

# Functional Skills Mathematics - Level 1

## Learning aims and outcomes at Level 1

Functional Skills mathematics qualifications at these levels should:

- Indicate that students 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 students 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 students to develop an appreciation of the role played by mathematics in the world of work and in life generally.

## Subject Content: Level 1

**Use of number and the number system:** students 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.

<b>Level 1 - using numbers and the number system – whole numbers, fractions, decimals and percentages</b>
1. Read, write, order and compare large numbers (up to one million)
2. Recognise and use positive and negative numbers
3. Multiply and divide whole numbers and decimals by 10, 100, 1000
4. Use multiplication facts and make connections with division facts
5. Use simple formulae expressed in words for one or two-step operations
6. Calculate the squares of one-digit and two-digit numbers
7. Follow the order of precedence of operators
8. Read, write, order and compare common fractions and mixed numbers
9. Find fractions of whole number quantities or measurements

10. Read, write, order and compare decimals up to three decimal places
11. Add, subtract, multiply and divide decimals up to two decimal places
12. Approximate by rounding to a whole number or to one or two decimal places
13. Read, write, order and compare percentages in whole numbers
14. Calculate percentages of quantities, including simple percentage increases and decreases by 5% and multiples thereof
15. Estimate answers to calculations using fractions and decimals
16. Recognise and calculate equivalences between common fractions, percentages and decimals
17. Work with simple ratio and direct proportions

**Use of common measures, shape and space:** students 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.

<b>Level 1 - using common measures, shape and space</b>
18. Calculate simple interest in multiples of 5% on amounts of money
19. Calculate discounts in multiples of 5% on amounts of money
20. Convert between units of length, weight, capacity, money and time, in the same system
21. Recognise and make use of simple scales on maps and drawings
22. Calculate the area and perimeter of simple shapes including those that are made up of a combination of rectangles
23. Calculate the volumes of cubes and cuboids
24. Draw 2-D shapes and demonstrate an understanding of line symmetry and knowledge of the relative size of angles
25. Interpret plans, elevations and nets of simple 3-D shapes
26. Use angles when describing position and direction, and measure angles in degrees

**Handle information and data:** students 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 information and data – see below.

<b>Level 1 - handling information and data</b>
27. Represent discrete data in tables, diagrams and charts including pie charts, bar charts and line graphs
28. Group discrete data and represent grouped data graphically
29. Find the mean and range of a set of quantities
30. Understand probability on a scale from 0 (impossible) to 1 (certain) and use probabilities to compare the likelihood of events
31. Use equally likely outcomes to find the probabilities of simple events and express them as fractions

**Solving mathematical problems and decision making:** students at Level 1 are expected to be able to use the knowledge and skills listed above to recognise and obtain a solution or solutions to a straightforward problem. A straightforward problem is one that requires students 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; common measures, shape and space; information and data). At Level 1 it is expected that the student will be able to address individual problems, some of which draw upon a combination of any two of the mathematical content areas and require students to make connections between those content areas.

<b>Level 1 - solving mathematical problems and decision making</b>
Students at Level 1 are expected to be able to:
<ul style="list-style-type: none"> <li>• Read, understand and use mathematical information and mathematical terms used at this level;</li> <li>• Address individual problems as described above;</li> <li>• Use knowledge and understanding to a required level of accuracy;</li> <li>• Analyse and interpret answers in the context of the original problem;</li> <li>• Check the sense, and reasonableness, of answers; and</li> <li>• Present results with appropriate explanation and interpretation demonstrating simple reasoning to support the process and show consistency with the evidence presented.</li> </ul>
The context of individual problems at this level will require some comprehension in order for the student to be able independently to identify and carry out an appropriate mathematical approach.