

OXFORD

**INTERNATIONAL
AQA EXAMINATIONS**

INTERNATIONAL A-LEVEL GEOGRAPHY GG05

Paper 5 Fieldwork and Geographical Skills

Mark scheme

June 2022

Version: 1.0 Final



2 2 6 X G G 0 5 / M S

Mark schemes are prepared by the lead assessment writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same, correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from oxfordaqaexams.org.uk

Copyright information

OxfordAQA retains the copyright on all its publications. However, registered schools/colleges for OxfordAQA are permitted to copy material from this booklet for their own internal use, with the following important exception: OxfordAQA cannot give permission to schools/colleges to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Copyright © 2022 Oxford International AQA Examinations and its licensors. All rights reserved.

International A-level Geography mark scheme

How to mark

Aims

When you are marking your allocation of scripts your main aims should be to:

- recognise and identify the achievements of students
- place students in the appropriate mark band and in the appropriate part of that mark band (high, low, middle) for **each** Assessment Objective
- record your judgements with brief notes, annotations and comments that are relevant to the mark scheme and make it clear to other examiners how you have arrived at the numerical mark awarded for each Assessment Objective
- ensure comparability of assessment for all students, regardless of question or examiner.

Approach

It is important to be **open-minded** and **positive** when marking scripts.

The specification recognises the variety of experiences and knowledge that students will have. It encourages them to study geography in a way that is relevant to them. The questions have been designed to give them opportunities to discuss what they have found out about geography. It is important to assess the quality of **what the student offers**.

Do not mark scripts based on the answer **you** would have written. The mark schemes have been composed to assess **quality of response** and not to identify expected items of knowledge.

Assessment Objectives

This component requires students to:

AO1	Demonstrate knowledge and understanding of places, environments, concepts, processes, interactions and change, at a variety of scales.
AO2	Apply knowledge and understanding in different contexts to interpret, analyse and evaluate geographical information and issues.
AO3	Use a variety of relevant quantitative, qualitative and fieldwork skills to: <ul style="list-style-type: none"> • investigate geographical questions and issues • interpret, analyse and evaluate data and evidence • construct arguments and draw conclusions.

The marking grids

Do not think of levels equaling grade boundaries.

Depending on the part of the examination, the levels will have different mark ranges assigned to them. This will reflect the different weighting of Assessment Objectives in particular tasks and across the examination as a whole.

Using the grids

Having familiarised yourself with the descriptors and indicative content, read through the answer and annotate it (as instructed below) to identify the qualities that are being looked for and that it shows. You can now check the levels and award a mark.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptors for that level. The descriptors for the level indicate the different qualities that might be seen in the student's answer for that level. If it meets all the descriptors for the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptors and the answer. With practice and familiarity you will find that for better answers you will be able to skip through the lower levels of the mark scheme quickly.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best-fit approach for defining the level and then use the variability of the response to help decide the mark within the level.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark.

It is often best to start in the middle of the level's mark range and then check and adjust. If there is a lot of indicative content fully identifiable in the work you need to give the highest mark in the level. If only some is identifiable or it is only partially fulfilled, then give the lower mark.

The exemplar materials used during standardisation will also help. There will be an answer in the standardising materials that will correspond with each level of the mark scheme. This answer will have been awarded a mark by the lead examiner. You can compare the student's answer with the example to determine if it is of the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the lead examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

In addition to the levels descriptors, question specific indicative content is provided as a guide for examiners. This is not intended to be exhaustive and you must credit other valid points.

An answer that contains nothing of relevance to the question must be awarded no marks.

Annotating scripts

You should write a summative comment at the end for each Assessment Objective and indicate the marks for each Assessment Objective being tested at the end of the answer in the margin in sequence. It is vital that the way you arrive at a mark should be recorded on the script. This will help you with making accurate judgements and it will help any subsequent markers to identify how you are thinking. Please do not write negative comments about students' work or their alleged aptitudes.

Section A

Total for this section: 45 marks

Question	Part	Marking guidance	Total marks
01		<p>Quantitative and qualitative data are used in geographical investigations.</p> <p>Using examples, explain the difference between quantitative and qualitative data.</p> <p>AO1 – Award 4 marks for knowledge and understanding of concepts. Up to 2 marks can be awarded for each data type. 1 mark only per data type without an example. Explicit difference required for maximum marks.</p>	<p>4</p> <p>AO1=4</p>

Indicative Content

- Quantitative data is information that can be measured (1) / counted (1) presented as a numerical value (1). Credit an appropriate example (1) eg temperature measured in degrees Celsius, slope angles measured in degrees, cars in a traffic survey, pedestrians passing a point in a measurement of footfall.
- Qualitative data is information relating to thoughts, feelings, opinions or perceptions (1). It does not have a measured scale (1). Credit an appropriate example (1) eg an opinion about a new development in an area, epitome words to describe a place, information contained in an interview transcript, photographs and field-sketches.
- Credit points that explain how qualitative data can be processed into a quantitative form.

Max 2 if just descriptions of data types without examples.

Question	Part	Marking guidance	Total marks
02	1	<p>Describe the main characteristics of stratified sampling (also known as structured sampling).</p> <p>AO1 – Award 3 marks for knowledge and understanding of the concept.</p>	<p>3</p> <p>AO1=3</p>

Indicative Content

- Stratified (structured) sampling is a method of sampling in which the population (all the items that could be selected) is divided into subsets or sub-divisions (1) based upon particular characteristics or attributes that can be found within the population (1). This requires some prior knowledge of the population (1). Samples are then drawn proportionally from the subsets (1). This helps to ensure the sample is fair / reduces bias (1).

Question	Part	Marking guidance	Total marks
02	2	<p>The students wanted to measure infiltration rates at 20 locations in the area covered by the map shown in Figure 1.</p> <p>Describe a suitable sampling strategy you would use to select these 20 locations.</p> <p>AO2 – Application of knowledge and understanding to describe a suitable sampling strategy in the map area.</p> <p>AO3 – Uses skills to interpret the situation and applies these skills to produce a credible strategy for sampling locations in the area.</p>	<p>6</p> <p>AO2=3</p> <p>AO3=3</p>

Level	Marks	Descriptor
2	4 – 6	<p>AO2 – The sampling strategy is clear and there is clear understanding of the requirement to apply a suitable stratified (structured) principle to determine the 20 locations.</p> <p>AO3 – Applies skills effectively to the resource and uses them to produce a credible and detailed strategy to select the required number of locations.</p>
1	1 – 3	<p>AO2 – There is a basic understanding of the application of a sampling strategy and a limited or absent understanding of the requirement to apply a stratified (structured) principle to the situation.</p> <p>AO3 – Skills are only applied in a basic way and there is a basic attempt to produce a sampling strategy to select the locations.</p>
0	0	No credible content.

Indicative Content

- As the map area is clearly divided into 3 vegetation zones, the sampling strategy needs to reflect this. Sample locations should be selected proportionally, with 60% of the required 20 (12 sites) chosen from the woodland and 20% (4 sites) from each of the grass and scrub zones. Level 2 answers must show an understanding of the need to apply a stratified framework to the area before using either a random or systematic approach to select the locations.
- The sample sites can be chosen random or systematically from within each of the zones and both have their merits.
- Random samples could be chosen based on random grid numbers – use of the map grid would be indicative of a more detailed methodology.
- A systematic approach might involve selecting sites at equally spaced distances within the zones, again the map grid could be used to aid selection.
- The principle of selecting locations with limited or no bias may be referred to in the response.

Question	Part	Marking guidance	Total marks
03	1	<p>Complete Table 1 and use the standard deviation formula below to complete the standard deviation calculation.</p> <p><u>You must show your working.</u></p> <p>Give the answer to <u>2 decimal places.</u></p> <p>AO3 – Accurate application of skills to complete the table and calculations as required.</p>	<p>6</p> <p>AO3=6</p>

Indicative Content

Month	Rainfall total (mm)	$x - \bar{x}$	$(x - \bar{x})^2$
January	343	204.5	41 820.25
February	17	-121.5	14 762.25
March	44	-94.5	8 930.25
April	57	-81.5	6 642.25
May	135	-3.5	12.25
June	186	47.5	2 256.25
July	143	4.5	20.25 (1)
August	122	-16.5	272.25
September	144	5.5 (1)	30.25 (1)
October	234	95.5	9 120.25
November	102	-36.5	1 332.25
December	135	-3.5	12.25
$\sum x = 1\ 662$			$\sum(x - \bar{x})^2 = 85\ 211$
$\bar{x} = 138.5$			

Standard deviation formula

$$\sigma = \sqrt{\frac{\sum(x - \bar{x})^2}{n}}$$

$$\sigma = \sqrt{(85\ 211/12)} = \sqrt{7\ 100.91667} \quad \text{(1 for evidence of working)}$$

$$\sigma = 84.26693697214030$$

$$= \mathbf{84.27} \text{ to 2dp (2 for final answer to 2dp) (1 for an answer to more than 2dp or only 1 dp)}$$

Question	Part	Marking guidance	Total marks
03	2	<p>Interpret the rainfall data for 1988 and 2018 with reference to Table 1, Table 2 and your calculated answer to Question 03.1.</p> <p>AO2 – Applies knowledge and understanding to interpret the statistics with effective comparisons and comment.</p> <p>AO3 – Uses the relevant data to interpret the statistics and make clear comparisons and comment on monthly rainfall variation between the two years in question.</p>	<p>6</p> <p>AO2=2 AO3=4</p>

Level	Marks	Descriptor
2	4 – 6	<p>AO2 – Shows clear interpretation of the data to make effective and accurate comparison and valid comment on the data provided.</p> <p>AO3 – Uses skills effectively to interpret the data sets with a clear understanding of the use of the statistical measures. Uses statistics effectively to support the interpretation. May use manipulated data in support.</p> <p>All of the data items need to be considered for maximum marks to be awarded at this level.</p>
1	1 – 3	<p>AO2 – Shows a basic understanding of the data to make some appropriate comparison and comment. Understanding leads to basic or generalised comments.</p> <p>AO3 – Uses basic skills to interpret the data sets with a limited understanding of the use of the statistical measures. Unlikely to use manipulated data in support.</p>
0	0	No creditable content.

Indicative Content

- 2018 has a lower mean average than 1988.
- This could indicate a change in climate over the thirty-year period. The difference in the two mean values is 76.4mm.
- There is greater variation in 1988 as well, indicated by the greater standard deviation value (greater deviance from the mean) of 94.74mm compared with 84.27mm in 2018.
- This may suggest that by 2018 rainfall had become slightly more consistent.
- The difference in the values of the two ranges backs this up, in 1988 the range was 370mm compared with 326mm in 2018, a difference of 44mm.
- These figures may suggest that (over the thirty-year period) there is some evidence for a changing climate, with the lower mean indicating a climate becoming drier. However, these are only two discrete years and it would be unwise to base assumptions on a limited data set.

Question	Part	Marking guidance	Total marks
04	1	<p>Complete Figure 2 using the data for Central and South West districts shown in the table below.</p> <p>1 mark per accurately shaded district. Expect reasonable accuracy with shading density.</p> <p>AO3 – Accurate application of skills to complete the map using the appropriate shading patterns for each district.</p>	<p>2</p> <p>AO3=2</p>

Question	Part	Marking guidance	Total marks
04	2	<p>Describe the pattern now shown in Figure 2.</p> <p>1 mark per valid descriptive point.</p> <p>AO3 – Uses the relevant skills to interpret the map data and to develop a clear description of the information provided on the map.</p>	<p>3</p> <p>AO3=3</p>

Indicative content

- Greatest Urban Living Index (ULI) is in the Central district although this is not in the highest category of ULI values.
- Coastal districts seem to display higher ULI values than inland districts.
- The districts further inland (West and South West) are in the same range of less than 50.
- These districts (West and South West) are the larger districts by area.
- Districts to the north and south of Central are in the middle range of ULI values.
- The ULI appears to decline with distance away from the Central district – a distance decay pattern.
- There are no districts in the highest category.

Question	Part	Marking guidance	Total marks
04	3	<p>State and justify <u>two</u> environmental factors that students could use to investigate well-being in an urban area.</p> <p>AO1 – Knowledge and understanding of appropriate factors that could reasonably be used by students investigating well-being in an urban area.</p> <p>AO2 – Application of knowledge and understanding of appropriate factors to identify them and to justify their inclusion in an investigation into well-being in an urban area.</p>	<p>6</p> <p>AO1=4 AO2=2</p>

Level	Marks	Descriptor
2	4 – 6	<p>AO1 – Shows a clear knowledge and understanding of two environmental factors that could be used in an investigation into well-being in an urban area. Refers to two appropriate variables in the response. Chosen factors may be linked, this is acceptable but justification should be clear and relevant.</p> <p>AO2 – Clear application of knowledge and understanding in the identification and justification of the factors used in an investigation into well-being in an urban area.</p>
1	1 – 3	<p>AO1 – Shows a basic knowledge and understanding of the factors that could be used in an investigation into well-being in an urban area. May only refer to one variable at this level.</p> <p>AO2 – Basic application of knowledge and understanding in the identification or justification of the factors used in an investigation into well-being in an urban area. Variables may be identified but not justified.</p>
0	0	No creditable content.

Indicative Content

- There are a number of factors that could be used to investigate well-being in an urban area. The choice may be linked to students own field-work experiences evaluating environmental quality or theoretical ideas studied through the course and listed in the specification. Factors could be those measured directly (as primary data) or collected from secondary sources. The focus is on the identification of the factors and the justification for their inclusion in a study of well-being.

For example:

- climate
- topography (drainage) and incidence of disease
- air quality and health
- water quality and health
- the stresses of urban living and health
- pollution (water, air quality, traffic, noise)
- justification should give a reason for their inclusion in an investigation – how it links to well-being and what it might suggest about the living conditions or the implications for life in an urban area.

- For example, topography would be an environmental factor that could be used to investigate well-being as low-lying areas can have pools of water which do not drain easily creating a humid environment that can encourage mosquitoes which spread malaria. These low-lying, humid places may be uncomfortable during the summer time impacting on the well-being of the residents.

Question	Part	Marking guidance	Total marks
04	4	<p>Critically assess the usefulness of choropleth maps such as that shown in Figure 2, on page 10, to present information.</p> <p>AO1 – Knowledge and understanding of the advantages and disadvantages of choropleth mapping.</p> <p>AO2 – Application of knowledge and understanding of the choropleth mapping technique in order to critically assess the usefulness of the technique.</p>	<p>9</p> <p>AO1=4 AO2=5</p>

Level	Marks	Descriptor
3	7 – 9	<p>AO1 – Shows a detailed and specific knowledge and understanding of the advantages and disadvantages of the choropleth mapping technique.</p> <p>AO2 – Effective application of knowledge and understanding to assess the usefulness of the technique for presenting data and comes to a clear view.</p>
2	4 – 6	<p>AO1 – Shows clear knowledge and understanding of the advantages and disadvantages of the choropleth mapping technique, answer may be unbalanced.</p> <p>AO2 – Some effective application of knowledge and understanding to assess the usefulness of this technique for presenting data. Response comes to a view but this may not be certain.</p>
1	1 – 3	<p>AO1 – Shows basic knowledge and understanding of the choropleth mapping technique which may refer to only advantages or disadvantages.</p> <p>AO2 – Basic application of knowledge and understanding to assess the usefulness of this technique for presenting data. Unlikely to present a clear view on the usefulness of the technique.</p>
0	0	No creditable content.

Indicative Content

Responses should consider both the advantages and disadvantages of choropleth mapping, may be with reference to the data presented in **Figure 2**.

Advantages of choropleth mapping:

- The maps are visually effective enabling large amounts of information to be seen easily.
- General patterns can be identified with ease.
- Anomalies can be easily identified.
- These maps convert numerical data into a more simplified form.
- Groupings / ranges can be adjusted to suit the message being presented.
- Uses pre-determined spatial areas such as countries, regions or districts that are easily understood.
- GIS / ICT packages can be utilised to produce professional looking maps.

Disadvantages of choropleth mapping:

- The technique can only be applied where there are clear spatial divisions that make sense.
- Completed maps will hide any variation within each area.
- It implies the value is true for everywhere within a zone.
- If too large a class interval is used, lots of places may have the same shading and patterns are difficult to see.
- If too small a class interval is used then you may have too many classes and again, patterns would be difficult to see.
- The completed choropleth map gives the impression that there are sudden changes at each boundary. The reality is that change is more gradual.
- Maps can be manipulated to present a particular message or perception.
- Hand drawn maps can be hard to produce – with even shading or equal spacing of lines.

Section B

Total for this section: 15 marks

Question	Part	Marking guidance	Total marks
05	1	<p>Describe and justify <u>one</u> primary data collection method used in your investigation.</p> <p>AO2 – Application of knowledge and understanding of the investigation process, methods of data collection and justification of these.</p> <p>AO3 – Application of fieldwork and investigation skills to collect primary data and justification of the chosen methods.</p>	<p>6</p> <p>AO2=3 AO3=3</p>

Level	Marks	Descriptor
2	4 – 6	<p>AO2 – Clear application of the relevant knowledge and understanding of the investigation process and a clear description of the method used in the investigation. Justification of the method employed is valid and generally well expressed. Level 2 can be achieved if the method is clearly described but without full justification or vice versa.</p> <p>AO3 – Clear application of fieldwork and investigation skills used to collect primary data and effective justification of the chosen method.</p>
1	1 – 3	<p>AO2 – There is a limited application of the relevant knowledge and understanding of the investigation process and a basic description of the method used in the investigation. Justification of the methods employed may be implicit or absent.</p> <p>AO3 – There is limited evidence of the application of the fieldwork and investigation skills used to collect primary data. Justification of the chosen method may be unclear.</p>
0	0	No creditable content.

Indicative Content

- The response requires a description of a primary data collection technique carried out in the investigation along with a justification for the choice of method that was undertaken. This may relate to the choice of method itself, sampling procedures undertaken as part of the method or actions taken whilst carrying out the data collection.
- Candidates should show a clear understanding of their chosen technique. Diagrams may be included and may be credited as part of the response.
- The method should be clearly justified, this may be in terms of why other approaches were not used. Justification can be in terms of practicality, ease of use, cost, efficiency, accuracy and health and safety.
- For example, in an investigation into Environmental Quality in an urban area, students may have undertaken an Environmental Quality Survey to establish perceptions of an area. This may have had particular categories for assessment such as 'noise', 'litter', 'green space' and 'building upkeep' which were each assessed on a five-point scale from poor (0) to excellent (5). The survey was carried out at 10 locations around the urban area, chosen using a systematic sample from a base map. This

method was used because it was straightforward to assess in each location, the categories were clear and the bipolar scale was clear to apply with little ambiguity.

Max Level 1 if method relates to secondary data.

Question	Part	Marking guidance	Total marks
05	2	<p>Evaluate the suitability of your chosen location and how this helped you meet the aim(s) of your investigation.</p> <p>AO2 – Application of knowledge and understanding of the investigation process, the location for study and its suitability for the investigation.</p> <p>AO3 – Application of fieldwork and investigation skills in establishing the suitability of the fieldwork location in meeting the aims of the investigation.</p>	<p>9</p> <p>AO2=5 AO3=4</p>

Level	Marks	Descriptor
3	7 – 9	<p>AO2 – There is detailed application of the relevant knowledge of the candidate's investigation and a thorough understanding of the suitability of the location chosen for the investigation with reference to its aim(s).</p> <p>AO3 – Detailed application of fieldwork and investigation skills to evaluate the extent to which the location chosen for the study helped to meet the aims of the investigation.</p>
2	4 – 6	<p>AO2 – There is clear application of the relevant knowledge of the candidate's investigation and a clear understanding of how suitable the location of the investigation was in meeting its aim(s).</p> <p>AO3 – Clear application of fieldwork and investigation skills to evaluate the suitability of the location and how it helped in meeting the aims of the investigation.</p>
1	1 – 3	<p>AO2 – There is only a basic application of the relevant knowledge and understanding of the candidate's investigation and limited understanding of how suitable the location was for the investigation carried out. Links to aim(s) are tentative or absent.</p> <p>AO3 – There is a basic application of the fieldwork and investigation skills to evaluate the suitability of the location chosen for the study and how it meets the aims of the investigation. Links between the location and the purpose of the investigation may be unclear or absent.</p>
0	0	No creditable content.

Indicative Content

- Candidates need to demonstrate an understanding of their study area and show how the study area linked to the aims of their investigation. The approach may assume that the location was suitable for the investigation and provide evidence based upon their findings.
- Candidates should take an evaluative approach and discuss how the location provided evidence to meet the aims of the investigation but also any problems and issues that arose.
- Responses should make reference to both the location (this should be clear and named) and the investigation aims. The suitability may be considered in terms of the original aims and also in terms of the outcomes and conclusions based upon the data / evidence collected.
- Candidates may reflect upon practical aspects of the study such as the ease or difficulty of collecting data to help them meet the aims of their investigation, the volume / amount of data they were able to collect, and the reliability and /or accuracy of the data collection. All of these may be limited by the choice of location.
- Some could suggest alternative locations which, in hindsight may have been better at helping them to meet the aims of the investigation.
- For example, students undertaking a sand dune investigation may suggest that their choice of location was suitable as it provided a suitable length of transect to observe changes in dune morphology and ecology. The location may have been large enough that it was possible to effectively and fairly sample transects without having to choose convenient sites, therefore making the investigation valid. The transect may have been of sufficient length to observe changes that reflect the evolution of the dunes over time and students were able to observe changes in soil pH, vegetation species distribution and dune height.
- Alternatively, the location may have been restrictive and access to suitable sites for measurement was difficult, limiting the validity of sample sites and the reliability of the measurements taken.
- Candidates should provide clear and specific details of the location in which their investigation was carried out.

Assessment Objective grid

	AO1	AO2	AO3	Total
Section A				
1	4			4
2.1	3			3
2.2		3	3	6
3.1			6	6
3.2		2	4	6
4.1			2	2
4.2			3	3
4.3	4	2		6
4.4	4	5		9
Section B				
5.1		3	3	6
5.2		5	4	9
Unit total	15	20	25	60