

GCSE (9-1)

Examiners' report

GEOGRAPHY B (GEOGRAPHY FOR ENQUIRING MINDS)

J384

For first teaching in 2016

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Version 1

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Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates. The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

Where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report. A full copy of the question paper can be downloaded from OCR.



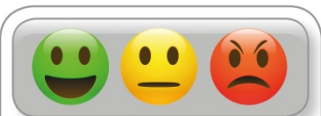
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Paper 1 series overview

Our Natural World covered all of the four physical geography topics and the physical geography fieldwork. The nature of the component differentiated between higher and lower ability candidates fully, with a wide range of marks. Case study knowledge, understanding and the ability to adjust to the question were the biggest reasons for that difference.

To be successful in this component, candidates needed to demonstrate a detailed knowledge of the concepts that underpin their case studies. This knowledge needed to be developed so that it was detailed enough to meet the requirements of the question. The longer questions required analysis and / or evaluation and at times a judgement to be made. This had to be clearly linked to a specific point and / or location.

Clear understanding of key geographical language helped candidates to understand the demands of the question as well as helping them to add precision and coherence to their answers. None of the four physical geography topics performed better than another, although they were more effectively answered than the fieldwork section. Q2c was the longest question that challenged candidates the most as it required a comparison between two impacts, a skill requiring a high level of evaluation, rather than just explaining the positives or negatives. Some candidates found geographical language in questions challenging, such as basaltic, and more common language, such as reliable.

Another area that centres can help candidates practice is in the style of developed writing. Answers that did not reach the higher levels tended to give 4 or 5 basic reasons. A better strategy would be to take fewer of the reasons and try to expand and develop them much more fully before moving to the next question. It was clear that some candidates did not have a calculator or a ruler which were required for them to fully engage with some of the geographical skills questions.

Section A overview

Section A tends to have shorter mark questions followed by higher level marked questions, often based on a case study. The shorter mark questions tend to test candidates key word recognition, geographical skills and mathematical techniques. The higher mark questions test their extended writing and their ability to link understanding and evidence to the specific question. Both 4 mark questions were challenging to candidates as it required them to be precise with their use of language and this often effectively differentiated between candidates.

Question 1 (a) (i)

Global Hazards

- 1 (a) (i) Below are four statements about a constructive plate boundary. Select which statement is **false**.
- A Basaltic lava that comes from the volcanoes has a low silica content and has a thin consistency.
 - B Plates are being pulled apart from each other by convection currents.
 - C Shield volcanoes are formed.
 - D The pressure created by the plate movements creates explosive volcanic eruptions.

Write the correct letter in the box. [1]

There were a similar number of candidates selecting options B, C and D demonstrating that they may not have understood the words 'basaltic' or 'shield volcano'.

Question 1 (a) (ii)

- (ii) Explain how the movement of tectonic plates at a destructive plate boundary causes volcanoes to form.

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..... [4]

A focus on the appropriate geographical language may help future candidates if they are faced with answering a similar question in future. A larger proportion of candidates understood the plates were moving together but not all were able to use the term subduction, instead plates collided, crashed or banged into each other or simply met. Which plate was subducted and why was also an area that led to confusion with the term heavier used instead of the term denser. How magma reaches the surface was also poorly described with the term gaps used frequently. The most effective answers were able to describe what was occurring in a few well-structured sentences using all of the appropriate terms with considerable accuracy.

Question 1 (b)

(b) Give **two** types of extreme weather associated with tropical storms.

1

.....

2

.....

[2]

This question was not answered well. A high proportion of candidates used the word extreme to describe what was going on despite this being in the question. Some candidates thought that tropical storms caused a tsunami and had clearly mixed them up with storm surges.

Question 1 (c)

(c) **Case study – UK based natural weather hazard event.**

Name of chosen UK based natural weather hazard

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Evaluate the responses to your chosen UK based natural weather hazard.

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[6]

The best answers showed detailed knowledge of a UK-based natural weather hazard and applied this knowledge and understanding to the question being asked. It is not enough for the candidate to write everything they know about the Boscastle flood or the 2012 drought but they need to tailor their answers to the question. The successful candidates did not write in detail about the causes of the hazard and may only briefly touch on the impacts, using them as a way to explore the management of the hazard and then spending an equal amount of time evaluating the impact of the response. This could be done by using place specific detail to make an overall evaluation of the response. However, is a word that was used in some of the best answers as it allowed candidates to consider both the positive and negatives of a single response and indicated they were evaluating, as the command term suggested.

A very small proportion of candidates chose a non-UK hazard or wrote about a tectonic hazard. One issue candidates faced was the way that multiple droughts were merged into one answer. Responses, such as hosepipe bans, have occurred in several years and it is important that a candidate knows some detail about specific droughts to make sure that it is possible to credit place specific detail and fully assess the response to the hazard.

Exemplar 1

governments ordered while others were more
 campaign based. One example of a government
 ban was the decision to ~~to~~ ban the use ~~of~~
 of hoses, over 20 million people were
 told they could not use their hoses. ^{This}
 ban was effective as it was able to reduce [6]
 the average daily water usage which was
 beforehand at 1.7 billion litres per day.
 Another response was the campaigns by
 various organisations persuading people to use
 less water. Although the campaign reached
 many people it was ultimately ineffective
 as many ignored it and used ^{excessive amounts of} water anyway

Exemplar 1 shows part of a candidate response, this demonstrates thorough knowledge of the drought using statistics such as over 20 million and 1.7 billion litres per day, but it is the thorough level of evaluation which means that this is a Level 3 answer. Each idea is considered and evidence provided to suggest whether a strategy was or wasn't successful.

Question 2 (a)

Changing Climate

- 2 (a) Study Fig. 1 in the separate Resource Booklet, a graph showing atmospheric carbon dioxide from ice cores. Select the correct description of the trend shown by the graph in Fig. 1.
- A fairly stable until 1800 then a sudden and very rapid rise
 - B only increases from 1000 to 2000
 - C small fluctuations all the way from 1000 to 2000
 - D stable at around 280 ppm, then a large decrease at the end

Write the correct letter in the box.

[1]

Most candidates answered this correctly.

Question 2 (b)

- (b) Discuss how reliable data on atmospheric carbon dioxide collected from ice cores is as evidence for climate change.

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[4]

Candidates found this to be one of the more difficult questions on the paper. Unfortunately there were a lot of answers that scored zero. This was because candidates overlooked the word 'reliable' within the question. They did show excellent knowledge of the way ice cores can be used to show how the atmosphere has changed, however, they were not answering the question.

Those that did engage with the question tended to write one or two simple answers about it giving an exact figure or not be touched by people. The best answers tended to focus on the objective nature of the data showing understanding of the collection process. The answer did not need to be balanced and did not need an overall judgement for it to be given full marks.

Exemplar 2

However, overall, I mostly disagree, as ~~I believe~~ that the damage caused to ~~economic~~ the environment is more devastating, as extinction is irreversible, compared to the economic impacts, which could be resolved or prevented by ~~migration~~ and ways such as migration.

Part of a thorough evaluation of the economic and environmental impacts of climate change showing how the two could be compared.

Exemplar 3

I mainly disagree with this statement and think that it's the environment that suffers most. This is because as the average ~~temperature~~ temperature increases it means that there is more common occurrences of wild fires. These wild fires not only effect trees but also create habitat losses for animals and risk them going extinct. Also, the sudden increase in temperature may mean that birds migration stages happen to early and this then leads to them arriving at their destination at the wrong time and potentially missing out on food. Lastly, climate change has meant more ~~storms~~ tropical storms are occurring again damaging animals habitats and saturating soil.

On the other hand, economic impacts are occurring. The sudden rise in temperature means that for some arable farmers the growing season for their crops is shorter, [8] and they lose out on yield and lose money. Also in some areas climate change means more rain so in areas that rely on tourism they may lose out on business due to rain.

A developed answer that contains a lot of relevant information and detail concerning economic and environmental impacts. Level 2 only as there is only basic evaluation of which impact is more concerning.

Question 3 (a)

Distinctive Landscapes

3 (a) Name **one** geomorphic process that erodes coastal landforms.

..... [1]

Most answers were correct. Longshore drift, backwash and swash were popular incorrect answers.

Question 3 (b) (i)

(b) (i) Study **Fig. 2** in the separate Resource Booklet, an OS map extract of Sea Palling in Norfolk.

Artificial reefs have been built along the stretch of coastline shown in **Fig. 2**. Calculate the length of the breakwater marked X.

- A 100 m
- B 120 m
- C 250 m
- D 360 m

Write the correct letter in the box.

[1]

Most candidates were able to use the scale to answer this correctly.

Question 3 (b) (ii)

(ii) Give **one** piece of map evidence which shows that the coastal defences at Sea Palling are effective. Explain your answer.

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..... [2]

The use of map evidence was needed to show that extra sediment was collecting behind the offshore reefs and this was due to a change in the processes occurring at that location. Some candidates did not receive credit due to a lack of precision about where the sand or sediment was building up, using neither a grid reference, a name or an adequate description. Descriptions like headlands and bays convey what candidates mean without being geographically accurate. Some candidates focused on what was located in the village of Sea Palling but this was not deemed to be an acceptable answer.

Question 3 (b) (iii)

- (iii) Geographical Information Systems (GIS) can show many different kinds of data on a map. Each kind of data forms a new 'layer' on the map.

Suggest an extra layer that could be added to **Fig. 2** to give further evidence for the effectiveness of these coastal defences.

.....
 [1]

There were a wide range of answers and a lot of blanks for this question. GIS did not seem to be widely understood and despite a wide range of acceptable answers which could be credited, a number of candidates did not score on this question. The rate of erosion and the historical coastline were the most popular answers. Any variable that could be changed by the presence of the reef is also acceptable, such as waver energy or wave height. Height was not acceptable as it is already on the map.

Question 3 (c) (i)

- (c) The data in the table below shows the annual rates of slumping of a stretch of muddy coastline.

Year	2010	2011	2012	2013	2014	2015	2016	2017
Amount of slumping (metres)	4.2	3.0	1.5	1.0	0.6	2.7	3.1	0.8

- (i) Calculate the mean amount of annual slumping.

.....
 [1]

This was generally well answered although some attempts at dividing by hand showed the absence of a calculator. It would be good practice for candidates to stick to one decimal place reflecting the data in the table and use units, although this was not essential. A few candidates removed the highest value, citing it as an anomaly, prior to the calculation, receiving no credit.

Question 3 (c) (ii)

- (ii) Identify the range in the annual rate of slumping between 2010 and 2017.

.....
 [1]

The two most popular answers were 3.6 and 3.4. A minority of candidates subtracted 0.8 from 3.6 rather than 0.6.

Question 3 (d)

(d) Case study – A coastal landscape in the UK.

Name of chosen coastal landscape in the UK

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Explain how management has impacted the coastal landscape.

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..... [6]

The key part of a successful answer was to consider how the management impacted the landscape of the area in question, not just the processes that are occurring. Most candidates were able to name the management that is occurring on the stretch of coast, citing groynes, sea walls and beach nourishment as the most popular answers. These could then be linked to the processes that they are designed to stop. Most candidates were able to link groynes to reducing the rate of longshore drift, although some thought they acted as a barrier to the wave. Candidates could then link the process to the landscape whether this was a reduction in the rate of cliff recession, the maintenance of a wide beach or impacts further along the coast.

This was a case study question so the candidates also had to show that they knew about the specific coastline that they had studied and not a generic area and management. Good answers focused on specific towns coastal areas, rock types or other specific data whereas the answers that got less credit referred to the Jurassic coast or the North Norfolk coast as a whole. Suggesting that there are sea walls on the North Norfolk coast does not provide enough place specific detail and support development in answers to receive credit.

A few candidates wrote about rivers and were given 0 marks.

Exemplar 4

to 'hold the line'. Before any sea defences were implemented the rate of erosion here was up to 1m per year, and the cliff was gradually receding towards the village. Since the 1960s, when sea defences such as the sea wall which measures 441m long and 9 groynes, were put in place the rate of erosion was dropped to 0m. Both of these management techniques,

Thorough knowledge of the case study location using facts about Overstrand to demonstrate the management strategies being used. This is then linked to the processes involved e.g. erosion, and therefore the impact on the landscape, demonstrating that the cliff is no longer receding at 1m per year.

Exemplar 5

On the Jurassic Coast, a few hard engineering solutions have been implemented to try and slow down erosion. For example, to combat long shoredrift, groynes have been implemented to the beach. These are effective at stopping it and have preserved the beaches in ~~the~~ the coast. However, they have

An answer that is too vague showing only basic knowledge of the management strategies used. The Jurassic coast is a long stretch of coastline and has varying management strategies along its length.

Question 4 (a)

Sustaining Ecosystems

- 4 (a) Study Fig. 3 in the separate Resource Booklet, a map showing the global distribution of coral reefs. Using Fig. 3, describe the global pattern of coral reefs.

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..... [3]

The question asked for a description of the global pattern and also carried with it the communication mark. Successful answers tended to focus on the location being mostly between the two Tropics before focusing in on a more specific location such as SE Asia. Giving a global scale and a smaller scale answer was an effective way to achieve all 3 marks. Giving two ideas on the same scale (global or local) capped the mark at 2. The use of the Equator in an answer was tricky as the location in relation to the Equator is inconsistent. Words like above, below, left and right should be discouraged and more geographical language used.

	AfL	Use geographical language such as North and South rather than up and down.
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Question 4 (b) (i)

- (b) Study Fig. 4 in the separate Resource Booklet, pie charts showing the level of risk and the cause of damage to coral reef ecosystems.

- (i) What percentage of the world's coral reefs are at high risk?

- A 4%
- B 12%
- C 19%
- D 27%

Write the correct letter in the box.

[1]

Most candidates read the graph accurately.

Question 4 (b) (ii)

(ii) What factor presents the greatest risk to the world's coral reefs?

.....
..... [1]

Most candidates answered this correctly. Those that didn't tended not to use the resource but use their own knowledge instead.

Question 4 (b) (iii)

(iii) Suggest **one** alternative way to plot the data shown in **Fig. 4**.

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..... [1]

Bar chart/ bar graph was by far the most popular answer. It would have been nice for candidates to think about a more complex response such as divided bar graph.

Question 4 (c)

(c) Select the correct definition of the term 'sustainable management'.

- A environments are exploited for the use of the current generation
- B environments are managed at the expense of future generations
- C managing an environment for the use of the current generation only
- D managing an environment to ensure it will benefit both current and future generations

Write the correct letter in the box. [1]

Most answered this question successfully.

Question 4 (d)

(d) **Case study – a global example of sustainable management in either the Arctic or Antarctic.**

Name of chosen global example of sustainable management

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Assess the success of **one** global scale sustainable management solution in either the Arctic or the Antarctic.

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..... [6]

Candidates with a clear understanding of their case study were able to successfully answer this question. Individual management strategies were identified and their success or otherwise explained using evidence. Ideas including the stance of Japan to whaling, the impact of climate change and the role of indigenous communities in decision making were often used by candidates to help weigh up the success of a management solution. There were a few areas that caused candidates to not reach full marks. Some answers were too descriptive, writing in great deal about what was being done to manage their cold region but without saying why it was successful. Other answers lacked specific case study detail, making general statements about cold regions which could apply to a variety of locations and scales. Candidates often mixed up Arctic and Antarctic, using them inter-changeably through the same answer, limiting the mark they could be given. There were some answers that dealt with the wrong case study, mostly using Clyde River, that were limited to Level one. Candidates need to be clear which was their global case study and which was their small scale case study.


Exemplar 6

In addition the agreement cannot and does not directly combat climate change, which is the areas biggest threat. Therefore the ecosystems are still in peril. Overall although the ~~plan~~ treaty is a step in the right direction there are other problems which need to be addressed in order to protect this environment

A demonstration of the thorough analysis of the Antarctic Treaty building on previous evidence that highlighted the candidate's thorough knowledge of the treaty.

Section B overview

Centres need to recognise that Section B has more marks than any of the individual topics in Section A and incorporate this into the way that they organise their teaching year. Fieldwork answers need to be specific to the fieldwork that candidates have completed as there is a tendency to give generic answers which could relate to any fieldwork in any location. Using resources about locations that students have not visited or studied as a case study can be built into the work candidates undertake throughout the year, potentially using fieldwork ideas as a way to finish each individual topic in Section A.

	<p>AfL</p>	<p>Practice writing answers about places that candidates have not visited or been a case study.</p>
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Question 5 (a)

- 5 (a) For a **physical geography fieldwork investigation** which you have completed, explain why your key question for investigation was appropriate.

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..... [2]

There were a wide range of acceptable reasons why a key question might be appropriate. The candidate had to suggest answers that were clearly linked to their fieldwork location, rather than a more generic location. This could have included links to models underlying fieldwork, links to the variables being measured, management techniques or the practicalities of running the trip. Answers that were unacceptable included general statements such as; being suitable as I could answer my hypothesis or measure some variables.

Question 5 (b) (i)

(b) Study **Fig. 5** in the separate resource booklet, fieldwork notes for some river fieldwork.

In order to calculate the speed of the river, you need to use the formula:

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

(i) Calculate the river speed for **measurement 1** at site 1 and site 2.

Show your working.

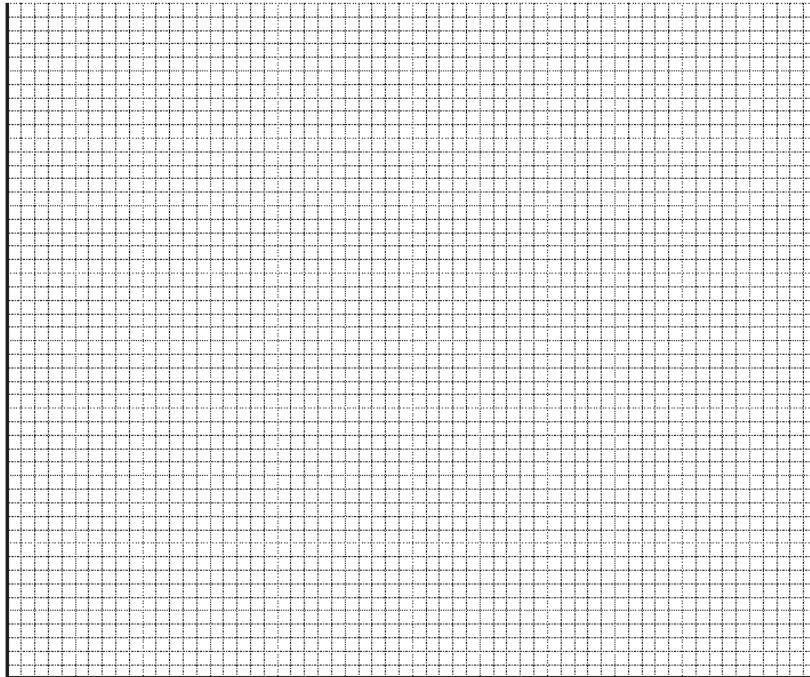
site 1

site 2 [3]

Most candidates were able to use the formula successfully. Good practice should include units and one decimal place but this was not required to be given the marks. Some candidates thought that the 2nd site was 100m long rather than a 100m from site 1. This meant that they weren't given all 3 marks but could still achieve the mark for showing their working. Closer scrutiny of the question would benefit the candidates who took a mean of all three measurements.

Question 5 (b) (ii)

- (ii) Draw a horizontal bar graph to show the width measurement results for the two sites.



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[2]

One mark was given for plotting the graph horizontally, using an axis that was logical and consistent. Most candidates decided to go up in 20s on the axis. The second mark was given for plotting both bars correctly, regardless of orientation. Lots of candidates drew vertical bar graphs, limiting their mark to one. Some candidates used 10 squares to represent 25 or 30 on the scale, which made it much more difficult to plot accurately. Some candidates used increments of 23 as it meant both 92 and 115 width measurements were on major grid lines.

Question 5 (b) (iii)

(iii)* Suggest how the students could improve the investigation in **Fig. 5** in order to improve the reliability of their results.

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..... [8]

Careful analysis of the resource booklet should have revealed a number of flaws in the fieldwork that was being undertaken. The question required candidates to consider how this could be improved so that the methodology was more reliable. Some candidates were able to identify the problems but did not offer any solutions. The mark scheme also takes into account that not all candidates would have completed river fieldwork, so the use of words like flowmeter were not required. The next step was then to consider what impacts the solution would have on the data that was being collected. This could make the data more precise or more representative of the whole of the river. The level of development that candidates put into this section was the key factor that differentiated answers and enabled some of them to reach the top level.

Exemplar 7

In addition from the results one can see the orange got stuck on rocks a number of times, this would decrease the average speed of the orange flow resulting in validity. To improve this the experiment should be repeated enough times eg 10 so anomalies can be excluded. [8]

This extract from a candidate's response demonstrates Level 3 for their evaluation. The candidate has shown what they could do to improve the experiment and the impact that this would have on the reliability of the investigation.

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