GCSE MARKING SCHEME

SUMMER 2022

GCSE
MATHEMATICS – NUMERACY
UNIT 1 – FOUNDATION TIER
3310U10-1

INTRODUCTION

This marking scheme was used by WJEC for the 2022 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

Unit 1: Foundation Tier	Mark	Comments
1. (a) (3, 1)	B1	Answer line takes precedence Allow (03, 01) Do not accept (3X, 1Y)
1 (b) (-2, -3)	B1	Answer line takes precedence Do not accept (-2X, -3Y)
2(a) 8 (loaves of bread) 200 (grams of butter) 12 (tins of tuna) 56 (tomatoes)	B2	Award B1 for 2 or 3 correct Lines for answers take precedence over working space. If no marks, award SC1 for all values evaluated accurately using a consistent multiplier which is >2.
2(b) Cylinder	B1	
2(c) (Hall hire charge = 5 × 10 =) (£)50	B2	Award B1 for • 5 (hours) • 'their hours >1' × 10 evaluated correctly • Multiple of 10 (but not 10) which is then used in their total costs (and is extra to the given £60) B1 or B2 marks may be seen in the total costs.
(Total costs) (£)50 + (£)250 + (£)60 + (£)400 (£)760	M1 A1	FT 'their (£)50'
(Number of tickets need to sell) (£)760 ÷ (£)8	M1	FT 'their (£)760' including (£)710 (without hall costs)
95	A1	On FT their answer must be a whole number rounded up if necessary
Organisation and communication	OC1	For OC1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response • lay out their explanations and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means
Writing	W1	For W1, candidates will be expected to: • show all their working • make few, if any, errors in spelling, punctuation and grammar • use correct mathematical form in their working • use appropriate terminology, units, etc.

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3(a) 20×(£)3 OR 19×(£)3 OR 20× (£)2.98	M1	Allow 20 ×(£)2.95 OR 20 × (£)2.90
		(£)59 OR (£)58
(£)60 OR (£)57 OR (£)59.60	A1	Ignore Subsequent working if an estimate is seen

3(b) Overestimate indicated and correct suitable reason given e.g.	E1	Allow 'because you estimate to nearest 10'
'Because 20 is more than 19 and (£)3 is more than (£)2.98' 'Because I rounded 2.98 up to 3' 'Because I rounded it up' 'Rounded 98p to £1' 'Rounded it up to the nearest whole number' 'Because I rounded both numbers up' 'Because the real numbers are less than the ones I used' 'Because my bags are 2p more than the party bags' 'There are only 19 bags and I used 20'		FT appropriate judgement based on **their estimate** seen in (a) e.g., 20 × (£)2.50 and underestimate given with reason as '2.50 is less than 2.98', award M0 A0 in (a) and E1 in (b) Allow statements that only refer to one value being estimated where both values have been rounded up. Do not accept 'Because I am over the real price' FT from **allowed** estimates in part (a) with 'can't tell' and a suitable reason given e.g., 'one is rounded up and the other rounded down.' If (a) is not attempted but a correct estimate for (a) is seen in (b) with appropriate judgement indicated and correct reason award E1

4(a)(i) Wednesday AND 10:00	B2	Allow Wednesday AND 10:00 – 11:00 or Wednesday AND 10:00 – 12:00 Award B1 for: • Wednesday • Friday AND 09:00 (-10:00 or – 11:00) • Tuesday AND 14:00 (-15:00 or – 16:00)
4(a)(ii) ((19 + 2 – 15) × 8 =) OR ((21 – 15) × 8=) 48	B2	Award B1 for: • ('their 19' + 2 – 15) × 8 correctly evaluated provided 'their 19' > 13 and 'their 19' is seen on the diagram or clearly stated as the hours completed without the extra 2 hours • ((19 – 15) × 8 =) 32 • ((19 + 1 – 15) × 8 =) 40 • ('their 21' – 15) × 8 correctly evaluated provided 'their 21' > 15 and 'their 21' is seen on the diagram or clearly stated as the hours completed with the extra 2 hours
4(b) 4·5 × 7 + 6 37·5 (litres)	M1 A1	
4(c) 4500	B1	
4(d) 6(cm) (±2mm) 6 × 0·4 (m) No AND 2·4 (metres) shown	B1 M1 A1	(5·8 (cm) to 6·2(cm)) May be seen or indicated on the diagram or from workings. FT 'their 6' seen or indicated × 0·4 (m) where 'their 6' is between 3 and 9 inclusive. FT their **correctly evaluated** 2·4 metres compared with 2·3 metres provided M1 awarded eg 5 × 0·4 (m) = 2(m) and Yes indicated Answer only of 2.4 (m) and any of the measurements below with No indicated gets B1 M1 A1 Measurement of: 5·8 cm gives 2·32 m 5·9 cm gives 2·36 m 6 cm gives 2·4 m 6·1 cm gives 2·44 m 6·2 cm gives 2·48 m **If no workings shown** and answer not from the list above, award SC1 for: • 2m, 2.04m, 2.08m, 2.12m, 2.16m, 2.2m, 2.24m, 2.28m and YES OR • 2.52m, 2.56m, 2.6m, 2.64m, 2.68m, 2.72m, 2.76m, 2.8 and NO (These values come from 5cm to 5.7cm and 6.3cm to 7cm) OR • 2.5m and NO

5(a) Gayle	B1	Do not accept 8·46 but accept Gayle and 8.46
5(b) 7·03	B1	Check the scoreboard
5(c) 7·95 – 6·31 or 795 - 631 1·64(m) or 164 (cm)	M1 A1	Allow any indication of attempting to find the difference between 7.95 and 6.31 If units are given they must be correct
5(d) <table><tr><td>Position</td><td>Name</td></tr><tr><td>1st</td><td>Gayle</td></tr><tr><td>2nd</td><td>Henderson</td></tr><tr><td>3rd</td><td>Echevarria</td></tr></table>	B1	Ignore any measurements given with the names
6(a) £3.80	B1	
6(b) 4 hours 20 minutes	B3	For B2 or B1, allow costs seen within repeated additions linked with the appropriate time B2 for sight of any of the following: • 260 minutes • £5.40 for 4 hours or for 240 minutes • ((£5.80 - £3) ÷ 40p =) 7 seen or implied **with** 7 lots of 20 minutes considered • 140 (minutes) (= 2 hours 20 minutes) • a final answer of 2 hours 20 minutes in the answer space B1 for sight of any of the following: • £4.20 for 3 hours or 2 hours 60 minutes, allow for 2.60 • (£5.80 - £3 =) £2.80 • (£5.80 - £3) ÷ 40p (= 7) • ((£5.80 - £3) ÷ 40p =) 7 allow for 7 provided it is **not** from incorrect working, it should be derived from 7 lots of 40p on to the £3, e.g. 7 lots of 40p. Ignore further incorrect working once awarded, such as an answer of 7 hours
7(a) 130 ≤ energy < 140	B1	Accept unambiguous indication, e.g. 130 – 140 Allow e.g.'130,140', '130 140' Do not accept the values 130, 140, 18 or a choice between the group and the frequency
7(b) Total of 37 (energy bars) $\frac{1 + 4 + 12}{37}$ $\frac{17}{37}$	B1 M1 A1	FT 'their 37' provided > 'their 1+4+12' Also allow **one** error in misreading 1 frequency, which impacts consistently on 'their denominator' and possibly 'their numerator' Only FT 'their 37' provided • 'their 37' is 36 or 38 or 39 or • 'their 37' is clearly from an addition error in calculating 1 + 4 + 12 + 18 + 2 ISW for incorrectly simplifying their fraction

7(c) (100 ×) $\underline{2}$ or   (100 ×) 1 – (100 ×) $\underline{18}$
        18 + 2   18 + 2
                10 (%)
	M1
	
	 A1
		FT any repeated misread of the scale from (b)
		
		 Award 2 marks for an answer of 10(%) unless from incorrect working

8(a) 100 × 720 ÷ 360 or 260 × 720 ÷ 360
              or for sight of 1° is 2 bags
 	
 200 (large bags sold) and 520 (small bags sold)
 	
 (Total sales) 200 × (£)1(.)80 + 520 × 80(p)
         (=   £360   +   £416)
 	
 (£) 776
	M1
	
	 A2
	
	 M1
	
	 A2
		
		 A1 for 200 (large bags) or 520 (small bags) or
		 for 'their number of large bags'
		                + 'their number of small bags' = 720
		
		 Ignore incorrect units stated, mark intention
		 Or equivalents all in p or all in £
		 Accept equivalent 720 × 80p + 200 × (£)1
		 FT for 'their 200 large bags' × (£)1.80 and
		 'their 520 small bags' × 80p,
		 provided 'their 200' ≥ 50 and 'their 520' ≥ 130,
		 'their 520' ≠ 'their 200' and both are whole numbers
		
		 CAO
		 A1 for either
		 • a correctly evaluated sum with one correct
		      evaluation of a product
		           or
		 • on **FT** for the correct evaluation of
		 'their smaller value'×(£)1.80 + 'their larger value'×80p
		 For example 100 × (£)1.80 + 260 × 80p = £388 is
		 awarded M0 A0 M1 A1
		
		 If initial M1, A2 awarded also award SC1 for one of
		 the following seen:
		 • 200 × 80(p) + 520 × (£)1.80 = (£)1096
		 • £360 **and** £416 (no method mark as not added)
		
		 If no marks, award SC1 for sight of 260(°)

8(b) Method to compare, e.g. • (Small bag per kg) 2.5 × 80 or 80×1000÷400 • (Per 100g) small 80p ÷ 4 and large £1.80÷ 10 • (g per penny) 400 ÷ 80 and 1000 ÷ 180 • (Per 200g) 80p ÷ 2 and £1.80 ÷ 5 • (Per 2000g) 5 × 80p and 2 × £1.80 • (Large bag per 400g) £1.80 × 0.4 Accurate comparison calculation, e.g. • (Small bag per kg) £2 • (Per 100g) small 20p and large18p • (g per penny) small 5g and large 5.5(5...) or 5.6g • (Per 200g) small 40p and large 36p • (Per 2000g) small £4 and large £3.60 • (Large bag per 400g) 72p **AND** Conclusion, Large bag (better value)	M1 A1	Needs to show comparing like quantity with like If units are given they must be correct

9(a) 18 (g)	B1	
9(b) 15 – 12.5 or 5 × 0.5 2.5 (cm)	M1 A1	
9(c) Sight of 20 (cm) (Wingspan in inches is) 12 × 20 ÷ 30 or 20 × 0.4 8 (inches)	B1 M1 A1	Allow 20 ÷ 2.5 or equivalent CAO
9(d) Positive (correlation)	B1	Do not accept a description
9(e) An answer in the inclusive range 18.5 (cm) to 22.5 (cm)	B1	
10. 420 - 420 × 35 ÷ 100 (= 420 – 147) or (100 – 35) × 420 ÷ 100 or equivalent 273 (people)	M2 A1	M1 for any one of • 420 × 35 ÷ 100 • sight of 42 + 42 + 42 + ½ of 42 • sight of 147