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Functional Skills Mathematics (4748-04) Level 1

Chief Examiners' report – Summer 2020

4748-119 (Online Evolve) and 4748-219 (Paper based)

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1 Introduction

The purpose of this document is to provide centres with feedback on the performance of candidates for 4748-119 and 4748-219 Functional Skills Mathematics Level 1.
The Chief Examiners' Report has been reintroduced as a result of feedback from centres, to give them guidance in preparing candidates for examination.
It should be read in conjunction with the following documents:

- 4748-04 City & Guilds Level 1 & 2 Functional Skills Mathematics Qualification Handbook which contains the DfE Subject content for Functional Skills Mathematics
- Guidance for Delivery for Level 1 Functional Skills Mathematics

2 Overall Performance

This report covers the period from September 2019 to April 2020. It relates to the introduction of a new assessment format for Functional Skills Mathematics, a response to Ofqual's new requirements and specifications.

Ofqual requires the distinct identification of underpinning knowledge and problem-solving skills, within the assessment, and for candidates to complete part of the assessment without a calculator. Candidates are therefore required to undertake a two-part assessment.

	Part 1 **Calculator not permitted** **(25 minutes)**	**Part 2** **Calculator permitted** **(1 hour 20 minutes)**
Underpinning knowledge (15marks = 25%)	10 single mark context free questions	5 single mark context free questions
Problem solving (45marks = 75%)	between 2 to 5 problem solving questions with practical context (total 5 marks)	1 single mark check (for sense of result) 9 problem solving questions with practical context (mark tariff between 2 and 6 marks each, total 39 marks)

Although many candidates have coped well with the new assessment requirements and have been well prepared for the level at which they have been entered, a very significant percentage of candidates have performed extremely poorly. Approximately 10% of candidates have achieved 10 marks or less which suggests that they were entered for assessment well before they could reasonably cope with Level 1 requirements. For example, some candidates were unable to complete very basic calculations involving fractions and/or percentages and failed to even attempt the majority of problem-solving questions in Part 2 of the assessment.

2.1 Areas of good performance

A large number of candidates cope very well with the assessment formats, both paper based and online versions, producing well worked solutions to the problems set.

Well prepared candidates are coping well with both the isolated, context free questions and using their knowledge and skills to recognise and obtain a solution or solutions to a number of complex problems. Overall, candidates achieved correct answers to most of the underpinning knowledge items and scored well in the non-calculator section.

Most of these candidates cope with calculation requirements and understand the principles of basic operations (addition, subtraction, multiplication, division and BIDMAS) and can deal with fractions, decimals, percentages, ratios/proportion and scaling within both types of question.

Statistical problems have been dealt with competently by these candidates, who can generally at least calculate averages and ranges accurately. Probability questions using word descriptions were also completed well.

Successful candidates have given sensible explanations of their results and demonstrated understanding of the problem contexts.

It is pleasing to note that candidates are increasingly coping well with the subject content that was added to the legacy specifications, including probability using numeric descriptions; sorting data into groups; interpreting plans and elevations; and use of basic geometry.

2.2 Areas for development

2.2.1 General observations

Although many candidates have been well prepared for their chosen assessment format, script marking shows that some candidates are, unprepared for, or simply unable to cope with, the demands of the Level 1 papers, particularly the need to make accurate calculations using fractions, percentages and ratios; rounding to given numbers of decimal places; reading and applying scales; and making statistical calculations including probability. The need to prepare candidates for a problem-solving approach involving not only calculation but also the selection of relevant data and the presentation and explanation of results, cannot be overemphasised.

Candidates are expected to show their working in order to be eligible for compensation marks in cases where they have not achieved a fully correct answer. This has been a particularly important issue for some online candidates who are clearly doing their working out on paper and neglecting to transfer some or all of their working to the online script.

Also, some online candidates do not appear to have had sufficient practice in using the diagram or chart tools and have therefore lost a significant number of marks.

2.2.2 Underpinning knowledge questions

There are a total of fifteen underpinning knowledge questions, generally with no contextual setting. Ten of these questions are in the non-calculator section. Here candidates have very restricted time (just under two minutes per question) and therefore need to be aware that they should move quickly between questions.

Many of the questions are straightforward calculations involving an understanding of fractions, percentages and ratios. Some will involve basic geometry (calculation of angles); calculations of areas, perimeters and volumes; and simple statistics questions including probability.

The following are examples of calculations that are not understood by some candidates:

- percentages: ***e.g.,*** *recognition of 20 out of 50 (customers) is 40%*
  e.g., *recognition that 30% is the same as 3/10*
- fractions*:* ***e.g.,*** *calculation of one fifth as a price reduction*
  NB one third is not 30%, nor 0.3
- ratio: ***e.g.,*** use of ratio 1 : 2
- time: ***e.g.,*** *additions of hours and minutes*
  e.g., *recognition that 38.5 hours is 38 hours 30 minutes*
- weight conversions ***e.g.,*** *1.25kg = 1250g*
- calculation of area ***e.g.,*** *of rectangle 5m x 7m = 35m^2*
- scaling down ***e.g.,*** *use of 1cm represents 1m*
- linear conversion ***e.g.,*** *recognition that 10mm = 1cm, 1000m = 1km*

Areas where candidates generally performed less well

Specific questions causing difficulty (selected from a number of versions)

The following questions were poorly attempted by more than half the candidates sitting particular assessment versions.

- multiplication of whole number by a fraction eg ¾ x 4400
- increasing a whole number by a percentage eg increase 800 by 25%
- using ratio eg number of over 60's in area from given total and ratio
- volume of cube given one side
- rounding to 2dp
- number of lines of symmetry for a regular (named) polygon

2.2.3 Problem solving questions

The subject content of the new qualification is, with a few exceptions, broadly similar to that required in the legacy qualification. However, many candidates have, understandably, found difficulty coping with the style of problem-solving questions that are formatted differently to those in the legacy qualification.

Candidates must understand that problem solving (as defined by Ofqual) will mean that they will have to identify mathematical processes required for solutions to problems. There will be little or no scaffolding within a question and little guidance given beyond a start point and a finish point. This is a very challenging dimension, incorporated in the new specifications, both for centres and their candidates.

3 Recommendations/Advice for centres

The assessment, and therefore the Teaching and learning required, is based on the ***DfE Subject content functional skills: mathematics (February 2018)***
Centres should understand that the assessment is based not only on the 31 Subject Content Specifications (SCS), but also on the general descriptions preceding each section and that the content at Level 1 subsumes and builds upon the content at all the lower levels (i.e. Entry 1 to 3).

Centres should carefully consider whether a candidate is operating at an appropriate level for entry at Level 1. Unfortunately, there have been a small number of candidates who were clearly not anywhere near the standard required (e.g. in a recent paper, a number of candidates failed to give a correct answer to 4/5 as a percentage).

There are two platforms, paper based and online, available for this assessment. Centres should ensure that an appropriate choice of platform is made for candidates based on each candidate's need and preference. A few online candidates have actually indicated on their scripts that their preference for working on paper has been ignored by centres.

Centres should advise candidates about appropriate 'exam technique' particularly with regard to attempting Questions in order. Candidates may attempt Questions in any order.

Candidates who choose to access assessment online need to be prepared not only in terms of the prescribed Functional Skills Standards, but also in terms of using the E-volve platform. They must be well practiced in the use of the presentation tools (tables, diagrams, charts and graphs) but also understand how to insert sufficient text, e.g. to show calculations and working, so that potential compensation marks, in the event of incorrect answers, are accessible.

The importance of showing working in paper-based assessment should be stressed for the same reason.

4 Additional Information

Centres should be aware that pass marks may vary from paper to paper as a result of an awarding process undertaken by City & Guilds. Any difference in pass marks reflects the perceived and actual difference in demand of the exam papers, including the source materials and the questions themselves. Therefore, it is possible that two candidates with the same score may have different overall results (pass or fail) if they have taken different versions of papers.

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