Principal Examiner Feedback

March 2013

Functional Skills Mathematics
Level 1 (FSM01)

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General Comments

Most candidates attempted the majority of the questions and gave thoughtful answers to the problems set. Overall candidates found questions most difficult when the context was unfamiliar to them, the question was open-ended or multi stage. As candidates are required to show success in problem solving in real life situations these types of questions are an essential part of functional skills papers. Centres need to ensure that candidates are offered many opportunities to solve such problems in preparation for the tests.

Many candidates did show their working clearly and were consequently able to obtain process marks. Centres need to place emphasis on the meaning of the notepad symbol as some candidates are ignoring the key need to show clear working. Those candidates who provided no working or disorganised working made it very difficult to credit their efforts. Awarding credit in multi stage problems was particularly difficult when a candidate's communication was poor.
Candidates need to understand that when dealing with questions that require them to 'explain their answer', it is important to provide both a decision and a reason for it. Similarly, questions which require candidates to decide if someone or something is correct and to 'show why they think this,' need both a decision and clear working to support the decision.

Centres need to place emphasis on understanding of functional language such as 'time plan,' and provide situations that allow candidates to practice the skill.
Candidates sometimes missed key elements in questions. Centres should place emphasis on highlighting, underlining or circling key information in questions to minimise the errors caused by lack of careful reading. Candidates need guidance on checking. It needs to be emphasised that a repeat of the previous working is not acceptable as a check. A reverse calculation, or estimation method, or use of a different route through the problem does provide a suitable check.

A significant minority of candidates were not using calculators. These candidates were more likely to make arithmetic errors and there was evidence that time lost doing lengthy calculations resulted in some candidates not completing the paper within the allotted time. Centres need to ensure that there is always access to a calculator during the test and, when preparing candidates for the test, encourage them to make use of a calculator.

In some instances it was clear from the response to the graph question and the placement of the football pitch, that some candidates had no pencil, eraser or ruler.

Report on Individual Questions

Section A

Q1a - Most candidates found this question straightforward. Those who did not obtain 2 marks sometimes chose 6 adults for the answer when they had calculated 6 x 5 = 30. Some candidates made good use of pairing groups of 6 children with 1 adult to see how many adults were needed for a total of 30 students. Relatively few multiplied 30 and 6 together. Candidates should be encouraged to apply a common sense approach and ask themselves whether they need more or less adults than children.

Q1b - This question proved challenging for weaker candidates. Most were able to calculate that 30 children, each paying £17, generated £510. They often also calculated that entry to the discovery centre would cost £129. However some then went straight to the decision of yes without subtracting to compare with the £375 needed to pay for the coach; others added £510 and £129 and compared the result to £375. Candidates need to be encouraged to ask whether they are comparing income with outlay when answering questions of this type. In this question it was clear that lack of a calculator hampered some candidates.

Q2a **-** Candidates need practice in producing workable time plans. Some excellent plans were seen; however others produced a plan with no timings or with timings but gaps where no activity took place and where they finished the last activity significantly later than 4 pm. Yet more had the show at a time when it was not available. In this question it was particularly important for candidates to check their solution against all the constraints in the question to see if it was fit for purpose. Candidates should be given practice in writing time plans as these are common question types; they should be encouraged to complete a table with headings showing the activity and start and finish times and checking these against the stated duration of the activity. These should be ordered sequentially in order of start times; this will help them ensure the times follow on and there are no gaps in their plan.

Q2b - Candidates offered a wide selection of acceptable reasons; unfortunately some candidates forgot to make a decision and so lost the mark. In questions that ask the candidate to ‘explain’ it is vital that they provide words rather than just a calculation. Candidates need to be aware that looking for a pattern in data is not appropriate to explain how likely something is, for example, ‘it goes up then it goes down’ will not gain marks.

Q2c - This question was answered well. The vast majority of candidates provided the data collection sheet asked for rather than a questionnaire. Many used a table with 3 columns and had a row for each of the 6 children’s information; some completed information for the 6 children showing how their data collection sheet worked, however, they should be advised that the priority is to include clear row and/or column headings and ensure they provide sufficient space so that all the necessary data can be recorded.

Q3 - Candidates were able to access this multi stage problem and obtain at some of the marks. The better answers showed all stages of each calculat and had a clear sentence written stating why Glyn was correct. The mos common error was to work out that £4.35 was needed but forget to state that they had a total of £5 available. Candidates need to be encouraged to ensure that they have figures to compare to support the decision made. A few misread the question and calculated the full cost for both as £5.80 and stopped. Centres need to emphasize the importance of careful reading of the question.

Section B

Q4a **-** Most candidates were able to access and use the simple rule correctly. Very few incorrect answers were seen.

Q4b - This question proved to be very challenging to all but the most able. It was clear that not all candidates knew that there are 100 cm in a metre. Again there was evidence that candidates without a calculator could not work out 300 ÷15 or 25 ×15. Very few candidates attempted a check of any type. Suitable checks here would have been a reverse check e.g. 15 × 20 = 300 having used the 300 ÷ 15 = 20 method originally, or 375 ÷ 25 = 15 having used 15 × 25 =375 originally. Alternatively candidates could have used a different method for the check. Having calculated only 20 candles could be made, the candidate could have checked by calculating that for 25 candles 3.75 metres would be required. Centres need to place great emphasis on suitable checking procedures. It is a basic functional skill and will be tested in every exam series.

Q5a - The vast majority of candidates were able to choose a suitable container to meet the question constraints.

Q5b **-** The better candidates showed clear working accompanied by communication of both the types and quantities of products. These candidates answered the question fully giving a total cost for the products selected. However it was sometimes difficult to follow the working of some candidates and this made the award of process marks challenging. Some candidates showed a variety of calculations but with little narrative to communicate what they were doing. They often subtracted product costs from the £75 available but did not include a total cost for their selected products. Centres should provide opportunities for candidates to practise multi stage optimization problems.

Q6a **-** This proved to be an accessible question. Many candidates were able to obtain at least 2 of the 3 available marks. Centres could encourage better graph drawing by offering candidates partially correct solutions and asking them to provide constructive criticism of the labelling, plotting and scale used. Such discussion might allow misconceptions to be cleared up.

Q6b - Many candidates were able to provide an acceptable comment about profits. Candidates would benefit from practice in interpreting graphs or data in table. They should be encouraged to identify key features, such as maximum or minimum values and where they occur, or relationships between consecutive values. A small number of candidates made a comment about preparing for the meeting e.g. writing an agenda, and lost the mark. Checking the question again after writing an answer might help candidates to ensure they have answered the question that they were asked.

Section C

Q7a - Many candidates were able to show a correct mean process. Some of those without calculators made arithmetic errors in the processing and lost the final mark.

Q7b - The majority of candidates applied the scale correctly and considered the positioning constraints when placing the football pitch on the plan. A small number of candidates miscounted and drew rectangles that were 7 by 3 rather than 8 by 4.

Q8a - Most candidates were able to obtain at least 1 mark. Some candidates misinterpreted the problem and allowed a 15 minute gap between all the games. Other candidates calculated $6 \times 50 = 300$ and then used this as 3 hours. The candidates who were most successful showed the start time of each game and the finish time of the last game and then added the 15 minutes to show that yes the tournament would finish at 3.45 pm. Some candidates did not present the final answer in consistent units and so were not comparing like with like: e.g. they worked out that 315 minutes were needed and that 5½ hours were available. Centres are advised to discuss with candidates ways to add on time durations. Perhaps adding 1 hour and taking off 10 minutes is the easiest way to add 50 minutes. They should also place emphasis on the need to compare in the same units in order to make a valid decision.

Q8b - Many candidates were able to obtain at least 2 of the 3 marks here. The main problem being the inclusion of the 'away' games as well; i.e. getting twice as many matches as needed. Practice with logical approaches to this type of question would help. Two-way tables can be very useful but need to be interpreted correctly.

Q9a - Candidates coped well with understanding negative numbers in this context.

Q9b - Although many of the candidates demonstrated the ability to calculate 25%, a significant minority seemed to be unable to work with percentages, a skill which is essential to be functional in maths. Common errors were to calculate 25% of £180 correctly as £45 but then go on to subtract this from £180, indicating that they had either not read the question carefully ,or did not fully understand the question. Another common error was to leave the answer as 45 instead of using correct money notation.

Pass mark for FSM01

Maximum mark	48
Pass mark	32
UMS	6

Note: Grade boundaries vary from year to year and from subject to subject, depending on the demands of the questions.

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