

### General Marking Guidance Mathematics

- If a candidate has crossed out a response to a question, the work should still be marked unless the candidate has replaced it with an alternative answer.
- Markers should apply the mark scheme consistently across all papers marked.
- Markers should mark according to the mark scheme and should apply it positively.
- The mark scheme gives guidance as to how to allocate marks.
- Where the mark scheme allows a mark for ‘any (other) valid response’, the marker should judge the response’s merits based on the information provided in the assessment materials.
- Where the marker is unsure of how to apply the mark scheme, guidance from the Principle Examiner must be sought.
- Where the mark scheme has responses in brackets – (£) 5.00, the candidate will gain the mark whether or not the information within the brackets is present or not as long as the answer is correct.
- Some answers allow follow through marks where the learner has found an incorrect answer in a previous part of the task. If this is the case, the marker must check that the learner’s answers are correct and should apply the format of the mark scheme to the learner’s response.

The mark scheme is a guide of possible answers that can be accepted, however, if the candidate has an alternative working out system to arrive at the correct answer this will also be accepted and marked accordingly.

### Assessment Guidelines

This assessment covers the whole of the Functional Skills standards and a sample of the coverage and range.

Functional Skills Standard / Performance	Functional Skills Coverage and Range		
<b>Representing 30-40%</b> Understand routine and non-routine problems in familiar and unfamiliar contexts and situations.  Identify the situation or problems and identify the mathematical methods needed to solve them.  Choose from a range of mathematics to find solutions.	Understand and use positive and negative numbers of any size in practical contexts	✓	
	Carry out calculations with numbers of any size in practical contexts, to a given number of decimal places	✓	
	Understand, use and calculate ratio and proportion, including problems involving scale	✓	
	Understand and use equivalences between fractions, decimals and percentages	✓	
	Understand and use simple formulae and equations involving one- or two-step operations	✓	
	Recognize and use 2D representations of 3D objects	✓	
	<b>Analysing 30-40%</b> Apply a range of mathematics to find solutions.  Use appropriate checking procedures and evaluate their effectiveness at each stage.	Find area, perimeter and volume of common shapes	✓
		Use, convert and calculate using metric and, where appropriate, imperial measures	✓
		Collect and represent discrete and continuous data, using information and communication technology (ICT) where appropriate	✓
		Use and interpret statistical measures, tables and diagrams for discrete and continuous data, using information and communication technology (ICT) where appropriate	✓
<b>Interpreting 30-40%</b> Interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations.  Draw conclusions and provide mathematical justifications	Use statistical methods to investigate situations	✓	
	Use probability to assess the likelihood of an outcome	✓	

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
<b>Task 1 Q1</b>	1	Suitable size drawn up to 28m <sup>2</sup>	Any shape and size acceptable up to 28m <sup>2</sup>	R	f
	1	Suitable scale chosen and shown on drawing e.g. 1:50 or 10cm = 5m or 2cm = 1m e.g. 1:100 or 5cm = 5m or 1cm = 1m or any other appropriate scale.	(1:20 will not fit on page) Must see scale to award mark	I	c
	1	<b>All six</b> toys drawn to correct scale shown on drawing		I	c
	1	<b>Four</b> toys drawn to correct scale shown on drawing		R	g
	1	Label and size shown	All toys must be labelled	I	f
	<b>Total 5 marks</b>				<b>R = 2 A = 0 I = 3</b>

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
<b>Task 1 Q2a</b>	1	Process to find of number of pieces for straight length of track <b><math>52 \times 2 / 0.4</math></b>		R	b
	1	Correct number of pieces found <b>260 pieces</b>		A	b
	1	Calculation of Cost of straight pieces <b><math>260 \times 7.50 = \text{£}1950</math></b>		R	b
	1	Correct method used for circumference of circle e.g. $2 \times 3.14 \times 3.185 = 20.0018$ or $3.14 \times 6.37$ or $6.28 \times 3.185$	Accept between 20 – 20.03	R	e
	1	Calculation of number of pieces for curved sections $20 / 0.4 = 50$ pieces	Only accept 50 pieces	R	b
	1	Calculation of cost of curved pieces $50 \times 11.50 = \text{£}575$	1 mark for correct answer including £ sign	A	b
	1	Calculation of total cost for 52 metres $1950 + 575 = \text{£}2,525$	1 mark for correct answer including £ sign	A	b
	1	Conclusion - over budget by £25		I	a
	1	Manipulation of figures to work out max length		I	b
	1	Max length of track is 51.2m		I	b
	<b>Total 10 marks</b>			<b>R = 4 A = 3 I = 3</b>	

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
Task 1 Q2b	1	Any suitable check e.g. $575/50 = 11.50$	Any method for checking	A	b
	Total 1 mark			R = 0 A = 1 I = 0	

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
Task 1 Q3	1	Decision to use metric or imperial measurements e.g. size converted to metric e.g. 60.96 cm x 30.48 cm x 6.35 cm e.g. 609.6 mm x 304.8 mm x 63.5 mm <u>Or</u> e.g. Cube sizes converted to inches Large Cube 1.969 in x 1.969 in x 1.969 in Small Cube 0.984in x 0.984 in x 0.984 in		R	h
	1	Calculate number of large cubes - length of display unit e.g. Large $609.6/50 = 12.172$ or 12 cubes e.g. Large $24/2.244 = 12.172$ or 12 cubes e.g. Small $609.6/25 = 24.384$ or 24 cubes		R	g
	1	Calculate number of large cubes - width of display unit e.g. Large $304.8/50 = 6.10$ or 6 cubes e.g. Large $12/2.244 = 6.10$ or 6 cubes e.g. Small $304.8/25 = 12.192$ or 12 cubes		R	g
	1	Calculate number of cubes - depth of display unit e.g. Large $63.5/50 = 1.27$ or 1 cube e.g. Large $2.5/2.244 = 1.27$ or 1 cube e.g. Small $63.5/25 = 2.54$ or 2 cubes		R	g
	1	Rounding down for all measurements	Only award if rounded <b>down</b>	I	a
	1	Calculating max number of large cubes that will fit $12 \times 6 \times 1 = 72$ OR max number of small cubes that will fit is $24 \times 12 \times 2 = 576$	Must use rounded down numbers as any larger numbers will not fit	A	h
	1	Both maxima seen. OR recognising that one large cube can be replaced by 8 small cubes e.g. 576 seen (or similar calculation)		I	f
	<b>Total marks 7</b>			<b>R=3, A=1, I=2</b>	

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range	
Task 1 4a	1	Extracting data accurately	Accept reasonable answer from chart	R	i	
	1	Determination of values for each age group or year from method used e.g. 32,000, 50,000, 100,000 e.g. 38,333, 51,000, 88,333	Any method used i.e. mean, median	I	k	
	1	Recognising use of ratio numbers (written as a ratio or percentage calculation) e.g. Mean 38:51:88 – Mean of age groups e.g. Actual most recent year 35:52:92	Accept any reasonable process	R	c	
	1	Calculation of total number of parts e.g. $32+50+100 = 182$ e.g. $35+52+92 = 179$	Allow reasonable answers from chart	A	c	
	1	Correct answer e.g. 0-3 years $4800/182 \times 32 = 843.96 \text{ m}^2$ 5-11 years $4800/182 \times 50 = 1318.68 \text{ m}^2$ 12-16 years $4800/182 \times 100 = 2637.36 \text{ m}^2$ e.g. 0-3 years $4800/91 \times 16 = 843.96 \text{ m}^2$ 5-11 years $4800/91 \times 25 = 1318.68 \text{ m}^2$ 12-16 years $4800/91 \times 50 = 2637.36 \text{ m}^2$ e.g. 0-3 years $4800/177 \times 38 = 1030.51 \text{ m}^2$ 5-11 years $4800/177 \times 51 = 1383.68 \text{ m}^2$ 12-16 years $4800/177 \times 88 = 2386.44 \text{ m}$	Follow through allowed for ratio  Accept rounding Accept % approach e.g. 0-3 20%, 5-11 29%, 12-16 51%	A	e	
	1	Any suitable explanation		I	c	
	<b>Total 6 marks</b>				<b>R=2 A=2 I=2</b>	

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
Task 1 4b	1	Any suitable check	Any method for checking	A	b
	Total 1 mark			R = 0 A = 1 I = 0	



Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
Task 2 Q1	1	Extracting data accurately Data extracted from Chart 1500,1900,1600,2200,2400,2800,1800		R	k
	1	Working out mean or median or daily need e.g. Correct answer calculated for mean= <u>2028.57</u> Median determined = <u>1900</u> Number of staff per day calculated Mon 3.75, Tue 4.75, Wed 4, Thu 5.5, Fri 6, Sat 7, Sun 4.5		R	k
	1	Calculation of number of staff required e.g. $2028.57 / 400 = 5.07$ 6 staff required e.g. $2800 / 400 = 7$ staff required e.g. $(3.75+4.75+4+5.5+6+7+4.5)/7 = 5.07$	Must have rounding up	A	k
	1	Follow through 5 or 6 staff needed normally	Accept list of correct daily staff requirements	I	a
	1	7 staff needed on a Saturday		I	a
	<b>Total marks 5</b>			<b>R=2 A=1 I=2</b>	

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
Task 2 Q2	1	<b>Minton Printing Company</b> (Correct substitution into formula) $5000 \times 0.8 / 100 + 15 = \text{£}55.00$		R	b
	1	<b>Juniper Press</b> (Correct substitution into formula) $(7 \times 5) + (3 \times 5) + 10 = \text{£}60 - 1/5 = \text{£}48$		A	e
	1	<b>Toprint</b> (Correct substitution into formula) $5000 \times 1.5 + 5 = \text{£}80 - 23\% = \text{£}61.60$		A	e
	1	Decision needed. Backed up with evidence. Any suitable explanation		I	e
	1	<b>Minton Printing Company</b> Recognising that only 4550 leaflets need to be paid for with validation $4550 \times 0.8 / 100 + 15 = \text{£}51.40$		I	e
	<b>Total marks 5</b>				<b>R=1 A=2 I=2</b>

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
Task 2 Q3a	1	Calculated number of spaces for disabled drivers e.g. $60 \times 4.5 / 100 = 2.7$	Accept 2 or 3 spaces	R	c
	1	Calculated number of spaces allocated for families with children e.g. $60 / 8 = 7.5$	Accept 7 or 8 spaces	A	c
	1	Calculated number of spaces allocated for motorcycles e.g. $60 \times 0.04 = 2.4$	Accept 2 or 3 spaces	A	d
	1	Calculated number of spaces allocated for staff use e.g. $60 / 20 = 3$ <b>spaces</b>		A	d
	1	Calculated number of free spaces e.g. $60 - 3 - 8 - 2 - 3 = 44$ <b>spaces</b>	If learner has used a common unit to convert figures award up to <b>5</b> marks but <b>MUST</b> be clear what has been done.	A	b
	1	Explanation that 44 spaces is more 2/3 of the total number of spaces so the manager is correct		I	b
	<b>Total marks 6</b>				<b>R = 1</b> <b>A = 4</b> <b>I = 1</b>

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
Task 2 Q3b	1	Any suitable check e.g. $60 \times \frac{2}{3} = 40$	Any method for checking	A	b
	<b>Total marks 1</b>			<b>R = 0 A = 1 I = 0</b>	

Question	Mark Available	Acceptable Response	Comment	RAI	Coverage and range
Task 2 Q4	1	Recognising that there are $50 - 8 = 42$ tickets left that could be a LEGOLAND voucher		R	
	1	Expressing the probability of drawing LEGOLAND voucher <b><math>\frac{7}{42}</math></b>		A	
	1	Simplifying the probability <b><math>\frac{1}{6}</math></b>			
	<b>Total marks 3</b>			<b>R = 1 A = 1 I = 1</b>	
	<b>Total Marks 50</b>	Passing Mark 35		<b>R = 16 A = 17 I = 17</b>	