

DRAFT NATIONAL STANDARDS FOR ADULT LITERACY AND NUMERACY

FEDA RESPONSE

Numeracy Questionnaire

These standards draw extensively on the expectations and requirements of the national numeracy strategy, the revised national curriculum for mathematics and the new key skills specifications for application of number. The adult numeracy standards have been developed in line with the demands of these other frameworks, but the draft standards also recognise that not all adults require or use these skills as part of their daily life.

N1a

Are all of the skills that have been included relevant to adult numeracy?

We thoroughly welcome the production of these standards. They make an excellent start in identifying the relationship between the national numeracy strategy, the revised national curriculum for mathematics and the new key skills specifications for application of number. We do have some reservations, which we address later in this response, about the equivalence between the basic skills and key skills levels.

We believe that the proposed skills represent a *range* which are highly relevant for adults, although each individual adult is unlikely to find the full range relevant to his or her life. For details see below

N1b

Please specify

There are a very wide range of skills specified, particularly at level 1 and level 2. The new basic skills curriculum and qualifications must allow adult learners to acquire and be assessed on these skills in bite-sized chunks.

If learners can only be accredited on the production of evidence covering *all* the sub-skills, we will:

- risk the possibility of discouraging learners from taking part in learning programmes
- seriously jeopardise the achievement of the country's widening participation and standards-raising targets.

N2a

Are there any skills missing which should be included?

There should be slightly more emphasis on problem-solving.

N2b

Please specify

Adults often need number in order to find solutions to practical problems, so the development of investigative skills and approaches would be very appropriate.

N3a

These standards identify the key capabilities of numeracy and track their development and progression through the levels. Each capability has a set of descriptors which specify the knowledge, techniques and understanding that an adult is expected to possess and demonstrate

Is the progression of the numeracy capabilities accurately defined by the standards?

Yes, with some reservations (see below).

N3b

Please explain

- The process of mapping the proposed national standards for adults to the national curriculum for Mathematics has created standards which do not provide consistency with the key skills specifications. The widely varying nature of adult starting points and the differential speed of learning mean that the national curriculum is not a suitable comparator for adult standards.
- The current learner-referenced nature of Entry level, while loose and lacking in rigour, does at least enfranchise these groups of learners. We urge QCA to ensure that the new national framework does not **disenfranchise** them.

N4a

Each level comprises key capabilities. Although these capabilities are separately specified, they are linked by sets of descriptors. The intention is for these descriptors to identify the links between interpreting, calculating and explaining within each level.

Are the links between the skills that comprise numeracy made clear and coherent by the standards?

Yes

N4b

What is unclear?

N/A

N5a

Are the divisions between the separate skills that comprise numeracy logical and consistent in the standards?

Yes

N5b

Please explain

N/A

N6a

The range of numeracy skills and the contexts and settings used and experienced by adults adds a dimension to the standards not necessarily found in existing frameworks or schemes associated with numeracy development in schools.

Do the numeracy standards accurately reflect how adults use number?

Yes, with the addition of a problem solving descriptor at each level in line with the Application of Number requirements, but with adult contexts specified in the guidance.

N6b

Please explain

N/A

N7

Is there a suitable balance between accuracy and approximation in the numeracy standards?

About right.

N7b

How could a better balance be achieved?

There could be slightly more emphasis on approximation, which is a skill essential to the practical, problem solving situations which adults are likely encounter.

N8

By giving examples, the guidance section seeks to clarify where adults may have opportunities to develop, practise and use these individual capabilities

Is the guidance section with examples helpful in clarifying the standards

- Yes, very helpful, though not always appropriate to the level, see below
- the press and other agencies should be actively discouraged from interpreting the guidance as part of the specification for curriculum and tests.

N8b

Please explain

For example at Entry 1 *helping children with homework* requires a high level of communication skills, self-confidence and the relevant numeracy skills for the homework. The example in Entry 2 *discussing financial affairs with an adviser or salesperson* also demands a high level of communication and listening skills, as well as numeracy skills beyond Entry 2.

N9

Do you have any further suggestions or examples which should be included in the guidance section?

There could be more examples from the world of work and job-seeking.

Before the standards are finalised, we suggest that QCA convenes a short meeting with a small group of numeracy teachers from a range of backgrounds (including the workplace), with the aim of:

- checking/discussing the examples already given at each level
- providing appropriate additional or alternative examples where required.

Teachers could work in groups according to level. The final session would enable each group to present their suggested amendments and additions to the guidance.

N10

The structure of the standards recognises that the development of skills and capabilities is uneven and depends upon the individual. The standards seek to

reflect progression within the three sub-divisions of Entry level as well as the increase in demand between the full framework levels.

N10a

Do the degrees of difficulty between levels seem equal?

Yes they do seem equal, but the process of benchmarking against the national curriculum appears to have created inconsistencies, particularly at Entry 2/3 and at level 1 and 2. The basic skills standards demand more sophisticated number skills than the equivalent key skills at each level.

N10b

Please specify

For examples see response to N13/14.

N11

Are the skills and capabilities for each level of the numeracy standards accurate?

Entry 1: Yes

Entry levels 2 and 3: need some revision, with a view to moving a number of the descriptors up one level to bring them into line with the key skills specifications

Level 1: more, and in some cases higher, skills are demanded than in equivalent AoN key skill – BS standards should be more closely referenced to key skills at level 1

Level 2: more skills and in some cases higher skills are demanded than in equivalent AoN key skill – BS standards should be more closely referenced to key skills at level 1

N12

The revised standards are intended to provide progression to the key skill of application of number at levels 1 and 2. The numeracy skills and capabilities provide the knowledge, techniques and understanding that underpin communication.

Are you familiar with the revised (2000) key skills specifications for application of number?

Yes

N13a

Do the standards for numeracy provide progression into the key skills specifications for application of number at levels 1 and 2?

No

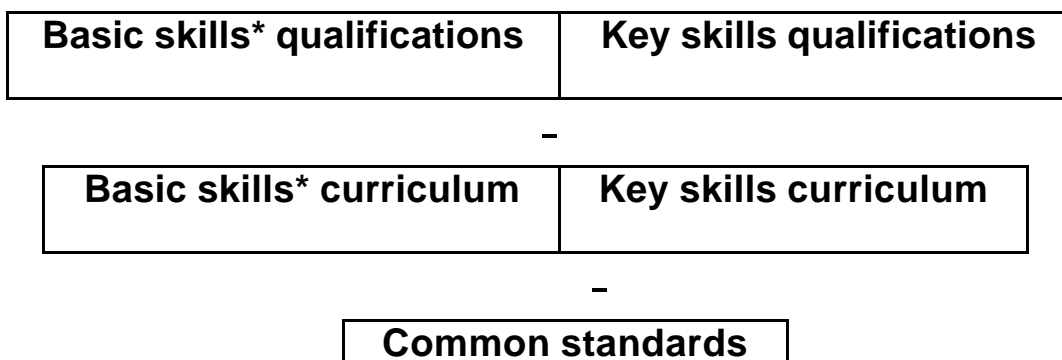
N13b

Please explain

This section of the introduction to the standards explains that “*the standards clearly specify the knowledge, techniques and understanding that underpin each key skill.*” The proposed basic skills standards are designed to be at the same level as the equivalent key skill. We therefore suggest that:

- the proposed standards, after adjustment, **be used as a basis for both key skills work and the work we call ‘basic skills’**
- separate, tailored programmes of learning and qualifications are used according to the needs of the key skills learner groups and the ‘basic skills’ learner groups
- the term ‘basic’ skills be changed, so that it sounds less low-level.

Suggested model



* need to find a new term

- We know that the separate but overlapping use of these terms ‘basic skills’ and ‘key skills’ is immensely confusing to learners, teachers, parents and the community at large. There would be widespread relief if the relationship could be clarified through the use of common standards which were *not* labelled ‘basic skills’.
- Key skills teachers may use the basic skills standards in order to identify the detail of the underpinning skills needed for the relevant key skill. This would be useful. Many key skills teachers will welcome the more technical and detailed information contained in the proposed standards in order to flesh out part A of the key skills specifications. This is another good reason for using the proposed standards, after adjustment, as the basis for both key skills *and* ‘basic skills’ curriculum and qualifications. We believe that the standards could provide the ‘technical-speak’ to underpin both, sitting comfortably alongside the ‘learner-speak’ nature of the new key skills specifications.
- Whether or not this proposal is agreed, we would strongly suggest that the use of the term “progression” in the introduction to the standards is inappropriate. It could create the impression that:
 - the basic skills are at a lower level than their key skill counterparts
 - basic skills work simply teaches underpinning skills in isolation and without context in order to prepare for the key skill at the same level.
 In fact, basic skills teachers will use the standards as the basis for a wide variety of highly contextualised and applied teaching/learning which does not necessarily lead into the key skills.
- *If* we have to keep the overall distinction between ‘basic’ skills and key skills in the standards, then we propose that the key skills guidance documentation avoids

using the term 'basic skills' to describe the acquisition of underpinning knowledge and understanding. This term has a much wider meaning for 'basic' skills specialists who use it to describe a whole post-16 curriculum area.

- We are concerned that the proposed basic skills standards are in many instances at a higher level than the equivalent key skill (please see response to N13c and N14 for details), eg

Many of the skill descriptors specified for the proposed Basic Skills Entry 2 and 3 are specified at Application of Number level 1, eg at Entry 3 using

- whole numbers (including 3 digit place value, sequences, negatives in the context of temperature)
- fractions (unit fractions and common non-unitary fractions)
- decimals (1/2 decimal places, interpreting answers on a calculator).

Similarly, the basic skills standards at levels 1 and 2 are more demanding than the specifications for Application of Number at levels 1 and 2

The proposed basic skills standards appear to incorporate almost the full range of skills specified in the national curriculum, thus pushing the level upwards and creating basic skills standards at a higher level than key skills specifications which are supposed to be at the same level. If key skills teachers look across to the basic skills standards for more precise guidance on content, the mismatch will be clearly visible and highly confusing.

To sum up, we believe that the standards should:

- be re-labelled as common standards which overtly underpin both basic skills and key skills learning programmes and qualifications
- avoid the use of the phrase "progression into key skills"
- avoid the pitfall of using "basic skills" to mean underpinning knowledge and skills
- be adjusted to ensure that anomalies of level are eradicated.

N13c

Please explain

Level 1 Proposed descriptor	Problem	Proposed revision
Interpret		
Read and understand mathematical information used for different purposes and <i>independently</i> select relevant information from given graphical, numerical and written material	More difficult than key skill level 1	Read and understand mathematical information used for different purposes and select relevant information from given <i>straightforward</i> graphical, numerical and written material. Remove <i>independently</i> unless that is specified in the key skills amplification
Square numbers	Not in key skill level 1	Remove
With negatives in the context of temperature	Key skill level 2	Remove
Fractions in expressions of likelihood (probability)	Not in key skill level 1	Remove
Length using everyday units and instruments	To what level of accuracy?	Specify level of accuracy in line with key skill level 1
Distance in road maps and distance charts	Not in key skill level 1	Retain, probably implicit
Use common measures	Refer to measuring equipment as in key skill	Add <i>and familiar (or everyday) measuring equipment</i>
Make accurate observations, eg count number of people or items	In key skills, not in basic skill	Add
Use conversion tables	Not in key skill	Remove
Approximate equivalencies between common metric and imperial measures	Key skill level 2	Remove Might be introduced in a simplified way as part of the curriculum, but should not

		be specified in the standards
Use shape and space to identify the properties of 2D shapes	Not in key skill level 1	Might be introduced in a simplified way as part of the curriculum, but should not be specified in the standards
Use data to check or confirm expectations	Not in key skill level 1	Might be introduced in a simplified way as part of the curriculum, but should not be specified in the standards
Use probability to know that some events are more likely to occur than others	Not in key skill level 1	Might be introduced in a simplified way as part of the curriculum, but should not be specified in the standards
Calculate		
Approximate by rounding	To what level of accuracy?	Add <i>to nearest whole number</i>
Two decimal place	Typo	Two decimal places
Convert units of measure in the same system	Not in key skill level 1	Retain, probably implicit
Use electronic or mechanical aids and other equipment to etc	Not in key skill level 1	Might be introduced in a simplified way as part of the curriculum, but should not be specified in the standards?
Use data and statistical measures to collect and record discrete data in tables, charts, diagrams and line graphs	Not in key skill; chart and diagram are only specified in <i>interpreting /presenting results</i> section of key skill	Retain <i>Use tables, charts, line graphs and diagrams to record results and quantities</i> in <i>Communicate mathematical information</i> section
Use shape and space to: solve problems using properties of regular 2D shapes draw regular 2D shapes using grids	Not in key skill level 1	Remove
Use probability to express the likelihood of an event using fractions, decimals or percentages	Not in key skill level 1	Remove

Communicate		
Use electronic or mechanical aids and other tools and equipment	Not in key skill level 1	Might be introduced in a simplified way as part of the curriculum, but should not be specified as part of the standards
Use approximation to corroborate results	Cf key skill <i>estimate to reject impossible answers</i> Are these the same?	Why not use same terminology as in key skill?

N13c

Please explain, continued

Level 2 Proposed descriptor	Problem	Proposed revision
Interpret		
Read and understand mathematical information used for different purposes and independently select and compare relevant information from a variety of graphical, numerical and written material	More difficult than key skill level 2	Obtain relevant information from different sources (eg from written and graphical material, first hand by measuring and observing)
An adult will be expected to use:whole numbers for place value and order of size	Not in key skill level 2	Is this implicit in key skill? If so, retain.
An adult will be expected to use: fractions in expressions of probability	Not in key skill level 2	Remove
An adult will be expected to use: decimals in place value up to 3 decimal placesdecimals in expressions of probability	Not in key skill level 2	Remove

An adult will be expected to use: percentages in increasing amounts such as adding on VAT, in decreasing amounts such as a 20% reduction in a sale	Not in key skill level 2	Is this implicit in key skill? If yes, retain. If no, remove.
Use shape and space: to recognise common 2D representations of 3D objects to identify properties of 2D shapes and of parallel and intersecting lines	Not in key skill	Remove
Use probability to identify the range of possible outcomes	Not in key skill	Remove
Calculate		
Carry out calculations with numbers of any size	Not in key skill	Remove, unless implicit in the key skill
Evaluate expressions	Not in key skill	Remove
Fractions evaluate one number as a fraction of another	Not in key skill	Remove, unless implicit in the key skill
Decimals approximate by rounding	Terminology – what's the relationship between this and <i>Use approximation to corroborate results</i> in the <i>Communicate</i> section?	Clarify <i>approximation vs estimation</i>
Percentages increase or decrease amounts by a percentage	Not in key skill	Remove
Calculate perimeters	Not in key skill	Is this implicit in key skill? If yes, retain. If no, remove.
Use shape and space:	Not specified in	Retain, probably implicit

..... to solve problems using properties of 3D shapes , and of parallel and intersecting lines to represent 3D objects in 2D	key skill	
Use electronic or mechanical aids and other equipment to calculate efficiently with whole numbers, fractions, decimals, percentages	Not in key skill	Might be introduced in a simplified way as part of the curriculum, but should not be specified as part of the standards???
Use data and statistical measures find the mean, median and mode, and use them to compare sets of data	Not in key skill	Remove
Use probability to identify all the outcomes of combined events using diagrams or tables	Not in key skill	Remove
Communicate		
Use line graphs to record results and quantities	Not specified in key skill	Implicit in the key skill at this level?
Use electronic or mechanical aids and other tools and equipment	Not in key skill	Implicit in the key skill at this level?
Use approximation to corroborate results	Cf key skill <i>estimate to reject impossible answers</i> Are these the same? What's the difference?	Why not use same terminology as in key skill?

N14

These standards recognise that some adults may never be able to meet certain aspects of the level descriptors, for example due to a specific difficulty or disability. It would be helpful to the developers of curricula and qualifications if these descriptors could be identified and alternative descriptors or means identified.

Please name the Entry level descriptors that may prove to be impossible and suggest alternative descriptors.

Please explain

- Many teachers are now working across basic skills/key skills.
- Many more will be doing so in the future.
- Many teachers will be using the basic skills at Entry level and level in order to teach the underpinning knowledge and skills necessary for Application of Number level 1.

For all these reasons, the basic skills standards and the key skills standards need to be consistent in terms of demand and level. We are concerned that many of the descriptors at Entry 2 and 3 are higher than they should be. For example many of the descriptors at *Entry 3* appear to be equivalent to descriptors in *AoN level 1*. In other words the basic skills standards are not consistent with the key skills specifications.

In our view, the Entry level descriptors for numeracy need to be adjusted in order to:

- make the demands of the basic skills standards consistent with those of the key skills
- ensure that Entry level is clearly operating at a lower level than AoN level 1

The table below maps equivalent descriptors at basic skills Entry 3 and Application of Number level 1. It shows that Entry 3, rather than being easier than AoN level 1 as we would expect, in fact demands a similar range and level of skills. In some instances it even requires *more* of the student than the key skill at the higher level.

Basic skills Entry 3 descriptor	Problem	Key skill level 1 descriptor
Interpret		
Read and understand the purpose and value of numbers, symbols, diagrams and charts used in graphical, numerical and written material	Entry 3 more difficult than AoN level 1, which describes the material as	Read and understand <i>straightforward</i> tables, charts diagrams and line graphs

	<i>straightforward</i>	
An adult will be expected to use: Whole numbers (including 3 digit place value, sequences, negatives in the context of temperature)	Almost the same as AoN 1, with the exception of percentages	Read and understand numbers used in different ways, eg large numbers,
Fractions (unit fractions and common non-unitary fractions) Decimals (1/2 decimal places, interpreting answers on a calculator)	Key skill specifies fractions as <i>simple</i>	<i>simple</i> fractions, decimals, percentages
Use common measures Money (decimal notation) Time (calendar, analogue and digital clocks) With negatives in the context of temperature Length using common units and instruments Distance on road signs Weight using common units and instruments Capacity using common units and instruments Temperatures including negative temperatures Simple scales	Same demands as AoN 1 Basic skills Entry 3 more difficult than AoN level 1 (negatives specifically mentioned in basic skill Entry)	Measure in everyday units by reading scales on familiar measuring equipment (eg watch, tape measure, measuring jug, weighing scales, thermometer)
Use data to extract and interpret information from lists, tables, diagrams and simple charts		Identify suitable calculations to get the results you need for your tasks
Use shape and space to identify some of the properties of 2D regular shapes (symmetries, side length, angles)	Additional demand in basic skill Entry 3	Not specified in key skill
Calculate		
Generate results to a given level of accuracy using methods appropriate to the specified purpose	Entry 3 demands similar skills to AoN level 1	Work to the level of accuracy you have been told to use (eg round to the nearest whole number, nearest 10, two decimal places)

<p>Use numbers to: Count on or back in 10s or 100s Add or subtract up to three digit numbers Multiply or divide 2 digit whole numbers by a single digit and interpret remainders in division Approximate by rounding to nearest 10 or 100 Estimate answers to calculations</p> <p>Find unit fractions of shapes or numbers</p>	<p>Decimals the only additional demand in the key skill</p>	<p>Add, subtract, multiply and divide with whole numbers and simple decimals</p> <p>Understand and use simple fractions and percentages (eg $\frac{2}{3}$ of £15 is £10)</p>
<p>Use measures to: add and subtract sums of money using decimal notation round sums of money estimate measure and compare time, length, weight, capacity notation</p>	<p>Entry 3 demands more specific skills than AoN level 1</p>	<p>Use straightforward scales on diagrams</p>
<p>Use electronic or mechanical aids and other equipment to: calculate with whole numbers and decimals to solve contextual problems check calculations</p>	<p>Entry 3 demands more specific skills than AoN level 1</p>	
<p>Use data to: collect and record numerical information in a tally or frequency table represent information in different ways so that it makes sense to others</p>	<p>Entry 3 demands more specific skills than AoN level 1</p>	<p>Find the mean of up to 10 items (eg for temperature, prices, times) Find the range of up to 10 item (eg for temperature range)</p>
<p>Use shape and space to: solve problems using properties of rectangular shapes</p>	<p>Entry 3 demands similar skills to AoN level 1</p>	<p>Work out area of rectangular spaces (eg floor areas) Work out volume of rectangular areas (eg a box)</p>

Communicate		
Present and explain results which meet the intended purpose using numbers, diagrams, charts and symbols	Entry 3 more demanding than AoN level 1	Use suitable ways of presenting information including a chart and a diagram Describe how the results of your calculations meet the purpose of your task
Use whole numbers, common fractions, and decimals to obtain and record results Use common measures and units of measure to define quantities Use tables, charts and diagrams to define quantities	Entry 3 demands similar skills to AoN level 1	Use the correct units (eg for area, volume, weight, time and temperature)
Use electronic or mechanical aids and other tools and equipment	Not specified in AoN level 1	
Use inverses and approximations to check results	The key skills formulation is better	Check calculations using different method (eg estimate to reject impossible answers, check a subtraction by "adding back")

N15

A glossary of terms to clarify the level descriptors is planned. Please identify any terms used in the numeracy standards that you feel should be included in this.

Approximate
Estimate

N16

Are there any other comments that you wish to make about the numeracy standards?

Ideally there should be consistency between basic skills, key skills and national curriculum levels. If that consistency is now impossible because the national curriculum and the new key skills specs are set in concrete, then basic skills should be aligned with key skills because they will both be used by post 16 learners and teachers.

The standards proposals go some way towards this alignment, but as they stand they help to create:

- a confusing mismatch between the skills demands at supposedly equivalent levels
- the false impression that basic skills are a pre-cursor to the key skills, rather than skills which sit in a continuum with the key skills but which lead to a curriculum which differently contextualised and taught.

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In which of the following areas do you work:

Adult Numeracy
Adult Numeracy
EAL/ESOL

