Examiners' Report

May 2016

Pearson Edexcel Functional Skills Mathematics Level 1 (FSM01)

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Introduction

General comments

1) Care must be taken to read the questions carefully. Some learners lost marks by not thinking about what was asked in the question.

2) Learners should always give a decision - a Yes or No - if one is requested. Marks were lost when the correct answer had been found, but then no decision or a wrong decision given.

3) Some marks were lost by giving poor accuracy – typically by rounding or truncating too severely.

4) Correct money notation should always be used – centres should be aware that there will always be at least one instance on each paper where credit is given specifically for this.

5) Some learners need more practice with metric units.

6) More practice is also necessary with doing checks - so that learners know how to do simple reverse checks or to show an alternative method to the one chosen. For example, showing a repeated addition where the original calculation is a multiplication is a helpful alternative method and some did do this. Centres should note that many learners seem to think that a check involves simply re-stating a calculation they have done earlier.

7) Many are confused when to work with area and when to work perimeter, and practice is needed here.

Section A

Q1a) Where the mean was correctly calculated, often the wrong decision was given – probably because of not enough care in reading the question to see what was required. An error often seen was to follow the correct process to find the mean but to give the answer as 9015 rather than 901.5. Learners should be encouraged to understand that the mean will always be a value within the range of the list of original numbers. A third common error was to use the calculator wrongly and not to total the numbers before dividing by 4.
Some learners did appear to attempt to find the median rather than the mean – this was perfectly acceptable given the wording of the question. However, having listed the numbers in order of size, few could then cope with finding the mean of the middle two numbers.
A few attempted to use the range instead of an average.

Q1b) Learners seemed comfortable working with the sums of money in this question.   Most were able to arrive at £7.60 although some then failed to make the comparison with £6 or did not progress to £1.60 for comparison with the £2 saving given in the question.
The last mark for the check was not often achieved, despite the fact that the question involved multiple calculations. A simple reversal of only one would have gained the mark, for example showing 1.60 + 6 = 7.60 where the saving had earlier been found by saying 7.60 – 6 = 1.60. Alternatively, where a learner had shown 2 x 2.50 = 5.00 on the way to finding the total cost, an alternative of 2.50 + 2.50 = 5.00 could be shown to gain this mark.

Q2a) Centres may already be giving their learners practical experience with problems such as this, and certainly, there were many who had no difficulty understanding that the use of perimeter, not area, was required and that the width of the gate had to be subtracted from the total perimeter needing to be fenced. A significant proportion, however, still found the area of the rectangle, though the same learners were often able to gain credit for finding the total length of fencing available by working out 6 x 25 = 150. These learners appear not to understand that they cannot functionally combine or compare an area measurement with a length.

Q2b) Many learners simply used guesswork here.   Even those who showed a correct calculation leading to a probability of 0.5 often then described this as "likely".
 It would appear that centres might spend more time helping learners to appreciate the various descriptors of probability from "impossible" to "certain" in practical contexts.

Q3a) It was very encouraging to see the widespread inclusion of units with a correct answer. Learners are clearly implementing the good practice centres are teaching and appeared to be comfortable with the context of ingredients in a recipe. Many readily expressed their answer of 2500g as 2.5kg.

Q3b) An even greater proportion of learners answered this correctly. Some were able to show 5 x 6 = 30 and use it efficiently; others used a build-up method. In some cases, those who wrote down that 5 x 6 = 30 then wrote 5 as their answer, rather than 6 – once again, a careful reading of the question would perhaps have avoided this.

Section B

Q4a) Teachers may like to introduce time planning by using a plan of a day in the life of a learner, using the schools/college own timetable to contextualise. Hopefully this may establish the importance of exact timing for break, lunch, finish time and travelling to school/college.

Setting out has been the downfall for many, so I suggest that learners may use a day from their timetable and reproduce in a table, with start and finish timing. The teacher could then use the table to show learners whether they can have a break, go home on time etc. This may instil the use of a table, or neat and accurate working, when tackling this type of question.

Many learners could not work with 3/4 of an hour = 45 mins so lost marks, perhaps cut pictures of clock faces up so learners can see that 15 mins = 1/4 etc. Understanding the fractions on a clock face will also be useful when dealing with pie charts and speed calculations in GCSE.

Calculating with time is difficult because we are not using the decimal system. Learners need to understand how long fractions of hours are as many only use the digital clock and have little experience of it. Give 1/4-hour break or finish in 3/4 hour to give real life experience.

Time plan

Use scaffold sheets with pre- drawn tables including start and end times or model answers so that learners get the idea of a well set out plan. Then build up to the full time plan.
Work with time plans that are relevant to the learner, tv programmes, day out, job interview etc.
Quite often, travel time is not considered. Maybe use outdoor space to set up different locations so that learners have to physically go between places to work out a time plan so they can time how long it takes them to get between locations and then make sure this is included in their time plan.

Learners should use the bullet points in the question as a final check. So learners tick off each bullet point once they have checked the time plan addresses each condition.

The biggest confusion over durations has been with Miss Baker. Encourage learners to introduce an additional column to the table to get all durations in the same format.

Q4b) Many learners did not understand what 10% was with many finding 50% first or dividing by 15.

Teachers could use 100 pennies along with each coin in our currency to show that 20 pence = 20/100 = 20% or a fifth etc. The use of several pound coins could also demonstrate, for example, that to find 20% of £3 multiply 20% of £1 x 3.

For percentages, learner can work on converting % to decimal and practice using calculators.
Remind learners not to always add on at the end or state VAT =… and Total cost=…
They can set up the answer before they start to avoid this. eg write VAT charged is _____ or 20% of £110 is_____
Then calculate and fill in the gap you left.

Teachers could also use receipts and invoices to show the addition of VAT. Look at how VAT is added onto the receipts. It is also useful to look at tax on payslips i.e working out what is left to spend.

Q5a) This question was well answered, the majority of learners knew what to do and calculated £44.70 correctly. Very few learners calculated the cost of 1 bottle on offer 2 to compare. Lack of confidence with division as a process may have caused this.
Online supermarket comparison sites can be used to get learners to find the best places to buy a list of products. Create a competition then as to which learner can find the products for the cheapest price.

Q5b) Many learners decided to write their conversion down which is encouraging as they understood that 1000mm was 100cm and used 35cm and 105cm to work out this problem. However, some decided to divide the pipe length by 3 or by 35 but then misinterpreted their solution.

A more practical approach in the classroom would be to compare the actual length needed with the solution length from the division, e.g. ask learners to divide a length of rope/string/paper etc then give them a piece with exact measurement [or ask them to cut a piece of exact measurement, to practice measuring skills] and ask them to compare them.
Centres could do lots of actual measuring with tape measures and problem solving i.e amounts of fabric needed for a tablecloth, skirting board for classroom etc.
The key issue here was with getting the consistency between the units. Use string to get learners to actually try out the problem and realise the need to make sure the units are consistent.

Q6) A very well answered question with the majority of learners multiplying the hours by hourly rate to compare the 2 wages. Learners need to be reminded to check calculations. Perhaps multi choice questions giving calculations with 3 or 4 different 'checks' to choose from, including alternative methods. Learners will then get used to reverse checking and the use of alternative methods in some circumstances.

Role cards with details of a job and wage can be given to learners. They could then have to ask each other about the job they have and what the pay is (ie number of hour worked, whether paid daily/salary etc). Learners then need to decide which job to take after considering all the information they have found out. Good to explore different vacancy sites online too. Give learners a job to find and they have to find the best pay.

Section C

Q7a) A very common mistake in this question was to use perimeter instead of area. If they did this they were likely to lose 3 out of 4 marks. Learners often confuse area and perimeter. Centres should try to use as many practical ways to teach area and perimeter as possible and, when discussing these concepts, to mention practical examples like filling the inside of a shape (with tiles etc) for area, and putting fences around for perimeter.
Learners should also be taught about paint coverage (squared metres per litre of paint) using questions from past exam papers to find the paint required for different sized areas.

Other more minor errors were to get the dimensions wrong, especially by assuming there were 3 equal sized walls, or to make a wrong decision or to leave off the decision.

Q7b) An extremely well answered question. Most learners used the formula correctly, but a minority of them added 11 on the end. Practice is needed in using a formula for weaker learners. Centres should practise questions involving function machines and they should get learners to show all the stages and answers from each stage of the calculations.

Q8a) Those learners, who correctly divided by 3, often appeared unsure about whether the answer was the discount or the price after taking off the discount. They need to read the question very carefully and make sure they answer it. Others appeared to have no idea about finding 1/3 of an amount. They used 30%; 0.3; 25%; 75%. They took away 1/3; divided by 100; divided by 1.3; found ½ etc.

Centres should teach their learners to be able to find fractions of amounts and practise questions involving discounts so they understand this terminology and the difference between the amounts saved and discounted values. There are endless examples of discounts online. They could research best buys for different items.

Q8b) A common mistake was to multiply the deposit by 12 as well as the monthly payments. Again the question needs to be read very carefully. Others correctly did 25 x 12 and either forgot to add on the 47 or took it away. The check was often left blank or they repeated their calculation.

Learners should be taught the meaning of deposit and the use of monthly payments to pay for goods, and how to calculate the total amount of monies that will be paid for different items with varied deposits and payment plans. Checking calculations should also be taught and learners made to practise checks on different processes.

Q9) Many learners had difficulties with scale, especially when dealing with the 1/2m for the width of the wardrobe.

Often the bed was not in the corner and the wardrobe did not have the longest side against the wall. It could help if learners were encouraged to underline the relevant points when reading the question.

Learners should be taught how to produce scale drawings using different measurements, conversion of measurements and scales with different requirements. Centres should use past exam paper questions to help learners prepare for these types of questions.