learners making an error in the use of the indices when substituted into the formula, with many learners calculating $0.75 + 0.75 + 0.75$ instead of $0.75 \times 0.75 \times 0.75$.

4(c) Errors in the use of money values are frequently seen for this task, with learners not converting from pounds and pence correctly, and errors are also seen in the reading of values from the conversion graph.

4(d) This task is another that learners often seem to struggle with as they sometimes calculate a mean or median instead of a mode.

Generic overview

All learners should be given sufficient opportunity to practise the required skills at each level as stated in the assessment specifications, and this can include the use of sample assessment scripts with associated mark schemes which can be found on the NCFE website. There is also a full suite of resources which includes PowerPoints, learner revision sheets, activity sheets and answer sheets, as well as learner skills checklists for both levels. Learners should have the ability to practise the differing skills across a range of tasks and this practice will support their development of transferable skills. Learners should also have the opportunity to apply the required skills to a variety of familiar and non-familiar tasks.

Errors at the initial stages of tasks are common and may be as a result of learners not ensuring that they have taken sufficient care to read the task instructions. Some tasks require the learner to make choices or decisions, and, in some assessments, this had not been given. Learners should be encouraged to read questions more than once and, in the case of paper-based assessments, should be encouraged to underline or highlight key information.

Errors have been seen in identifying dimensions (for example, internal volume of 3D shapes or in calculations involving compound shapes with missing measurements being incorrectly calculated).

Learners should also be encouraged to attempt all tasks, as marks may on occasion be awarded for the correct method seen, even when incorrect values are used, and marks may be awarded for follow-through, where an incorrectly calculated value has subsequently been used with the correct following process or method. This is particularly crucial when completing tasks with multi-steps, where the result of one calculation may be required for a subsequent calculation.

Similarly, care in presenting information is important. Displays of calculations and approaches to tasks were generally clear and sufficient and, in some cases, resulted in marks being awarded where full marks were not achieved. However, there were some examples seen where learners had only given a final answer without any evidence seen of supporting calculations and some examples of incorrect calculations (for example, $12 \div 345$ shown for $345 \div 12$).

This meant that if the learner's answer was incorrect, then sometimes part marks may not be awarded and for some learners, this may have made the difference between achieving and not achieving the assessments.

This may have been due to learners completing their calculations on a separate piece of paper, but they need to ensure that they transfer all their working to the assessment paper. Learners also need to ensure that any written calculations are clearly shown, with the result of that calculation also given.

Several learners were not awarded marks as it appeared that they had not read the question correctly and did not take note of key phrases such as: 'Show how you decide', 'Give your answer to 2 decimal places', and 'You must show all your working'. The use of such phrases indicates to the learners that more than just the final answer is required (for example, an explanation of their answer as a comparison between 2 values, such as 2 mean or median values, is required).

This then ensures that the learners are fulfilling the level 2 skill standard of 'Interpret and communicate solutions to multi-stage practical problems in familiar and unfamiliar contexts and situations', as well as 'Draw conclusions and provide mathematical justifications'.

Again, on many occasions, learners are often not awarded marks due to the lack of explanation or justification of learners' choices or responses from their calculations.

In some examples for these assessments, learners' handwriting was poor and on rare occasions, it was extremely difficult to decipher what working out a learner had shown. Some examples were also seen of learners completing the assessments in pencil, which again sometimes made it difficult, if final answers were incorrect, to award part marks for correct values or methods used. Learners should be always completing all assessments in pen.

Additionally, I would recommend that learners practise checking their final answers as preparation for their actual assessment with the intention to enable them to identify errors in calculations that may then be corrected. It is also recommended that learners are encouraged to return to the task's instructions after completion of a task, to check that their final answer is displayed as requested in the task instructions (for example, to 1 or 2 decimal places or rounded to the nearest whole number).

A full suite of learning resources is available to centres and learners on the NCFE website that can provide opportunities for learners to fully prepare for their assessments. This includes sample assessments, mark schemes, and resources such as subject content specific information sheets, customisable PowerPoints and learner activity and answer sheets, along with learner checklists that can be used in teaching environments or as self-directed study.

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Chief examiner

March 2022