GCSE MARKING SCHEME

AUTUMN 2024

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

About this marking scheme

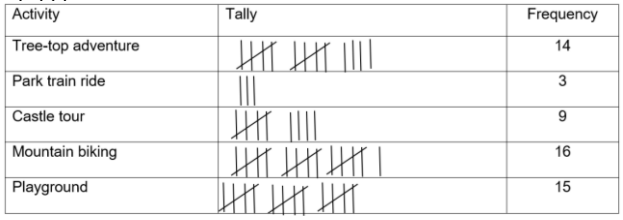
The purpose of this marking scheme is to provide teachers, learners, and other interested parties, with an understanding of the assessment criteria used to assess this specific assessment.

This marking scheme reflects the criteria by which this assessment was marked in a live series and was finalised following detailed discussion at an examiners' conference. A team of qualified examiners were trained specifically in the application of this marking scheme. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners. It may not be possible, or appropriate, to capture every variation that a candidate may present in their responses within this marking scheme. However, during the training conference, examiners were guided in using their professional judgement to credit alternative valid responses as instructed by the document, and through reviewing exemplar responses.

Without the benefit of participation in the examiners' conference, teachers, learners and other users, may have different views on certain matters of detail or interpretation. Therefore, it is strongly recommended that this marking scheme is used alongside other guidance, such as published exemplar materials or Guidance for Teaching. This marking scheme is final and will not be changed, unless in the event that a clear error is identified, as it reflects the criteria used to assess candidate responses during the live series.

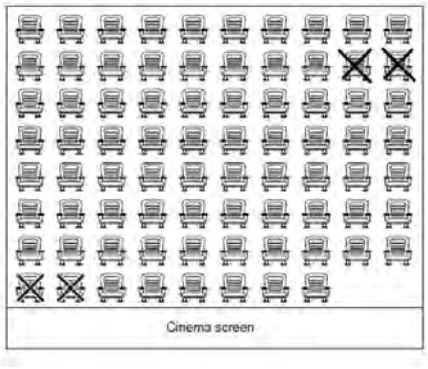
WJEC GCSE MATHEMATICS – NUMERACY

AUTUMN 2024 MARKING SCHEME

GCSE Mathematics Numeracy **Unit 1: Foundation Tier**	Mark	Comments
1(a)(i)  	B1	For completing all the extra tallies correctly including **correct tally notation** (e.g. for mountain biking) (extra 3 for the castle tour, 3 for tree-top adventure and 3 for mountain biking)
	B1	For completing all the frequencies correctly. FT for 'their tallies' or FT if extra tallies are not added. **(11, 3, 6, 13 and 15)** Accept given frequencies and new frequencies written either in the table or beside the table or by the bullet points e.g. for mountain biking 13 and 16 seen
Unambiguously indicates 'No' with a reason, e.g. 'No, most people preferred mountain biking' 'No, mountain biking is' 'No, more people preferred mountain biking' 'No, 15 people chose playground, 16 chose mountain biking'	E1	FT 'their frequencies' if given, otherwise FT 'their tallies' including if extra tallies are not added. If 13 and 16 given for Mountain biking, then 16 must be used for their explanation. On FT, when using the given frequencies, allow 'yes, as 15 people chose the playground' Do not accept 'No because it is not the modal activity'
1(a)(ii) 57	B1	FT from 'their table'
1(a)(iii) A uniform scale used that would include all required frequencies	B1	
Five vertical lines at **correct** heights. (intention of correct height e.g. line drawn for 9 but not quite at 9)	B2	FT their scale if it includes all required frequencies If both the given frequency and new frequencies given, the new ones **must** be used. FT their frequencies throughout. Allow use of correct frequencies if not given in (a)(i). If frequencies not seen FT their tallies. Award B1 for any one of the following: • any 3 or 4 correct vertical lines. • all 5 correct heights indicated
1(a)(iv) 5	B1	FT from 'their table' or 'their graph' Answer space in front of the word 'times' takes precedence

1(a)(v) Valid reason given (linked to time, number of people surveyed, who was surveyed or the conditions) e.g. 'Sharon only asked people in the afternoon' 'Sharon only used the afternoon data' 'It was only on Saturday' 'She only did the tally for one afternoon' 'Train may be more popular at other times' 'Maybe the people in the morning preferred the train ride and this wasn't recorded' 'More children could have been in the morning' 'Sharon only asked 57 people' 'Not enough people asked' 'Could have asked only children' 'Maybe the children didn't do the survey' 'Maybe only adults were asked' 'It was a sunny day'	E1	Accept 'Just because it is not the favourite it could still be doing well (at other times)' 'lots of people may have gone on the train but it wasn't their favourite' Allow 'Because it was only 1 day in the month' 'Ask more people' 'Train may have had more people overall' 'Park train may not have been working' Do not accept: 'Playground is free and you have to pay for train' 'People just haven't given the train a go' 'Because people went on it' 'Playground is more popular, and train is least' 'The playground may have had more or less people' 'Because the train was 3 and the playground was 15' 'She missed the results of 9 visitors'
1(b) likely	B1	

2(a) (Amount of discount for 1 ticket =) (£)0.45 or 45(p) OR (Amount of discount for 2 tickets =) (£)0.9(0) or 90(p) (Cost of tickets =) 2 × (£)4.50 – 2 × (£)0.45 + (£)1.40 (9 – 0.90 + 1.40) Or 2 × (£)4.50 – 2 × 0.1 × (£)4.50 + (£)1.40 Or equivalent = (£)9.50	 B1 M2 A1	If units are given, they must be correct Workings may be seen in stages Award B1 for (£)0.9(0) or 90(p) seen as the **total discount** FT 'their **derived or stated** (£)0.45 or (£)0.9(0)' Award M1 for: • 2 × (£)4.50 – 2 × (£)0.45 (£9 – 90p) • 2 × (£)4.50 – 1 × (£)0.45 + (£)1.40 (£9 – 45p + £1.40) • 1 × (£)4.50 – 2 × (£)0.45 + (£)1.40 (£4.50 – 90p + £1.40) • 1 × (£)4.50 – 1 × (£)0.45 + (£)1.40 (£4.50 – 45p + £1.40) • 2 × (£)4.50 – 2 × (£)0.45 + 2 × (£)1.40 (£9 – 90p + £2.80) • 2 × (£)4.50 + (£)1.40 (£)9 + (£)1.40 FT from M2 or M1 (Answers from M1: (£)8.10, (£)9.95, (£)5, (£)5.45 (£)10.90, (£)10.40) <u>If the discount is applied at the end:</u> Award M1 for 2 x £4.50 + £1.40 Award A1 for £10.40 Award SC1 for an answer of £9.36 (from £10.40 – 0.1 x £10.40 = £10.40 – £1.04) FT for SC1 for 0.9 × 'their 10.40' correctly evaluated provided M1 awarded <u>If the booking fee is added to the cost of each ticket and the discount is applied at the end:</u> Award M1 for: 2 x (£4.50 + £1.40) – 0.1 x (£4.50 + £1.40) Or £11.80 - £1.18 Award A1 for £10.62 If no marks awarded, award SC1 for (£)9 seen
Organisation and communication Writing	OC1 W1	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 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.

2(b) Seats G9 **and** G10 indicated on diagram  	B1	
2(c) (£)3.59 + (£)5.45 (£)9.04 (£)9.04 – (£)7.60 (£)1.44	M1 A1 M1 A1	No misread allowed CAO FT 'their derived or stated 9.04' provided 'their 9.04' > 7.60
3(a)(i) 45 (years)	B1	
3(a)(ii) 2.06 (metres)	B1	Do not accept 2m 6cm
3(a) (iii) three million (and) one hundred (and) forty-two thousand (dollars)	B1	Ignore spelling and the units given
3(b) Sphere	B1	

3(c) 15 (metres)	B3	Answer space takes precedence Answers and/or workings may be seen on the diagram For B3, allow answers in the inclusive range 14.4 (metres) to 15.6 (metres) Award B2 for any one of the following: • Scale factor of 2 • Scale factor of ½ • (×) 2 • (×) 200 • (28 ÷ 14 =) 2 • 28 ÷ 2 = 14 (embedded scale factor of 2) • 14 × 2 = 28 (embedded scale factor of 2) • Implied scale factor of 2 e.g. double 'their 7.5' • 1(cm) is 2(m) or equivalent Do not award B2 if 28 × 2 = 56 alone is seen as this does not indicate a scale factor of 2 Award B1 for any one of the following: • One correct measurement seen or implied. • 7.5 (cm) ± 2 mm • 14 (cm) ± 2 mm • Allow 7.5 m • Allow 14 m
3(d)(i) No and a valid reason e.g. 'No, because the angle is more than 90(˚)' 'No, as the angle is bigger than a right angle' No, acute is less than 90 (˚)' 'No, angle is obtuse' 'No, it's obtuse'	E1	Reasons may be indicated on the diagram. Allow 'No, angle is too big to be an acute angle' 'No, angle is larger than an acute angle' No, angle is greater than an acute angle' 'No, an acute angle is smaller', Do not allow 'No, because an acute angle is 70(˚)' 'No, because it's not an acute angle' 'No because an acute angle is not 157'
3(d)(ii) Correct line drawn from Bryn	B2	Use of overlay Award B1 for either • 157° (± 2˚) drawn at Bryn • 7cm (± 2mm) line drawn from Bryn No marks awarded for a line drawn at Alex

4(a)(i) 045(°) (± 3°)	B1	Do not accept 45(°) (± 3°)
4(a)(ii) 243(°) (± 3°)	B1	
4(a)(iii) An unambiguous answer of 8 (km) or an answer in the range 7.68 (km) to 8.32 (km)	B2	This must be an unambiguous answer, do not award if another distance is also given as a final answer, e.g. • 5 miles = 8 km final answer 7 km • 5 miles = 8 km with final answer 8 ÷ 5 = 1.6 B1 for any one of the following: • (5 cm =) 5 miles = 8 km with a further incorrect calculation or distance • 5 (± 0.2) × 1.6 • 5 (± 0.2) × 8 ÷ 5 • 5 (± 0.2) × 1.609 • 5 (± 0.2) × 1.61 B0 for 5 (± 0.2) × 1.5
4(b)(i) Answer in the inclusive range 14.45 (lumens) to 14.5 (lumens)	B1	
4(b)(ii) Answer in the inclusive range 1.07 (candelas) to 1.075 (candelas)	B1	
4(c) Any value in the range 19 to 20	B2	Accept from reverse working Answer space takes precedence, if blank allow an unambiguous embedded answer in the range B1 for sight of unambiguous appropriate working, e.g. any of the following examples or similar: • 1 000 000 ÷ 52 000 • 1 000 000 ÷ 50 000 • $\frac{1\,000\,000}{52\,000}$ • $\frac{1\,000\,000}{50\,000}$ • $\frac{1000}{50}$ • $\frac{1000}{52}$
5(a) 40 × 1(.)75 ÷ 5 or 1(.)75 × 8 or equivalent	M2	May be shown in stages M1 for any of the following: • 40 ÷ 5 • sight of an appropriate 8 • 40 × 1(.)75 (= 70 or 7000) • 1(.)75 ÷ 5 (= 0.35 or 35)
(£)14 or 1400(p)	A1	If units are given they must be correct

5(b) Sight of $280 \div 4$ or $3 \times 280 \div 4$ Oil 210 (ml) Vinegar 70 (ml)	M1 A1 A1	 Answer space takes precedence Answer space takes precedence If M1 awarded but 210 (ml) and 70 (ml) are reversed, allow A0 A1 If M1 awarded with A0, A0 due to incorrect evaluation of $280 \div 4$ then also award SC1 if • 'their 210' + 'their 70' = 280, or • 'their 210' = 3 × 'their 70'
5(c) (Sells for a total of) $40 \times (0.)90$ OR (cost for 1 portion) $2400 \div 40$ or $24 \div 40$ (Sells for a total of $40 \times (0.)90$) (£)36 or 3600(p) OR (cost for 1 portion $24 \div 40$) 60 (p) or (£)0.60 (% profit) $\frac{36 - 24}{24} \times 100$ or $\frac{(0.)90 - (0.)60}{(0.)60} \times 100$ or $\frac{36}{24} \times 100 - 1 \times 100$ or $\frac{(0.)90}{(0.)60} - 1 \times 100$ or equivalent 50 (%)	M1 A1 m1 A1	 If units are given they must be correct Must be consistent place value, i.e. use of £ or p FT correct use of 'their $40 \times (0.)90$' or 'their $24 \div 40$' Accept a correct answer provided not from incorrect working, may be from reverse calculations or unsupported
6(a) Method, e.g. trial to cost with twice as many pots as saucers • 2×40 (+) 1×25 (= 105p) • 6×40 (+) 3×25 Calculation that would lead to a total cost of £10.50 or 10 saucers, e.g. • $20 \times 40 + 10 \times 25$ • $10 \times (2 \times 40 + 1 \times 25)$ • $10 \times$ (£)1.05 • 10×105(p) • $10(.)50 \div 1(.)05$ (Cost of 10 saucers 10×25p) (£)2.5(0)	M1 A1 B1	Accept sight of 105(p) or (£)1.05 as suitable method Allow for a suitable pair of double the number of plant pots to saucers, e.g. 18 pots and 9 saucers with 18×40 and 9×25 May be implied from sight of 10 saucers or 10 lots of 25p or (£)2.50 Must be as a final answer Answer space takes precedence Allow M1 A1 B1 for an unambiguous correct response

6(b) Method to compare the 3 packets, e.g. • For 1g of each considered: (Bee £2.49) Cornfield 15 ÷ 5 AND Butterfly 7.2(0) ÷ 3 • Complete comparison of Bee Mix (5g comparison with Cornfield) 5 × 2.49 AND then (3g comparison with Butterfly) 3 × 2.49 • Complete comparison of Butterfly Mix (1g comparison with Bee) Butterfly 7.2(0) ÷ 3 AND then comparison of Butterfly with Cornfield	M2	May be in stages with different pairs of mixes compared, eliminated and a further suitable pair compared M1 for method to compare 2 packets, e.g. • For 1g of each: (Bee £2.49) Cornfield 15 ÷ 5 or Butterfly 7.2(0) ÷ 3 • For 3g of each: (Butterfly £7.20) Bee 2.49 × 3 or Cornfield 3 × 15 ÷ 5 • For 5g of each: (Cornfield £15) Bee 2.49 × 5 or Butterfly 5 × 7.20 ÷ 3 • For 15g of each: Bee 15 × 2.49 and Cornfield 3 × 15 or Bee 15 × 2.49 and Butterfly 5 × 7.20 or Cornfield 3 × 15 and Butterfly 5 × 7.20
Accurate calculation(s) for comparison of **2** packets	A1	FT from M1 or M2 If units are given they must be correct, penalise once only
Accurate calculations for comparison of the **3** packets AND Conclusion, 'Butterfly Flower Mix', indicated or unambiguously implied	A1	

6(c) (Area sown) ½ × (3.5 + 4.5) × 1.6 or 3.5 × 1.6 + ½ × (4.5 – 3.5) × 1.6 (= 5.6 + 0.8)	M1	Allow intention of brackets, may be implied in further working
6.4 (m^2)	A1	CAO FT only if an attempt to work with the trapezium to find 'their derived area', which may dimensionally incorrect, e.g. a length or a volume, otherwise no further FT. The calculation for 'their derived area' must include at least 2 of 3.5, 4.5 and 1.6
(Number of packets of seeds) 3	B1	(6.4 ÷ 2.5 = 2.56 so 3 packs) May be implied in further working FT 'their derived 6.4' ÷ 2.5 (rounded up to a whole number) provided both of the following conditions are met: • 'their derived 6.4' > 2.5 • 'their derived 6.4' ÷ 2.5 is not a whole number
(Cost of Cosmos seeds) 3 × 8(.)20	M1	Depends on either B1 previously awarded or on 'their derived 6.4' ÷ 2.5 rounded down to a whole number of packets > 1 Accept an equivalent full method
(£)24.60 or 2460(p)	A1	If units are given they must be correct If final B0 M0 A0, award SC1 for one of the following answers or equivalent in pence: • (8.20 ÷ 2.5 × 6.4 = 3.28 × 6.4 =) (£)20.99(2) or (£)21 • (8.20 ÷ 2.5 × 7 = 3.28 × 7 =) (£)22.96 • 'their derived area' × 3(.)28 correctly evaluated • 'their derived area rounded up to an integer' × 3(.)28 correctly evaluated
7(a) 20 ≤ time in minutes < 30	B1	Allow e.g. '20 to 30' '20 – 30' '20 < time < 30' '20 ≤ time ≤ 30' '20 < time ≤ 30' '12 pupils for 20 to 30 minutes' (implies the group) '12 pupils in 20 – 30 minutes' (implies the group) '12 (pupils), 20 – 30 minutes' (2 answers side by side, mark the right-hand attempt) Sight of 20 and 30 with incorrect inequality signs, e.g. '20 ≤ 30' Do not accept, e.g. '12' '25' '20 – 30 minutes, 12 (pupils)', (as a choice of answers, mark the right-hand attempt)
7(b) 15	B1	

7(c) Unambiguously indicates 'Can't tell' with a reason, e.g. 'doesn't give the raw data (for the group 0 to 10 minutes)', 'only know (frequency) for the group 0 to (less than) 10 minutes' '5 pupils spent less than 10 minutes, but the diagram doesn't show if any of these spent no time' 'it doesn't tell you exactly how many minutes each pupil spent individually'	E1	Allow 'Can't tell' with a reason such as, e.g. 'grouped data', 'data is grouped' 'it is given in a range on the diagram' 'it doesn't show specifically' 'graph is not specific' 'it doesn't given an exact time' 'the graph gives 0 to 10 minutes making it impossible to get an accurate reading' 'could be 1 minute each or 5 minutes each we don't know' (examples all within the group $0 \leq \text{time} < 10$) 'doesn't give the data for 0 minutes' 'because the group is from greater than or equal to 0 minutes to less than 10 minutes' 'graph does not say they did or not' 'we can't see this on the diagram' 'does not give enough data' Do not accept reasons that imply 0 minutes is not included in the diagram Do not accept, 'Can't tell' e.g. 'the groups are an estimate' 'could be 5 minutes each or 20 minutes each we don't know' (examples not all within the required group) 'because the group is from greater than 0 minutes to less than 10 minutes' 'doesn't tell us how many people there are'
7(d) Unambiguously indicates 'No' with a reason, e.g. 'it is the same number (both 5 pupils) but different number of Year 9 asked to Year 10', 'the totals are different', 'Year 9 percentage is lower (than Year 10)' '5/34 is not the same (percentage) as 5/33' 'there are more pupils in Year 9 (than in Year 10)' 'there are fewer pupils in Year 10 (than Year 9)'	E1	Check diagram for totals If 'totals are different' is stated or clearly implied, ignore any incorrect totals or fractions given, provided the numerator of 5 pupils is correct Alllow 'No' with a reason, e.g. 'the difference is 1' OR Allow 'No' with sight of total 34 for Year 9 and 33 for Year 10 Do not accept, e.g. 'because the results are different' 'the difference is 2' 'there are more pupils in Year 10 (than in Year 9)', unless the correct totals are seen 'there are fewer Year 9 (than Year 10)', unless the correct totals are seen