Chief Examiner Report for Functional Skills Maths

NCFE Functional Skills Qualification in Mathematics at Level 1 – 501/2325/7
NCFE Functional Skills Qualification in Mathematics at Level 2 – 501/2324/5

August 2017

Level 1:

Understanding practical problems with time and money often shows establishment. However, errors are often seen with final displays of money and with the subtraction of time. Practical problems with length, weight and capacity are often affected by incorrect metric conversions, inconsistent units or lack of familiarity applying the appropriate approaches or methods to tackle the problem. Converting within metric, and the necessity to work with consistent units, is a common area of development.

Such errors can affect solving problems as well as calculating a correct area, perimeter or volume. Area and perimeter responses often share the common theme of being mixed up, for example, a perimeter calculation for an area request and an area calculation for a perimeter request.

Similarly, it's not uncommon to identify that a learner has calculated a mean average at a task requesting range and calculated range at a mean average task. Unfortunately, learners can lose marks at 2 tasks if this occurs, and may lose marks at 4 tasks if a mix up between area and perimeter has also occurred. Within Handling Data, there are indicators that probability identification and expression is improving. However, this is still an area of concern overall.

The identification of information from tables and graphs shows proficiency overall. However, displays of information often indicate lack of familiarity with pie charts and graph title necessity. Identifying amounts from tables and graphs, or identifying amounts from task information, for ratio values and fraction values indicates that further practice for learners preparing for assessment will be beneficial.

Similarly, ratio use still appears to be a challenging area for many. Identifying fraction amounts and percentage amounts often shows establishment. However, equivalencies between fractions, decimals and percentages appears as a challenging area for many, learners should be prepared to convert between forms.

Level 2:

Learners at Level 2 appear to be less likely to mix up area and perimeter. However, errors are common with irregular shapes or internal spaces, and extend to volume. These errors can be typically attributed to errors identifying a shape's dimensions. This includes differentiating between radius and diameter, and often extends to doubling a radius rather than squaring. Conversions within metric measure often show establishment. However, conversions between systems using a given conversion often indicate that further practice would be of benefit.

Conversion expectations extend to time and money. Learners often work with inconsistent forms of money, for example, adding values in pence to values in pounds. Similarly, learners often make errors working with time. Errors subtracting times are common, and errors with decimal forms of time are common. Additionally, learners should be prepared to work with negative and positive numbers. Too many marks are lost by learners due to lack of familiarity.

Use of simple equations and formulae are generally areas of proficiency. However, within formulae use there are several common errors: squared values (values are often doubled), inconsistent units, and substitution errors.

Identifying information from tables and graphs often shows establishment. However, marks are often lost in bar graph production. Too often, marks are lost for a missing title, inappropriate scale, lack of labels or an incorrect bar. Calculating averages is often completed accurately. However, common errors include mixing up averages (the most common error appears to be with mean and median) and there are often incorrect responses to requests for a median average from a set of even values. Probability remains an area of development, although there is improvement identifying initial values.

Ratio responses are often affected by errors identifying initial values. However, errors in division when simplifying and errors in display, or order, also affect many responses. Similarly, fraction simplification is often affected by the identification of initial values, and division errors, or lack of consistency, when dividing. Errors within equivalencies between fractions, decimals and percentages tend to be attributable to lack of familiarity. Learners should be prepared to convert between forms, for example, percentages or decimals to fractions in simplest form, or from fractions to decimals or percentages.

Scale use, whether using a given scale to identify a distance or applying a scale to a graph or diagram, appears to be an area that could benefit from further practice. Incorporating scale within practice, whether within an area task or within a problem to solve may support learners' familiarity.

Generic Overview:

All learners preparing for final assessment should be prepared to comments on their answers and to show appropriate checks of their answers.

Additionally, learners at both levels should be prepared to show final answers with appropriate units (for example, m²), to show money appropriately (for example, £0.90 or 90p), and to show their final answers to the requested level of accuracy (for example, 1 decimal place or the nearest whole number).

For learners preparing for online assessment, it will be beneficial to include advice on ratio display (for example, 2:3), fraction display (for example, 4/7) and area display (cm2, cm sq, or cm squared are all acceptable).

Finally, learners should be advised to attempt all tasks. Part marks, that are sometimes crucial to achievement, can often be gained by an attempt.

Overcoming an area:

It often appears that tasks that include problems within Measure, Shape and Space can pose the biggest challenge for learners. This may be due to lack of familiarity, and being unfamiliar with how to approach. Challenges may include whether to apply perimeter, area, volume or whether to apply division to identify lengths or widths in a given shape.

Learners that are well prepared for final assessment are able to differentiate which methods or approaches will be appropriate. For example, a task requesting how many 3 cm square shapes will fit in a space that measures 0.5 m by 0.4 m will require knowledge that a square has equal sides and will require unit conversion so that dimensions are in the same system, in addition to identifying that division will be the appropriate method to apply. There are several necessary steps to tackle the problem correctly. Learners would be expected to:

1. identify the square as a 3 by 3 cm shape
2. to identify the space as 50 cm by 40 cm (or convert 3 cm to 0.03 m)
3. To apply 50/3 to identify that 16 squares will fit along the length
4. To apply 40/3 to identify that 13 squares will fit width
5. Finally, a multiplication of 16 by 13 will be required to establish that 208 squares will fit in the space

Common errors likely to be seen include:

- division using the areas of the 2 shapes (2000 cm²/9 cm²= 222)
- calculation of the space's area (50 x 40) and then division of a length, for example 2000/3
- division of mixed units, in incorrect order, for example, 3/0.5=6
- applying the correct approach of 50/3 but rounding to 17.

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