**NCFE Level 2 Functional Skills Qualification in Mathematics (603/5060/X)**

Mark scheme: Practice P001269

v1.2

**Examiner Mark Scheme Guidance**

**Information**

This guidance is intended to support NCFE examiners in the valid, reliable and consistent application
of the relevant mark scheme version, against learner evidence generated during their external
assessment.

This mark scheme provides:

* the total marks available for each question
* the subject content reference for each mark
* example process/methods and evidence of the types of responses expected for each mark
* (once confirmed) the pass mark for the relevant assessment version.

This mark scheme **must** be used for paper-based and online marking of the assessment version indicated**.**

**Instructions and guidance on application**

* All learners must receive the same treatment and should be marked fairly. Examiners must
mark the first learner in exactly the same way as they mark the last.
* Mark schemes should be applied positively. Learners must be rewarded for what they have
shown they can do rather than penalised for things they have not done.
* Examiners should always award full marks if deserved, i.e. if the answer matches the mark
scheme. Half marks must not be awarded.
* Examiners should be prepared to award zero marks if the learner’s response is not worthy
of credit according to the mark scheme.
* The mark scheme is a working document and may be added to at the standardisation to reflect
valid alternative answers given by a learner.
* When in doubt regarding the application of the mark scheme to a learner’s response, the Chief Examiner must be consulted.

This mark scheme provides the following information:

* section and activity information
* question number
* total marks available per question (top row, shaded) followed by
* attribution of individual marks per question
* problem solving (PS) and underpinning skill (UPS) attribution
* process/method or answers, as well as additional or alterative evidence; indicative of the

subject content (SC) attribution

* any additional guidance, as required.

To support the valid, reliable and consistent marking of learner evidence, the following abbreviations
are applied throughout the mark scheme:

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| **Annotation** | **Explanation and use** |
| **FT** | Follow through marks are applied when there are earlier mistakes in the method. |
| **OE** | Or equivalent marks are available for the justification of the answer being presented in a different form to the mark scheme i.e. 0.5 or ½. |
| **CAO** | Correct answer only.  |
| **Their** | ‘Their’ refers to the learners’ own values. |
| **Seen** | Seen refers to the requirement to see the stated value in the learner’s response or working out.  |
| **Imp** | Implied refers to the learner’s response implying correct working out used but not seen. |
| **Brackets** | Indicates units are not required on final answers or for answers seen within working. |
| **BOD** | Benefit of doubt where learner handwriting may be difficult to interpret but previous working may indicate correct final answer. |
| **Shaded** | Indicates requirements for full marks to be awarded. |

**Version Control**

Mark schemes are subject to version control. Examiners **must** ensure they have access to the latest version following each standardisation event.

Over time mark schemes will incorporate additional evidence captured and confirmed during standardisation events. Any additional evidence criteria will be captured in colour-coded text applicable
to the dated standardisation event.

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| **Paper number: P001269** | **Version: 1.2** |
| **(Section A) Activity 1: Moving office (Non-calculator Test)** |
| **Q** | **Marks** | **UPS / PS** | **Process and Answer** | **Additional or Alternative Evidence (with guidance)** | **SC** |
| **1 (a)** | **2** | **UPS** | 263.25 (m2) | Award 2 marks if correct answer given |  |
| 1 |  | 27 × 9.75  |  | N11a |
| 1 |  | 263.25 (m2) | CAO implies first mark  | N11a |
| **1 (b)** | **4** | **PS** | See below | Award 4 marks for 388.75 and (Office) B |  |
| 1 |  | Correct total area of rectangular element(s) | Do not accept for one rectangle only  | M16b |
| 1 |  | Correct area of triangle or trapezium |  | M16b |
| 1 |  | **Their** 388.75 (m2) | FT **their** areas from 1st and 2nd marks (if correct method) of rectangles and triangle/trapezium | M16b |
| 1 |  | Correct decision based on **their** values  | 11.25 (m2)FT **their** area of Office B (must be area) | N9a |

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| **Q1b Original – Total area = 388.75 m2**9 m24.75 m10 m25 m4.75 m9 m24.75 m10 m25 m4.75 m365 m223.75 m2 | Rectangles + Triangle |
| Rectangle + Trapezium9 m24.75 m10 m25 m4.75 m275 m2113.75 m2 | Rectangle + Trapezium165 m2223.75 m29 m24.75 m10 m25 m4.75 m |
| Large rectangle – small rectangle + triangle9 m24.75 m10m25 m4.75 m500 m2-135 m2+23.75 m29 m24.75 m10m25 m4.75 m618.75 m2-206.25 m2-23.75 m2 | Large rectangle – small rectangle - triangle  |

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| **1 (c)** | **2** | **UPS** |  | Award 2 marks if correct answer given  |  |
| 1 |  |  | OE fraction | N7a |
| 1 |  |  | OE fraction | N7a |
| **1 (d)** | **4** | **PS** | [67680, 74025] | Award 4 marks if answer within range indicated |  |
| 1 |  | Scatter diagram completed with an appropriate line of best fit. | Line must go through (100, [28000, 36000]) and (500, [74000, 82000]) | H28 |
| 1 |  | (Value for 400) [64000, 70000] | If line of best fit attempted, FT their lineIf no line attempted, values in range imply first mark | H28 |
| 1 |  | 1.0575 × their value from graphor(their value from graph ÷ 100) × 5.75  | Any full correct method for finding 5.75%  | M13a |
| 1 |  | [67680, 74025] | Award for answer within range indicated | M13b |
| **Additional guidance** |
| **1 (e)** | **2** | **PS** |  | Award 2 marks if correct answer given |  |
| 1 |  |  |  | N8 |
| 1 |  |  | CAO implies 1st mark  | N8 |
| **1 (f)** | **1** | **PS** | 15(%) | CAO | N6a |

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| **(Section B) Activity 2: Films (Calculator Test)** |
| **Q** | **Marks** | **UPS / PS** | **Process and Answer** | **Additional or Alternative Evidence (with guidance)** | **SC** |
| **2 (a)** | **2** | **UPS** |  | Award 2 marks if correct answer given |  |
| 1 |  | 28 (as denominator)  | Award if 0.108 seen | H26 |
| 1 |  |  | OE 0.11 or 11% | H26 |
| **2 (b)** | **3** | **PS** | See below  |  |  |
| 1 |  | Correct calculation of one of mean, median or range for both sets of scores |

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|  | RP | TIZ |
| Mean | 59.33 | 64.25 |
| Median | 60 | 66.5 |
| Range | 45 | 39 |

 | H25 |
| 1 |  | Correct calculation of a second measure for both sets of scores | H25 |
| 1 |  | Conclusion and explanation e.g. The Infinity Zone because it has the highest mean and medianor The Infinity Zone because it has the highest mean and least variation in scores | Must be supported by calculations FT their valuesAward 1 mark if explanation is “Rainbow Prism because it gets the highest score of 83”, but do not award previous 2 marksAccept valid comment if range is higher or lower stated | H25 |
| **2 (c)** | **4** | **PS** | See below |  |  |
| **Alternative method 1** |
| 1 |  | 101.6 ÷ 2.54 or 40 | Converts width to inches | M14a |
| 1 |  | **their** (40) ÷ 16 × 9 or 22.5 | Calculates screen height in inches | N11a |
| 1 |  | 8280000  | seen or implied | N1a |
| 1 |  | or or 9200 AND yes or no | FT their values only if correctly substituted in formula, dependent on correct methods in first two marks | N3 |
| **Alternative method 2** |
| 1 |  | (101.6 ÷ 16) × 9 or 57.15 | Calculates screen height in cm | N11a |
| 1 |  | 101.6 ÷ 2.54 or 40ANDtheir 57.15 ÷ 2.54 or 22.5 | Calculates width and height in inches | M14a |
| 1 |  | 8280000 seen or implied |  | N1a |
| 1 |  | or or 9200 AND yes or no | FT their values only if correctly substituted in formula dependent on correct methods in first two marks | N3 |
| **2 (d)** | **1** | **UPS** | 35 (Mb/s) | CAO | H23b |
| **2 (e)** | **2** | **UPS** | 42.86(%) | Award 2 marks if correct answer given |  |
| 1 |  | 6 ÷ 14 × 100 | OE | N5b |
| 1 |  | 42.86(%) | CAO implies 1st mark  | N9b |
| **2 (f)** | **3** | **PS** | See below  |  |  |
| 1 |  | 58.3(3…) (Mb/s) or 58.8(2…) (Mb/s) from use of 7000 ÷ 119) seconds) | Accept rounding to 1dp or more  | M15 |
| 1 |  | 59.5 (Mb/s) (from trial and improvement) Or 68.6 (Mb/s) (from reverse percentage calculation) Or 69.2 (Mb/s) (from reverse percentage calculation following use of 58.8(2…) | FT their speedFT their 58.3 (Mb/s) or 58.8 (Mb/s) | N5a |
| 1 |  | Service J with correct working | FT their 85% dependent on first mark being correctIf 49.5833 with H seen, award 2 marks | H28 |

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| **Activity 3: Building a pond (Calculator Test)** |
| **Q** | **Marks** | **UPS / PS** | **Process and Answer** | **Additional or Alternative Evidence (with guidance)** | **SC** |
| **3 (a)** | **1** | **UPS** | 167.5 (cm) | CAO | M18a |
| **3 (b)** | **3** | **PS** | See below |  |  |
| 1 |  | 9.09 (m) or 909 (cm) | From 7.65 + 0.72 + 0.72From 765 + 72 + 72 | M20 |
| 1 |  | 5.82 (m) or 582 (cm) | From 4.38 + 0.72 + 0.72From 438 + 72 + 72 | M20 |
| 1 |  | C with correct workings | Accept 5.85 (m) × 9.1 (m) or (£)130 | N9a |
| **3 (c)** | **4** | **PS** | See below |  |  |
| **Alternative method 1** |
| 1 |  | 24.1(25…) (m3)or 24,125,040 (cm3)  | Correct volume of pond from 7.65 × 4.38 × 0.72or 765 × 438 × 72 | M20 |
| 1 |  | 0.92 × **their** volume or 22.2 or 22.195(…) (m3) or 22,195,036 (cm3) | OE FT **their** volume in 1st mark Accept any full correct method to find 92% of **their** volume Correct answer implies 1st mark  | N5a |
| 1 |  | 220 × **their** 92% volume or [4882.9079, 4884 (gallons)] | Conversion from m3 to gallons  | M14a |
| 1 |  | **Their** gallons ÷ 1300 rounded up or 4 (bottles) from correct working | FT on previous mark  | N11a |
| **Alternative method 2** |
| 1 |  | 24.1(25…) (m3)or 24,125,040 (cm3)  | Correct volume of pond from 7.65 × 4.38 × 0.72 or 765 × 438 × 72 | M20 |
| 1 |  | 0.92 × **their** volume in gallons  | OE FT their volume in 1st mark Accept any full correct method to find 92%of their volume in gallonsCorrect answer implies 1st mark | N5a |
| 1 |  | 220 × **their** volume  | Finds volume in gallons | M14a |
| 1 |  | **Their** gallons ÷ 1300 rounded up or 4 (bottles) from correct working | FT on previous mark | N11a |
| **3 (d)** | **3** | **PS** | 9 Koi fish **and** 36 Goldfish | Award 3 marks if correct answer given  |  |
| 1 |  | 33.507 (m2) | Surface area of water from 4.38 × 7.65 | M17b |
| 1 |  | 1.2 + 4 × 0.6or 3.6 (m2) | Correct use of 1 : 4 ratio  | N11a |
| 1 |  | 9 Koi fish **and** 36 Goldfish | CAO | N11a |
| **3 (e)** | **1** | **UPS** | 4(°) | CAO | M22a |
| **3 (f)** | **1** | **UPS** | 12.88 m or 128.8 cm0.8 m or 80 cm | Drawing does not need to be to scale.Must include dimensions, with units | M21 |
| **3 (g)** | **2** | **UPS** | 4.6(3...) (m3) | Award 2 marks if correct answer given |  |
| 1 |  |  |  | M17a |
| 1 |  | 4.6(3...) (m3) | CAO | M17a |

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| **Activity 4: Energy bills (Calculator Test)** |
| **Q** | **Marks** | **UPS / PS** | **Process and Answer** | **Additional or Alternative Evidence (with guidance)** | **SC** |
| **4 (a)** | **4** | **PS** | See below |  |  |
| 1 |  | (£)152.50  | Between March (£160) and April (£145) | H23a |
| 1 |  | **Their** median × 6or (£)915 | FT on their value from previous mark | M13a |
| 1 |  | (£)775 | Find total cost for July to December | M13a |
| 1 |  | ((£)915 – 775) × 100 ÷ 775or 18(.06...)(%) | FT on previous mark Any full correct method for finding **their** overpayment as a % of **their** (£)775 | N6a |
| **4 (b)** | **3** | **PS** | 5(%) | Award 3 marks if correct answer given |  |
| 1 |  | 211.9(0) – 14.9(0) or 197 |  | N1a |
| 1 |  | 9.85 ÷ their 197 | Accept 9.85 ÷ 211.9 | N5b |
| 1 |  | 5(%) | CAO | M13a |
| **4 (c)** | **2** | **PS** | See below |  |  |
| 1 |  | (0.32 × 365) + (0.031 × 17563) |  | N3 |
| 1 |  | (£)661.25(3) **and** yes  | Must be supported by calculations | N12 |
| **4 (d)** | **2** | **UPS** | See below |  | N4 |
| 1 |  |  |  OE 3875/1000 | N4 |
|  | 1 |  | 387.5(%) | CAO |  |
| **4 (e)** | **4** | **PS** | (£)64.98 or (£)65(.00) | Award 4 marks if correct answer given  |  |
| 1 |  | (2.50 × 1) + (7.50 × 4) + (12.50 × 5) + (17.50 × 2)or 2.50 + 30 + 62.50 + 35or 130 | Accept alternatives to writing the calculation out, e.g. writing parts next to the tableMust be consistent values, i.e. all highest or all lowest value | H24 |
| 1 |  | **Their** 130 ÷ 12  | FT on previous task | H24 |
| 1 |  | (£)10.8(3…) | CAO Implies first 2 marks  | H24 |
| 1 |  | Their (£)10.83(3…) × 6 or (£)64.98 or (£)65(.00) |  | M13a |