Functional Skills Criteria for Mathematics

Entry 1, Entry 2, Entry 3, Level 1 and Level 2

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Contents

The criteria

Introduction

1. Functional skills qualifications in mathematics assess three interrelated process skills:

Representing selecting the mathematics and information to model a situation	Analysing processing and using mathematics	Interpreting interpreting and communicating the results of the analysis
■ Learners recognise that a situation has aspects that can be represented using mathematics ■ Learners make an initial model of a situation using suitable forms of representation ■ Learners decide on the methods, operations and tools, including information and communication technology (ICT), to use in a situation ■ Learners select the mathematical information to use.	■ Learners use appropriate mathematical procedures ■ Learners examine patterns and relationships ■ Learners change values and assumptions or adjust relationships to see the effects on answers in models ■ Learners find results and solutions.	■ Learners interpret results and solutions ■ Learners draw conclusions in light of situations ■ Learners consider the appropriateness and accuracy of results and conclusions ■ Learners choose appropriate language and forms of presentation to communicate results and solutions.

2. Functional skills qualifications in mathematics are available at Entry 1, Entry 2, Entry 3, level 1 and level 2. The criteria for these qualifications specify the requirements in terms of skill standards and coverage and range at each level. At each level of the qualification, these subsume the previous level's skill standards and the indicative coverage and range, supporting a progression-based suite of skills qualifications. The coverage and range statements provide

an indication of the type of mathematical content learners are expected to apply in functional contexts; however, relevant content could also be drawn from equivalent National Curriculum levels and Adult Numeracy standards.

3. These criteria should be used in conjunction with the *Functional Skills Qualifications Criteria* publication, which includes the criteria common to all functional skills qualifications, and the controlled assessment regulations for the qualifications: *Controlled Assessment Regulations for Functional Skills: Entry 1, Entry 2 and Entry 3 in English, Mathematics and ICT; English speaking, Listening and Communication at Entry 1, Entry 2, Entry 3, Level 1 and Level 2*.

Skill standards and assessment weightings

4. Functional skills qualifications in mathematics must require learners to demonstrate their ability in relation to:

Entry 1

Skill standards	**Coverage and range**	**Assessment weighting**
Representing 1. Understand simple mathematical information in familiar contexts and situations.	a) Understand and use numbers with one significant figure in practical contexts; b) Describe the properties of size and measure, including length, width, height and weight, and make simple comparisons; c) Describe position; d) Recognise and select coins and notes; e) Recognise and name common 2D and 3D shapes; f) Sort and classify objects practically using a single criterion.	30–40%
Analysing 2. Use mathematics to obtain answers to simple given practical problems that are clear and routine. 3. Generate results that make sense for a specified task.		30–40%
Interpreting 4. Provide solutions to simple given practical problems in familiar contexts and situations.		30–40%

Entry 2

<table>
<tr><th>Skill standards</th><th>Coverage and range</th><th>Assessment weighting</th></tr>
<tr><td>Representing

1. Understand simple practical problems in familiar contexts and situations.

2. Select basic mathematics to obtain answers.</td><td rowspan="3">a) Understand and use whole numbers with up to two significant figures;

b) Understand and use addition/subtraction in practical situations;

c) Use doubling and halving in practical situations;

d) Recognise and use familiar measures, including time and money;

e) Recognise sequences of numbers, including odd and even numbers;

f) Use simple scales and measure to the nearest labelled division;

g) Know properties of simple 2D and 3D shapes;

h) Extract information from simple lists.</td><td>30–40%</td></tr>
<tr><td>Analysing

3. Use basic mathematics to obtain answers to simple given practical problems that are clear and routine.

4. Generate results to a given level of accuracy.

5. Use given checking procedures.</td><td>30–40%</td></tr>
<tr><td>Interpreting

6. Describe solutions to simple given practical problems in familiar contexts and situations.</td><td>30–40%</td></tr>
</table>

Entry 3

Skill standards	Coverage and range	Assessment weighting
Representing 1. Understand practical problems in familiar contexts and situations. 2. Begin to develop own strategies for solving simple problems. 3. Select mathematics to obtain answers to simple given practical problems that are clear and routine.	a) Add and subtract using three-digit numbers; b) Solve practical problems involving multiplication and division by 2, 3, 4, 5 and 10; c) Round to the nearest 10 or 100. d) Understand and use simple fractions; e) Understand, estimate, measure and compare length, capacity, weight and temperature; f) Understand decimals to two decimal places in practical contexts; g) Recognise and describe number patterns; h) Complete simple calculations involving money and measures. i) Recognise and name simple 2D and 3D shapes and their properties; j) Use metric units in everyday situations; k) Extract, use and compare information from lists, tables, simple charts and simple graphs.	30–40%
Analysing 4. Apply mathematics to obtain answers to simple given practical problems that are clear and routine. 5. Use simple checking procedures.		30–40%
Interpreting 6. Interpret and communicate solutions to practical problems in familiar contexts and situations.		30–40%

Level 1

<table>
<tr><th>Skill standards</th><th>Coverage and range</th><th>Assessment weighting</th></tr>
<tr><td>Representing

1. Understand practical problems in familiar and unfamiliar contexts and situations, some of which are non-routine.

2. Identify and obtain necessary information to tackle the problem.

3. Select mathematics in an organised way to find solutions.</td><td rowspan="3">a) Understand and use whole numbers and understand negative numbers in practical contexts;

b) Add, subtract, multiply and divide whole numbers using a range of strategies;

c) Understand and use equivalences between common fractions, decimals and percentages;

d) Add and subtract decimals up to two decimal places;

e) Solve simple problems involving ratio, where one number is a multiple of the other;

f) Use simple formulae expressed in words for one- or two-step operations;

g) Solve problems requiring calculation with common measures, including money, time, length, weight, capacity and temperature;

h) Convert units of measure in the same system;

i) Work out areas and perimeters in practical situations;

j) Construct geometric diagrams, models and shapes;

k) Extract and interpret information from tables, diagrams, charts and graphs;

l) Collect and record discrete data and organise and represent information in different ways;</td><td>30–40%</td></tr>
<tr><td>Analysing

4. Apply mathematics in an organised way to find solutions to straightforward practical problems for different purposes.

5. Use appropriate checking procedures at each stage.</td><td>30–40%</td></tr>
<tr><td>Interpreting

6. Interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations.</td><td>30–40%</td></tr>
</table>

	m) Find mean and range; n) Use data to assess the likelihood of an outcome.	

Level 2

Skill standards	Coverage and range	Assessment weighting
Representing 1. Understand routine and non-routine problems in familiar and unfamiliar contexts and situations. 2. Identify the situation or problems and identify the mathematical methods needed to solve them. 3. Choose from a range of mathematics to find solutions.	a) Understand and use positive and negative numbers of any size in practical contexts; b) Carry out calculations with numbers of any size in practical contexts, to a given number of decimal places; c) Understand, use and calculate ratio and proportion, including problems involving scale; d) Understand and use equivalences between fractions, decimals and percentages; e) Understand and use simple formulae and equations involving one- or two-step operations; f) Recognise and use 2D representations of 3D objects; g) Find area, perimeter and volume of common shapes; h) Use, convert and calculate using metric and, where appropriate, imperial measures; i) Collect and represent discrete and continuous data, using ICT where appropriate; j) Use and interpret statistical measures, tables and diagrams, for	30–40%
Analysing 4. Apply a range of mathematics to find solutions. 5. Use appropriate checking procedures and evaluate their effectiveness at each stage.		30–40%
Interpreting 6. Interpret and communicate solutions to multi-stage practical		30–40%

problems in familiar and unfamiliar contexts and situations. 7. Draw conclusions and provide mathematical justifications.	discrete and continuous data, using ICT where appropriate; k) Use statistical methods to investigate situations; l) Use probability to assess the likelihood of an outcome.	

Scheme of assessment

5. Functional skills qualifications in mathematics must be single-component qualifications with assessment that focuses on the three interrelated process skills identified in the skill standards.

6. Specifications at each level must be consistent with the National Curriculum Mathematics and Adult Numeracy standards at the corresponding levels:

    - Entry 1:
        - National Curriculum Mathematics level 1;
        - Adult Numeracy standards at Entry 1.
    - Entry 2:
        - National Curriculum Mathematics levels 1–2;
        - Adult Numeracy standards at Entry 2.
    - Entry 3:
        - National Curriculum Mathematics levels 1–3;
        - Adult Numeracy standards at Entry 3.
    - Level 1:
        - National Curriculum Mathematics levels 1–4;
        - Adult Numeracy standards at level 1.
    - Level 2:
        - National Curriculum Mathematics levels 1–6;
        - Adult Numeracy standards at level 2.

7. Specifications for functional skills qualifications in mathematics must allocate a weighting of 100 per cent to external assessment at levels 1 and 2.

8. Assessment must focus on functionality and the effective application of process skills in purposeful contexts and scenarios that reflect real-life situations.

9. Assessment of functional skills qualifications in mathematics must have a minimum of 75 per cent open-response assessment at all levels.

10. Specifications must conform to the assessment weightings outlined in the skill standards. Assessment must provide opportunities to demonstrate each of the process skills and span a sufficient selection of the skill sub-sections within the specified ranges stated in the skill standards. The balance may vary between individual assessment tasks.

11. Assessment must cover all of the skill standards. Awarding organisations are responsible for determining the extent to which assessment tasks provide opportunities for learners to apply the indicative coverage and range or equivalent content.

12. Assessment must require learners to demonstrate their ability to represent, analyse and interpret, using numbers (including algebra at level 2), geometry and statistics within functional contexts.

13. Mark schemes must clearly indicate how marks are allocated for each of the process skills (representing, analysing,and interpreting).

14. The duration of the assessment leading to a functional skills qualification in mathematics at Entry 1, 2 and 3 should be a minimum of one hour and must not exceed one and a half hours. At levels 1 and 2 the duration of the assessment leading to a functional skills qualification in mathematics must be a minimum of one and a half hours and a maximum of two hours.

15. Learners are permitted to use calculators within assessments.

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