GCSE MARKING SCHEME

SUMMER 2024

GCSE
MATHEMATICS – NUMERACY
UNIT 2 – FOUNDATION TIER
3310U20-1

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

SUMMER 2024 MARKING SCHEME

Unit 2: Foundation Tier	Mark	Comments
1.(a) Suitable explanation e.g. 'Morgan has added £99 (and not 99p)' 'the units are different' 'Morgan has added pence and pounds' 'Morgan typed in 99 not 0.99' 'Didn't put 0. in front of 99'	E1	Allow: 'Morgan has forgotten the decimal point for the 99 pence' 'Didn't put the dot in front of 99' 'Adds them all up instead of putting 0 in front of 99p' 'he didn't put decimal place he added as whole numbers' *'numbers added together with decimal point after the number (99)'* 'Morgan added £98.01 onto the actual cost' '2.70 + 0.99 + 1.30 + 1.95 + 7.49 (=14.43)' 'he forgot that it was 99p' 'didn't use 99p for bananas' 'Morgan has forgotten to put one of the decimal places in' Do not accept: 'he added them up incorrectly' 'it should be (£)14.43' 'he put 99 when it should be 9.9' '2.70 + 99p + 1.30 + 1.95 + 7.49 = £14.43' 'he has not made the 99p £1' 'he didn't use his calculator' 'he didn't put the dot in' 'he put the decimal in which made it a higher number it = £14.43' (not clear enough)
1. (b) 20 – (2.70 + 0.99 + 1.30 + 1.95 + 7.49) or equivalent (£)5.57	M1 A1	(£)20 – (£)14.43 Allow 14.43 - 20 Accept 2.70 + 99 + 1.30 + 1.95 + 7.49 seen if it leads to the correct answer. FT 'their 14.43' if clearly stated in (a) and is <20 for M1 only. CAO If no marks awarded, award SC1 for sight of (£)14.43. May be seen on shopping list or in part (a).
2. (a)(i) 24 ÷ 6 4 (pupils)	M1 A1	Allow M1 for any one of the following seen • 4, 8, 12, 16, 20, 24 (all seen) • 4, 4, 4, 4, 4, 4 seen on the pictogram for 8N • 6, 12, 18, 24 (all seen) • 4 × 6 = 24 Answer may be in the key or on the working lines for (a)(i). The answer box for the key takes precedence. Do not accept embedded answers. The answer must be clearly stated.
2. (a)(ii) 15 (pupils)	B1	F.T 3·75 × 'their 4' correctly evaluated. Allow decimal, rounded or truncated answers on FT.

<table>
<tr><th>Unit 2: Foundation Tier</th><th>Mark</th><th>Comments</th></tr>
<tr><td>2. (b) 4 buses</td><td>B3</td><td>Award B3 for 4 buses, provided it doesn't come from incorrect working or values but allow 110 ÷ 37 = 2.97 or 3 buses (or equivalent) and then 4 buses as their final answer.

If B3 not awarded, award B2 for any one of the following:
• (110 + 11) ÷ 37
• 121 ÷ 37
• 3·2(7027…) or 3.3
• 3 buses with 10 (people left) or 3 r 10
• 121 – 3 x 37 and have 10 (left) with answer of 3
• Sight of 4 x 37 or 37 + 37 + 37 + 37
• Sight of 148
• 'their 110 + 11' ÷ 37 answer rounded up

If B2 not awarded, award B1 for any one of the following:
• Sight of 3 x 37 or 37 + 37 + 37
• Attempt to work with multiples of 37 up to at least 3 lots of 37 (e.g. 37, 74, 110 or 37, 73, 110)
• Sight of 111
• 110 ÷ 37
• Answer of 3
• 'their 110 + 11' ÷ 37 answer rounded down</td></tr>
<tr><td>2. (c) (i)
<table><tr><th>Activity</th><th>Number of pupils</th></tr><tr><td>Climbing</td><td>6</td></tr><tr><td>High ropes</td><td>4</td></tr><tr><td>Bowling</td><td>3</td></tr><tr><td>Sailing</td><td>11</td></tr></table></td><td>B1

B1

B1</td><td>Answers in the table take precedence
Allow tallies for the correct number of pupils

Award B1 for climbing = 6 AND high ropes = 4

Award B1 for bowling = 3,
F.T 'their climbing' ÷ 2

Award B1 for sailing = 11
FT 24 – 4 – 'their climbing' – 'their bowling'</td></tr>
<tr><td>2. (c) (ii) unlikely</td><td>B1</td><td></td></tr>
</table>

Unit 2: Foundation Tier	Mark	Comments
3. OR OR		Accept unambiguous indication of programme names E.g. 40 minute news for the football show. Allow correct use of 24-hour time.
5:30 p.m. — *The Football Show* 6:10 p.m. — *Politics Cymru*	B2	Award B1 for any one of the following: • *The Football Show* **AND** *Politics Cymru* on first two lines on RHS in either order • **Strict** FT for the 3rd time in the table from 'their given first programme on the 2nd line in the table' i.e. Football show and then 6:10 or Politics Cymru and then 5:50 or Cartoon Time and then 5:55 or Baking Fun and then 6:20 • Consistent working backwards from 6:30pm for the **whole 3rd line of the table** i.e. 5:50 and then Football show or 6:10 and then Politics Cymru or 6:05 and then Cartoon Time or 5:40 and then Baking Fun
5:30 p.m. — *Politics Cymru* 5:50 p.m. — *The Football Show*		
6:45 p.m. — *Cartoon Time* 7:10 p.m. — *Baking Fun*	B2	Award B1 for any one of the following: • 6:45 (pm) **AND** *Cartoon Time* • 6:45 (pm) **AND** *Baking Fun* • **Strict** FT for 'their given third programme on the 5th line' i.e. 6:45 (pm) **AND** Football show **AND** then 7:25 or 6:45 (pm) **AND** Politics Cymru **AND** then 7:05 • Consistent working backwards from 8pm for the **whole 6th line of the table** i.e. 7:20 and then Football show or 7:40 and then Politics Cymru or 7:35 and then Cartoon Time or 7:10 and then Baking Fun • if a programme stated (on 5th line of the table) has a consistent start and end time for their programme. E.g. on 5th line 7pm **and** Football show **and** then 7:40pm on the next line **or** 6:40 **and** Cartoon Time **and** 7:05 on the next line If repeated use of a programme gains marks in both sections penalise -1 e.g. Cartoon Time and then 5:55 in first section and then 6:45 p.m. — *Cartoon Time* 7:10 p.m. — *Baking Fun* Award B1 B2 -1 or B0 B2 If **no marks awarded for the whole question**, award SC1 for: • BOTH *Cartoon Time* AND *Baking Fun* given in the 5th and 6th lines in the programme column (in either order)
6:45 p.m. — *Baking Fun* 7:35 p.m. — *Cartoon Time*		

Unit 2: Foundation Tier	Mark	Comments
4(a) (Deal A =) (£)19.99 + (£)28.99 × 24 **AND** (Deal B =) (£)100(.00) + (£)24.36 × 24	M3	Award M2 for any one of the following • (Deal A =) (£)19.99 + 28.99 × 24 • (Deal B =) (£)100(.00) + 24.36 × 24 Award M1 for any one of the following: • Sight of (£)28.99 × 24 or (£)695.76 • Sight of (£)24.36 × 24 or (£)584.64 • Sight of (£)1175.52 (BIDMAS error Deal A) • Sight of (£)2984.64 (BIDMAS error Deal B)
(Deal A =) (£)715.75 **AND** (Deal B =) (£)684.64	A1	CAO If M0A0 awarded, award SC1 for any one of the following: (19.99 + 29 × 24=) (£)715.99 (20 + 28.99 × 24=) (£)715.76 (20 + 29 × 24=) (£)716 (100 + 24.4(0)× 24=) (£)685.6(0) (100 + 24 × 24=) (£)676
Deal B (is cheaper by) **AND** (£)31.11	B1	FT the difference between 'their **derived** Deal A' and 'their **derived** Deal B' **with** 'their cheaper' deal stated provided at least one mark previously awarded. **Note:** For use of 12 months instead of 24 months award: SC1 for sight of (19.99 + 28.99 x 12 =) (£)367.87 SC1 for sight of (100 + 24.36 x 12 =) (£)392.32. B1 for the correct conclusion with the correct difference on follow-through (Deal A AND (£)24.45) provided at least one mark awarded.
4(a) Alternative method for difference *(Monthly payments difference =)* *[(£)28.99-(£)24.36] × 24 or equivalent*	*M1*	*(695.76 – 584.64)*
(Deal B cheaper by =) (£)111.12	*A1*	
(One off payments difference=) (£)100(.00) - (£)19.99 *(Deal A is cheaper by =) (£)80.01*	*M1* *A1*	*If M0A0 M0A0 awarded, award SC1 for any one of the following:* *(£) 31.35 from (29 – 24.36) × 24 - (100 – 19.99)* *(£) 31.36 from (29 – 24.36) × 24 - (100 – 20)* *(£) 30.15 from (28.99 – 24.40) × 24 - (100 – 19.99)* *(£) 30.16 from (28.99 – 24.40) × 24 - (100 – 20)* *(£) 39.75 from (28.99 – 24) × 24 - (100 – 19.99)* *(£) 39.76 from (28.99 – 24) × 24 - (100 – 20)* *(£) 39.99 from (29 – 24) × 24 - (100 – 19.99)* *(£) 40 from (29 – 24) × 24 - (100 – 20)* *(£) 30.39 from (29 – 24.40) × 24 - (100 – 19.99)* *(£) 30.4(0) from (29 – 24.40) × 24 - (100 – 20)*
*Deal B (is cheaper by) **AND** (£)31.11*	*B1*	*FT the difference between 'their **derived** monthly payments difference' **and** 'their **derived** one-off payment difference' with correct conclusion provided at least one mark previously awarded.* ***Note:** For use of 12 months instead of 24, award:* *M1 for 100 – 19.99* *A1 for (£)80.01* *SC1 for sight of (28.99 x 12 - 24.36 x 12) (£)55.56 and the correct conclusion with the correct difference on follow-through (Deal A and 24.45)*

Unit 2: Foundation Tier	Mark	Comments
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.
4(b) A line of 12·8cm (±2mm) (or a point) in a correct position drawn within the angle tolerance (±2°)	B2	If 2 'vertical lines' given, mark the line that gains the most marks from the first B2 Award B1 for any one of the following: • a line drawn (or point indicated) of length 12·8cm (±2mm) in a correct position but out of the angle tolerance (±2°) • a line drawn from the given line (or point indicated) of length 12·8cm (±2mm) within the angle tolerance (±2°) but not in a correct position
Screen size = 14·3 cm (±2mm) OVERLAY	B1	Strict FT from their diagram. If B2 previously awarded, then award the final B1 provided: • 'their diagonal' is measured correctly (± 2 mm) (may need to check both diagonals) AND • this measurement lies between 13.9 and 14.7 cm (i.e. 14.3 cm ± 4 mm). If B1 or B0 previously awarded, award the final B1 for 'their diagonal' measured correctly (±2mm) (may need to check both diagonals) Answer must be given in cm **and** to 1 decimal place for B1 Award SC1 for an answer of 14.3 (cm) from use of Pythagoras' Theorem.

Unit 2: Foundation Tier	Mark	Comments
5. $6 \times 7 + 5 \times 180$ or equivalent (42 + 900)	M2	May be seen in stages but M2 only awarded if intention of adding 6×7 and 5×180 is seen. Award M1 for any one of the following. May be embedded within working. • sight of 6×7 • sight of 5×180
942 (cm)	A2	Answer line takes precedence. Award A1 for any one of the following. May be embedded within working. • $(6 \times 7 =)$ 42 • $(5 \times 180 =)$ 900 If no marks awarded, award SC2 for an answer of 1129 (cm) from using 6 panels and 7 posts. If no marks awarded, award SC1 for any one of the following: • An answer of 381 (cm) (from use of 3 posts and 2 panels) • Sight of 5 panels with 6 posts drawn • $7 \times 7 + 6 \times 180$ (49 + 1080)
6. (Amount needed to save after next week) (£)510 – 165 or (£) 510 – (95 + 70) or (£) 510 – 95 – 70 (=£345)	M2	May be seen in stages Allow missing brackets provided not contradicted in further working M1 for sight of any one of • 510 – 95 (= £415) • 510 – 70 (= £440)
(Amount to save per week £) ÷ 12	m1	Depends on at least M1 previously awarded
(£) 28.75	A1	CAO. ISW FT provided at least 2 marks previously awarded • FT from M1 m1 for A1: ○ 415 ÷ 12 = (£)34.58(333…) or (£)34.59 ○ 440 ÷ 12 = (£)36.66(666..) or (£)36.67 • FT from M2 m0 for A1: ○ 345 ÷ 13 = (£)26.53(8….) or (£)26.54 ○ 345 ÷ 11 = (£)31.36(36…) or (£)31.37 If no marks, award any one of the following:

SC2	(£)28.75 < answer ≤ (£)29, from supporting working, e.g. 12 × 29 + 95 + 70 = (£)513
SC1	(£)28.75 < unsupported answer ≤ (£)29
SC1	answer (£)13.75 from 165 ÷ 12
SC1	answer (£)42.50 from 510 ÷ 12

Unit 2: Foundation Tier	Mark	Comments
7(a)(i) 133 × 8 1064 (miles)	M1 A1	Mark final answer. Allow 1064 km
7(a)(ii) 8 × 60 480 (mph)	M1 A1	FT from (a)(i) 60 × 'their 1064' ÷ 133 or 'their 1064' ÷ $\frac{133}{60}$ or 'their 1064' ÷ 2.2(166…) Allow A1 for 479 (mph) < answer ≤ 483.64 (mph) from 1064 ÷ 2.2(1666…) rounded or truncated to at least 1 d.p. or similar for a correctly evaluated 'their 1064' ÷ 2.2(166..)
7(b) 55 × 40 × 23 50 600 (cm^3) or 50 600 ml or 50.6 litres Unambiguously implies 'Yes' with one of the following: • (48 litres =) 48 000 cm^3 • 50.6 (litres) • a suitable appropriate statement, e.g. '50 litres is more than 48 litres'	M1 A1 E1	FT from M1 A0 provided appropriate conclusion and conversion is shown Allow 'Yes' with clear **use of** 1 litre = 1000 cm^3, e.g. • (48 litres is less than) 50(.6 litres) • 50(.6 litres is greater than 48 litres) • 50 000 (cm^3) is greater than 48 000 (cm^3)
7(c) a = 43(°) b = 137(°) c = 112(°) d = 112(°)	B1 B1 B1 B1	FT b = 180 - 'their a', provided 'their b' > 90 and 'their b' ≠ 112 FT 360 – (68 + 'their a' + 'their b'), provided: • 112 < 'their a' + 'their b' < 202 • c ≠ 137 • their c' ≠ 'their b' FT d = 'their c', provided 90 < 'their c' < 180

8. *Select the method to give the best mark:*

	Method **using £**	**OR**	Method **using $**
Camera Fox	(62.95 + 3.90 =) (£)66.85 B1		(62.95 + 3.90) × 1.25 or (£)66.85 × 1.25 or 62.95 × 1.25 + 3.90 × 1.25 M1 ($)83.56(25) or (78.69 + 4.88 = $)83.57 *Allow an answer in the range* *($) 83.55 to ($)83.57* A1
US Camera Geek	81.20 ÷ 1.25 M1 (£)64.96 A1		($81.20 given)
Sure Camera	75 – 75 × 0.14 or 75 – 10.50 or 75 × (1 – 0.14) M1 (£)64.50 A1		(75 – 75 × 0.14) × 1.25 or 64.50 × 1.25 or 75 × (1 – 0.14) × 1.25 M2 ($)80.62(5) or ($)80.63 A1
Conclusion 'Sure Camera'	Costs 66.85, 64.96 and 64.50 WITH incorrect conclusion or no conclusion penalise -1		Costs in dollars correct WITH incorrect conclusion or no conclusion penalise -1

OR method **using £ and $**

	£		$
Camera Fox	(62.95 + 3.90 =) (£)66.85 B1		
US Camera Geek			($81.20 given)
Sure Camera	*75 – 75 × 0.14 M1* *(£)64.50 A1*	***or***	(75 – 75 × 0.14) × 1.25 M2 ($)80.62(5) or ($)80.63 A1
Conclusion	Costs (£)66.85 with (£)64.50 and ($)80.62(5) (or ($)80.63) AND conclusion 'Sure Camera' A1		

Unit 2: Foundation Tier	Mark	Comments
9.		*Penalise incorrect units -1 only on first occurrence, by withholding A or B mark, not M marks*
(Number of kWh =) 138 × 39·5 × 1.02264 ÷ 3.6 (Cost of gas = Number of kWh) × 0(.)12	M1 m1	(= 1548.4474 kWh)
(£)185.76 to (£)185.82 or 18576(p) to 18582(p)	A1	(1548.4474 × 0.12 = £185.813688)
(Standing charge 30 × (0.)32 =) (£)9.6(0) or 960(p)	B1	CAO
(Total of gas and standing charge) *(£)195.36 to (£)195.42 or 19536(p) to 19542(p)	B1	FT 'their derived cost of gas' + 'their 30 × (0.)32' correctly evaluated, provided 'their derived cost of gas' ≠ 'their 138 × 39·5 × 1.02264 ÷ 3.6' or 1548.4474 kWh May be implied in later working
(Total including VAT =) 1.05 × 195(.)36 to 1.05 × 195(.)42	M1	FT 'their derived total cost of gas **+** 'their standing charge'
*(£)205.12 to (£)205.19(1) or 20512(p) to 20519(.1p)	A1	ISW further rounding, e.g. (£)205, (£)205.20 If final B0 B0 M0 A0, award SC1 for correctly evaluated final answer of 1.05 × 'derived cost of gas' having omitted the standing charge, provided 'their derived cost of gas' ≠ 'their 138 × 39·5 × 1.02264 ÷ 3.6' or 1548.4474 kWh **Allow answers in these ranges that may include unseen rounding or truncation from a previously written value*
9. Alternative method: Gas per day		*Penalise incorrect units -1 only on first occurrence, by withholding A or B mark, not M marks*
(Number of kWh =) 138 × 39·5 × 1.02264 ÷ 3.6 *(Number of kWh per day) ÷ 30* *(Cost of gas per day) × 0(.)12*	*M1* *m1* *m1*	*(= 1548.4474 kWh)* *(= 51.6149133…kWh)*
(Cost of gas per day =) (£)6.19(…) or 619(...p)	*A1*	*CAO*
(Total of gas and standing charge) *6.51(…) or 651.(…p)*	*B1*	*FT 'their derived cost of gas per day' + (0.)32 correctly evaluated* *May be implied in later working*
(Total including VAT =) *1.05 × 6.51(…) × 30*	*M1*	*(= 6.83(94…) × 30 or 6.84 × 30)* *FT 'their derived cost of gas per day **+** (0.)32, provided 'their derived cost of gas'* *≠ 'their 138 × 39·5 × 1.02264 ÷ 3.6' or 1548.4474 kWh*
**(£)205.12 to (£)205.19(1)* *or 20512(p) to 20519(.1p)*	*A1*	*ISW further rounding, e.g. (£)205, (£)205.20* *If final B0 M0 A0, award SC1 for correctly evaluated final answer of 1.05 × 'derived cost of gas per day' × 30 having omitted the standing charge,* provided 'their cost of gas' ≠ 'their 138 × 39·5 × 1.02264 ÷ 3.6' or 1548.4474 kWh **Allow answers in these ranges that may include unseen rounding or truncation from a previously written value*

Unit 2: Foundation Tier	Mark	Comments
10(a) $\frac{247}{400}$	B2	Mark final answer B1 for sight of $\frac{988}{1600}$ or $\frac{494}{800}$ If no marks, award SC1 for a final answer of $\frac{153}{400}$
10(b) 18000 × 8 ÷ 5 or 18000 × 1.6 or equivalent 28 800 (km)	M1 A1	Accept use of × 1.6 to × 1.613 or ÷ 0.62 to ÷ 0.625 Also accept answers in the range 28960 (km) to 28980 (km)
10(c) (Cost of tarmac) 1600 × 23 × 0.035 × 250 (£) 322 000	M2 A1	M1 for a product including any 3 of these 4 values Allow M1 for • (1600 × 0.035 × 250 =) 14 000 • (1600 × 23 × 250 =) 9 200 000 • (1600 × 23 × 0.035 =) 1288 • (23 × 0.035 × 250 =) 201.25 CAO If no marks, award SC1 for an unsupported answer with leading digits 322 and all other digits zero e.g. 32 200 or 3 220 000 If no marks, award either • SC2 for (988 × 23 × 0.035 × 250 =) (£)198 835 or • SC1 for (988 × 23 × 0.035 =) 795(.34 m^3)