



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

Mark scheme: P001372
v1.2 Past Paper

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 arithmetic 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 derived 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.

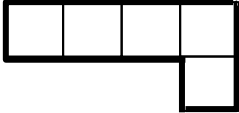
Over time mark schemes will incorporate additional evidence captured and confirmed during standardisation events. Any additional evidence criteria will be captured in colour-coded text applicable to the dated standardisation event.

Recording of marks

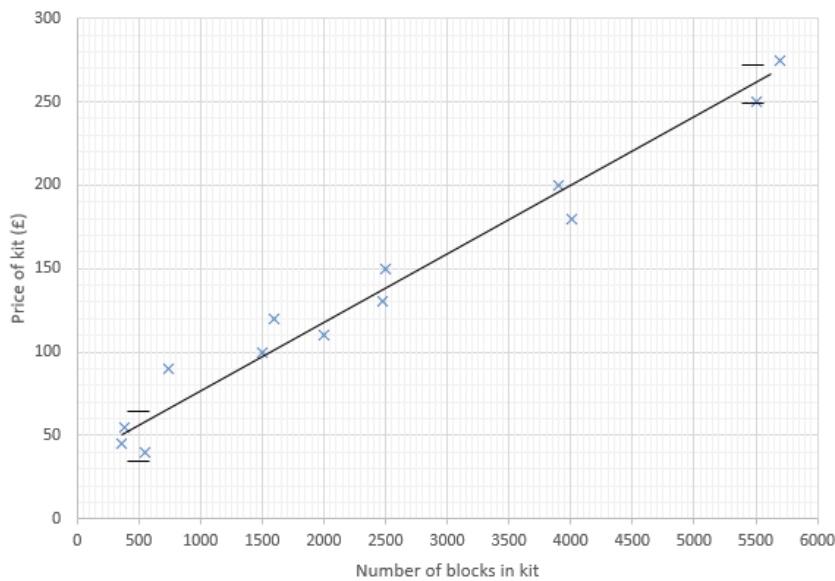
Paper-based: Individual marks should be annotated in the 'Examiner' column in the learner script, added up and recorded at the end of each activity. The overall marks awarded for each learner should be clearly and legibly recorded in the grid on the front of the learner script.

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.

Paper number:		L2 P001372 paper-based		Version: 1.2	
(Section A) Activity 1: Building blocks (Non-calculator Test)					
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
1 (a)	3	PS	46(%)	Award 3 marks if correct answer given	
	1		$75 + 276 + 45 + 50 + 154$ or 600		N8
	1		$276 \times 100 \div (75 + 276 + 45 + 50 + 154)$	OE $\frac{46}{100}$ or 276/600	N5b
	1		46(%)	FT their $276 \div 600 \times 100$	N5b
1 (b)	1	UPS	$\frac{1}{9}$	Accept 0.11(..) or 11.(..)%	H26
1 (c)	1	UPS	See below	Accept any orientation	
	1				M21
1 (d)	2	PS	13.5 (cm)	Award 2 marks if correct answer given	
	1		$5 \times 54 \div 20$	OE	M18b
	1		13.5 (cm)	CAO Accept if written as a fraction	M18b
1 (e)	3	PS	32 (curved pieces)	Award 3 marks if correct answer given	
	1		3.14×1600 or $2 \times 3.14 \times 800$ or 5024	OE Allow 1600×314 for 1 mark	M16a
	1		5024	CAO	M16a
	1		Correct answer to their $5024 \div 157$ or 32 (curved pieces)	FT dependent on correct method in first mark	N2a
1 (f)	2	UPS	See below		
	1		Scatter diagram completed with appropriate line of best fit	Line must go through (500,[45,65]) and (5500,[250,270])	H28
	1		(£)180	Accept [170,190] If no line attempted, value in range implies first mark If line drawn but value outside [170,190] award one mark only if correct for their line	H28

Additional guidance



1 (g)	3	PS	780 (blocks)	Award 3 marks if correct answer given	
	1		2.7 2.9 3.5 4.5 7.4 9.0		H23a
	1		4	CAO Implies first mark, may be seen as part of a calculation	H23a
	1		780 (blocks)	CAO	N11a

(Section B) Activity 2: Police workshop (Calculator Test)					
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
2 (a)	3	PS	See below		
Alternative method 1 (fractions)					
1			$\frac{2}{11}$	CAO	N11a
1			$\frac{16}{88}$ AND $\frac{11}{88}$ OR 0.18(..) AND 0.125 OR 18(...)% AND 12.5%	OE FT their $\frac{2}{11}$	N11a
1			Yes from valid direct comparison		N11a
Alternative method 2 (ratios)					
1			1 : 7	CAO	N11a

	1		2 : 14 or 1 : 4.5	OE any valid ratio that allows direct comparison between 2 : 9 or 1 : 7 FT their 1 : 7	N11a
	1		Yes from valid direct comparison of ratios		N11a
2 (b)	2	PS	(£)1.98(288) or 1982880	Award 2 marks if correct answer given	
	1		$1.7 \times (1.08)^2$ or $1\,700\,000 \times (1.08)^2$	OE any full correct method	M13b
	1		(£)1.98(288) or 1982880	CAO	M13b
2 (c)	1	UPS	(-3,4)	CAO Brackets not required but must have space or comma	M19
2 (d)	2	UPS	See below		
	1		$\frac{3}{15}$ or $\frac{1}{5}$	OE	H26
	1		0.2	FT their fraction Accept 0.3* only if indicated as a recurring decimal	H27
2 (e)	3	PS	3.125 or 3.13 or 3.1 or 3 (m/s)	Award 3 marks if correct answer given	
	1		$25000 \times 9 \div 100$ or 2250	May be seen in stages	M18a
	1		$(25000 \times 9 \div 100) \div (12 \times 60)$	OE	M15
	1		3.125 or 3.13 or 3.1 or 3 (m/s)	CAO	M15
2 (f)	2	UPS	19.625 or 19.63 or 19.6 (m ²)	Award 2 marks if correct answer given	
	1		$3.14 \times 5 \times 5$ or 78.5	OE 78.53(98..) if using pi key on calculator	M16b
	1		19.625 or 19.63 or 19.6 (m ²)	CAO Accept 19.6(3495408) if using pi key	M16b
2 (g)	2	PS	See below		
Alternative method 1 (cm)					
	1		5.5×2.54 or 13.97 OR 3.75×2.54 or 9.525 OR $2 \times 5.5 \times 2.54$ or 27.9(4) OR $2 \times 3.75 \times 2.54$ or 19.0(5)		M14a
	1		27.94 and 19.05 and yes		N9a
Alternative method 2 (inches)					

	1		21 ÷ 2.54 or 8.26(..) or 8.3 OR 29.7 ÷ 2.54 or 11.69(..) or 11.7		M14a
	1		11 and 7.5 and 11.6(9...) and 8.26(...) and yes		N9a

Activity 3: Volunteering (Calculator Test)					
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
3 (a)	1	UPS	Medium	Indicated in any way	N1b
3 (b)	3	PS	(£)36 180	Award 3 marks if correct answer given	
	1		626 000 × 21 ÷ 100	OE Any full correct method	N5a
	1		131 460	CAO	N5a
	1		(£)36 180 or correct answer to their (626 000 × 21 ÷ 100) – 95280		M13a
3 (c)	3	PS	(£)64.25	Award 3 marks if correct answer given	
	1		2634.25 ÷ 10.25 or 257		N11a
	1		(2634.25 ÷ 10.25) × 0.25 or 2634.25 – (2634.25 ÷ 10.25 × 10)	OE any full correct method	N11a
	1		(£)64.25	CAO	N11a
3 (d)	2	UPS	320 (minutes)	Award 2 marks if correct answer given	
	1		8 × 480 ÷ 12	OE	N11b
	1		320 (minutes)	CAO	N11b
3 (e)	4	PS	36 and 50 AND no	Award 4 marks if correct answer given	
	1		(10 × 48) + (30 × 146) + (50 × 74) + (70 × 32) or 480 + 4380 + 3700 + 2240 or 10800		H24
	1		Their ((10 × 48) + (30 × 146) + (50 × 74) + (70 × 32)) ÷ 300 or 36	Mean for one-off donors	H24
	1		50	Mean for annual donors	H25
	1		36 and 50 AND no	CAO	H25

3 (f)	2	UPS	$3\frac{2}{5}$ with working that allows direct comparison	Award 2 marks if correct answer given	
	1		$\frac{51}{15}$ and $\frac{50}{15}$ OR $3\frac{6}{15}$ and $3\frac{5}{15}$ OR 3.4 and 3.3(3..) OR 0.4 and 0.3(3..) OR 34% and 33(...)%	OE	N7b
	1		$3\frac{2}{5}$ with working that allows direct comparison	Accept equivalent fractions, or Kay	N7b

Activity 4: Selling cars (Calculator Test)					
Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
4 (a)	2	UPS	12.3(%)	Award 2 marks if correct answer given	
	1		$(15\,400 - 13\,500) \times 100 \div 15\,400$ or $1900 \times 100 \div 15\,400$ or 12.33(...)	OE full correct method	N5b
	1		12.3(%)	CAO	N9b
4 (b)	4	PS	See below		
	1		$12\,000 \times 0.9 \times (0.75)^3$	Correct substitution into formula	N3
	1		4556.25	CAO Emma's price	N12
	1		[8400,9600]	Online price from graph	H28
	1		correct answer to their [8400,9600] – their (£)4556.25	Their 4556.25 is dependent on correct substitution in first mark	M13a
4 (c)	4	PS	See below		
	1		72 (km) OR 10 (miles)	Accept distances in the range [71 ,73] Accept distances in the range [9.5 ,10.5]	M14b

	1		Their $72 \div 16$ or $45 \div$ their 10 or 4.5	Fuel used Their 72 in range [71,73] Their 10 in range [9.5, 10.5]	M15
	1		(their $72 \div 16$) \times 136.9 or 616.05 or (their $72 \div 16$) \times 1.396 or 6.16(05) OR ($45 \div$ their 10) \times 136.9 or 616(.05) or ($45 \div$ their 10) \times 1.369 or 6.16(05)	Cost of petrol Their 72 in range [71,73] Their 10 in range [9.5, 10.5]	M15
	1		6.16	FT their 72 and 10 Accept 6.17	N9b
4 (d)	5	PS	32 (cars)	Must be supported by calculations	
Alternative method 1					
	1		15 800	CAO	H23b
	1		Their $15800 \times 1.5 \div 100$ or $7500 \div (1.5 \div 100)$	Award for any full correct method. Their 15800 must be in range [14750,30 500]	N5a
	1		237 or 500 000	CAO Implies second mark	N5a
	1		Correct answer to $7500 \div$ their 237 or 31.6(4...) OR Correct answer to their 500 000 \div their 15800 or 31.6(4...)	Their 237 dependent on correct method in second mark Their 15800 must be in range [14750,30 500] Their 500 000 dependent on correct method in second mark	M13a
	1		32 (cars)	FT their 32 from correctly rounded answer to their calculation in fourth mark	N9b
Alternative method 2 (trial & improvement)					
	1		15 800	CAO	H23b
	1		Trial, e.g. 10 cars, $10 \times 15800 \times 1.5 \div 100$ or 2370	OE Any full correct method Their 15800 must be in range [14750,30 500]	N5a

	1		Trial, e.g. 30 cars, $30 \times 15800 \times 1.5 \div 100$ or 7110	OE Any full correct method Their 15800 must be in range [14750,30500]	N5a
	1		Trial concludes that between 31 and 32 cars needed		M13a
	1		32 (cars)		N9b

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