



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

Mark scheme: P001260 (Paper 3)

Assessment window: Monday 24 February 2020 – Friday 28 February 2020

v1.3

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 $\frac{1}{2}$.

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.

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.

Annotation	Explanation and use
Tick	Used to indicate correct values/method or final answer.
Red highlight	Used to indicate where the learner has made an error in either the value used or an incorrect calculation.
Red line box	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: L2 P001260-Paper-based 3			Version: 1.3	Pass mark: 36	
(Section A) Activity 1: Knitting (Non-calculator Test)					
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
1 (a)	1	UPS	<div><div>0</div><div>/</div><div>\</div><div>•</div></div> <div><div>()</div><div>()</div><div>(✓)</div><div>()</div></div>		M19
1 (b)	2	PS	All 4 pairs correct	Award 2 marks if correct answer given	
	1		Any 2 pairs correct		M22b
	1		All 4 pairs correct	May be in any order	M22b
	Additional guidance				
<div><div><div>Stitch</div><div>3</div></div><div><div>Row</div><div>1</div></div></div> <div><div><div>Stitch</div><div>13</div></div><div><div>Row</div><div>1</div></div></div> <div><div><div>Stitch</div><div>3</div></div><div><div>Row</div><div>15</div></div></div> <div><div><div>Stitch</div><div>13</div></div><div><div>Row</div><div>15</div></div></div>					
1 (c)	4	PS	0.485 (m)	Award 4 marks if correct answer given	
	1		3.1 seen	CAO	N2b
	1		2 × (their 3.1) × 0.325 or 2.015	Their 3.1 may be 3.1, 3.14, 3.142 or 3.1416	M16a
	1		2.015 (m)	FT Their 3.1 from correct method for perimeter Accept use of 3.1, 3.14, 3.142 or 3.1416 Using 3.14 award for 2.041 Using 3.142 award for 2.042 Using 3.1416 award for 2.042043	N10b
	1		0.485 (m)	FT (2.5 – their 2.015) only if their 0 < their 2.015 ≤ 2.5 from correct method for perimeter	N10a
1 (d)	2	PS	2.2 and 2(.0) (m)	Award 2 marks if correct answer given	
	1		1(.0) + 0.6 + 0.6 or 0.6 + 0.8 + 0.6	OE	M20
	1		2.2 and 2(.0) (m)	CAO	M20
1 (e)	1	UPS	$2\frac{3}{4}$ (mm)	OE mixed number with 2 as integer	N7a

1 (f)	2	PS	4.41 or 4.42 or 4.418 or 4.4178 (m)	Award 2 marks if correct answer given	
	1		$3.98 + (3.98 \div 10) + (3.98 \div 100)$ or $3.98 + 0.398 + 0.0398$	OE Any full correct method	N5a
	1		4.41 or 4.42 or 4.418 or 4.4178 (m)		N10a
1 (g)	2	UPS	$\frac{3}{2} \frac{5}{3} \frac{7}{4}$	Award 2 marks if correct answer given OE	
	1		$1\frac{6}{12}$ and $1\frac{9}{12}$ and $1\frac{8}{12}$ or 1.5 and 1.75 and 1.66(...)	OE Accept $1\frac{1}{2}$ and $1\frac{3}{4}$ and $1\frac{2}{3}$	N7b
	1		$\frac{3}{2} \frac{5}{3} \frac{7}{4}$	Accept $1\frac{6}{12}$ and $1\frac{8}{12}$ and $1\frac{9}{12}$ or 1.5 1.6(...) 1.75 or $\frac{18}{12} \frac{20}{12} \frac{21}{12}$ Accept $1\frac{1}{2}$ $1\frac{2}{3}$ $1\frac{3}{4}$	N7b
1 (h)	1	UPS	10 (days)		N11b

(Section B) Activity 2: Basketball (Calculator Test)

Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
2 (a)	2	UPS	44(%)	Award 2 marks if correct answer given	
	1		$33 \times 100 \div 75$	OE Any full correct method	N5b
	1		44(%)	CAO	N5b
2 (b)	5	PS	(£)103.68	Award 5 marks if correct answer given	
	1		10	CAO median games 7 to 12	H23a
	1		Their $10 \div 1.25$ or 8	OE any full correct method Their 10 must be between 6 and 14, accept fraction if in range of 6 - 14	N6b
	1		8	Median games 1 to 6 FT their 10 if between 6 and 14 Do not award if 0.75×10 used OE	N6b
	1		$50 \times 1.2^{\text{their } 4}$	OE Any full correct method Their 4 must be FT of their 8	M13b

				Allow 4 from median of 7.5 from 0.75×10 OE	
	1		(£)103.68	CAO	M13b
2 (c)	2	PS	36.5(497...) or 37 or 36 or 36.55	Award 2 marks if correct answer given	
	1		$\frac{50 \times 15}{0.44 \times 8 + 17}$		N3
	1		36.5(497...) or 37 or 36 or 36.55	CAO Accept any correct rounding Implies first mark	N12
2 (d)	1	UPS	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; text-align: center;">A (✓)</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">B ()</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">C (✓)</div> </div>	Accept unambiguous indication on diagrams Award if values of 50° etc indicated instead of a tick	M22a
2 (e)	3	PS	10.17(...) or 10.18 or 10.2 (m ²)	Award 3 marks if correct answer given	
	1		$0.9 \times 400 \div 100$ or 3.6 (m)	OE	M18a
	1		$\pi ((0.9 \times 400 \div 100) \div 2)^2$ or 10.1736	OE Accept $0.45^2 \times 3.14$	M16b
	1		10.17(...) or 10.18 or 10.2 (m ²)	CAO	M16b
2 (f)	2	UPS	See below		
	1		$\frac{3}{8}$		H26
	1		0.375	FT their $\frac{3}{8}$ if between 0 and 1 and their decimal answer is correct to 2 or more dp if required. Do not accept 0.3 for $\frac{1}{3}$	H27

Activity 3: Road safety (Calculator Test)					
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
3 (a)	3	PS	See below		
	1		12	CAO	H28
	1		3	CAO	H28
	1		$\frac{3}{12}$ or $\frac{1}{4}$	OE	N8
	Additional guidance Award 2 marks for $\frac{20}{30}$ (H28 and N8) fraction of all drivers who can read over 400 ft				

	or $\frac{12}{30}$ (H28 and N8) fraction of all drivers who are over 65 Award 1 mark for $\frac{3}{20}$ (H28) fraction of drivers who can read over 400 ft who are over 65			
3 (b)	5	PS	See below	
	Alternative 1 – working in metres			
	1		Scatter diagram drawn with appropriate line of best fit	Accept if in range (17, [500, 600]) and (83, [250, 350]) H28
	1		[480, 560] and [340, 400]	If line of best fit attempted, FT their line If no line attempted, values in range imply first mark H28
	1		Their $520 \div 3.28$ or their $375 \div 3.28$ or $(\text{their } 520 - \text{their } 375) \div 3.28$	OE Their 520 or their 375, both must be numbers between 280 and 600 M14a
	1		[146, 171] and [103, 122] or [24, 68]	CAO Implies third mark M14a
	1		[24, 68] and yes or no	FT their value if within range N1b
	Alternative 2 – working in feet			
	1		Scatter diagram drawn with appropriate line of best fit	Accept if in range (17, [500, 600]) and (83, [250, 350]) H28
	1		[480, 560] and [340, 400]	If line of best fit attempted, FT their line If no line attempted, values in range imply first mark H28
	1		50×3.28 or 164	M14a
	1		[480, 560] – [340, 400] or [78, 225]	CAO Implies third mark M14a
	1		[78, 225] AND yes of no	FT their value if in range N1b
3 (c)	2	UPS	69.95 or 70 (mph)	Award 2 marks if correct answer given
	1		$(45 \times 4) + (55 \times 13) + (65 \times 36) + (80 \times 47)$ or 6995	Allow 75×47 or 6760 H24
	1		69.95 or 70 (mph)	CAO H24
3 (d)	1	UPS	42	N3
3 (e)	4	PS	3.3(...) (%) or 1424912(.3) or 1424913 AND yes	Award 4 marks if correct answer given
	1		$(1355796 + 1403555 + 1390880) \div 3$ or $(1413598 + 1445817) \div 2$	H25

1		1383410(.3...) or 1383411 AND 1429707(.5) or 1429708	CAO Implies first mark	H25
1		<u>their 1429707</u> <u>their 1383410</u> or $(\text{their } 1429707 - \text{their } 1383410) \times 100 \div \text{their } 1383410$ or $1.03 \times \text{their } 1383410$ or 1424912(...) or 1424913	FT Their values from correct methods for mean Accept if 3% of 1383410.3 (41602.31) seen OE	N6a
1		3.3(...) (%) or 1424912 (...) or 1424913 AND yes	CAO Award if Yes and 4794.86 seen	N6a

Activity 4: Printing (Calculator Test)					
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
4 (a)	4	PS	See below		
Alternative method 1					
1			144 (cm ²)	Must be area method	M16b
1			Their 144×3.9 or 561(.6) or 562	FT their 144 from an area method e.g. 20×13 or 18×11 or 198	M15
1			$2000 \div (\text{their } 144 \times 3.9)$ or 3.5(...)	FT their 144 from an area method e.g. 20×13 or 18×11	M15
1			4	CAO 4 with no working award 1 mark only	N9b
Alternative method 2					
1			144 (cm ²)		M16b
1			$2000 \div 3.9$ or 512 (.82...) or 513		M15
1			Their $(2000 \div 3.9) \div \text{their } 144$ or 3.5(...)	FT their 144 from an area method e.g. 20×13 or 18×11	M15
1			4	CAO 4 with no working award 1 mark only	N9b
4 (b)	1	UPS	6		M20
4 (c)	2	PS	See below		
Alternative method 1					
1			$\frac{1}{6}$ (off)	OE	N8

	1		16(.6...) or 16.7 or 17 (%) and Offer A	Implies first mark	N4
	Alternative method 2				
	1		$(2 + 0.5)P$ or 2.5P and $0.95 \times 3 \times P$ or 2.85P	OE allow any consistent value for P (price of one box)	N8
	1		2.5P and 2.85P and Offer A	Implies first mark Allow any valid comparison e.g. 83% and 95% or 0.83 and 0.95	N4
4 (d)	4	PS	See below		
	1		45 45 125 129 132 138 146 or 202 195 182 180 148 146 138		H23a
	1		142 (median)	CAO Implies first mark	H23a
	1		45 (mode)	CAO	H23b
	1		Any valid comment	e.g. it is in the middle / it is more central / the mode is too low	H23b
4 (e)	2	UPS	(£)807 000	Award 2 marks if correct answer given	
	1		$863490 \div 1.07$	OE Any full correct method	N6b
	1		(£)807 000	CAO	N6b
4 (f)	2	PS	2 : 3	Award 2 marks if correct answer given	
	1		$\frac{3}{11}$ or 2 : 9	OE 2 : 9 is white : other	N11a
	1		2 : 3		N11a