



GCSE MARKING SCHEME

SUMMER 2025

GEOLOGY - COMPONENT 2
C480U20-1

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.

GCSE GEOLOGY
COMPONENT 2 - GEOLOGICAL PRINCIPLES
SUMMER 2025 MARK SCHEME

Instructions for examiners of GCSE Geology when applying the mark scheme

1 Positive marking

It should be remembered that candidates are writing under examination conditions and credit should be given for what the candidate writes, rather than adopting the approach of penalising him/her for any omissions. It should be possible for a very good response to achieve full marks and a very poor one to achieve zero marks. Worthwhile answers that meet the requirements of the question, but do not appear on the mark scheme are to be given credit.

2 Tick marking

Low tariff questions should be marked using a points-based system. Each credit worthy response should be ticked in red pen. The number of ticks must equal the mark awarded for the sub-question. The mark scheme should be applied precisely using the marking details box as a guide to the responses that are acceptable. Do not use crosses to indicate answers that are incorrect.

3 Banded mark schemes

Banded mark schemes are divided so that each band has a relevant descriptor. The descriptor for the band provides a description of the performance level for that band. Each band contains marks. Examiners should first read and annotate a learner's answer to pick out the evidence that is being assessed in that question. **Do not use ticks** on the candidate's response. Once the annotation is complete, the mark scheme can be applied. This is done as a two-stage process.

Stage 1 – Deciding on the band

When deciding on a band, the answer should be viewed holistically. Beginning at the lowest band, examiners should look at the learner's answer and check whether it matches the descriptor for that band. Examiners should look at the descriptor for that band and see if it matches the qualities shown in the learner's answer. If the descriptor at the lowest band is satisfied, examiners should move up to the next band and repeat this process for each band until the descriptor matches the answer.

If an answer covers different aspects of different bands within the mark scheme, a 'best fit' approach should be adopted to decide on the band and then the learner's response should be used to decide on the mark within the band. For instance if a response is mainly in band 2 but with a limited amount of band 3 content, the answer would be placed in band 2, but the mark awarded would be close to the top of band 2 as a result of the band 3 content.

Examiners should not seek to mark candidates down as a result of small omissions in minor areas of an answer.

Stage 2 – Deciding on the mark

Once the band has been decided, examiners can then assign a mark. During standardising (marking conference), detailed advice from the Principal Examiner on the qualities of each mark band will be given. Examiners will then receive examples of answers in each mark band that have been awarded a mark by the Principal Examiner. Examiners should mark the examples and compare their marks with those of the Principal Examiner. When marking, examiners can use these examples to decide whether a learner's response is of a superior, inferior or comparable standard to the example. Examiners are reminded of the need to revisit the answer as they apply the mark scheme in order to confirm that the band and the mark allocated is appropriate to the response provided.

Indicative content is also provided for banded mark schemes. Indicative content is not exhaustive, and any other valid points must be credited. In order to reach the highest bands of the mark scheme a learner need not cover all of the points mentioned in the indicative content but must meet the requirements of the highest mark band. Where a response is not creditworthy, that is contains nothing of any significance to the mark scheme, or where no response has been provided, no marks should be awarded.

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
1	(a)	(i)	Rounded / subrounded grains (1) Moderately well / well sorted (1)	2			2		2
		(ii)	Sandstone / orthoquartzite / desert sandstone (1)	1			1		1
		(iii)	Shale (1) accept mudstone / siltstone	1			1		1
	(b)	(i)	Correct plot (1)	1			1	1	
		(ii)	Correct line of best fit (1)	1			1	1	
		(iii)	$0.05 \times 10^{-9} \text{ m}^2$	1			1	1	
	(c)	(i)	Any two x (1) from: - as mean grain size increases the permeability increases - there is a positive relationship / correlation between grain size and permeability - credit reference to values		2		2	2	
		(ii)	Any one x (1) from: - grain shape - grain sorting - degree of cementation - degree of compaction Also, credit reference to fracturing, jointing or dissolution	1			1		

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
	(d)	(i)	Any two x (1) from: - water table reaches the surface - contact between permeable limestone and impermeable shale (Rock Unit B) - shale (Rock Unit B) forces water to the surface			2	2		
		(ii)	Well 1 is more suitable than Well 2 (1) Well 1 Sandstone (Rock Unit A) is permeable and porous / it is an aquifer / can store water (1) Well 1 penetrates sandstone (Rock Unit A) (1) Rock Unit A dips towards the well (1) Well 2 Shale (Rock Unit B) is impermeable (1) Well 2 does not penetrate deep enough to access the sandstone (Rock Unit A) (1) To a maximum of 4 marks			4	4		
			Question 1 total	8	2	6	16	5	4

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
2	(a)	(i)	25° (accept range 20-30)	1			1	1	1
		(ii)	Correct thickness of Igneous Body N using scale (1) Correct dip of Igneous Body N (1) Bedding in Rock Unit A / joints in Igneous Body N / joints in Rock Unit A (1)		3		3	1	3
	(b)	(i)	Cleavage (1) Look for regular planes of cleavage (1) Augite has 2, olivine has none (1) or Hardness (1) Do not accept scratch test Scratch with a steel pin or equivalent (1) Augite scratches, olivine does not (1)	3			3		3
		(ii)	Intrusive because it has medium crystals (2.5mm) / reference to baked margin / contact metamorphism (1) One rate of cooling due to crystals of similar size / it is equicrystalline (1)		2		2		
	(c)	(i)	Sill (1) Any two x (1) from: • concordant / parallel to beds • linear • small scale		3		3		

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
		(ii)	Yes, it formed through contact metamorphism next to an igneous intrusion / it has a baked margin (1) Not marble as Rock Unit A does not react with acid / marble does not contain quartz / it is metaquartzite / it is not limestone (1)			2	2		
	(d)		Any two x (1) from: • wear a hard hat • don't climb exposure • use safety goggles when hammering • wear safety footwear • reference to other sensible safety measures	2			2		
			Question 2 total	6	8	2	16	2	7

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
3	(a)	(i)	Any two x (1) from: - medium grained / 1-0.125mm 60% / modal group of grains 0.5-0.25mm - well / moderately sorted		2		2	2	
		(ii)	Coarser modal grain size than Sand Z / bars moved to the left (1) More than 3 bars plotted / bars to show more poorly sorted (1) Bars add up to 100% (1)		3		3	3	
	(b)		Majority of grains 0.5-0.25 mm (1) Range between 1-0.125 mm (1) Rounded grains (1)		3		3	1	3
	(c)		Sand Z because: Any two x (1) from: Smaller grains Rounded grains Better sorting Any two x (1) from: Due to attrition or abrasion Role of current in sorting To a maximum of three marks		3		3		

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
	(d)	(i)	Ripple marks (1) Any two x (1) from: • current / wave / wind • unidirectional (accept bidirectional) • shallow • migration / movement of grains	3			3		1
		(ii)	Uniformitarianism (1)	1			1		
	(e)		Any three x (1) from: • submerged forest • tree formed on land / environment suitable for trees / above sea level • tree now on beach • sea levels rise • sea level lower in the past	3			3		
			Question 3 total	7	11	0	18	6	4

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
4	(a)	(i)	Any bed dipping at 40° from the surface towards S (credit 35°-45°) (1) Dyke plotted vertical at the correct location (1) F1 dipping at 50° (credit 45°-55°) (1) F1 dipping towards R at correct location (1) Dyke cross-cuts F1 (1) Rock Unit D correct thickness east of F1(1)		6		6	6	6
		(ii)	North-south (1) Normal (1) Tension (1)		3		3		
	(b)	(i)	4cm or 100 x 2 (1) 200m (1)		2		2	2	
		(ii)	Any two from x (1) from: • fault movement of synform / syncline • core bed / north side has been eroded • north side has been upthrown		2		2		
	(c)		It is not a pluton because Any four x (1) from: • it forms an unconformity • it is sedimentary / conglomerate / not igneous • it is horizontal / rests on top of geology below • it lacks a metamorphic aureole • however, it is discordant • however, it has a large outcrop • however, it has a rounded shape			4	4		
			Question 4 total	0	13	4	17	8	6

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
5	(a)		Mica (1) Foliated / slatey cleavage / fine (1) Slate (1) Regional (1)	4			4		4
	(b)	(i)	Goniatite (1) Simple / basic suture line / smooth saddles and lobes / zig zag suture line (1)		2		2		
		(ii)	Devonian (1)	1			1		
	(c)		Indicative Content Folding and faulting - folding forms at a convergent plate boundary due to compressional stress - F1 fault indicates tension, typically not found at a convergent plate boundary - F3 thrust fault indicates compression but occurred after 255Ma because it cross-cuts the granite. F3 is probably younger than Palaeozoic, but may be very top of Palaeozoic Rock Unit G and Rock Unit H - slate forms as a result of increased heat and pressure at a convergent plate boundary - slate could have been formed pre-Palaeozoic Era - granite forms at a convergent plate boundary as a result of partial melting of the crust - granite intruded during the Permian which supports the Palaeozoic Era			6	6		

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
			Fossil goniatite • 380Ma is in the Devonian which supports the Palaeozoic • extinct by the end of Palaeozoic • age of Goniatite indicates that all rocks in the folded sequence must be Devonian or younger 5-6 marks There is a clear response which draws upon the interpretation of all three of the features (folding and faulting, rocks and fossil). Explanations are developed from Map 1, Figure 5a and 5b. The sources of evidence are interpreted coherently as outlined in the indicative content above. Conclusions/evaluations are made that support the views that have been argued. <i>There is a sustained line of reasoning which is coherent, substantiated and logically structured. The information included in the response is relevant.</i> 3-4 marks The response draws upon the interpretation of at least two of the three features (folding and faulting, rocks, and fossil). The sources of evidence are interpreted quite well as outlined in the indicative content above. There is some attempt at an evaluation of the evidence. A conclusion is drawn that supports the view that has been argued. <i>There is a line of reasoning which is partially coherent, supported by some evidence and with some structure. Mainly relevant information is included but there may be some irrelevant information or minor errors.</i>						

Question			Marking details	Marks Available					
				AO1	AO2	AO3	Total	Maths	Prac
			1-2 marks The response makes use of the interpretation of at least one of the three features (folding and faulting, rocks and fossil) with rather superficial comment. There may be a lack of relevance in places. There is little evidence of evaluation, although there may be a conclusion that supports the view that has been argued. <i>There is a basic line of reasoning which is not coherent, supported by limited evidence and with very little structure. There may be significant errors or the inclusion of much irrelevant information.</i> 0 marks <i>No attempt made or no response worthy of credit.</i>						
			Question 5 total	5	2	6	13	0	4
			Paper totals	26	36	18	80	21	25