FUNCTIONAL SKILLS
MATHS

CE REPORT

July 2016
Introduction

The purpose of this feedback report is to provide information to centres on candidate performance and to give advice on areas which need further development and improvement.

It should be read in conjunction with the Functional Maths Standards at Level 1 and level 2 (which are underpinned by the Adult Numeracy Standards).

Overall Performance

Many candidates were typically well prepared for questions at Level 1; however, some appeared to lack some of the basic mathematical skills that are vital to achieve a pass. This variation was more evident for candidates entered for Level 2 examinations. Performance at centres differed.
### Areas Causing concern for weaker candidates

At Level 1 and Level 2, areas causing concern for weaker candidates are

a) exam technique  

b) skills expected at the level.

#### a) Exam technique

- **Reading the question.** Some candidates did not read the questions carefully and therefore did not answer all parts of a question and forfeited marks; this is particularly evident at Level 1 where secondary parts to questions, comments and checks are often missed.
- **Using information provided.** Some candidates did not take note of important data relevant to the question, such as words and phrases that were emboldened and therefore failed to answer the question asked.

#### b) Skills

- The importance of all three process skills should be emphasised to candidates, and the need to earn marks for Representing and Interpreting as well as Analysing. If candidates do not show working and do not provide comments, reasons and explanations they are likely to forfeit approximately two thirds of the available marks and consequently fail to achieve a pass.
  - Marks are frequently lost because working is not shown. The presence of ‘Show your working’ in a question indicates that marks are allocated for sight of working and candidates will lose valuable method marks if they fail to do this.
  - Online candidates at both levels are utilising the calculator tool effectively, however, some still fail to transfer valid working to the answer box.
  - Explanations prove to be difficult for many candidates at both levels. Candidates often present brief explanations that are poorly formed and contain insufficient detail.
- Candidates perform less well on some questions that are related to practical aspects of everyday life. For example, the calculation for the number of paving stones required for a patio should be based on division of patio and paving stone dimensions rather than on area division. In such a question candidates using an area division method are likely to score some marks but will not gain full marks.
- Most candidates cope well with calculations involving money, although incorrect monetary notation can cause candidates to lose marks unnecessarily. Final answers to calculations involving monetary values should typically be rounded to two decimal places, e.g. £2.8 should be written as £2.80. Mixed notation should be avoided, e.g. £2.38p.
- Performance is often weak in calculations that involve hours, minutes and seconds; centres need to impress upon candidates that there are 60 minutes in an hour. Candidates should be confident converting decimal representations of time into appropriate units, for example, 3.26 hours is not the same as 3 hours 26 minutes.
- Percentages and fractions are always interpreted literally and should therefore not be used as placeholder representations of another quantity in calculations e.g. ‘50 – 20% = 40’ is an unacceptable method. Also, working such as ‘18% of £25’ where ‘of’ is meant to imply a
multiplication is unacceptable.

- Accuracy marks are sometimes lost for inappropriate rounding; this is particularly evident at Level 2 where increased question complexity may produce a greater number of intermediate values. Excessive rounding of intermediate values should generally be avoided. Candidates should understand when use of a fraction instead of a recurring decimal is more appropriate to avoid significant rounding errors.

- Candidates often fail to present appropriate checks of their work, or provide unnecessary checks of every calculation. Candidates need only present checks when requested. Candidates should be familiar with strategies for checking work, including use of alternate methods, inverse operations and use of approximation. Care should be taken when reversing calculations that involve any rounding of values.

- In questions that require drawing a graph or chart, candidates frequently lose marks for failing to present a fully descriptive title and appropriate labelling of axes and bars, lines and/or sectors.

Advice for centres

Candidates should

- be encouraged to answer all parts of a question and should be encouraged to attempt all questions; even if they can only do part of a question or show an acceptable method, they may gain extra marks.

- be careful that they address the specific question asked and do not interpret a question incorrectly and in a way that simplifies it. There is a distinct difference between ‘Bob thinks he will spend £54. Is he correct?’ and ‘Bob thinks he will spend less than £54. Is he correct?’ as the former refers to a specific value whereas the latter implies a possible range of values. Other qualifiers may include ‘approximately £54’, ‘more than £54’, ‘almost £54’. Candidates should clearly reflect this difference in their explanations and emphasise the relative size of values where appropriate.

- ensure they present working thoroughly, including documenting any simpler calculations they may perform mentally. Mathematical working and commentary of method should ideally be separated, and overly verbose descriptions of method avoided. Candidates are encouraged to label discrete sections of working, especially at Level 2 where multi-step calculations may be more complex. Candidates usually gain marks for decisions based on the results of their calculations even if their calculations contain errors. If a candidate thinks their result is wrong they should not make a guess at what it might be and then base a decision on that guess. If a candidate presents what they believe is an incorrect calculation, they should be advised not to delete it as it may provide them with extra marks. However, where a candidate decides to replace incorrect working with correct working, the incorrect working must be clearly indicated as not for consideration – a simple line drawn through the incorrect working is sufficient.

- avoid chaining of calculations where the result of one calculation is used directly in a subsequent
calculation e.g. 1+1=2+1=3 as such a statement is mathematically incorrect.

- be encouraged to use parentheses in calculations to avoid errors in order of operations.
- be reminded that the online calculator is provided as a tool, and any working that they wish to be assessed must be presented within the answer box.
- be encouraged to explain their findings more rigorously. Candidates should consider use of any values they calculate, and any other relevant values or details from the question, to help form more thorough explanations. The explanation should be clearly separated from preceding working, be formed of one or more complete sentences and include clear justification of conclusions. Values stated in explanation must indicate correct units.
- respond to questions appropriately;
  - Where a question has the form ‘Is she correct? Explain your answer’, a suitable response should contain two elements; an indication of correctness and an explanation of this, e.g. ‘Yes she is correct because…’ followed by a suitable explanation.
  - Where a question requires a reason or a comment, a reason should justify or reinforce a preceding statement or answer but a comment may be any statement relevant and appropriate to the question.
  - Where a comment is required on a chart or graph, candidates should be providing comments that make inferences about the data represented, and not about the structure of the chart or graph itself.
- avoid use of the word ‘Total’ where a summation of values is implied as the values involved may be ambiguous and thus the method unclear.
- show an appropriate range of results derived from multiple trials when trial and improvement methods are used.
- familiarise themselves, in advance of an examination, with the mathematical symbols available on a computer keyboard so that they are able to confidently and succinctly represent the full range of mathematical operations required in calculations without resorting to describing methods using words. Candidates should know how to access and use the pi button on a calculator.
- be confident creating appropriate axis scales that allow for easy and accurate plotting of graphs and charts, and inclusion of a key where appropriate to identify content.
- be reminded that they should not activate the 3-D bar chart function.
- ensure readings from graphs are not rounded to an inappropriate degree of accuracy or to an assumed value.

Online candidates are strongly encouraged to access the practice examination prior to taking their actual examination so they are familiar with task and question format, and the functionality available within the user interface of the assessment software. Candidates should be comfortable using the functions available in the toolbar of the answer box to allow them to present superscript text used for presentation of some units e.g. area in m² and temperature in °C.

Candidates are also encouraged to access the online tutorials available for the graphing tool and
drawing tool; use of at least one of these is likely to be necessary. Candidates should be able to annotate using text box labels and differentiate using colour e.g. for dual bar charts. Where appropriate, axis titles should include an indication of units.

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