

Principal Examiner Feedback

July 2011

Functional Skills Mathematics
Level 2 (FSM02)

Edexcel is one of the leading examining and awarding bodies in the UK and throughout the world. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers.

Through a network of UK and overseas offices, Edexcel's centres receive the support they need to help them deliver their education and training programmes to learners.

For further information, please call our GCE line on 0844 576 0025, our GCSE team on 0844 576 0027, or visit our website at www.edexcel.com.

If you have any subject specific questions about the content of this Examiners' Report that require the help of a subject specialist, you may find our **Ask The Expert** email service helpful.

Ask The Expert can be accessed online at the following link:
<http://www.edexcel.com/Aboutus/contact-us/>

July 2011

Publications Code FC028935

All the material in this publication is copyright

© Edexcel Ltd 2011

Functional Skills Mathematics Level 2

Introduction

Overall the response to this paper by the candidates was a positive one; most candidates attempted the majority of the questions. Calculations relating to averages, interpreting pie charts and money were often successfully answered.

It is important that centres highlight the embedded nature of Functional Skills Mathematics to prepare the candidates for the range of contexts in which the exam questions may be set. If the skills required are embedded into a range of lessons e.g. designing a timetable to meet given constraints, using a given formula to solve problems, drawing and using a graph to predict given outcomes; the candidates will become adept at the skills without becoming alienated by lessons in mathematics. Every Functional Skills Mathematics exam will contain multistage problems and it is important that centres provide their candidates with practice in working through multistage problems in a range of contexts.

The candidates should be encouraged to show all stages of their working even when they are using a calculator and to present answers with the appropriate units. Marks in Functional Skills Mathematics are awarded for the process; conversely marks may be lost if candidates do not show their processes.

It is of great importance that candidates take note of the working box icon. When the icon is present it is essential for working to be shown in order to gain full marks for the question.

Report on Individual Questions

SECTION A: FITNESS CENTRE

Question 1 – There was evidence of a variety of approaches used to identify the number of hours that the leisure centre was open. The calculation of elapsed time did create difficulties for some candidates and although many candidates started to work with time they did not always arrive at a successful answer. Candidates who chose a counting on method or rounding to full hours before dealing with the 45 minutes were most successful and the use of a time line often proved helpful to candidates. Centres should encourage candidates to read the question fully and provide opportunities for candidates to practice working with time, particularly working with am and pm and crossing the mid-day period.

Most candidates provided good graphical interpretations with scatter graphs with lines of best fit and line graphs used successfully. It should be noted that continuous time is not best demonstrated in the form of a bar chart which cannot be used for interpolation.

Candidates should be encouraged to focus on the information required for the vertical scale to ensure that they are using an appropriate linear scale. Practice at achieving this in a variety of contexts would be helpful to candidates. Scaling often has a significant impact on the plotting of the information. Candidates should be aware that a broken scale that does not start at zero is acceptable and this may assist the candidates to identify an appropriate starting point.

Candidates should be encouraged to show markings on their graphs to indicate that they are interpreting information from the graph; this indication is often awarded process marks.

Question 2 - Many candidates were able to access the time plan question though a significant number did not work with all of the constraints indicated within the question. Candidates needed to focus on the bulleted or indented constraints to ensure that they were fully encapsulated within the time plan in order to gain full marks.

Marks were awarded for the structure of the time plan so candidates needed to indicate start and finish times as a minimum to access the first marks. Candidates who were most successful created a table with equal time spacing. Candidates who were less successful worked with lists and did not provide a structured foundation from which to answer the question.

Question 3 - Most candidates demonstrated a good knowledge of averages and used the mean to identify the average. Some candidates have shown some confusion between the range and the median and practice identifying the correct calculation required would be useful.

Some candidates lost marks through working with incorrect data, although some credit for process was awarded. The importance of reading the question carefully and identifying the important information by circling or underlining would improve the candidates' chances of using the correct data.

Candidates were able to calculate percentage correctly using a variety of methods although marks were lost marks by incorrect rounding and not considering the functionality of the answer.

Very few candidates used efficient calculations, such as multiplying by 0.7. The opportunity to practice using the interaction between decimal and percentage to ensure a more sophisticated and efficient method is to be encouraged. Many candidates were successful at performing a check of their answer often using a reverse calculation.

SECTION B: CARE HOME

Question 4 - Candidates have been very successful at understanding simple probability and most gave the correct answer.

Detailed answers were often seen to compare pie charts and these were generally accurate. Some candidates gave extra information by comparing the proportions using actual percentages or differences. Many offered comparisons for all 4 food groups.

Question 5 – Many candidates did not show a conversion from feet and inches into inches but were able to use the graph to find a correct value for the weight needed and by implication had successfully converted to inches. Where answers were incorrect marks were lost because candidates had not indicated on the graph the height and/or BMI band they were using.

This second part of the question was well answered by the majority of candidates. They successfully accessed the data from the tables and fully understood the question and its demand. A majority of candidates were not awarded the final mark for this question, as they had not demonstrated fully a check against the range of calories and their answer. Where candidates are requested to show a check, they should be encouraged to show a check mathematically or provide a simple statement.

Question 6 – This was a multistage problem which the majority of candidates were able to access but few were able to provide a complete and valid response. Many candidates were able to demonstrate knowledge of conversion between the metric units.

Candidates usually chose to find the number of chairs that could fit along each wall or the perimeter of the room. However not all considered the space needed to be left for the door and the majority of candidates did not think about what happens at the corners of the room and did not arrange the chairs accordingly. Remainders in calculations were not always dealt with appropriately with some candidates rounding answers as if rounding a decimal value to the nearest whole number and did not think about the physical nature of the context.

Only a few candidates clearly stated how many chairs they would have along each wall in order to answer the question of how to arrange 45 chairs. A small number did not read the information carefully and set out their chairs in rows across the room.

SECTION C: KARTING

Question 7 – A significant number of candidates did not attempt to substitute into or work out the formula. Substitution into a given formula is a common question at level 2 and should be practised within the classroom to build confidence. Candidates could be encouraged to highlight the key information in the question in preparation for the substitution and to build up the substitution in stages.

Time spent reflecting upon real life contexts where formulae are used to ensure that answers to formula questions remain functional would be valuable.

Many candidates used their prior knowledge of distance, speed and time rather than the given formula which led to incorrect responses. The candidates who were successful in calculating the correct record speed or finding Hannah's actual time often did not go on to compare like quantities; it was necessary to compare 32secs with 23.7 secs or 26.6mph and 35.9mph. Candidates also need to be aware that premature rounding can affect the accuracy of final answers in multi-stage calculations.

Question 8 - Many candidates did not interpret the question fully and did not include Hanna within the group of friends. In this case, candidates were not penalised for this omission but candidates do need to read the questions fully and identify the functional context.

The majority of candidates displayed answers in the correct money notation and remembered to consider the trailing zero. Some candidates missed the need to find the cost for each person and instead gave the total cost. Another common error was to correctly deduct the 1 or 3 people who were admitted free from the total of 11 or 12 but then to divide the total cost by the reduced number of people e.g. $10 \times \text{£}30 = \text{£}300$. $\text{£}300 \div 10 = \text{£}30$ each rather than the total number of people.

Question 9 - This question was answered successfully by the majority of candidates. The most common approaches were to find the total cost of 15 adverts, or work out the maximum number of adverts that could be played for the budget available. Very few candidates who correctly completed the calculation failed to state whether the budget was sufficient or not. However it is vital that when asked a question that requires a decision to be made, a sentence is written below the supporting calculations.

Question 10 - The majority of candidates were able to correctly select the fan required but this multi-staged question proved challenging to the majority of candidates.

Many candidates made some progress with the minimum response being to divide the 135000 m³ total air capacity of the building by 17.617 m³/s. Candidates then managed various amounts of additional work to convert units of time and deal with the 4 changes an hour. The most successful candidates gave clearly structured working and often added additional written commentary of their process. Those who really understood all aspects of the problem dealt with calculations efficiently; for example some worked with the extraction rate for 15 minutes to address the 4 changes per hour. There were some very elegant and satisfying strategies employed to get the correct answer.

This question was another example where premature rounding affected the accuracy of final answers so candidates need to be reminded of this.

Pass mark for FSM02

Maximum mark	48
Pass mark	28
UMS	6

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

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467

Fax 01623 450481

Email publication.orders@edexcel.com

Order Code FC028935 July 2011

For more information on Edexcel qualifications, please visit
www.edexcel.com/quals

Pearson Education Limited. Registered company number 872828
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE

Ofqual




Llywodraeth Cynulliad Cymru
Welsh Assembly Government

