

Functional Skills
Mathematics Level 1

Paper Based OnDemand
Practice Set 3
Mark Scheme

Functional Skills qualifications from Pearson

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Marking Guidance for Functional Skills Mathematics Level 1

General

- All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded; exemplification will not be exhaustive. When examiners are in doubt regarding the application of the mark scheme, the response should be escalated to a senior examiner to review.
- Mark schemes should be applied positively. Learners must be rewarded for what they have shown they can do rather than penalised for omissions.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the learner's response is not worthy of credit according to the mark scheme. If there is a wrong answer (or no answer) indicated in the answer box, always check the working in the body of the script (and on any diagrams) and award any marks appropriate from the mark scheme.
- Working is always expected. For short questions, where working may not be seen, correct answers may still be awarded full marks. For longer questions, an answer in brackets from the mark scheme seen in the body of the working, implies a correct process and the appropriate marks may be awarded.
- **Questions that specifically state that working is required:** learners who do not show working will get no marks – full details will be given in the mark scheme for each individual question.

Applying the Mark Scheme

- The mark scheme has a column for **Process** and a column for **Evidence**. In most questions the majority of marks are awarded for the process the learner uses to reach an answer. The evidence column shows the *most likely* examples that will be seen. If the learner gives different evidence valid for the process, examiners should award the mark(s).
- If working is **crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.
- If there is a **choice of methods** shown, then mark the work leading to the answer given in the answer box or working box. If there is no definitive answer then marks should be awarded for the lowest scoring method shown.
- A suspected **misread**, e.g. 528 instead of 523, may still gain process marks provided the question has not been simplified. Examiners should send any instance of a suspected misread to a senior examiner to review.
- It may be appropriate to **ignore subsequent work (isw)** when the learner's additional work does not change the meaning of their answer.
- **Correct** working followed by an **incorrect decision** may be seen, showing that the learner can calculate but does not understand the functional demand of the question. The mark scheme will make clear how to mark these questions.

- **Transcription** errors occur when the learner presents a correct answer in working and writes it incorrectly on the answer box e.g. 698 in the body and 689 in the answer box; mark the better answer if clearly only a transcription error. Examiners should send any instance of transcription errors to a senior examiner to review.
- **Incorrect method** if it is clear from the working that the correct answer has been obtained from incorrect working, award 0 marks. Examiners must escalate the response to a senior examiner to review.
- **Follow through marks (ft)** must only be awarded when explicitly allowed in the mark scheme. Where the process uses the learner's answer from a previous step, this is clearly shown.
 - Speech marks are used to show that previously incorrect numerical work is being followed through, for example '240' means their 240 coming from a correct or set of correct processes.
 - When words are used in { } then this value does not need to come from a correct process but should be the value the learner believes to be required. The constraints on this value will be detailed in the mark scheme. For example, {volume} means the figure may not come from a correct process but is clearly the value learners believe should be used as the volume.
- Marks can usually be awarded where units are not shown. Where units are required this will be stated. For example, 5(m) indicates that the units do not have to be stated for the mark to be awarded.
- Learners may present their answers or working in many **equivalent** ways. This is denoted oe in the mark scheme. Repeated addition for multiplication and repeated subtraction for division are common alternative approaches. The mark scheme will specify the minimum required to award these marks.
- A **range** of answers is often allowed, when a range of answers is given e.g. [12.5, 13] this is the inclusive closed interval.
- **Accuracy** of figures. Accept an answer which has been rounded or truncated from the correct figure unless other guidance is given. For example, for 12.66.. accept 12.6, 12.7, 12.66, 12.67 or any other more accurate figure.
- **Probability** answers must be given as a fraction, percentage or decimal. If a learner gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths). If a learner gives the answer as a percentage a % must be used. Incorrect notation should lose the accuracy marks but be awarded any implied process marks. If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.
- **Graphs.** A linear scale must be linear, in an appropriate range for the data used, and use consistent intervals. The scale used does not have to start at 0 and not all intervals must be labelled. The minimum requirements for labels will be given, but examiners should give credit if a title is given which makes the label obvious.

Section A (Non-Calculator)

PRACL1/N03				
Question	Process	Mark	Mark Grid	Evidence
Q1	Begins to calculate mean	1 or	A	$29.4 + 50.8 + 24.7 + 19.9 (=124.8)$
	Full process to calculate mean	2 or	AB	'124.8' $\div 4 (=31.2)$
	Accurate figure	3	ABC	31.2 NB Accept any suitable mathematical layout for calculations
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q2	Process to square a two digit number	1	A	$12 \times 12 (=144)$
	Full process to calculate answer	1 or	B	'144' + 208 (=352)
	Accurate figure	2	BC	352
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q3(a)	Begins to work with percentage	1 or	A	e.g. $48600 \div 100 \times 15 (=7290)$ OR $48600 \div 10 (=4860)$ and $'4860' \div 2 (=2430)$
	Full process to calculate percentage increase	2 or	AB	$48600 + '7290' (=55890)$ OR $48600 + '4860' + '2430' (=55890)$
	Accurate figure	3	ABC	55890
Q3(b)	Valid check using a reverse calculation	1	D	e.g. $55890 - 7290 = 48600$
Total marks for question		4		

Question	Process	Mark	Mark Grid	Evidence
Q4	Process to convert at least one time	1	A	e.g. $4 \times 60 (=240)$ OR 45 (mins) or 80 (mins) or 90 (mins) or 1 (hr) 30 (mins) May be seen in subsequent working
	Begins to work with time	1 or	B	e.g. '240' + '15' (=255) OR Adds at least 3 of '45', '80', 50, '90' OR Adds at least 3 of '45' (mins), 1 (hr) 20 (mins), 50 (mins), 1 (hr) '30' (mins) OR Subtracts at least 2 times from 4 (hrs) '15' (mins)
	Full process to find figures to compare	2 or	BC	e.g. '45' (mins) + 1 (hr) 20 (mins) + 50 (mins) + 1 (hr) '30' (mins) (=4 (hrs) 25 (mins)) $4 \times 60 + '15' (=255)$ AND '45' + '80' + 50 + '90' (=265) OR $4 \text{ (hrs) } '15' \text{ (mins)} - '45' - '80' - 50 (=80)$
	Valid decision with accurate figure	3	BCD	e.g. No AND 4 (hrs) 25 (mins) and 4 (hrs) 15 (mins) OR No AND 255 and 265 OR No AND 10 (mins) over OR No AND 80 (mins) and 90 (mins) NB working must be shown for this question
Total marks for question		4		

Section B (Calculator)

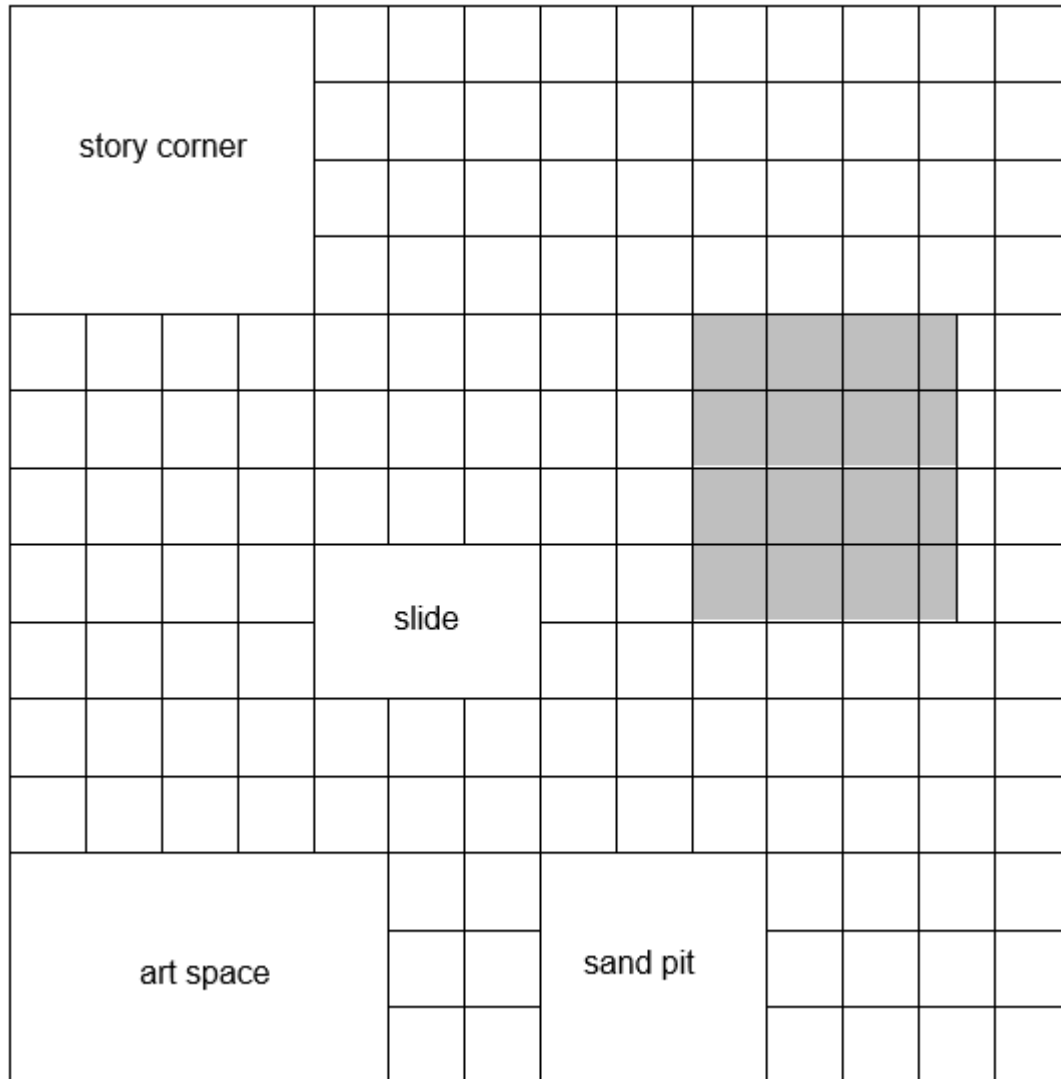
PRACL1/C03				
Question	Process	Mark	Mark Grid	Evidence
Q1(a)	Begins process to calculate the range	1 or	A	e.g. 4249 to 13958 OR 13958 – 4249 (=9709)
	Accurate figure	2	AB	9709
Q1(b)	Valid check using estimation	1	C	e.g. 14000 – 4000 = 10000
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q2	Begins to with proportion	1 or	A	e.g. $500 \div 250 (=2)$ oe $75 \div 4 (=18.75)$ OR $9 \times 500 (=4500)$ OR $250 \div 4 (=62.5)$
	Develops solution	2 or	AB	e.g. $'2' \times 4 (=8)$ OR $'18.75' \times 250 (=4687.5)$ OR $'62.5' \times 75 (=4687.5)$ OR $'4500' \div 250 (=18)$ OR $9 \times 500 (=4500)$ and $250 \div 4 (=62.5)$
	Full process to find figures to compare	3 or	ABC	e.g. $'8' \times 9 (=72)$ OR $4687.5 \div 500 (=9.375)$ OR $'4500' \div '62.5' (=72)$ OR $'4500' \div 250 (=18)$ and $75 \div 4 (=18.75)$ OR $9 \times 500 (=4500)$ and $'18.75' \times 250 (=4687.5)$ oe
	Valid decision with accurate figure	4	ABCD	e.g. No AND 10 (packs) OR No AND 72 (Sausage rolls) OR No AND 18 and 18.75 (number of batches) OR No AND 4500 (g) and 4687(.5 g)
Total marks for question		4		

Question	Process	Mark	Mark Grid	Evidence
Q3	Works with cost of gas per unit	1 or	A	$42000 \times 4.71 (=197820)$ oe
	Process to find total cost before discount or with discount	2	AB	e.g. '197820' + '23165' (=220985) or '1978.2' + 231.65 (=2209.85) OR '2209.85' – '98.91' – '11.5825' (=2099.3575)
	Process to begin to work with percentage	1 or	C	e.g. '2209.85' \div 100 \times 5 (=110.4925) OR '1978.2' \div 100 \times 5 (=98.91) OR 231.65 \div 100 \times 5 (=11.5825) OR (100 – 5) \div 100 (=0.95)
	Develops solution	2 or	CD	e.g. '2209.85' – '110.4925' (=2099.3575) OR '1978.2' \div 100 \times 5 (=98.91) and 231.65 \div 100 \times 5 (=11.5825) OR '2209.85' \times '0.95' (=2099.3575)
	Accurate figure	3	CDE	2099.36
Total marks for question		5		

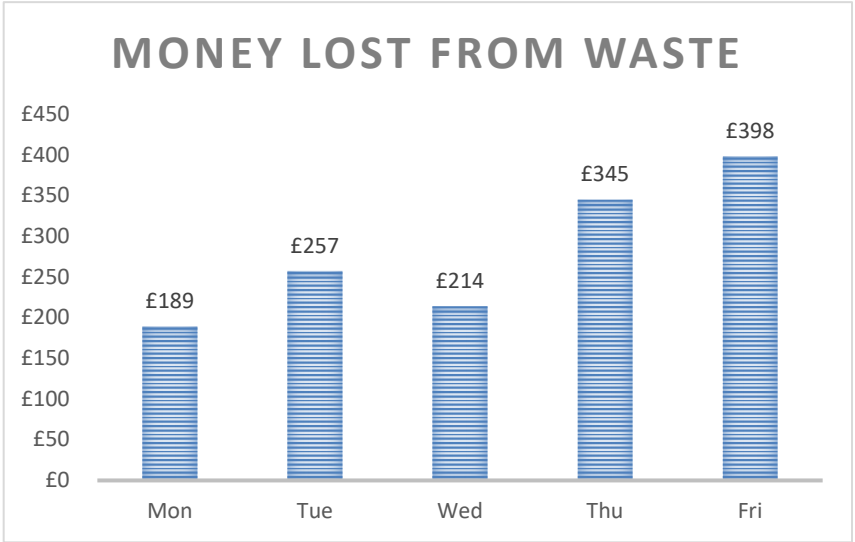
Question	Process	Mark	Mark Grid	Evidence
Q4	<p>Begins to work with scale</p> <p>Develops solution</p> <p>Fully correct solution</p>	<p>1 or</p> <p>2 or</p> <p>3</p>	<p>A</p> <p>AB</p> <p>ABC</p>	<p>Draws a rectangle with one side 4 squares or 3.5 squares OR Draws a rectangle at least 2 squares away from all other activity spaces OR Draws a rectangle at least 3 squares away from all doors</p> <p>Draws a rectangle with sides 4 squares and 3.5 squares AND at least 2 squares away from all other activity spaces OR Draws a rectangle with sides 4 squares and 3.5 squares AND at least 3 squares away from all doors</p> <p>Draws a rectangle with sides 4 squares and 3.5 squares AND at least 2 squares away from all other activity spaces AND at least 3 squares away from all doors</p>
Total marks for question		3		

Solution for Question 4



Question	Process	Mark	Mark Grid	Evidence																		
Q5	<p>Process to show groups</p> <p>Begins to populate information in the table</p> <p>Fully correct table.</p>	<p>1</p> <p>1 or</p> <p>2</p>	<p>A</p> <p>B</p> <p>BC</p>	<p>e.g. 11 to 15 and 16 to 20 and 21 to 25</p> <p>Completes at least 3 correct frequencies or tallies</p> <p>Correctly populates table with data for all their groups (Mark frequencies if inconsistent with tallies)</p> <table border="1" data-bbox="1218 687 2078 1051"> <thead> <tr> <th>distance (miles)</th> <th>tally</th> <th>frequency</th> </tr> </thead> <tbody> <tr> <td>1 to 5</td> <td> III</td> <td>8</td> </tr> <tr> <td>6 to 10</td> <td> II</td> <td>7</td> </tr> <tr> <td>11 to 15</td> <td>III</td> <td>3</td> </tr> <tr> <td>16 to 20</td> <td>I</td> <td>1</td> </tr> <tr> <td>21 to 25</td> <td>I</td> <td>1</td> </tr> </tbody> </table>	distance (miles)	tally	frequency	1 to 5	III	8	6 to 10	II	7	11 to 15	III	3	16 to 20	I	1	21 to 25	I	1
distance (miles)	tally	frequency																				
1 to 5	III	8																				
6 to 10	II	7																				
11 to 15	III	3																				
16 to 20	I	1																				
21 to 25	I	1																				
Total marks for question		3																				

Question	Process	Mark	Mark Grid	Evidence
Q6	Process to find missing length	1	A	7200 – 4800 (=2400) OR 3600 + 1800 (=5400)
	Begins process to work with dimensions	1 or	B	e.g. 7200 ÷ 600 (=12) or ‘2400’ ÷ 600 (=4)
	Develops solution	2 or	BC	e.g. 7200 ÷ 600 (=12) and 1800 ÷ 600 (=3)
	Process to find the number of slabs required for one of the areas or continues to work with dimensions	3 or	BCD	e.g. ‘12’ × ‘3’ (=36) OR 7200 ÷ 600 (=12) and 1800 ÷ 600 (=3) and ‘2400’ ÷ 600 (=4)
	Full process to find figures to compare	4 or	BCDE	e.g. ‘12’ × ‘3’ + ‘6’ × ‘4’ (=60)
	Valid decision with accurate figure	5	BCDEF	e.g. Yes AND 60
Total marks for question		6		

Question	Process	Mark	Mark Grid	Evidence												
Q7	<p>Starts to draw a suitable graph</p> <p>Develops their graph</p> <p>Fully correct suitable graph</p>	<p>1 or</p> <p>2 or</p> <p>3</p>	<p>A</p> <p>AB</p> <p>ABC</p>	<p>One of linear scale, labels, accurate plotting</p> <p>Two of linear scale, labels, accurate plotting</p> <p>All of linear scale, labels, accurate plotting Minimum labels required, Horizontal “(Day), M,T,W,Th,F” Vertical “(amount of money lost) £”</p> <p>Example of a suitable graph</p>  <table border="1" data-bbox="1211 901 2063 1444"> <caption>MONEY LOST FROM WASTE</caption> <thead> <tr> <th>Day</th> <th>Amount (£)</th> </tr> </thead> <tbody> <tr> <td>Mon</td> <td>189</td> </tr> <tr> <td>Tue</td> <td>257</td> </tr> <tr> <td>Wed</td> <td>214</td> </tr> <tr> <td>Thu</td> <td>345</td> </tr> <tr> <td>Fri</td> <td>398</td> </tr> </tbody> </table>	Day	Amount (£)	Mon	189	Tue	257	Wed	214	Thu	345	Fri	398
Day	Amount (£)															
Mon	189															
Tue	257															
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Fri	398															
Total marks for question		3														

Question	Process	Mark	Mark Grid	Evidence
Q8(a)	Converts to percentage	1	A	175
Q8(b)	Process to convert to decimal	1 or	B	e.g. $2 \div 3 (=0.666..)$ OR 1.666..
	Accurate figure rounded to 2 decimal places	2	BC	1.67
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q9	Converts time	1	A	$6 \times 60 (=360)$ OR '395' $\div 60 (=6.583..)$
	Process to begin to work with formula	1 or	B	e.g. $40 \times 79 (=3160)$
	Full process to work with formula	2 or	BC	e.g. '3160' $\div 8 (=395)$
	Valid decision with accurate figure	3	BCD	e.g. Yes AND 6.5(83..) OR Yes AND 360 and 395
Total marks for question		4		

Question	Process	Mark	Mark Grid	Evidence
Q10	Full process to find perimeter or finds the cost of one length	1 or	A	90 + 26 + 26 + 42 + 64 + 68 (=316) oe OR e.g. 90 × 0.59 (=53.1)
	Full process to find the total cost	2 or	AB	'316' × 0.59 (=186.44) OR '53.1' + '15.34' + '15.34' + '24.78' + '37.76' + '40.12' (=186.44) oe
	Accurate figure	3	ABC	186.44
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q11(a)	Process to measure distances	1	A	Measures accurately at least 2 of 4 cm, 6 cm, 9 cm Allow $\pm 2\text{mm}$ for each measurement
	Process to calculate total distance or use scale	1 or	B	e.g. $3 + 4.5 + 6.5 + '4' + '6' + '9'$ (=33) OR $3 \div 2$ (=1.5) OR 18×2 (=36)
	Full process to find figures to compare	2 or	BC	e.g. $'33' \div 2$ (=16.5) oe OR 18×2 (=36) and $3 + 4.5 + 6.5 + '4' + '6' + '9'$ (=33)
	Accurate figure follows through their acceptable measurement	3	BCD	No AND [16.2, 16.8] (km) OR No AND 36 and [32.4, 33.6] (cm) NB working must be shown for this question
Q11(b)	Accurate figure	1	E	97403
Total marks for question		5		