

# GCSE GEOGRAPHY

Paper 1 / 40301H Physical Geography  
Report on the Examination

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## General

Questions 1 was the most popular question on the paper, almost universally answered, followed by Questions 5 and 7 which proved to be the most popular combination. The least popular were Questions 2 and 3.

Some students were able to engage with a range of command words, de-construct the question and use illustrative material in support of their answers. There were some very good papers and answers – the average mark increased by 4 marks this year in comparison to 2012 – an indication that advice is being adhered to.

However, there remain a number of issues. Some students omitted questions that required photos to be labelled or diagrams to be drawn in Section B. These questions are relatively straightforward and it appears that students were merely failing to note that all the parts needed completing. They should be advised to make sure they are attempting 25 marks on each question as a check. It remains important to ensure that arrows connect to relevant features when labelling a sketch or a photograph. Examiners need to see that students have clearly indicated a specific feature rather having an arrow or line ambiguously near but not actually pointing to any one of several possible features.

There is a need to ensure that students have adequate knowledge of all aspect of the specification content, even of challenging and less popular themes. For example, the lack of knowledge displayed in answers to the questions on the geological timescale and drumlins was disappointing in what were basic questions. At times, there was confusion between linked concepts such as shield and composite volcanoes, and hard and soft engineering. Revision strategies should be used to seek to avoid this. Students should understand key terms and be prepared to apply their knowledge in an exam situation: learning them to repeat is not enough. Linked to this is the need to have a good working knowledge of case studies. It is not good practice to name a specific location and then write generically. There must be specific reference to facts and figures that clearly relate to the case study selected to progress through the levels. Some students did make effective use of these, even when there was no specific requirement to do so, and this is to be commended and encouraged.

The resources are provided to give a stimulus or to provide (part of) the answer. This material cannot be disregarded but some students do this and it results in a loss of marks. This was apparent when in 1(e) students failed to describe what Figures 2a and 2b showed with regard to the cause of the tsunami. There was little detailed description of the underground features in 2(c) and the photograph in 4(b) was largely ignored in favour of a generic description of rainforest. In order to earn the marks students need to describe what they can see. In 6(a)(i), answers included generic sketches or even plans of drumlins which did not reflect the one shown in Figure 13. Similarly, many students did not access level 2 in 2(d)(ii) as there was no specific reference to the map or photograph. The atlas maps proved problematic for some. The sea level was often misinterpreted in Figure 12 and in 7(c) the shape in area Y was presumed to be flat. Atlas maps are a basic resource and students might be expected to have answered these questions more adroitly by using the resources in a targeted way to answer the question – regarding dams in question 5, winter sports in question 6 and the shape of the coast in question 7.

Questions often demand that links be made between parts of an answer. This the case foe example in 1(d) where students had to indicate how volcanoes may be monitored but then relate this to an impending eruption and/or preparation. Similarly, when explaining landforms, links must

be addressed so that the answer has a clear sequence presented in a logical order with reference to specific processes. Diagrams can be effectively used in this context and a number did do this – especially for the sea stack.

As ever, there is a need to reflect on command words, in particular the frequently used ones of 'describe' and 'explain'. Whilst there may be marks for describing in an explain question for 'scene-setting' purposes, there are no marks for explanation in a describe question. The students who went onto explanation in 2(c)(i) and 4(b) effectively pre-empted the next question but gained no marks for explanation here. Similarly, the use of words such as 'because' and 'as' in a describe question should trigger alarm bells as there are no marks available.

Some parts of the specification refer to issues – and two such parts were examined here in questions 3(e) with regard to issues linked to extreme weather and 5(c)(ii) with regard to issues linked to the building of dams and reservoirs. As the ideas of 'issues' and 'debate' are part of the specification for these topics, there should be an expectation that students will be examined on them. Students therefore need to be more familiar with the idea that an issue is something that is contentious and will cause disagreement and/or debate.

## SECTION A

### Question 1 The Restless Earth

Part 1(a)(i) was generally well done. Here, there was a need to use the information provided in Figure 1 as a stimulus to determining the answer – recognising the direction of the plate movement at the two margins was the way for most. Some identified differences in processes and others in landforms. There was a need to refer to both plate margins for all the three marks. Students should be clear that it is the plates that move together not the boundaries. There was some drift to examples which were not valid as they were not focusing on the differences. Most were able to identify the Pacific Plate and the North American Plate in 1(a)(ii), but both had to be stated for the mark to be given.

Overall, 1(b) was well done, with many gaining the two marks available. Common characteristics related to the flat topped nature and runny lava. The command in 1(b)(ii) was to explain. Responses at the lower end continued to describe, which was not relevant here. Some were confused with shield volcanoes and went onto look at constructive margins. The starting point was the recognition of the destructive plate margin and then the subduction, subsequent melting and then linking this to subsequent eruptions and the layers of ash and lava that form in a composite volcano. These were the best answers; often there was one half of the sequence – either the plate movement and subduction or the ways in which the layers and steep cone were created.

There was a need to address both aspects in 1(d), so there should have been recognition of the ways in which volcanoes are monitored and this then linked to an impending eruption or how people could then prepare. Sometimes signs were described including animal behaviour and smoke but without the precision required. Others looked at recurrence interval which is not the same as monitoring. Better responses were clear in their knowledge noting how robotic spiders monitored levels of sulphur dioxide where an increase was recognised as a sign of an impending eruption. Some had a clear and varied knowledge of GPS, heat sensors and seismic activity. Weaker students wrote about earthquakes and their monitoring.

Figure 2 was included to aid students in explaining the cause of a tsunami in 1(e). Where there was some prior knowledge and a willingness to look at the information, the cause could be derived. The best did this, noting the destructive plate margin, the presence of the epicentre beneath the sea, the subsequent vertical displacement of water due to the shifting of the plates and then recognition of the increase in wave height as the tsunami approached land. Some applied their own knowledge to good effect. However, many did not go beyond the destructive margin – the start of the answer, despite the help in the figure.

Part 1(f) was better done than its counterpart last year which focused on the effects of earthquakes in a richer and poorer area. Then, there had been a persistent drift to reasons and responses. Although there was some drift away from the question again this year, this was not as widespread as previously, with students relevantly focusing on the effects of a tsunami. There was a requirement to use a case study here and many chose the Boxing Day/Indian Ocean tsunami of 2004 – although the year was not always accurately stated. The more recent tsunami in Japan featured rarely. Despite naming the case study, a significant number of students wrote generically about it, limiting their answer to level 1. Better responses included some specific facts and figures – sometimes too many; this illustrates the need for organised description rather than just a random regurgitation of facts/figures. Level 3 was achieved by considering the countries affected, by indicating place names and the fact that Banda Aceh was effectively wiped out, as 230000 people died in total in the region, that people were buried in mass graves to stop disease from spreading, that there was a real impact on tourism in places like Thailand etc.

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## Question 2 Rocks, Resources and Scenery

Many students in (a) knew that granite was older than chalk, but few could recall accurate knowledge to go beyond this. Better answers recorded the ages or the differences in millions of years or noted the Cretaceous versus Cambrian period. Spellings were often inaccurate and for some knowledge of the geological timescale seemed limited.

2(b) was generally well done with the composition being recognised, the permeable nature, linked to joints and bedding planes and the fact that it's chemically weak. Few described the colour and some drifted to identifying the type of rock or were confused regarding permeability etc.

In 2(c)(i), most got a mark for noting stalactites, stalagmites and pillars. Some drifted almost immediately to explanation – which was part 2(c)(ii), instead of obeying the command word here. Some gave very basic points that stalactites hung from the ceiling; the best responses sought to describe what was evident in the photo, i.e. the stalactites were longer and thinner than the stalagmites which were stubbier and seemed to be opposite the stalactites. The critical aspect in 2(c)(ii) was the need to have a clear sequence and reference to process. There should have been reference to the water in the cave containing dissolved calcium carbonate due to carbonation; an awareness that as this dripped from the ceiling some evaporated leaving behind microscopic particles of re-deposited calcium carbonate that built up over time. A significant proportion did not recognise the evaporation process and some had a random sequence rather than starting at the beginning and going through step by step.

Most gave a valid 6 figure grid reference, although some readings were not accurate enough while others got Eastings and Northings the wrong way around – which was disappointing for what should be a basic skill, especially on the Higher Tier paper. Many wrote generically in 2(d)(ii) disregarding the command to 'Use Figures 4a and 4b' in the question. Such responses were limited to level 1. The map was more effectively used than the photograph and precise answers noted the likely impact of heavy lorries on the B6255 and the large, deep white hole which scarred the landscape with woodland and the River Doe nearby.

In 2(e), a case study was generally utilised with Hope near Castleton being the most prevalent. Some clearly had the case study detail – knowing that 75000 trees had been planted, but there had to be a link to reducing the impact on the environment (not people) to progress to level 2 and then level 3. Again the weaker responses showed the need for a clear focus on the question asked.

## Question 3 Challenge of Weather and Climate

A significant number of students described the graph in 3(a) step by step, rather than having a focus on the overall trend with supporting evidence. Students should ensure they cover the whole time period in their answers, not just a part of it.

Responses to 3(b) were variable. There was some drift to cause with reference to ice caps melting which was not relevant in a question asking about effects. Despite the reference to the UK in the question, some students referred to the Maldives and Bangladesh. To access level 2, there had to be specific reference to the UK through places, climate type, crop names that were appropriate.

The most common response in 3(c) was to simply give an example of extreme weather. It was disappointing that students could often not describe this key concept. Where valid points were made, these focused on the exceptional nature of the events referred to – there was some

reference to Met Office records being broken. However, there was little reference to its infrequency and rarity.

For 3(d) (i) it was not true to say that all the British Isles as seen in the satellite image were covered in snow. Whilst most of it is, there are exceptions as seen along the north-west coast of Great Britain and large areas of the western part of the Republic of Ireland. Equally the depth of snow could not be discerned from Figure 6a and so such comments were not relevant. This illustrates the need to be specific and accurate when using the resources. Almost all got the first two marks available in 3(d)(ii), but the summary proved more challenging. Some just repeated the information without giving a clear sense of what the weather would be like over the next few days. Anticyclones were often wrongly given in 3(d)(iii), but there should be an appreciation that these bring dry weather and that it is a depression that would be responsible for large amounts of precipitation, including snow.

In 3(e), there was reference in the question to extreme weather '**such as** that shown in Figures 6a and 6b'. The use of 'such as' in questions like this is intended to open the question up to allow, in this case, any form of extreme weather to be used in answers - whether it be very heavy rain, gales, fog and so on. Problems and impacts had to be considered, but to reach the level 2, there had to be a tentative issue noted and the discussion of issues had to be clear for level 3. Thus, there may have been a debate about whether roads are salted enough, whether there is enough salt available, whether schools should shut with regard to snow or the limited time to rescue people, issue warnings in Boscastle, the drying out of buildings and the time scale people were away from home and subsequent improvements in flood management and whether they are adequate.

## Question 4 Living World

Most gained the mark for noting the presence of tropical rainforests near to the Equator in 4(a). However, statements beyond this were vague, often referring to continents rather than a more precise location, such as the Amazon. Appreciation of distribution itself, as distinct to location, was very rare with occasional reference to spread.

As in 2(c)(i), the use of the photograph in 4(b) proved less than straightforward. Students were asked to describe the vegetation shown in Figure 7, not just tropical rainforest vegetation generically. The Assessment Objective marks allocated to this question were 1 for AO2 and 2 for AO3 rather than knowledge. Marks were only available for a description of the photograph. So students who wrote about the layers and what these were gained little, whereas those who noted what could be seen in the photo such as the thin trunks, which are relatively branchless until near the top, and the presence of some very tall trees above the rest scored well. There were also some who disregarded the 'describe' command and launched into explanation - the next question. Although there was some drift to adaptations to soils in 4(c), many were able to identify appropriate climate adaptations such as drip tip leaves or growing tall. Fewer were able to then *explain why* trees grow so tall and have buttress roots and why they have drip tip leaves in connection with the climate. Explanation was essential for level 2, and those who failed to obey the command word remained in level 1.

In 4(d)(i), the vast majority calculated the correct distance of 60km. Most were able to gain marks for describing the location of tourist areas in 4(d)(ii), but fewer were able to apply their knowledge to consider why with reference to the key attractions such as sea and likely beaches, the proximity to the airport for international arrivals and subsequent access by roads to hotels. There were many who just lifted information from Figure 8b in 4(d)(iii) instead of using it – to even a small extent. One mark was given for this selection, but use had to be made for the second mark – e.g.

by noting the fact that the tourist arrivals were over 3 times the population or the uniqueness of the only 7 star hotel in the world.

Areas in south western USA featured significantly in 4(e) with reference to Mojave and Sonoran Deserts. Students often referred to retirement migration and tourism – at times with good case study knowledge. However, there had to be some reference to sustainable development to reach level 2 and this had to be more to the fore for level 3. The best used examples like the Hoover Dam and Las Vegas and questioned the use of water and how long it could continue. There was some drift to measures taken by residents to conserve water but this had to be linked to economic development to be valid – which was often not the case.

## SECTION B

### Question 5 Water on the Land

Many were not able to access all the marks available in 5(a)(i) as labels were often very general and at times inaccurate – so the valley sides do not equate with a river cliff. Some just randomly noted a range of features including meanders and interlocking spurs that were not visible. There was limited attention to detail; students had to ensure their label matched what was evident in the photo. The best responses had labels for both the channel and valley and identified the narrow river at an appropriate point, the steep valley sides and the presence of load where shadows were cast or fast flowing water. Responses to 5(a)(ii) were variable - depending on how familiar students were with the required landform. Often the necessary alignment of hard and soft rock was not recognised, or there was a partial sequence which resulted in the waterfall, but not the gorge. Some believed that vertical erosion was responsible for the gorge rather than the repeated collapse of overhanging hard rock. The best had a full and clear sequence, referred to specific erosional processes and recognised that the gorge was left following the repeated retreat of the waterfall upstream.

The sketch hydrograph in 5(b)(i) was generally appropriately drawn to show a higher peak and a shorter lag time. Some began the rise before the rainfall started and some had a higher peak, but with the same lag time. Most could identify a number of factors affecting river discharge in 5(b)(ii), but far fewer could explain the sequence of events and link to discharge effectively to reach level 2. Often, there was the beginning of explanation and a significant proportion reached the top of level 1. To go beyond this, students had to indicate that vegetation, for example, would increase interception, take up some of the water through its roots (not absorb through leaves) and this would delay the water reaching the river so that the lag time would be greater and the peak lower as water would infiltrate. There had to be reference to more than one factor to reach level 2.

There was limited effective use of the atlas map in 5(c)(i). Some apparently got confused and believed that the area was at sea level or that there was a dense population. Better answers noted the high relief and rivers and that there would be more rainfall likely and the river valleys could be dammed. Others were aware of the nearby cities that could be supplied with water and of the fact that there was limited settlement and so less disruption likely. Many were able to describe advantages and disadvantages of building dams and reservoirs in 5(c)(ii). A fair proportion began to just start discussing issues but responses where there was a real engagement with the question were limited. There is a need to go beyond just description and recognise that the building of dams and reservoirs is contentious and provokes debate – some may agree but others do not. There was no requirement to use a case study though some did include case study detail, but not in a purposeful way. However, there were some who considered whether Kielder really was required, the displacement of many for the Three Gorges Dam and the political implications of reservoirs in Wales supplying England with water, such as Lake Vyrnwy.



## Question 6 Ice on the Land

Part 6(a)(i) required a sketch of the drumlin shown in Figure 13 – a fact that was disregarded by many as their sketches did not resemble the profile given in the picture. Labels were sometimes general such as steep and gentle, rather than using appropriate terms. Conversely, some used lee and stoss and noted the overall shape. 6(a)(ii) proved challenging for many. Some believed that drumlins are the result of glacial erosion and there was some confusion with a roche moutonnee (although this is not a named landform in the specification). The recognition of glacial deposition as a start of an answer was as far as some got and vague reference to an obstacle. This needed to be developed to indicate why deposition occurred and how this then led to the characteristic drumlin shape in a clear sequence.

Most got the thinner and shorter glacier in 6(b)(i) but it was important to maintain the shape and not just have a straight line across the diagram. The majority of students were aware that accumulation and ablation were the causes of advance and retreat. Often these were seen separately indicating that snowfall led to advance for example. Better responses showed an awareness of the relationship between the two aspects recognising that greater ablation via melting or calving than accumulation via snowfall or avalanches would lead to the glacier shrinking and therefore retreating.

As in 5(c)(i), there was limited real use of the map in 6 (c), although most could identify relevant features here such as ice caps. They then had to make a link to Switzerland's popularity for winter sports via evidence from the map of likely activities and the access afforded for international tourists via the airports in Geneva for example. The level of knowledge shown in 6(d) was disappointing and too many students failed to engage with the 'Explain how' aspect of the question. Too many answers got side-tracked into air pollution and global warming which was an inappropriate scale in the context of this question. Often ideas related to litter, noise, building hotels in a very general way. There was no requirement for a case study but they were effectively used at times. Few students fully engaged with the impacts that people have walking on flowers, eroding soil and the recovery time nor the use of snow cannons in areas such as Wengen and the demands they place on limited supplies of water.

## Question 7 The Coastal Zone

Many were able to access the marks available in 7(a)(i) with cave, arch, cliff and headland being common labels. Some had a clear sequence in 7(a)(ii) but lacked reference to a headland, believing that arches could form in a cliff. This proved a key discriminator as did the completeness of the explanatory sequence – i.e. determining what happens to make the cave become an arch and then a stack.

Most did get the 2 marks available for 7(b) (i), but some needed to ensure that the line drawn was horizontal and not diagonal - a ruler therefore was an asset here. Some failed to add on the 35 cm to the 5 in 2010 and wrongly marked the line at 35. There was a need to refer to both economic and environmental effects in 7(b)(ii) and to obey the command word to describe, rather than just identify. An underpinning of realism was needed in statements about possible effects of sea level rise and not the alarming rates of rapid sea level rise predicted by some students. There was much doom and gloom – settlements destroyed, wildlife wiped out –, rather than a more measured approach that considered what might happen to habitats being flooded with salt water and the need to consider costly protection. Some did include these points and the best supplemented them with reference to case study information although this was not a requirement.

There was a need to look at Figure 19 in 7(c) and describe what was visible on the atlas map, for example to note the uneven, indented coast of X with headlands and bays present and the straighter/smooth coast (but not flat) at Y with a spit. Successful students noted that the shape could be and often was conveyed by the recognition of landforms.

There was some confusion between hard and soft engineering in 7(d). There was a need to make a case for the option selected, rather than just describe hard and/or soft engineering strategies. Some did not refer to any specific methods and this reduced the quality of the answer. There was some reference to case studies and clearly some students knew them well. But not all could use them effectively. Describing Mappleton did not necessarily answer the question, unless a particular spin was put on the answer. The best sought to justify why their selected option was the better choice, often by using a combination of its advantages and the disadvantages of the rejected alternative.

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