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Examiners' Report

June 2016

Pearson Edexcel Functional Skills Mathematics Level 1 (FSM01)

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Introduction

It has been reassuring to see that majority of learners engaged with all questions and there have been a smaller number of blank responses compared to previous series. This implies that learners were relatively well prepared to sit this Level 1 paper. It is noteworthy, however, to point out that most of the blank responses were seen in the more challenging, hence worth more marks, questions and in the last section of the paper. This implies that learners may need to apply a more strategic approach to the timing of their responses to assure they have plenty of time for multi-step questions and attempt all questions in the paper.

The majority of learners presented their working throughout each question but there were a few instances where the calculations were not clearly organised or simply missing. This led to some learners missing out on process marks. Learners should be encouraged to present all their calculations, however simple, and do so in an organised and logical order. There has also been some evidence that learners did not have access to calculators and so arithmetical errors were often seen. Centres should ensure that learners have access to calculators and other equipment necessary to complete the paper, especially rulers as a significant number of hand drawn diagrams were seen. It is also critical that learners state their decision clearly (Yes or No usually suffice) as at least one mark in every question is awarded for correct conclusion accompanied by accurate figures. Accurate figures also require showing the units they are working with, i.e. cm, £, minutes etc.

Learners engaged with a variety of contexts and responded to tasks well in most cases. However, there were some instances where learners misinterpreted the results of their calculations and their final answer was incorrect. Learners should be encouraged to carefully consider the context, practise extracting essential information (highlighting key data is advisable) and focus on what the demand asks for when making their final decision. They should also develop a habit of showing the check of their calculations, especially when explicitly asked to do so.

There are a few areas that the learners should particularly improve on. These include extracting correct data from tables and graphs, carefully considering the stem of the question and highlighting key information, converting between units, especially length and time units, using rounding appropriately – some learners unnecessarily do so in the intermediate stages of their process which leads to inaccurate final decision.

General comments

Section A

Q1a)
Marks were lost on this question mainly due to learners giving the discounted price rather than the amount of the discount. Learners must be taught to check over their work to minimise losing unnecessary marks in this way. Some learners are clearly unsure about how to calculate percentage amounts; this was a very straight-forward percentage question and learners must be secure in their knowledge of how to calculate the basic percentages of 10%, 25% and 50% as this is a fundamental functional skill. Only a small number knew that 25% could be calculated by dividing by 4. Learners need more opportunities to calculate 50% and 25% of amounts. Suggestion is for staff to ask learners what 25% of … is on a regular basis using real life figures, perhaps in shopping sales context. Although this particular question did not require it, it is good practice to ensure that learners always use correct money notation as this is a basic functional skill.

Q1b)
While majority of learners engaged with the question and understood how to use the rule provided, they often lost a mark due to not specifically answering the question i.e. 'No Vicky will not be able to comfortable lift the kayak'. Many of the questions on functional skills papers require a final decision/conclusion based on their workings and learners must be taught to re-read and check their work in order to avoid losing these marks. A large number of candidate also lost marks due to not showing a check. There are always now at least two marks on functional skills papers which are awarded for a valid check shown, and learners must be taught to read the questions carefully and 'check' over their work. Using different approaches to questions and explicit checks, such as reverse calculations, should be taught as an everyday skill to develop number awareness and show the relationships between numerical operations. A small number of learners missed out the decimal point in their answer to the conversion; a check would have highlighted the mistake. This was a basic operation and I think only practice in class would make this better. Maybe allowing the class to choose the number and operation writing on the whiteboard. Or splitting the class into teams and giving them a number of operations to carry out. Regrouping and comparing to see who has managed to get the correct answer.

Q1c)
While most of the learners did not find it difficult to complete addition and subtraction required in this question, far too many learners scored poorly on this question due to selecting incorrect prices from the table. Learners must be taught to highlight/mark relevant information in these multi-stage calculation questions to ensure that they meet all the criteria required when answering. Using shopping websites in class tasks would help them to develop this skill and also demonstrate how often shops give prices both excluding and including VAT. Correct money notation was required for this question and some learners lost marks for this reason. It is paramount that when dealing with money questions learners always show £ sign and show figures to 2 decimal places.

Q2)

While some fully correct answers were seen, many learners scored poorly on this question. One reason for lost marks was a lack of knowledge with regard to converting between hours and minutes. Converting between units of measure is central to functional maths, so centres must ensure that learners are confident with conversion of units. Most frequently seen mistake involved assuming that 150 minutes is 1 hour and 50 minutes. This style of multi-stage question is common to functional maths papers and learners must be taught to develop a methodical, logical approach to these questions. Centres should use past papers to familiarise learners with the style of questions; encourage learners to work in pairs/small groups to share ideas and to see different approaches. Again, this was a question that required a decision, so learners should check over their work to ensure that they have fully answered all questions, including giving a decision/conclusion when required. Perhaps the best way to teach this would be firstly by timetables, e.g. bus, train etc. and then working out the total distance travelled. Then ask the class to find out how long it would take to travel 6 miles or some other distance.

Q3)

Very few learners scored both marks on this question; many learners correctly identified '40%' but were unable to compare it with 1/3. This question required learners to be able to convert between fractions, decimals and percentages in order to make comparisons. Conversion of 1/3 always causes problems for learners; it should be re-enforced to learners that 1/3 is equal to 33.3333% and 0.333333 recurring as a common error is to lose accuracy by incorrectly regarding 1/3 as 33%, 30% or 0.3. Again, a final decision was also required for this question.

Section B

Q4a)
This question was completed successfully but only in part. Majority of learners knew how to calculate the mean and managed to find the final accurate figure(s); unfortunately, majority of them did not show final decision nor the check of their calculations. Some learners made mistakes in BIDMAS and divided the last figure in their addition by 7. Centres should remind learners to find the sum of all figures first before dividing by the number of all data entries. There were also occasional responses where learners worked out the median rather than the mean. The importance of showing a check when explicitly asked to do so needs to be reiterated to the learners before the exam.

Q4b)
This question was done very successfully with a vast majority of learners correctly identifying the 5-degree angle. Some have also clearly showed that they know how to precisely measure angles as they measured all 4 options, even though it was not required in the question.

Q5a)
This time plan question was relatively straightforward compared to other papers and most learners have successfully engaged with it. However, some till missed out on some marks as they left out the finishing times or ignored overlaps. Learners often gave correct timings for all the activities, but failed to mention times for packing boxes. Many learners also wrote that the meeting would run from 10:50 until 11:40, misreading the length of the meeting. It has been reassuring to see such a high success rate in this question involving time but more focus should be places on providing coherent time plans that cover all activities, without overlap and show clear start and end times.

Q5b)
While this question used relatively straightforward scale and clear constraints many learners did not fully understand the brief and either ignored or misinterpreted the criteria for each of the two shapes they were supposed to place on a grid. Many learners succeeded in drawing a correct rectangle for the desk, however, a large amount of the solutions drawn for the table were not squares. Most responses took the door arc into account, which proves functional approach, but many did not allow the correct free area around the table. This is again an example of a question where highlighting key information would be beneficial to candidate's success and checking their answer would improve their chances of scoring all marks.

Q6)
Some learners were not aware of how many millilitres there are in a litre which again shows that learners require more practice in converting units in the same system. Had they made a connection that 4 glasses of 250 ml made a litre they would have been able to reach a correct conclusion. Many learners did not know where to begin on Q6 and just randomly multiplied numbers. Centres would benefit from ensuring learners are aware of the need to demonstrate use of consistent units in how questions are answered. Students who can do the conversion may be losing marks by not writing it down.

Section C

Q7a)
This question was generally answered successfully, with learners using a variety of methods to find ¾ of 2. Some learners were trying to change the fraction and were successful in finding equivalent fractions. Many chose to divide by 4 then multiply by 3. Poor answers got these processes mixed up. Learners were converting into cm which may have made the calculation easier to calculate, but some did not know that there were 100cm in 1m. Finding fractions of a simple quantity practise will be helpful for future learners, especially with a change in unit or an answer that gave a decimal. There were many answers seen that missed the final decision. Learners should be reminded that giving a final decision is very much a functional process and the final mark is lost when this is missed out.
Checking remains to be a problem and centres would do well to prepare learners for processes to do this. Lots of attempts of checking were seen but very few were correct. Repeating the same calculation is not a valid check – it must be reverse calculation or alternative method. Occasionally estimation may be appropriate too.

Q7b)
This question was answered well with many learners correctly identifying the likelihood. Despite this, learners do need more practice doing this sort of simple probability and questioning whether their answer is sensible - quite a few ticked 'impossible' or 'certain'. Encouraging the learners to draw a probability line may be a strategy that centres could adopt. Learners should also be reminded that if they change their answer they need to cross out clearly the incorrect one.

Q8a)
This was probably the most non attempted question in the paper. As with previous questions there was difficulty in converting the units which made it a non-starter for many as they could not figure how 9 could be divided by 180. Another common problem is identifying the correct formula for perimeter which is being confused with area and some struggled to deal with the gate. Some learners were failing to read the question carefully and follow the instructions such as “3 sides” and included all four sides of the garden, therefore not thinking logically about the problem. Some failed to give a decision, or made the wrong decision.

Q8b)
This question was answered very well with majority of learners being able to process and calculate a correct route. Many learners used the diagram given to great use allowing them to understand the demand of the question. Some incorrect answers were seen within a correct route which implies learners either did not use or were not aware how to use a calculator. Another common incorrect response included simply adding the unconnected distances e.g. 3 + 4 + 6.3. Marking the route on the diagram first may help those who struggled with this type of question, and re-reading the question afterwards to check that they have both started and finished at the store.

Q9)

This question was sadly often left out blank or had incomplete solution, with many learners either not finding how many sacks were necessary for 300kg, or, with those that did, just calculated the cost of 12 single bags, without consideration of the offer, or a “mix and match “.

A common error was the lack of understanding of the offer in that £34.95 is for 5 bags only and so the price for one bag cannot be £34.95 divided by 5; it is easy to see where the misunderstanding is here but learners need to be made more aware that offers are generally either/or but can include a combination or prices and centres should expose their learners to this type of real world problem. Learners should be prepared that offers are very common and truly functional so should be prepared to read the demands of the questions carefully and highlights key aspects. Finally, many marks have been lost by not giving a decision in the answer.

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