AQA
Realising potential

LEVEL 1 AND 2 FUNCTIONAL SKILLS IN MATHEMATICS

(8361/8362)

Specification
For teaching from September 2019 onwards
For exams January 2020 onwards

Version 1.0 March 2019

Contents

Are you using the latest version of these specifications?

- You will always find the most up-to-date version of these specifications on our website at aqa.org.uk/8361
- We will write to you if there are significant changes to these specifications.

1 Introduction

1.1 Why choose AQA Level 1 and 2 Functional Skills in Mathematics

Maths is for everyone. It is diverse, engaging and essential in equipping learners with the right skills to reach their future destination, whatever that may be.

AQA's Functional Skills qualifications allow teachers and learners to explore real life contexts together. Everyday mathematics forms the basis of our practical and engaging specification, giving teachers the freedom to shape what success looks like for every learner.

Our question papers are designed with learners in mind. We're committed to ensuring that learners are settled early in our exams and have the best possible opportunity to demonstrate their knowledge and understanding of maths, to ensure they achieve the results they deserve.

You can find out about all our mathematics qualifications at aqa.org.uk/mathematics

1.2 Support and resources to help you teach

We know that support and resources are vital for your teaching and that you have limited time to find or develop good quality materials. So we've worked with experienced teachers to provide you with a range of resources that will help you plan, teach and prepare for exams with confidence.

Teaching resources

Our resources include:

- Additional specimen papers
- Scheme of work (route map)
- Teaching guidance to outline clearly the possible scope of teaching and learning
- Summary of changes.

Preparing for exams

Visit aqa.org.uk/maths for everything you need to prepare for our exams, including:

- past papers, mark schemes and examiners' reports from the legacy specification 4367/4368
- specimen papers and mark schemes for new courses.

Keep your skills up-to-date with professional development

Wherever you are in your career, there's always something new to learn. As well as subject-specific training, we offer a range of courses to help boost your skills.

You can attend a course at venues around the country, in your school or online – whatever suits your needs and availability. Find out more at coursesandevents.aqa.org.uk

Help and support

Visit our website for information, guidance, support and resources at aqa.org.uk/maths

You can talk directly to the Maths subject team.

E: maths@aqa.org.uk

T: 0161 957 3852

2 Specification at a glance

Subject content

1 Use of number and the number system
2 Use of measures, shape and space
3 Handling information and data

Assessments

AQA Level 1 and 2 Functional Skills in Mathematics are linear. Learners must sit both papers in the same series. For both levels, 25% of the total marks are allocated to the assessment of underpinning skills and 75% of the total marks are allocated to the assessment of problem solving.

Paper 1: Non-calculator	+	Paper 2: Calculator
What's assessed All subject content for the level		**What's assessed** All subject content for the level
How it's assessed • Written exam: 30 mins • Paper based • 20 marks • 25% of the AQA Level 1 and 2 Functional Skills in Mathematics • Set and marked by AQA		**How it's assessed** • Written exam: 1 hour 30 mins • Paper based • 60 marks • 75% of the AQA Level 1 and 2 Functional Skills in Mathematics • Set and marked by AQA
Questions Section A: Underpinning Skills A mix of multiple choice and short response questions Section B: Problem solving Short response questions		**Questions** Section A: Underpinning Skills A mix of multiple choice and short response questions Section B: Problem solving Short response questions

3 Subject content

The specification content covers the subject content that will be assessed through both papers. For ease of comparison Level 1 and Level 2 content is presented together.

3.1 Use of number and the number system

3.2 Use of measures, shape and space

3.3 Handling information and data

Level 1 content will be assumed prior knowledge for Level 2.

3.1 Use of number and the number system

Level 1

Learners at Level 1 are expected to be able to count in steps of various sizes, including negative numbers; read, write and understand positive whole numbers to one million. They can order and compare whole numbers of any size, and fractions, ratios and decimals and recognise the effect of multiplying and dividing by powers of 10, 100 and 1000. They can identify, compare and extend a range of numerical and spatial patterns, use, understand and calculate with fractions, decimals and percentages and calculate simple interest. For specific content on numbers and the number system – see below.

Ref	Level 1 content
NS1	Read, write, order and compare large numbers (up to one million)
NS2	Recognise and use positive and negative numbers
NS3	Multiply and divide whole numbers and decimals by 10, 100, 1000
NS4	Use multiplication facts and make connections with division facts
NS5	Use simple formulae expressed in words for one or two-step operations
NS6	Calculate the squares of one-digit and two-digit numbers
NS7	Follow the order of precedence of operators
NS8	Read, write, order and compare common fractions and mixed numbers
NS9	Find fractions of whole number quantities or measurements
NS10	Read, write, order and compare decimals up to three decimal places
NS11	Add, subtract, multiply and divide decimals up to two decimal places
NS12	Approximate by rounding to a whole number or to one or two decimal places
NS13	Read, write, order and compare percentages in whole numbers
NS14	Calculate percentages of quantities, including simple percentage increases and decreases by 5% and multiples thereof
NS15	Estimate answers to calculations using fractions and decimals
NS16	Recognise and calculate equivalences between common fractions, percentages and decimals
NS17	Work with simple ratio and direct proportions

Level 2

Learners at Level 2 are expected to be able to use numbers of any size; read, write and make use of positive and negative integers of any size; use, order and compare integers, fractions, decimals, percentages and ratios as well as recognise the value of a digit in any whole or decimal number. They can use numerical and spatial patterns for a purpose and calculate with, and convert between, numbers written as fractions, decimals, percentages and ratios. For specific content on numbers and the number system – see below.

Ref	Level 2 content
NS18	Read, write, order and compare positive and negative numbers of any size
NS19	Carry out calculations with numbers up to one million including strategies to check answers including estimation and approximation
NS20	Evaluate expressions and make substitutions in given formulae in words and symbols
NS21	Identify and know the equivalence between fractions, decimals and percentages
NS22	Work out percentages of amounts and express one amount as a percentage of another
NS23	Calculate percentage change (any size increase and decrease), and original value after percentage change
NS24	Order, add, subtract and compare amounts or quantities using proper and improper fractions and mixed numbers
NS25	Express one number as a fraction of another
NS26	Order, approximate and compare decimals
NS27	Add, subtract, multiply and divide decimals up to three decimal places
NS28	Understand and calculate using ratios, direct proportion and inverse proportion
NS29	Follow the order of precedence of operators, including indices

3.2 Use of measures, shape and space

Learners for both Level 1 and Level 2 should have knowledge and understanding of terms used in household and general finance, for example profit, loss, cost price, selling price, discount, expenses, budgeting, balance, VAT, interest rate, salary, wages, gross and net pay, income tax, personal allowance and national insurance.

Level 1

Learners at Level 1 are expected to be able to work out simple relationships between common units of measurement to define quantities, also involving mathematical terms for position and direction. They can apply and use calculations with common measures including money, time, length, weight and capacity. They can visualise, draw and describe 2-D and 3-D shapes and use properties of 2-D shapes in calculations. For specific content on common measures, shape and space – see below.

Ref	Level 1 content
M1	Calculate simple interest in multiples of 5% on amounts of money
M2	Calculate discounts in multiples of 5% on amounts of money
M3	Convert between units of length, weight, capacity, money and time, in the same system
M4	Recognise and make use of simple scales on maps and drawings
M5	Calculate the area and perimeter of simple shapes including those that are made up of a combination of rectangles
M6	Calculate the volumes of cubes and cuboids
M7	Draw 2-D shapes and demonstrate an understanding of line symmetry and knowledge of the relative size of angles
M8	Interpret plans, elevations and nets of simple 3-D shapes
M9	Use angles when describing position and direction, and measure angles in degrees

Level 2

Learners at Level 2 are expected to be able to handle relationships between measurements of various kinds, use angles and coordinates when involving position and direction and make use of geometric properties in calculations with 2-D and 3-D shapes and understand the relationships between them. For specific content on measures, shape and space – see below.

Ref	Level 2 content
M10	Calculate amounts of money, compound interest, percentage increases, decreases and discounts including tax and simple budgeting
M11	Convert between metric and imperial units of length, weight and capacity using a) a conversion factor and b) a conversion graph
M12	Calculate using compound measures including speed, density and rates of pay
M13	Calculate perimeters and areas of 2-D shapes including triangles and circles and composite shapes including non-rectangular shapes (formulae given except for triangles and circles)
M14	Use formulae to find volumes and surface areas of 3-D shapes including cylinders (formulae to be given for 3-D shapes other than cylinders)
M15	Calculate actual dimensions from scale drawings and create a scale diagram given actual measurements
M16	Use coordinates in 2-D, positive and negative, to specify the positions of points
M17	Understand and use common 2-D representations of 3-D objects
M18	Draw 3-D shapes including plans and elevations
M19	Calculate values of angles and/or coordinates with 2-D and 3-D shapes

3.3 Handling information and data

Level 1

Learners at Level 1 are expected to be able to select, construct and interpret a range of statistical diagrams in various contexts; select and use methods and forms to present and describe outcomes. They can extract and interpret information from tables, diagrams, charts and graphs; apply simple statistics and recognise features of charts to summarise and compare sets of data; recognise and use the probability scale and interpret probabilities. For specific content on handling information and data – see below.

Ref	Level 1 content
H1	Represent discrete data in tables, diagrams and charts including pie charts, bar charts and line graphs
H2	Group discrete data and represent grouped data graphically
H3	Find the mean and range of a set of quantities
H4	Understand probability on a scale from 0 (impossible) to 1 (certain) and use probabilities to compare the likelihood of events
H5	Use equally likely outcomes to find the probabilities of simple events and express them as fractions

Level 2

Learners at Level 2 are expected to be able to construct, interpret and evaluate a range of statistical diagrams. They can calculate and interpret probabilities. They can calculate, analyse, compare and interpret appropriate data sets, tables, diagrams and statistical measures such as common averages (mean, median, mode) and spread (range), and use statistics to compare sets of data. They can identify patterns and trends from data as well as recognise simple correlation. For specific content on handling information and data – see below.

Ref	Level 2
H6	Calculate the median and mode of a set of quantities
H7	Estimate the mean of a grouped frequency distribution from discrete data
H8	Use the mean, median, mode and range to compare two sets of data
H9	Work out the probability of combined events including the use of diagrams and tables, including two-way tables
H10	Express probabilities as fractions, decimals and percentages
H11	Draw and interpret scatter diagrams and recognise positive and negative correlation

4 Scheme of assessment

Find past papers and mark schemes, and specimen papers for new courses, on our website at aqa.org.uk/pastpapers

AQA Level 1 and 2 Functional Skills in Mathematics assessments and certifications, for this specification, are available for the first time in January 2020 and then every February/March, May/June, November and January for the life of the specification.

This is a linear qualification, marks for individual papers cannot be carried forward.

All materials are available in English only.

4.1 Aims and learning outcomes

Functional Skills mathematics qualifications at these levels should:

- indicate that learners can demonstrate their ability in mathematical skills and their ability to apply these, through appropriate reasoning and decision making, to solve realistic problems of increasing complexity
- introduce learners to new areas of life and work so that they are exposed to concepts and problems which, while not of immediate concern, may be of value in later life and
- enable learners to develop an appreciation of the role played by mathematics in the world of work and in life generally.

4.2 Solving mathematical problems and decision making

Level 1

Learners at Level 1 are expected to be able to use the knowledge and skills listed in the subject content to recognise and obtain a solution or solutions to a straightforward problem. A straightforward problem is one that requires learners to either work through one step or process or to work through more than one connected step or process.

Individual problems are based on the knowledge and/or skills in the mathematical content areas (number and the number system; measures, shape and space; information and data). At Level 1 it is expected that the learner will be able to address individual problems, some of which draw upon a combination of any two of the mathematical content areas and require learners to make connections between those content areas.

Learners at Level 1 are expected to be able to:

- read, understand and use mathematical information and mathematical terms used at this level
- address individual problems as described above
- use knowledge and understanding to a required level of accuracy
- identify suitable operations and calculations to generate results
- analyse and interpret answers in the context of the original problem
- check the sense, and reasonableness, of answers and
- present results with appropriate explanation and interpretation demonstrating simple reasoning to support the process and show consistency with the evidence presented.

The context of individual problems at this level will require some comprehension in order for the learner to be able independently to identify and carry out an appropriate mathematical approach.

Level 2

Learners at Level 2 are expected to be able to use the knowledge and skills listed in the subject content to recognise and obtain a solution or solutions to a complex problem. A complex problem is one which requires a multistep process, typically requiring planning and working through at least two connected steps or processes.

Individual problems are based on a combination of the knowledge and/or skills from the mathematical content areas (number and the number system; measures, shape and space; information and data). At Level 2 it is expected that the learner will be able to address individual problems some of which draw upon a combination of all three mathematical areas and require learners to make connections between those content areas.

Learners at Level 2 are expected to be able to:

- read, understand, and use mathematical information and mathematical terms
- address individual problems as described above
- use knowledge and understanding to a required level of accuracy
- identify suitable operations and calculations to generate results
- analyse and interpret answers in the context of the original problem
- check the sense and reasonableness of answers and
- present and explain results clearly and accurately demonstrating reasoning to support the process and show consistency with the evidence presented.

The context of individual problems at this level will require interpretation and analysis in order for the learner to be able independently to identify and carry out an appropriate mathematical process or processes.

4.3 Guided learning hours

Guided Learning Hours (GLH) are defined (within the Education and Skills Act 2008) as the time a person spends:

- being taught or given instruction by a lecturer, tutor, supervisor or other appropriate provider of education or training
- otherwise participating in education and training under the immediate guidance or supervision of such a person.

It doesn't include time spent on unsupervised preparation or study, whether at home or otherwise.

The guided learning hours for this qualification is 55 hours.

4.4 Total qualification time

Total Qualification Time (TQT) is the total number of hours assigned to a qualification – combining the GLH, assessment time and Directed Study Hours (DST).

DST is defined as the activity of a learner in preparation, study or any other form of participation in the qualification subject, which takes place as directed – but not supervised – by a teacher, tutor or other appropriate provider.

The anticipated TQT for this qualification is 55 hours.

5 General administration

You can find information about all aspects of administration, as well as all the forms you need, at aqa.org.uk/examsadmin

5.1 Entries and codes

You only need to make one entry for each qualification – this will cover all the question papers and certification.

Every specification is given a national discount (classification) code by the Department for Education (DfE), which indicates its subject area.

If a learner takes two specifications with the same discount code, Further and Higher Education providers are likely to take the view that they have only achieved one of the two qualifications. Please check this before your learners start their course. Where two specifications have the same discount code, only one of them will be counted for the purpose of the *School and College Performance tables* – the DfE's rules on 'early entry' will determine which one.

Qualification title	AQA entry code
AQA Level 1 Functional Skills in Mathematics	8361
AQA Level 2 Functional Skills in Mathematics	8362

This specification complies with Ofqual's:

- *General Conditions of Recognition* that apply to all regulated qualifications
- Functional Skills qualification conditions that apply to all Functional Skills
- Functional Skills Mathematics conditions that apply to all Functional Skills in this subject.

The Ofqual qualification accreditation numbers (QAN) are 603/4257/2 (Level 1) and 603/4258/4 (Level 2).

5.2 Overlaps with other qualifications

There is some overlap between this specification and AQA's GCSE Mathematics.

5.3 Awarding grades and reporting results

The AQA Level 1 and 2 Functional Skills qualifications will be graded on a pass/fail system. Learners who fail to reach the minimum standard will be recorded as 'Fail' (failed) and will not receive a qualification certificate.

We will publish the minimum raw mark for a pass when we issue learners' results.

5.4 Resits and shelf life

Learners can resit the qualification as many times as they wish, within the shelf life of the qualification.

5.5 Previous learning and prerequisites

Learners are not required to have taken any particular qualifications before taking this course. Any requirements for entry to a course based on this specification are at the discretion of schools and colleges.

5.6 Access to assessment: diversity and inclusion

General qualifications are designed to prepare learners for a wide range of occupations and further study. Therefore our qualifications must assess a wide range of competencies.

The subject criteria have been assessed to see if any of the skills or knowledge required present any possible difficulty to any learners, whatever their ethnic background, religion, sex, age, disability or sexuality. If any difficulties were encountered, the criteria were reviewed again to make sure that tests of specific competencies were only included if they were important to the subject.

As members of the Joint Council for Qualifications (JCQ) we participate in the production of the JCQ document *Access Arrangements and Reasonable Adjustments: General and Vocational qualifications.* We follow these guidelines when assessing the needs of individual learners who may require an access arrangement or reasonable adjustment. This document is published on the JCQ website at jcq.org.uk

Learners with disabilities and special needs

We can make arrangements for disabled learners and learners with special needs to help them access the assessments, as long as the competencies being tested are not changed. Access arrangements must be agreed **before** the assessment. For example, a Braille paper would be a reasonable adjustment for a Braille reader but not for a learner who does not read Braille.

We are required by the Equality Act 2010 to make reasonable adjustments to remove or lessen any disadvantage that affects a disabled learner.

If you have learners who need access arrangements or reasonable adjustments, you can apply by emailing accessarrangementsqueries@aqa.org.uk

Special consideration

We can give special consideration to learners who have been disadvantaged at the time of the exam through no fault of their own – for example a temporary illness, injury or serious problem such as the death of a relative. We can only do this **after** the exam.

Your exams officer should apply online for special consideration at aqa.org.uk/eaqa

For more information and advice about special consideration please see aqa.org.uk/access or email specialconsiderationqueries@aqa.org.uk

5.7 Working with AQA for the first time

If your school or college has not previously offered any AQA specification, you need to register as an AQA centre to offer our exams to your learners. Find out how at aqa.org.uk/becomeacentre

If your school or college is new to this specification, please let us know by completing an Intention to enter form. The easiest way to do this is via e-AQA at aqa.org.uk/eaqa

5.8 Private candidates

A private candidate is someone who enters for exams through an AQA-approved school or college but is not enrolled as a learner there.

If you are a private candidate you may be self-taught, home-schooled or have private tuition, either with a tutor or through a distance learning organisation. You must be based in the UK.

If you have any queries as a private candidate, you can:

- speak to the exams officer at the school or college where you intend to take your exams
- visit our website at aqa.org.uk/examsadmin
- email: privatecandidates@aqa.org.uk

5.9 Materials for use in the examination

For all question papers, learners are expected to have mathematical instruments available for use in the exam. These instruments are defined as:

- pencil (for use in diagrams only)
- ruler
- pair of compasses
- protractor.

Calculators

Learners will be expected to have a calculator for Paper 2 for level 1 and level 2 examinations. The calculator should have the following as an absolute minimum requirement:

- four rules and square root functions.

Learners are encouraged to use a scientific calculator and to be familiar with the use of common functions including:

- brackets, powers and roots, fractions, the memory facility and order of operations.

For the purposes of this specification, a 'calculator' is any electronic or mechanical device which may be used for the performance of mathematical computations. However, only those permissible in the guidance in the *Instructions for conducting examinations* are allowed in Functional Skills Mathematics examinations. Further guidance on regulations relating to calculators can be obtained from Joint Council for General Qualifications document *Instructions for conducting examinations*.

Realising potential

Get help and support

Visit our website for information, guidance, support and resources at:
aqa.org.uk/maths

You can talk directly to the Maths subject team

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