





# Mapping document

Functional Skills – Mathematics: Level 2 (603/5060/X)

 = new statement

Using numbers and the number system – whole numbers		
DfE Functional Skills reform subject content for mathematics (February 2018)	Legacy NCFE Functional Skills mathematics amplification	Mapping comment
1. Read, write, order and compare positive and negative numbers of any size		No change
2. Carry out calculations with numbers up to one million including strategies to check answers including estimation and approximation	Understand and use positive and negative numbers of any size in practical contexts	New: specific reference to calculations with values of up to 1 million (the same as new Level 1), with specific reference to checks using estimation/approximation 
3. Evaluate expressions and make substitutions in given formulae in words and symbols	Understand and use simple formulae and equations involving one or two-step operations	Formulae use now includes words and symbols
4. Identify and know the equivalence between fractions, decimals and percentages		No change
5. Work out percentages of amounts and express one amount as a percentage of another	Understand and use equivalences between fractions, decimals and percentages	Specific reference to amounts as % and finding % amounts
6. Calculate percentage change (any size increase and decrease), and original value after percentage change		Specific reference to % increase/decrease and reverse %

7. Order, add, subtract and compare amounts or quantities using proper and improper fractions and mixed numbers		New: proper and improper fractions and mixed numbers 
8. Express one number as a fraction of another		Specific reference to amounts as fractions
9. Order, approximate and compare decimals	Carry out calculations with numbers of any size in practical contexts, to a given number of decimal places	Specific reference to ordering/comparing decimals.
10. Add, subtract, multiply and divide decimals up to three decimal places		Calculations with decimals are now specified as $+ - \times \div$ , and there's specific reference of up to 3 decimal places
11. Understand and calculate using ratios, direct proportion and inverse proportion	Understand, use and calculate ratio and proportion, including problems involving scale	New: specific reference to inverse proportion 
12. Follow the order of precedence of operators, including indices		New: specific reference to BIDMAS/BODMAS and indices (the new Level 1 skill required is $3^2$ while Level 2 includes $3^3$ ) 

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	Using common measures, shapes and space	
DfE Functional Skills reform subject content for mathematics (February 2018)	Legacy NCFE Functional Skills mathematics amplification	Mapping comment
13. Calculate amounts of money, compound interest, percentage increases, decreases and discounts including tax and simple budgeting		New: specific reference to compound interest, percentage increases, decreases and discounts including tax and simple budgeting
14. Convert between metric and imperial units of length, weight and capacity using a) a conversion factor and b) a conversion graph	Use, convert and calculate using metric, and, where appropriate, imperial measures	New: conversion graph as well as Conversion rate is new
15. Calculate using compound measures including speed, density and rates of pay		New: compound measures, Specifically speed, density and rates of pay
16. Calculate perimeters and areas of 2D shapes including triangles and circles and composite shapes including non-rectangular shapes (formulae given except for triangles and circles)	Find area, perimeter and volume of common shapes	New: no formulae to be included for area and perimeter of circles and triangles
17. Use formulae to find volumes and surface areas of 3D shapes including cylinders (formulae to be given for 3D shapes other than cylinders)		New: no formulae for cylinder volume And surface area
18. Calculate actual dimensions from scale drawings and create a scale diagram given actual measurements		Specific reference to creating a scale drawing

19. Use coordinates in 2D, positive and negative, to specify the positions of points		New: use of coordinates (+-)	★
20. Understand and use common 2D representations of 3D objects		No change.	
21. Draw 3D shapes to include plans and elevations	Recognise and use 2D representations of 3D objects	New: draw 3D shapes	★
22. Calculate values of angles and/or coordinates with 2D and 3D shapes		Specific reference to angles and coordinates in 2D, 3D shapes	★

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	Handling information and data	
DfE Functional Skills reform subject content for mathematics (February 2018)	Legacy NCFE Functional Skills mathematics amplification	Mapping comment
23. Calculate the median and mode of a set of quantities	Use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using ICT where appropriate	Reference to using/interpreting data from tables/diagrams has been removed.
24. Estimate the mean of a grouped frequency distribution from discrete data	Use statistical methods to investigate situations	New: specific reference to mean average from grouped frequency distribution. There's now specific reference to mode and median averages ('from a set of quantities')
25. Use the mean, median, mode and range to compare two sets of data		Specific reference to 2 sets of data for mean, mode and median
26. Work out the probability of combined events including the use of diagrams and tables, including two-way tables	Use probability to assess the likelihood of an outcome	New: specific reference to probability of combined events (including the use of diagrams and tables, including two-way tables)
27. Express probabilities as fractions, decimals and percentages		Specific reference to probability displayed as a fraction, decimal or percentage
28. Draw and interpret scatter diagrams and recognise positive and negative correlation	Collect and represent discrete and continuous data, using ICT where appropriate	New: scatter diagrams (draw and interpret)

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## Functional Skills – Mathematics: Level 2 (603/5060/X)

### DfE guidance on Problem Solving and Decision Making at Level 2.

*Solving mathematical problems and decision making:* learners at Level 2 are expected to be able to use the knowledge and skills listed above 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 student 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.

### Learning aims and outcomes at Level 2

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.
- 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 student to be able independently to identify and carry out an appropriate mathematical process or processes.



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