edexcel

Examiners' Report

July 2017

Pearson Edexcel Functional Skills Mathematics Level 1 (FSM01)

Functional Skills Qualifications from Pearson

Functional Skills qualifications from Pearson, the world's leading learning company. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications website at qualifications.pearson.com. Alternatively, you can get in touch with us using the details on our contact us page.

Pearson: helping people progress, everywhere

Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your learners at: www.pearson.com/uk

July 2017
Publications Code FSM01_01_1707_ER

Introduction

It was good to see that centres had prepared learners well for examination and that the significant majority accessed most of the questions, selecting the appropriate mathematics skills with the correct equipment, such as rulers and calculators. Centres should be congratulated on ensuring that learners were exam ready and fully prepared for summative assessment. In a very small majority of cases, some candidates were clearly not ready for examination and it may have been more appropriate for these learners to have accessed assessment at Entry Level before moving on to Level 1.

Most learners completed their answers in black ball point pen, however, in a small number of cases, candidates wrote in coloured pen or pencil. At times, this made some questions difficult to read and some learners' answers were not clear, particularly questions 4 and 7. Centres should read the guidance on the front of our examination papers carefully and ensure that learners have the correct equipment at the beginning of the examination.

A significant number of centres adapted exams to meet individual learner needs and in some cases printed the scripts on coloured paper. This is best practice to meet individual needs; however, it is furthermore important to ensure that learners use black ball point pen to ensure that their answers are clear. Centres should also check that scale questions and diagrams are not altered to the detriment of the learner, particularly where papers have been enlarged for learners with visual impairment.

Exam papers are carefully designed to optimise the writing space for learners, ensuring that learners have enough space to complete their calculations and final answer; however, a large number of centres during this series provided candidates with scrap paper for calculations. Where possible, this should be discouraged, as all calculations are considered during the marking of the examination. Where it is unavoidable that additional paper is used, centres should ensure that this is submitted with the examination paper for consideration by the examiner to ensure that all learners' work is credited and the security of the exam is maintained. Where learners have made mistakes, it is important that they cross out their mistakes to ensure their correct answer is clear to the examiner.

Section A of the examination was tackled particularly well by candidates. Questions included the use of a range of number skills, carefully reading from tables and objects containing key information. It was good to see that previous advice about underlining key points in questions has started to be adopted by many learners, but this is still too few. Centres should further consolidate this practice, as it does have a significant impact on learner performance and supports reading skills.

Learners did particularly well with the mean question, only a small minority confused the mean with median and mode methods or did not attempt this question. Learners attempted the fraction and ratio questions well, particularly where the learners selected less complicated, straight forward methods. Some

learners attempted more complicated methods and in a significant few of these cases, made mistakes that cost them some of the less demanding marks on the paper. Methods included; converting the fraction into less simple fractions, mainly eights or converting into decimals. Many learners dealt with the money question well and calculated accurately the multiples of £5.50 to calculate the total cost. Many learners also accessed the check, as they did with the other checks on the paper. Centres should be congratulated in their teaching of appropriate checking methods, as an increasing majority of candidates made an attempt to check their answers. Where learners did not check their answers, they tended to lose all three of these valuable checking marks on the paper, so there is still some work for some centres to consolidate the learning of checking processes.

Most learners also did well with the questions in Section B. Question 4a required learners to work with a rota and a number of constraints. Learners accessed this question and most scored at least one mark or better. Where learners were not successful, it was clear that they had not read the key clearly and had not considered all of the constraints. Centres should provide learners with a range of practical scenarios in which tables and diagrams are used to represent mathematics that include keys and a range of real to life constraints. Learners should also be encouraged to check their answers carefully against the constraints and key before moving on to the next question.
Similarly to question 3, question 4b focused on money and a budget. Most learners achieved 3 or 4 from the available 4 marks for this question. Where learners did not provide an appropriate decision with their answer, or provided a decision that was incorrect, they lost the final mark. Learners were less successful at this question than question 3, as they did not consider the constraints, which provided an extra layer of challenge and complexity to the question in comparison.

Most learners were able to convert successfully between millilitres and litres and scaled up the milk required for the recipe by the scale factor 10. The conversion added an extra layer of complexity for this question. In a small number of cases, where learners had to deal with decimals of a litre, they found this aspect particularly challenging. Some were unsure at this stage of their calculations whether they should multiply or divide and which numbers to use in the order of their calculations. Centres should provide learners with practice in dealing with the result of a conversion and strategies to check the meaningfulness of answers, i.e. a simple is that too big or too small?
Most learners tackled the percentage question using simple and more advanced percentage calculation methods. Many learners lost marks as they did not show money notation or did not read the demand of the question carefully, which required an answer of £3.30 (discount) and not £18.70 (price after the discount).

Learners produced a good range of simple and functional data collection sheets. In a small number of cases, learners produced graphs to display the data for 6 people, which was not functional and did not show an understanding of data collection sheets.

Section C was tacked less successfully by candidates. This section included a number of measure, shape and space questions; a scale drawing, use of perimeter and area. Learners found the perimeter and area questions particularly challenging, many of which, confused perimeter with area.

Many candidates demonstrated between these questions the knowledge of both perimeter and area processes, but significant uncertainty about their application; many learners did not select the correct mathematics for the right question. Although the measure, shape and space questions were challenging for learners, many showed a very good understanding of a simple formula, with most learners achieving all of the available three marks for this question.

Section A

Question 1a

The significant majority of learners accessed this question and achieved 1 mark.

Question 1b

The majority of Learners attempted this question and were more successful where they selected less complicated, straight forward methods. Some learners attempted more complicated methods and in a significant few of these cases, made mistakes that cost them some of the less demanding marks on the paper. Methods included; converting the fraction into less simple fractions, mainly eighths, or converting into decimals. Centres should ensure that schemes of work include a range of methods to calculate with simple fractions and simple conversion between fractions, decimals and percentages using a calculator. Learners should be encouraged to show their conversions, particularly where simple fractions may be learned in a rote method or learners know this in their head, as at level 1, this may receive some credit, e.g. three quarters is equivalent to 0.75 or 75%.

Learners are not required to show an understanding of eights at level 1; however, many did over complicate the question by working with eighths.

Question 2a

It was pleasing to see that the significant majority of learners understood the mean and were able to use both of the processes to demonstrate a mean method effectively. In the very small number of cases where learners confused median and mode with the mean, they did not achieve any of the available three marks. A very small number also confused the mean with the range. Too many learners did not achieve the final mark as they did not conclude their solution with a correct decision.

Question 2b

Most learners accessed this question and selected from a range of appropriate methods to gain the full two marks. Centres may wish to use questions such as this where there are a range of methods to demonstrate appropriate checking processes, such as; the range of methods: build up method, $15 \times 5 = 75$, $85 \div 5 = 17$,

85 ÷ 15 = 5.6 and reverse calculations.

Question 3a
Most learners accessed this question to achieve at least 3 marks. Where learners attempted the check, they were also successful, demonstrating a range of methods to work with the multiples of £5.50, calculating forwards and backwards and working with the 2 and 3 as multiples of 6.

Question 3b
Candidates who were otherwise gaining full credit on Section A, in many cases, failed to understand or access this part of the question. For this question, candidates were asked to list an appropriate combination of games. When errors were made, it was usually in providing only the most obvious first 3 matches or some learners offered repeats in line with a home and away league rather than a tournament. Extracting and interpreting information for tables is a required level 1 skill; therefore, centres should provide candidates with more opportunity to practice this type of question and show a range of methods, to include, listing and tabling to consolidate understanding.

Section B

Question 4a
Most learners accessed this question and achieved 1 or both of the marks. Where learners did not achieve full marks, they did not check the key and did not show a clear understanding of the constraints or working in half hour sections on the schedule. Centres should provide learners with a range of tables that include keys and constraints to enable learners to complete this type of question and achieve all available marks. Learners should also be shown relevant checking methods to ensure that their solution meets the constraints by going back and checking their solution against the question's constraints, working along the table rows and down the columns, checking against the key.

Question 4b
Learners that read this question carefully and demonstrated that they had selected the correct information from the price list did better. This was demonstrated by clear underlining or indicating the "4 nights", "executive double room", "dinner £25 per person" and "dinner for both of them for 4 nights". Learners should develop their exam reading skills, focusing on skim reading, scan reading and detailed reading strategies to ensure that they are working with the correct information from the question.
Many learners chose the correct room type and worked with 4 nights, but too many of the learners did not calculate the correct number of meals and worked with £100 instead of £200. A small number of learners also calculated with two rooms, for four nights, however, appropriate credit was given to learners that chose these methods.
Some learners did not demonstrate a thorough understanding of the comparable figures. Some calculated to the budget of £1200, but showed a lack of understanding the total price by stating that Dev would need to pay £3.08 more than the budget. Appropriate credit was given to learners that realised that they could not afford 5 of the dinners and that they had spent their budget.

Question 5a
The majority of learners identified the scale factor 10 for this question and worked with a number of methods to scale up the milk. A small number of learners worked with a scale factor of 8, which did not get credit. Some learners wasted time by scaling up the whole list of ingredients, when the question only required the milk.

Although learners did particularly well with this question, a significant limiting factor to candidate success was the inability to deal with the millilitre and litre conversion. Many learners lost marks due to incorrect conversions and many lost marks because their converted figures added an extra layer of complexity to the problem, which a small number of learners struggled to work through. These learners were unsure about how to deal with the decimal number of litres or the large number 3000 millilitres, opting for the wrong multiplication or divide by the scale factor or constructing an incorrect order of calculation. Learners should be provided with lots of practice to check that their final answers make sense and practice working with large numbers. Furthermore, some learners confused the scale factor 10 with the conversion of 1000 and failed to pick this up when they checked their answers.

Question 5b
Failure to display the correct money notation resulted in a disappointingly large number of candidates failing to achieve all of the marks on this question. As did presenting the discounted price as their final answer. Centres should ensure that learners always include appropriate units with their answers to ensure that all available marks can be achieved.
Where the learners accessed the checking mark; many did not, learners showed a good range of reverse calculation and, although not expected at level 1, a range of more advanced percentage calculation processes to check their answers.

Question 6
Most learners embraced the open nature of this question with a range of good, functional data collection sheets. Most learners engage with the question by choosing appropriate headings with input opportunities for 6 people. Some learners also displayed some emerging level 2 skills in their responses, which centres should be congratulated.
Learners should ensure that they read the questions carefully. In this instance, a small number of candidates created a number of data collection sheets for more than one table of 6 people and as a result wasted time.

Section C
Question 7
Most learners accessed one or both of the marks for this question and performed well at this question; however, a minority failed to engage with the scale. Learners were credited with marks for placing the mirror in both landscape and portrait orientation. Some learners placed the mirror directly above the fire and some learners placed the mirror at the top close to the ceiling. To prepare learners for level 2, centres should ask learners to consider the functionality of their responses. To improve learner performance at this type

of question, learners should be provided with opportunity to work with scale drawings using a range of resources to include squared paper, graph paper and a range of scales, including challenging scales. Centres should ensure that learners have good access to squared paper and graph paper within their mathematics lessons to practice scale questions.

Question 8a
All but a very small minority answered this question successfully, requiring the learner to select information from a table based on a number of constraints.

Question 8b
Many learners accessed the question and begun to work with perimeter or the lengths of the skirting board or the conversion, but struggled past 1 or 2 marks. A common theme on this paper was that many learners struggled with conversion, in this case, from cm to metres and may not have accessed this mark. This is a simple conversion for level 1 and it was disappointing that many were unable to calculate it. The most successful learners subtracted the length of the door from the total perimeter and were able to complete the question. However, it was disappointing that a large number of learners calculated 3 × 4 and seemingly confused perimeter with area. Many did not access the check, but those that did access it picked up valuable marks even by reverse calculating their incorrect area processes. Centres should provide learners with a number of practical scenarios to calculate perimeter and area and bring mathematics to life by providing learners the opportunity to calculate perimeter and area in real situations/practical tasks. Key to learner success is ensuring that learners understand the difference between perimeter and area and its practical application, as many learners, evidenced by question 8b and question 10 demonstrate they know the processes, but confuse and cannot apply the mathematics to practical scenarios.

Question 9
Learners accessed this question well and most achieved full marks. Those that were not successful made errors in selecting the correct numbers to use in the formula, some errors were due to not using a calculator. Centres should ensure that learners are fully prepared for examination, however, in the main, should be congratulated in ensuring that learner performance for this question type was good on this paper.

Question 10
Further to my comments on question 8, learners found question 10 very challenging due to confusion between perimeter and area processes. The requirement for level 1 area calculation is for learners to be able to calculate area by counting squares. This question used a simple scale factor of 50, which enabled learners to count squares as the primary method of calculation. This did add a level of challenge to the question and it was pleasing to see that many did access the question as the last question on the paper, but too many did not achieve full marks due to the incorrect calculation of the perimeter of the room and the perimeter of the carpet tiles, opposed to the area. Some learners went on to divide the perimeter of the room by the perimeter of the carpet tiles, and showed some limited understanding of how many tiles went into the room;

however, this did not get credited with the marks allocated to area. Learners were however credited with an understanding of how many packs were needed based on their incorrect number of tiles figure. Again, my recommendation echoes my earlier comment that centres need to clarify to learners the distinct difference between perimeter and area through practical, multistep and scenario based questions and real life tasks.

Pearson Education Limited is a registered company in England and Wales whose registered office is at 80 Strand, London, WC2R 0RL, United Kingdom, company Registration number 872828, VAT Number GB278 5371 21.