



## **NCFE Level 1 Functional Skills Qualification in Mathematics (603/5055/6)**

Mark scheme: P001253

Assessment window: Monday 14 October 2019 – Friday 18 October 2019  
v1.1

past paper

# 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 alternative 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:

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.

<b>CAO</b>	Correct answer only.
<b>Their</b>	'Their' refers to the learners' own values.
<b>Seen</b>	Seen refers to the requirement to see the stated value in the learner's response or working out.
<b>Imp</b>	Implied refers to the learner's response implying correct working out used but not seen.
<b>Brackets</b>	Indicates units are not required on final answers or for answers seen within working.
<b>BOD</b>	Benefit of doubt where learner handwriting may be difficult to interpret but previous working may indicate correct final answer.
<b>Shaded</b>	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.

### Recording of marks

*Paper-based:* Individual marks should be annotated in the 'Examiner' column in the learner script, added up and recorded at the end of each activity. The overall marks awarded for each learner should be clearly and legibly recorded in the grid on the front of the learner script.

*Online:* Onscreen marking tools (i.e. ticks, crosses) marks should be applied to indicate application throughout the learner script, in addition to marks being recorded numerically within the corresponding 'Learning Outcomes' box, indicated by the relevant Subject Content reference.

<b>Annotation</b>	<b>Explanation and use</b>
<b>Tick</b>	Used to indicate correct values/method or final answer.
<b>Red highlight</b>	Used to indicate where the learner has made an error in either the value used or an incorrect calculation.
<b>Red line box</b>	Used to indicate where the learner may have made an error that has resulted in benefit of doubt being applied i.e. transposition of figures but previous working clearly shows otherwise.

**Note:** Pass marks for Functional Skills external assessments are set in an awarding meeting, in which a combination of statistical analysis and professional judgement is used to determine the minimum required standard to achieve a pass in the assessment.

While different versions of the same assessment are designed to be of the same level of difficulty, variations in content can lead to the minimum required standard being represented by different marks across versions.

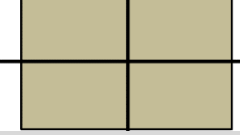
past paper

Paper number:		Paper-based 1 (Oct 19)		Version:	1.1	Pass mark:	37
(Section A) Activity 1: Climbing mountains (Non-calculator Test)							
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)		SC	
1 (a)	2	PS	2015	Award 2 marks if correct answer given			
	1		5	5 seen or indicated, i.e. 4 + 4 + 4 + 4 + 4		N4	
	1		2015	CAO		N2	
1 (b)	1	UPS	7 hours 40 mins	CAO		M20e	
1 (c)	2	PS	(£)26.40	Award 2 marks if correct answer given			
	1		$\frac{15}{100} \times 176$ or $\frac{176}{10} + \frac{1}{2} \left( \frac{176}{10} \right)$ or 17.6 + 8.8	OE Correct method for finding 15% of 176		M19	
	1		(£)26.40	CAO Must be to 2 dp		M19	
1 (d)	5	PS	6 (hours)	Award 5 marks if correct answer given			
	1		12 x 17 or 204			N5	
	1		$(1345 \div 100) \times 10$ or 134.5	OE		N3b	
	1		338.5			N5	
	1		their 338.5 ÷ 60 or 5.6(4...) or 5 hours and 38.5 minutes	Not 5.3 hours "Their" is from a correct addition of first two values		N11b	
	1		6 (hours)	CAO		M20e	
1 (e)	1	UPS	Option 3 - The angle is more than 12° but less than 90°	CAO		M24c	
1 (f)	2	UPS	9 9 (degrees)	Award 2 marks if correct answer given			
	1		3 – (–6) or 3 + 6	Allow attempt to count along number line with 3 and – 6 marked May be evidenced by –9		N2	
	1		9 (degrees)	CAO (do not accept –9)		N2	
1 (g)	2	PS	See below				

	1		$\frac{2}{10}$ or 30% seen	Accept 0.2 <b>and</b> 0.3 or $\frac{20}{100}$ <b>and</b> $\frac{30}{100}$	N16
	1		Rain	Must be supported by comparison of numbers in same form	H30b

<b>(Section B) Activity 2: Community nurse (Calculator Test)</b>																																																																	
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC																																																												
<b>2 (a)</b>	<b>4</b>	<b>PS</b>	See below																																																														
	1		3 or more non-overlapping class intervals (e.g. 0-9, 10-19, 20-29, 30-39 – see table below)	Allow intervals of different sizes Allow if additional (unnecessary) classes added	H28a																																																												
	1		Frequencies total 24	Award mark if individuals are incorrect but total 24	H28a																																																												
	1		Frequencies correct		H28a																																																												
	1		Suitable headings for table	For example, (Number of) minutes and (number of) people. Do not award if "Time" given for first column	H28a																																																												
<p><b>Additional guidance</b></p> <p>Example</p> <table border="1" data-bbox="223 1160 769 1451"> <thead> <tr> <th colspan="3">Minutes</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>0 – 9</td> <td>or</td> <td>1 – 10</td> <td>8</td> </tr> <tr> <td>10 – 19</td> <td>or</td> <td>11 – 20</td> <td>9</td> </tr> <tr> <td>20 – 29</td> <td>or</td> <td>21 – 30</td> <td>2</td> </tr> <tr> <td>30 – 39</td> <td>or</td> <td>31 – 40</td> <td>5</td> </tr> </tbody> </table> <table border="1" data-bbox="1078 1043 1259 1659"> <thead> <tr> <th>Min</th> <th>Freq</th> </tr> </thead> <tbody> <tr><td>2</td><td>1</td></tr> <tr><td>3</td><td>1</td></tr> <tr><td>4</td><td>1</td></tr> <tr><td>5</td><td>1</td></tr> <tr><td>6</td><td>1</td></tr> <tr><td>7</td><td>1</td></tr> <tr><td>8</td><td>2</td></tr> <tr><td>11</td><td>2</td></tr> <tr><td>12</td><td>3</td></tr> <tr><td>13</td><td>1</td></tr> <tr><td>14</td><td>1</td></tr> <tr><td>15</td><td>1</td></tr> <tr><td>18</td><td>1</td></tr> <tr><td>25</td><td>1</td></tr> <tr><td>28</td><td>1</td></tr> <tr><td>31</td><td>1</td></tr> <tr><td>32</td><td>2</td></tr> <tr><td>35</td><td>1</td></tr> <tr><td>37</td><td>1</td></tr> </tbody> </table>						Minutes			Frequency	0 – 9	or	1 – 10	8	10 – 19	or	11 – 20	9	20 – 29	or	21 – 30	2	30 – 39	or	31 – 40	5	Min	Freq	2	1	3	1	4	1	5	1	6	1	7	1	8	2	11	2	12	3	13	1	14	1	15	1	18	1	25	1	28	1	31	1	32	2	35	1	37	1
Minutes			Frequency																																																														
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<b>2 (b)</b>	<b>3</b>	<b>PS</b>	See below																																																														
	<b>Alternative method 1</b>																																																																
	1		$\frac{40}{100} \times 15$ or $1.5 \times 4$	OE correct method for finding 40% of 15	N14																																																												
1		6	Dep on calculation seen.	N14																																																													

	1		No and 8, supported by correct working		N13
<b>Alternative method 2 (not in spec for L1 but may be seen)</b>					
	1		8	8 from graph	N14
	1		$\frac{8}{15} \times 100 = 53$	OE correct method for showing that 8 is 53% of 15	N14
	1		No, supported by correct working		N13
<b>2 (c)</b>	<b>3</b>	<b>PS</b>	13 and (£)3.64 in table	Award 3 marks if correct answer given	
	1		13 (km) in table		M21
	1		<b>their</b> 13 × 28 or 364 or <b>their</b> 13 × 0.28 or 3.64	" <b>Their</b> " is from the value calculated in 1 <sup>st</sup> mark	N17
	1		13 and (£)3.64 in table	CAO	M20d
<b>2 (d)</b>	<b>1</b>	<b>UPS</b>	180 (°)	CAO	M26a
<b>2 (e)</b>	<b>2</b>	<b>PS</b>	See below		
<b>Alternative Method 1</b>					
	1		800 ÷ 52 or 15.38(...) or 15.4 or 52 × 17 or 884		N17
	1		15 or 15.38(...) or 15.4 or 884 and no	CAO Award 2 marks if correct answer given	N17
<b>Alternative Method 2</b>					
	1		800 ÷ 17 or 47.05(...) or 47.06		N17
	1		47.05(...) or 47.06 and no	CAO Award 2 marks if correct answer given	N17
<b>2 (f)</b>	<b>2</b>	<b>UPS</b>	See below		
	1		40 × 130 (=5200)		N15
	1		52 or 5270 or (£) 52.70 seen	<b>No FT on their 5200</b>	M20d

Activity 3: French flag (Calculator Test)					
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
3 (a)	2	UPS	7.5 (m)	Award 2 marks if correct answer given	
	1		225 + 225 + 150 + 150 or 750 or 2.25 + 2.25 + 1.5 + 1.5 or 7.5		M22b
	1		7.5 (m)	CAO	M20a
3 (b)	1	UPS		Mark intention. Both lines of symmetry required.	M24b
3 (c)	4	PS	937 or 938 (plants)	Award 4 marks if correct answer given	
	1		225 × 150 or 75 × 150 or 33750 or 11250	Method for finding area of flag or stripe	M22a
	1		11250	CAO	M22a
	1		<b>their</b> 11250 ÷ 12 or 937.5	FT only from <b>their</b> area calculation in 1 <sup>st</sup> mark	N17
	1		937 or 938 (plants)	FT <b>their</b> plants correctly rounded to a whole number from 3 <sup>rd</sup> mark	N12
3 (d)	2	UPS	(£)35.96	Award 2 marks if correct answer given	
	1		(42.98 + 31.56 + 33.98 + 42.99 + 35.75 + 28.50) ÷ 6 or 215.76 ÷ 6		H29a
	1		(£)35.96		H29a
3 (e)	2	PS	11.6p or £0.116 and yes	Award 2 marks if correct answer given	
	1		<b>their</b> 35.96 ÷ 310 or 3596 ÷ 310 or <b>their</b> 215.76 ÷ (310 × 6) or 21576 ÷ (310 × 6) or (£) 0.116 or 11.6 (p)	FT from " <b>Their</b> " final value for Q3d	H29a
	1		11.6p and yes or £0.116 and £0.01 and yes	Accept rounding to 12p	M20d
3 (f)	2	PS	6 (litres)	Award 3 marks if correct answer given	
	1		30 × 50 × 4 or 6000 (cm <sup>3</sup> )		M23
	1		6 (litres)	CAO	M20c



3 (g)	2	PS	$4.2 \times 4 = 16.8$ and yes <b>OR</b> $21:84 = 1:4$ and yes	Award 2 marks if correct answer given	
	1		4.2 and 16.8 OR $\frac{21}{5}$ and $\frac{84}{5}$ OR 21:84		N8b
	1		$4.2 \times 4 = 16.8$ OR $21:84 = 1:4$ and yes	CAO, accept equivalent correct comparisons	N17

Activity 4: World hunger (Calculator)					
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
4 (a)	2	PS	See below		
	<b>Alternative method 1</b>				
	1		$7726.5 \div 9$ or $7726\ 500\ 000 \div 9$		N9
	1		859 (million)	CAO	N12
	<b>Alternative method 2</b>				
	1		$7726.5 \times 0.11$ or 849.91(...)		N9
	1		850 (million)	CAO	N12
4 (b)	1	UPS	39	CAO	H29b
4 (c)	2	UPS	0.3	Award 2 marks if correct answer given	
	1		$\frac{6}{20}$ or $\frac{3}{10}$	OE	H31
	1		0.3	CAO	N16
4 (d)	3	PS	25	Award 3 marks if correct answer given	
	1		$1.60 \times 1.60$ or 2.56		N5
	1		$64 \div$ <b>their</b> 2.56	FT <b>their</b> 2.56 from first mark	N5
	1		25	CAO	N5
4 (e)	2	PS	See below		

	1		$0.2 \times 300$ or $(300 \div 10) \times 2$ or 60 or $0.15 \times 440$ or $\frac{440}{10} + \frac{440}{10} \times \left(\frac{1}{2}\right)$ or 66	OE Any full correct method for finding 20% of 300 or 15% of 450	N14
	1		60 and 66 and Village B	With correct supporting working	N13
<b>4 (f)</b>	1	<b>UPS</b>	1 000 000	CAO Ignore commas. Do not allow full stops/decimal points.	N1a
<b>4 (g)</b>	2	<b>PS</b>	$\frac{3}{20}$	Award 2 marks if correct answer given	
	1		$\frac{15}{100}$		N16
	1		$\frac{3}{20}$	CAO	N16
<b>4 (h)</b>	2	<b>PS</b>	See below		
	1		All sectors correct size but labels (or key for onscreen version) missing or 2 sectors correct and correctly labelled.	Supermarkets 3 segments OR 54 (degrees) Restaurants 7 segments OR 126 (degrees) Households 9 segments OR 162 (degrees) Others 1 segment OR 18 (degrees)	H27b
	1		All sectors correct and labelled (or key for onscreen version)	No tolerance	H27b