Unit standard 26623: Use number to solve problems (version 4)

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US26623 version 4: Use number to solve problems

Updated February 2018. This document has been updated in its entirety to address new issues that have arisen from moderation.

Appropriate technology (Explanatory Note 2)

Any technology used must allow the learner to demonstrate the skills and understanding required by the standard. For example, if the learner has used a calculator to solve a multiplication problem, the learner may demonstrate the multiplication skills required through judging the reasonableness of the solution.

Naturally occurring evidence (Explanatory Note 3)

Evidence for this standard can come from formative and summative assessments, as long as the main purpose of those assessments is not the one-off assessment of standard 26623.

Reasonable solutions resulting from effective methods (Explanatory Notes 2 and 5, Evidence Requirements 1.1 and 1.2)

Evidence is needed that the learner has determined that the solution to the problems they have solved is appropriate. This applies regardless of whether or not the learner used a calculator (or other technology), traditional algorithms, or mental strategies to complete the calculations and solve the problems.

How competence is demonstrated (Explanatory Note 3)

Assessors are reminded that where competence has been demonstrated orally or visually, sufficient evidence of this competence must be captured and presented in submissions for national external moderation to allow moderation to occur.

Evidence from activities that require higher levels of mathematics (Outcome 1)

Evidence occurring naturally may reflect performance at a higher level than is required for standard 26623. In such cases the learner’s problem solving and calculations – that are at the required level for standard 26623 – may not be obvious in the learner work. Adequate documentation of these lower level calculations (e.g. annotations giving examples of workings) would be required for national external moderation.

Effective strategies used to solve problems (Evidence Requirement 1.1)

Learners must select the strategy to use to solve the problem (as opposed to being guided to the strategy). This may rule out some sources of evidence (e.g. if directions as to what operations to use, or step-by-step instructions as to how to solve the problem are provided by task information).

Required range items (Evidence Requirement 1.1)

Across all of the activities, three instances of addition, three instances of subtraction, three instances of multiplication and three instances of division need to be demonstrated in total.

The three instances of each operation must be in activities which are different enough to show transfer of skills.

Calculations reflecting the required level of demand (Evidence Requirement 1.1 range and Explanatory Note 5)

The problems solved must involve calculations that reflect the level of demand described by the additive and multiplicative strands of step 5 of the Learning Progressions for Adult Numeracy. At this level, addition and subtraction calculations involve multi-digit numbers and/or decimals, and multiplication and division calculations involve multi-digit or decimal multipliers and divisors. Multiplication and division by 10, 100 and 1000 do not reflect step 5.

Positive and/or negative integers (Evidence Requirement 1.1 range item)

Positive integers, negative integers, or both can be included in a learner's portfolio of evidence. It is not necessary to include negative integers unless they occur naturally in the problem the learner is attempting to solve.

Percentages and fractions (Evidence Requirement 1.1 range items)

Learners must demonstrate they can deal with fractions and percentages within the context of solving a problem. Unless it is required for the problem, the standard does not require learners to express things as a percentage or in fractional form. Conversions between fractions, decimals and percentages do not provide appropriate evidence for the standard unless they are required by the problem being solved.