

Entry level 3 Functional Maths Criteria – 2009 coverage and range statements with additional amplification from the original 2007 pilot standards



Add and subtract using three-digit numbers

- Understand there are different strategies for adding and subtracting, for example $26 + 19 = 26 + 20 - 1 = 45$.
- Know how to partition numbers, for example $32 + 127 + 6 = 100 + 30 + 20 + 2 + 7 + 6$.

Solve whole number problems involving multiplication and division Replaced with: Solve practical problems involving multiplication and division by 2, 3, 4, 5 and 10.

- Multiply or divide two-digit whole numbers by single-digit whole numbers.
- Understand division as repeated subtraction and the inverse of multiplication, for example use multiplication to check 125 divided by 5.
- Understand that division is not commutative, i.e. 8 divided by 4 is not the same as 4 divided by 8.
- Interpret situations where division does not give an exact answer remainder, for example 5 people per taxi, 17 people, how many taxis?

Use mental recall of multiplication facts for 2, 3, 4, 5 and 10

Replaced with: Solve practical problems involving multiplication and division by 2, 3, 4, 5 and 10.

- Recognise two-digit and three-digit multiples of 2, 5 and 10 and three-digit multiples of 50 and 100, for example count coins.
- Understand how the distributive law can be used in multiplication, for example $3 \times 56 = 3(50 + 6) = 3 \times 50 + 3 \times 6$.
- Understand there are different strategies for multiplying, for example to multiply by four, double and double again, to multiply by five, multiply by 10 and halve.

Round to the nearest 10 or 100

- Understand place value for units, tens and hundreds. For example, a shop reports its sales to the nearest 10 items. One week the shop sells 167 magazines what number would this be reported as?
- Round numbers less than 1000 to the nearest 10 and 100.
- Estimate answers to calculations using rounding.
- Round sums of money, for example £1.99 to £2.

Understand and use simple fractions

- Read and write common fractions, for example halves, quarters, thirds, tenths.
- Understand what the top and bottom numbers represent.

- Understand that a unit fraction is one part of a whole divided into equal parts for example $\frac{1}{3}$, $\frac{1}{10}$.
- Understand that non-unit fractions are several equal parts of a whole, for example $\frac{3}{4}$ represents three parts of something that has been divided into four equal parts ($\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$)
- Understand that equivalent fractions look different but have the same value.
- Recognise and use equivalence, for example $\frac{2}{4} = \frac{5}{10} = \frac{1}{2}$, $\frac{6}{6} = 1$

Understand, estimate, measure and compare length, capacity, weight and temperature

- Choose and use appropriate units and measuring instruments.
- Read scales to the nearest labelled and unlabelled division on measuring instruments.
- Distance – know the units miles and kilometres.
- Length – know that 10 mm = 1 cm, 100 cm = 1 m, 1000 m = 1 km.
- Capacity – know that 1000 ml = 1 l.
- Weight – know that 1000 g = 1 kg.
- Temperature – read a thermometer, understand that temperature can be measured in Celsius and Fahrenheit.

Understand decimals to two decimal places in practical contexts

- Understand common measures to one decimal place (1.5 metres) and money to two decimal places (£2.37).
- Understand the decimal point separates pounds and pence, m and cm.
- Understand how zero as a place holder, £1.05 and as leading zero, £0.35 and 0.5 m.

Recognise and describe number patterns

- Describe a number pattern, for example goes up by 3 each time; doubles.
- Identify multiples of 2, 5 and 10 in a number square.
- Recognise number patterns, for example extend sequences such as 50, 55, 60, 65 ...
- Recognise odd and even numbers up to 1000, for example 754, 247.

Complete simple calculations involving money and measures

Recognise and name simple 2D and 3D shapes and their properties

- 2D shapes, for example triangle, rectangle (including square), circle
- 3D shapes, for example cylinder (cans), cuboid (boxes), cube.

- Identify right angles in 2D shapes and in the environment.

Use metric units in everyday situations

- Length, weight, capacity.

Extract, use and compare information from lists, tables, simple charts and simple graphs

- Understand title, labels, axis, scale, key.
- Use a scale to extract numerical values.
- Use a bar chart to make comparisons.
- Understand that an icon in a pictogram may have a value of more than one.
- Make observations and record numerical information using a tally chart.
- Understand simple pie charts, for example two, three or four segments.

Check accuracy of calculations and results (not in the 2009 criteria but useful for covering process skills/ Skill Standards – see pages 3-4)

- Add in a different order.
- Use inverses.
- Estimate answers by rounding, for example £1.99 to £2.

Present findings to make sense to others (not in the 2009 criteria but underpins several other C&R statements)

- Know how to use a simple scale to represent data.
- Present results in a table or chart.
- Label diagrams and charts.

Understand and use whole numbers to 1000 (not in the 2009 criteria but underpins many other C&R statements)

- Count, read, write, order and compare numbers to 1000.
- Understand that the position of a digit signifies its value including the use of zero as a place holder, for example make the biggest even number, lowest odd number from the digits 5, 7 and 8.
- Count on or back in 10s, 100s starting from any two- or three-digit number up to 1000.

Complete written calculations with two digit numbers (not in the 2009 criteria)

- Standard column methods are not required.
- Use a calculator efficiently.

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Important background information

This sheet is an addition to the existing L1-L2 Functional Maths help sheet – also available on www.skillsworkshop.org. It is designed to give teachers that are new to Functional maths an idea of the underpinning skills needed for achievement of the 2009 coverage and range statements. It is not an official guidance document. The diagram below is a personal interpretation of the process skills - more information can be found in the previously mentioned L1-L2 help sheet.

Original sources

Qualifications and Curriculum Authority (2007), *Functional skill standards*.

http://www.qca.org.uk/libraryAssets/media/QCA-07-3472-functional-skills_standards.pdf

QCA (2008), *Functional skills guidance: amplification of the standards*.

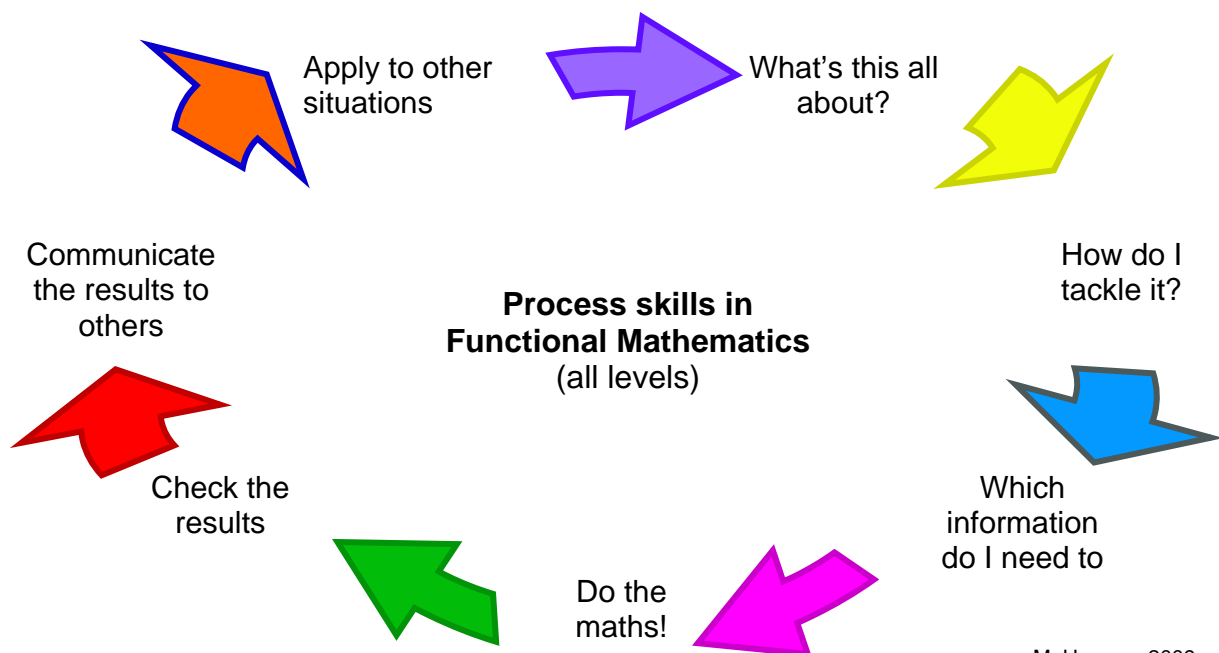
http://www.qca.org.uk/libraryAssets/media/qca-08-3700_Functional_skills_guidance_amplification_of_the_standards.pdf

Current sources

Please note that the QCA web site is closing in August 2011 and the links above are already not active. However, if the full titles of the documents are typed into Google etc. they can be found in other web locations.

On page 1 the extra details under each coverage and range statement are extracted from the old (but still useful) "amplification of the standards" document (see above). Note that the amplified information was designed to extend and explain the original 2007 Pilot FS Standards coverage and range statements. These have since been amended and replaced by the 2009 Functional Skills criteria. Some of the original pilot C&R statements (see grey shaded area on page 1) have been removed or merged with other coverage and range statements in the final 2009 criteria.

<http://www.ofqual.gov.uk/qualification-and-assessment-framework/89-articles/238-functional-skills-criteria>



M. Harnew, 2009.

| Process Skills overview (all levels) | | |
|---|---|--|
| IMPORTANT: In Functional Mathematics it is the process skills that are assessed – not the coverage and range statements. | | |
| Representing – selecting the mathematics and information to model a situation | Analysing – processing and using mathematics | Interpreting – interpreting and communicating the results of the analysis |
| <ul style="list-style-type: none"> recognise that a situation has aspects that can be represented using mathematics | <ul style="list-style-type: none"> use appropriate mathematical procedures | <ul style="list-style-type: none"> interpret results and solutions |
| <ul style="list-style-type: none"> make an initial model of a situation using suitable forms of representation | <ul style="list-style-type: none"> examine patterns and relationships | <ul style="list-style-type: none"> draw conclusions in light of situations |
| <ul style="list-style-type: none"> decide on the methods, operations and tools, including ICT, to use in a situation | <ul style="list-style-type: none"> change values and assumptions or adjust relationships to see the effects on answers in models | <ul style="list-style-type: none"> consider the appropriateness and accuracy of results and conclusions |
| <ul style="list-style-type: none"> select the mathematical information to use | <ul style="list-style-type: none"> find results and solutions | <ul style="list-style-type: none"> choose appropriate language and forms of presentation to communicate results and solutions |

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|---|---|
| <p>References: Ofqual (2009), <i>Functional Skills criteria for Mathematics: Entry 1, Entry 2, Entry 3, level 1 and level 2</i> http://www.ofqual.gov.uk/qualification-and-assessment-framework/89-articles/238-functional-skills-criteria</p> | |
| <p>Entry Level 3 Skill Standards Process skills (each of the 3 process skills has a 30–40% weighting in formal assessment) R = representing, A = analysis, I = interpreting.</p> | <p>Entry 3 Coverage and range statements <i>The C&R statements provide an indication of the type of content candidates are expected to apply in functional contexts (see page 1 for amplification). However, relevant content can also be drawn from equivalent (school) National Curriculum levels and the Adult Numeracy standards.</i></p> |
| <p>R understand practical problems in familiar contexts and situations</p> | Add and subtract using three-digit numbers |
| <p>R begin to develop own strategies for solving simple problems</p> | Solve practical problems involving multiplication and division by 2, 3, 4, 5 and 10 |
| <p>R select mathematics to obtain answers to simple given practical problems that are clear and routine</p> | Round to the nearest 10 or 100 |
| <p>A apply mathematics to obtain answers to simple given practical problems that are clear and routine</p> | Understand and use simple fractions |
| <p>A use simple checking procedures</p> | Understand, estimate, measure & compare length, capacity, weight, temperature |
| <p>I interpret and communicate solutions to practical problems in familiar contexts and situations</p> | Understand decimals to two decimal places in practical contexts |
| | Recognise and describe number patterns |
| | Complete simple calculations involving money and measures |
| | Recognise and name simple 2D and 3D shapes and their properties |
| | Use metric units in everyday situations |
| | Extract, use and compare information from lists, tables, simple charts/graphs |