Guidance for Delivery
Functional Skills Mathematics Level 2
4748-120 (e-volve) and 4748-220 (Paper-based)
Contents

1 Introduction
2 Structure of the assessment
3 Duration
4 Permitted equipment
5 Underpinning skills and problem solving
6 Question types
7 Sample assessments
8 Tips

Appendix 1 Assessment Specifications
1 Introduction

The following document is intended to support tutors with the delivery of the reformed Level 2 Functional Skills mathematics qualification. It must read in conjunction with the DfE Subject content functional skills: Mathematics which specifies the content of the qualification and the 4748 Qualification Handbook.

The new subject content requires candidates to demonstrate their competence (functionality) in mathematics at the appropriate level. Achievement of the qualification demonstrates a sound grasp of mathematical skills at the appropriate level and the ability to apply mathematical thinking effectively to solve problems successfully in the workplace and in other real life situations.

Although there is an emphasis on work-based contexts and financial literacy, the assessments are generic rather than vocationally based.

The subject content is split into three areas: using numbers and the number system; using common measures, shape and space; and handling information and data / statistics. There is naturally much overlap between these sections and drawing on different areas should be encouraged when preparing learners for assessment.

2 Structure of the assessment

The Level 2 Functional Skills Mathematics examinations comprise two sections: a short section without a calculator available and a longer section in which a calculator is permitted. Within both sections there are context-free questions testing underpinning skills and knowledge and there are problem solving questions requiring candidates to tackle problems in more complex contexts, ie, problems requiring a multistep process requiring some planning and working through at least two connected steps.

Candidates will be required to analyse the problems to decide suitable approaches, tackle the problems, achieve solutions and explain findings. Problem-solving questions will account for 75% of the marks on each paper.

There are two options for assessment:
- an onscreen examination (e-volve)
- a paper-based examination

Both options are available on demand.

The examination is based on the assessment specification (Appendix 1) and the DfE Subject Content for Functional Skills Mathematics and teaching should reflect this.

As the examination is summative, candidates should only be entered for the examinations once they have completed a period of learning and have successfully completed practice papers.
3 Duration

The Level 2 assessment is 1 hour and 45 minutes.
Section 1 is 25 minutes.
Section 2 is 1 hour and 20 minutes.
Any remaining time from Section 1 must not be carried across to Section 2.

4 Permitted equipment

The following are not permitted:

- A calculator is not permitted in Section 1.
- A protractor is not permitted at Level 2.

For the paper-based exams, candidates will need:

<table>
<thead>
<tr>
<th>Level 1</th>
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<tbody>
<tr>
<td>Pen</td>
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<tr>
<td>Pencil</td>
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<tr>
<td>Eraser</td>
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<tr>
<td>30cm ruler</td>
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<tr>
<td>Protractor</td>
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<tr>
<td>Calculator (Section 2 only)</td>
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<table>
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<td>30 cm ruler</td>
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<tr>
<td>Calculator (Section 2 only)</td>
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5 Underpinning skills and problem solving

Each of the two Sections will contain a balance of problem solving and underpinning skills questions.

Overall 25% of the marks will be for UPK and 75% for problem solving.

- Section 1 has 10 marks for underpinning skills and 5 marks for problem-solving.
- Section 2 has 5 marks for underpinning skills and 40 marks are for problem solving.

Underpinning skills questions will normally have no context or a very limited context and minimal reading demand. They are designed to assess standard mathematical processes for the level.

Problem-solving questions will be a realistic problem based on a topic that people might reasonably meet in everyday life or work.

Ofqual define a problem as

- having little or no scaffolding: there is little guidance given to the student beyond a start point and a finish point. Questions do not explicitly state the mathematical process(es) required for the solution.
- The information is not given in mathematical form or in mathematical language; or there is a need for the results to be interpreted or methods evaluated, for example, in a real-world context.

Therefore, problem-solving questions will generally not have specific instructions that give the method like

- Work out the total cost.
- Draw a line of symmetry on the outline.

Instead candidates are more likely to come across questions like eg

- Is the manager correct?
  Explain your answer.
- Which type of ticket do you recommend?
  Explain your reasons. Include figures or calculations to support your decision.
- Did the changes make any difference?
  Explain your findings to the manager. Show calculations to support your explanation.
- Will the man be better off in the new job?
  Give a reason for your answer.

Candidates will be expected to choose an appropriate approach and methods as well as carry out calculations. They will also be given opportunities to interpret information.
6 Question types

Papers will be a mixture of the following question types, whichever format the learner opts to sit

- short answer
- multiple choice question (MCQ)
- producing or reading from graphs / charts / tables / diagrams.

7 Sample papers

Regardless of which assessment option is chosen, candidates should be familiar with sample papers, which are indicative of content.

e-volve candidates should be given the opportunity to practise onscreen samples. They should be aware that answers must be recorded in the answer boxes where provided and working should be shown in the spaces provided for working. Candidates who fail to do these things will be unable to access compensation marks if their final answer is incorrect.

Candidates should be encouraged to practise using the tools in the evolve examination by accessing the familiarisation tool (found here). It is strongly recommended that candidates taking the e-volve papers practise drawing charts, graphs and diagrams with the online tools in advance of sitting the paper.

In the e-volve examination, for the second section only, the candidate will have access to an onscreen calculator. Candidates will not be permitted to use their own calculator for these examinations.

Candidates opting for paper-based assessment should likewise be given the opportunity to practise sample papers. They must also answer in the spaces provided and are advised to show working. They must have rulers in order to successfully attempt some of the questions and calculators for the calculator permitted section.

Sample assessments can be found on the 4748 page of the City & Guilds website (found here). The paper-based samples are under the Documents / Assessment Materials / Level 2 / Functional Skills Mathematics / Sample papers. The e-volve onscreen samples are under Information / Level 2 / Sample Onscreen Materials.

In addition to the sample assessments, our SmartScreen mathematics resources are mapped to each of the subject content statements at level 1 and 2 and provide a wide range of activities to support teaching and learning.
8 Tips

Subject content

Centres should be aware of all the detailed subject content specified for Level 2 in the DfE Subject content document (DfE Subject content functional skills: Mathematics) and be aware that Level 2 content also subsumes all level content below Level 2.

Particular attention is drawn to the following significant ‘upgrading’ from previous Level 2 specifications (numbers refer to DfE Subject content):

19. Use coordinates in 2-D, positive and negative, to specify the positions of points

21. Draw 3-D shapes to include plans and elevations

22. Calculate values of angles and/or coordinates with 2-D and 3-D shapes

24. Estimate the mean of a grouped frequency distribution from discrete data

26. ene out the probability of combined events including the use of diagrams and tables including two-way tables

28. Draw and interpret scatter diagrams and recognise positive and negative correlation

General calculation issues

Candidates must understand order of operations conventions (BODMAS/BIDMAS) and apply them to calculations. Online Candidates should be aware that the e-volve calculator currently does not automatically apply BODMAS/BIDMAS.

They must also be able to apply these rules when using formulae, including algebraic equations.

Candidates should use estimation and approximation techniques when required, including checking calculations.

Explanations / comments needed for problem solving questions

Problem solving questions may specify a requirement for explanation (comments). Candidates must be aware that, although marks will be awarded for relevant calculations, full marks will require suitable explanation using their results, preferably with reference to numerical values calculated:

eg the first option is cheaper by £4.50

eg, A is warmer than B average temperature for A is 26°C > 19°C for B
Candidates must also be prepared to explain why an answer is sensible (or not) based on mathematical process rather than calculated results.

Candidates should be taught the distinction between averages and range and how to use each in explanations in context.

**Presentation of results / workings**

The importance of showing working, ie to show calculations and methods used, should be stressed, particularly so that potential compensation marks, in the event of incorrect answers, are accessible to the candidate. This should be emphasised to online candidates who may use ‘pencil and paper’ methods initially to formulate their solutions.

Candidates need to understand the use of scales in scale diagrams and be prepared to construct scale diagrams, including plans and elevations.

Candidates should be taught to use a variety of presentation methods to summarise results, including graphs, charts and tables. They must understand that a table is not a chart (and vice versa). Summary tables should be systematically constructed to include rows and columns with appropriate headings.

Level 2 candidates must be prepared to construct scattergraphs and to draw and understand trend lines. Additionally they may be required presentation methods listed in the Level 1 subject content (27), ie line graphs, bar charts and pie charts.

They should understand that a line graph is only an option if the data plotted is continuous data. It is not an option if the results illustrated are discrete. Pie charts are suitable only if there is an intention to show proportions.

- A bar chart should have a title, axes labelled, bars labelled (a key is also acceptable), a scale starting at zero and bar heights accurately plotted.
- A pie chart should have a title, segments labelled or a key provided, and sector angles accurately drawn. It must only be used where the intention is to show proportion.
- A line graph should have a title, labelled axes, continuous linear scales on both vertical and horizontal axes, the vertical scale may start at zero (if it does not, a broken line symbol should be used), accurate plots shown clearly and a single line joining the plots.

Candidates who choose to access assessment online need to be prepared not only in terms of the prescribed Functional Skills Specification, but also in terms of using the e-volve platform. They must be well practised in the use of the presentation tools (tables, diagrams, charts and graphs) including how to insert sufficient text, keys and the use of sensible scales.
### Appendix 1

**Assessment specification 4748-120 and 4748-220**

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<th>Total 60 marks</th>
<th>Time 1 hour 45 minutes (Section 1 - 25 minutes, Section 2 - 1 hour 20 minutes)</th>
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<tr>
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<td><strong>Totals</strong></td>
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