Version

General Certificate of Secondary Education
June 2011

Geography A 40301H

(Specification 4030)

Unit 1: Physical Geography (Higher)

Report on the Examination

Further copies of this Report on the Examination are available from: aqa.org.uk

Set and published by the Assessment and Qualifications Alliance.

The Assessment and Qualifications Alliance (AQA) is a company limited by guarantee registered in England and Wales (company number 3644723) and a registered charity (registered charity number 1073334).
Registered address: AQA, Devas Street, Manchester M15 6EX.

General

This paper was the second on the new specification. The Restless Earth was clearly the most popular question followed by Water on the Land, Rocks, Resources and Scenery and The Coastal Zone. The minority question was clearly The Challenge of Weather and Climate, followed by Living World. There was a huge shift in the quality of responses in contrast to last year. Some of the concerns had been addressed in the examiner's report. However, the single most important factor regarding the quality of responses lay in the fact that the majority of the candidates this year were Year 11 and therefore more mature and better versed in how to approach the examination than their Year 10 counterparts last year. Thus, the quality seen was comparable to the legacy specification and it was heartening to read some of the material that students presented as part of their answers. There was evidence of clear engagement with the questions, precise and specific use of case studies linked and developed statements that displayed a richness of understanding and an accompanying confidence in executing geographical skills.

There are, not surprisingly, aspects that could be improved upon and a summary of key points follows here. But the trend is overall very positive and the use of case studies including reference to places and specific facts is particularly encouraging.

Some candidates were clearly aware of how to deconstruct a question and met the requirement to answer the question asked, obeying the command word(s). However, for many, there is a need for greater consistency in this and a need to practise further. Centres should ensure adequate practice of past questions, but also ensure that candidates can deal with questions they have not seen before. It is unlikely that a question done from the previous year's paper will come up again in the same format. Thus, deconstructing questions forces candidates to be flexible in their responses. Candidates should identify the command word or words (and be previously aware of its/their meaning), the concept(s) concerned and what they mean, any limiting factors – such as the need to refer to a case study – and then to paraphrase it in their own words in their head to ensure the question asked is the one being addressed.

The need to understand and obey the command words is a critical skill in ensuring success. Too many drift into explanation when asked to describe (as in 4bi and 7bi). There is no credit for this, space is being filled and time lost for irrelevant information. If candidates are using words like 'because, as, therefore' they are drifting to explanation and this should be a check for them not to proceed. Centres should supply candidates with a list of common commands and their meaning, and seek to ensure understanding. A further check is to get students to go back to a question if they think they are writing the same information again – for it will be the case that one question has the information in it wrongly.

Allocating time wisely and writing answers of an appropriate length for the question is an important aspect of examination technique. There were many instances of short questions, such as 4(a) and 5(a), where candidates had exceeded significantly the space available. Often, they might have obtained 4, 5 or even 6 marks; yet there were only two and three available. Candidates should be aware of this, for time spent on these questions will mean less time available for the extended writing questions. Thus, they should consider how many points have been made in the space provided before continuing with the answer. Six clear points extremely well-written can only obtain three marks on a three mark question.

In the context of this, candidates need to ensure that they are addressing the specific question asked. At times, they clearly know a significant amount of information, but fail to direct it to the question. 'Tweaking the content' can make peripheral information pertinent to the question being answered. For example, in (2)(d) many described the rock type and its uses and referred to case studies such as tourism in Malham for limestone, but failed then to make the next step with regard to the benefits that this brings in terms of jobs for locals in souvenir shops and cafes.

The use of photographs remains an issue and an area where candidates should amass more marks than they do. There is a need to use the photograph and observe it in some detail. Features labelled, drawn or described in words must be clearly visible. If they are not, they should not be included in the answer. Reference should be made to key features, no matter how obvious it may seem –for example the material on the ice making it look dirty in question 6(b).

Describing a pattern and using text are also skills requiring development. A pattern requires the candidate having an overview of a distribution and conveying the spread in a precise manner using the map provided, as in question 4(a)(ii). The use of text demands simply that – the candidate needs to read it, make sense of it and then add the next stage, put it in their own words but not simply 'lift' information from text as short as that in 5(c)(i). Some disregarded the figure here, despite the command to use it.

Explanation of landforms was often a strength. Many were able to give a clear sequence in an appropriate order and refer specifically to process – which is not just named but explained. This is something that could be developed by all candidates for the nature of Paper 1 means that landforms are likely to be on the paper and the method of answering is both generic and formulaic.

SECTION A

Question 1 The Restless Earth

Part 1(a) was well done. Many clearly saw two – or more – differences between continental and oceanic crust. These referred to continental being lighter, thicker, older and, less often, not able to be renewed and/or destroyed. A minority failed to contrast, and some weaker candidates believed that the continental crust equated with land and oceanic with sea.

Performance on 1(b)(i) was variable. There were too many textbook style cross sections that showed internal features. A significant proportion drew sketches that did not represent the volcano in Figure 1. The expectations for a sketch of the shape are quite basic – the oval type of the crater, the angle of slope of the sides away from the crater – but many were just cones and bore no link to the observed photograph. Much better were those that looked at the photograph and used this to inform a representative sketch. The next stage was the labelling. The arrows must connect and they must reflect what is visible, not what may be expected. They must also relate to the features of the volcano – not other aspects of the landscape.
There was some confusion between constructive and destructive plate margins in 1(b)(ii) and some reference to collision margins (last year's question). However, the question proved to discriminate clearly. Many candidates got a partial sequence, usually linked to plates moving apart and magma moving up from below the crust; better candidates recognised the origin of magma in the mantle, and the best responses went on to note cooling and the subsequent repetition of events that led to the build-up of the layers needed to form a volcano.

The vast majority were able to describe the size of a supervolcano in 1(c)(i). This was either in absolute terms or with reference to a 'normal' volcano. There was some precise information regarding scale as for some with regard to shape, where many used the term 'caldera'. However, it was the shape description that proved more difficult and some went into too much detail on the size aspect – leaving no space for shape. There were two critical features of a level 2 response - a worldwide focus and the ability to link and develop statements. A case study was not a requirement, but many used supervolcanoes to illustrate their answer, especially Yellowstone. The worldwide element could be conveyed by referring to other continents, looking at the impact of ash on global weather, growth and crops and trade. Often, there was a local and national element to such answers where there was informed reference to likely impacts. Weaker candidates tended to list effects in a random fashion and often overstated outcomes – trillions dead, destruction of everything. There was some misconception that Mt St Helens is a supervolcano.

There was an effective use of a case study by a substantial number of candidates in 1(d). The Andes and the Alps were the most popular choices, and many sought to pepper their description with specific practices regarding farming such as terracing or transhumance, the role of llamas in the Andes; the proportion of HEP generated in Switzerland; specific minerals mined in both and the largest goldmine of Yanacoocha in Peru and reference to proportions visiting Alps for winter sports, named resorts and the importance of Macchu Picchu and the Inca trail in the Alps. The photographs appeared to be a useful stimulus – with candidates taking clues from these and then applying their own case study. Weaker candidates wrote generically about a range of fold mountains, which may or may not have been named or used inaccurate information.

Question 2 Rocks, Resources and Scenery

Many candidates had a clear and precise response to 2(a). Typically, there was reference to magma cooling, where this occurred – so reference to intrusive and extrusive and the presence of crystals. Some responses clearly gave more than the minimum for two marks. There was some belief that impermeability was a unique feature of igneous rocks.

There was a clear sequence identified in 2(b)(i). A drawback was a lack of completeness- either with regard to the origin of the material (more common) that was sinking and being compressed or at the end after it had been taken to the sea. There was a clear focus on process here which was the thrust of the question and many used appropriate terminology. Although there was some confusion on the part of some candidates with erosion, many gave clear definitions that referred to the lack of movement and the breakdown of rocks, and noted a number of types of weathering. Responses to 2(b)(iii) were varied. Some candidates appeared to be just guessing – and cliffs, acid rain, rivers and foliage on trees were seen. The quality of diagrams was often very good – a sequence perhaps worked better than a single one as this allowed the process to be explained more easily. Candidates accessing level 1 recognised the repeated heating by day and cooling at night; low level responses were aware of the different layers, whilst the best understood the differential levels of heating and cooling as rock is a poor conductor of heat, and that this led to the peeling away of the outer layers.

A granite tor is the only significant landform within granite areas and is a distinctive feature. There were two command words in this question – the first one of which was to describe. This became the key discriminator as candidates failed to look at the photograph – or if they did – failed to write about what was visible. There could have been reference to the grey colour, the blocks, the stepped profile, the horizontal cracks or joints etc. The omission of the description meant that many candidates were restricted to level 1. Explanation was much stronger and there were many varied and informed explanations – mainly focussing on the varied spacing of joints within the granite and the impact of this on rates of chemical and freeze-thaw weathering. The best understood that the tor was not surrounded by a different softer rock. They also completed the formation by looking at the removal of the overlying rock.

In 2(d), many candidates struggled to connect clearly with the question. Their responses were peripheral to it, without being clearly targeted to it. Thus, there was reference to the uses of areas of carboniferous limestone and often specific description with regard to Hope quarry and tourism in Malham. However, for a significant proportion, this was the thrust of the answer. There was a need to go one step further to clearly identify the benefits that such activities bring with regard to specific job types, allowing diversification and a source of income for farmers and the knock-on effects on the local economy. Some drifted into the use of quarries after they had been restored, which was last year's question.

Question 3 Challenge of Weather and Climate

In 3(a)(i), many identified features of the weather, rather than the depression – the weather system. Candidates had to accurately cross reference the information on Figure 5(a) with that on Figure 5(b) and then label features such as the warm and cold fronts (which coincided with the edges of the cloud). Some noted the correct position of an occluded front and the position of the (centre of the) low pressure. If candidates recognised the changing numbers and the increase outwards, they were able to answer the question correctly. Some related to the circular shape and their tight spacing. There was a need to focus on the isobars only, and there was some drift to the weather symbols and a description of the weather conditions – which was not relevant to this question.

Part 3(b) clearly presented a challenge to some candidates. This was due to two main factors – the failure to comply with the command word to 'explain' rather than describe and to have the knowledge to appreciate what happened at the two fronts versus the warm sector in between. There was much confusion between warm and cold fronts and the general sequence of a depression. Better candidates related to a specific sequence with a focus on explanation. Thus there was recognition that the two air masses were different and that the warm air would rise over the cold air. The best were aware of the contrasts in the way that this happened at the two fronts and the sequence of events set in motion by the air rising to give the different weather types associated with the two fronts.

Most were able to access level 2 in 3(c)(i) by recognising trends, such as the overall fluctuating increase and/or the discrepancy between the north and south hemisphere. Many offered some

evidence, and the best responses manipulated the figures, rather than just 'lifting' information from the graph and saw clear contrasts, including the increasing separation between the hemispheres. The one possible cause of climate change in 3(c)(ii) was well done. Many had information beyond what was needed for the two marks available. Many considered the increasing use of fossil fuels, the release of carbon dioxide and the recognition that this was a greenhouse gas. Some were vague, noting more cars but not making the required link.

There were few level 3 responses in 3(d). This was due to the need to obey two command words and to have at least some global aspects in an answer. Level 1 responses typically had a local/national response focus and neglected the global aspect. Some candidates who noted Kyoto were vague in what it sought to do and displayed little understanding. At the opposite end of the spectrum, candidates were more precise, had clear global points and explained how strategies such as Kyoto and carbon credits would help the situation. These were often supported by complementary, local/national initiatives. Here, unlike in question 2(c), the descriptive element was stronger than the explanation.

Question 4 Living World

Definitions were clear and precise in 4(a)(i). Many went beyond what was required for two marks. There was specific reference to living and non-living elements and the interrelationships between the different components. There was some confusion with habitat. The most common creditworthy response in 4(a)(ii) referred to the location of the hot desert ecosystem along the tropics of Cancer and Capricorn. However, beyond that, many drifted into a listing of a series of locations – which is not a description of pattern. The best noted the presence of the largest desert in north Africa, and the frequency with which deserts occurred on western coasts.

In 4(b)(i), there was a substantial drift to explanation – despite the command word to describe and the fact that the explanation came in the next question. Marks are not lost as a result – but valuable time is wasted writing irrelevant information. Too often, there was scant reference to the photograph and a focus on what was clearly not visible – such as roots. Good answers occurred where candidates looked carefully at the photographs and wrote down visible features in an organised way – such as the ribbed skin on the cactus, the presence of needles, the limited branches, small shrubs growing close to the ground. There was plenty of scope here and many candidates missed the opportunity to score marks. Explanation was required for 4(b)(ii) and this question was better answered. Although some candidates drifted to animals, many focussed on the climate and the soils by referring to features above and below ground level. Links were clear and many had explanation to the fore with reference to small leaves or needles related to reduced loss of water via transpiration, the seeds being dormant awaiting rain and maximising it whilst present, and the root systems designed to be deep to reach groundwater when rain is not available.

Most could identify a cause on 4(c)(i) – such as logging or mining. Some found it more difficult to add a little bit more to exemplify why logging might be occurring. Some referred to more than one cause. A small minority looked at effects, rather than causes. The effects of deforestation were well known in 4(c)(ii). Linking these effects to the case study was the main issue. Many were aware of the effects on species diversity, the hydrological cycle and soil erosion, and the social implications for indigenous populations and beyond. However, there was a need to link this to the named case study and to include some specific information with regard to locations, species, tribes and possible medicines lost rather than to write generically.

SECTION B

Question 5 Water on the Land

Many were able to access the marks available in 5(a) and indeed, many gave more points and detail than that required for the three marks available. There was much detail on processes and how they worked. At the other end of the scale, there was some listing of processes and some confusion between abrasion and attrition.

There was a good range of responses to 5(b)(i). Many got three marks for precise and purposeful labelling of flood plain, meander and (possible) ox-bow lake. Again, candidates need reminding of the need to ensure that arrows connect with the intended feature. Here, a label that said meander and did not connect actually identified the flood plain. Furthermore, there is a need to label what is visible and not what cannot be seen – such as depth or process. Part 5(b)(ii) had many plans rather than the cross-section specified in the question. Marks therefore were limited to level 1. Those who drew a cross section had to ensure that it was clearly asymmetrical to access level 2. There was then a need to label relevant features – such as slip off slope, river cliff, and there was reference also to the depth and speed of the water. The best cross sections showed detail of undercutting on the outside bend and the build-up of material on the inside. For some candidates, there was confusion between the inside and outside bend and some drifted to process. This was also apparent in 5(bi)(ii) with the explanation of the formation of an ox-bow lake. Candidates who fell into this category achieved level 1 as the sequence was not clear. Some candidates got the end part of the sequence but not the initial stages. The best answers noted erosion on the outside bend, the narrowing of the neck of the meander, the occurrence of a flood leading to the river taking the shorter, straighter course and then the role of subsequent deposition sealing the cut off meander.

In 5(c)(i), successful responses sought to do as the question said – firstly to use the newspaper cuttings and the information in them – and secondly – to say why flooding occurred. The question was well done where candidates did this. One or two causes of flooding could have been considered. The critical aspect was to identify a cause, such as deforestation and then go through the sequence of events set in motion. Thus, there was reference to reduced interception, faster surface runoff and reduced lag time. Some candidates wrote about causes not present in Figure 11 and others identified causes from Figure 11, but did not go onto explanation. Candidates had to target the content of their answer to the question in 5(c)(ii). It was not enough to describe the strategies of either hard or soft engineering and consider advantages and disadvantages. The content had to be tweaked to make it clearly address the question asked. The best responses used the strategies and then made a case for that approach that related the strategy to cost, appearance, effects elsewhere and the potential reduction of the flood risk. There was, here, support and illustration. Some answers related to cliff erosion and coastal management, rather than river flooding.

Question 6 Ice on the Land

A common approach to part 6(a)(i) was to consider the components of accumulation and ablation and link these to the retreat or advance of the glacier. Some identified examples of accumulation, such as snowfall and ablation - the melting, whilst fewer referred explicitly to inputs and outputs. There was some confusion with the different zones, rather than the processes and relative amounts, but the question was generally well done. In 6(a)(ii), most recognised the retreat of the glacier, but were weaker on using the map beyond this. Good responses identified the southerly direction of the retreat, the scale of it – between 1200 and 1400m, its narrowing – or its unevenness of retreat over time. Ticking off three points should have led to three marks, if the map was analysed closely. Candidates needed more than one reason to access level 2 in 6(a)(iii). Often, there was reference to changing weather and climate leading to less snowfall, the subsequent reduction in the glacial budget linked to global warming and its possible causes – including those relating to the tilt of the earth as well as increased burning of fossil fuels. The strength of the link between the reasons was a means of discriminating within the level.

Candidates generally recognised the melting of the glacier via the channels present on the surface in 6(b). There was often a focus on moraine in 6(b) and sometimes detail about the ridges and uneven appearance. Again those that focussed on the question and the glacier fared well. However, there was some drift from the glacier to the valley and a description of landforms. This, as well as types of moraine that were not visible, were all irrelevant.

In 6(c), as in 5(b)(iii), weaker candidates considered part of the sequence. There was a recognition of ice occupying a river valley or reference to processes (often in isolation) or the removal of the interlocking spurs by the ice as they were bulldozed to create the U-shape valley. The best responses linked all aspects together in a clear and ordered way. Some drifted to other features related to a glacial trough, such as a ribbon lake or hanging valley and some described rather than explained the landform. All of these were irrelevant here.

There was some drift to effects and responses in 6(d). However, many did focus on causes of avalanches, and the responses showed significant variation. Weaker candidates often described and defined the hazard and the different types and went on to identify separate statements, such as skiers (or walkers) and the presence of a lot of snow. The best responses were clearly aware of a variety of causes and sought to explain their occurrence by describing the presence of different layers of snow with contrasting characteristics and explaining how this led to instability in connection with the role of gravity. The presence of new layers of snow adding weight, explosions triggering avalanches for safety and the presence of water and its role as a lubricant were common reasons given in some accomplished accounts.

Question 7 The Coastal Zone

The diagrams produced to illustrate the process of longshore drift in 7(a)(i) were variable. Sometimes, it was difficult to distinguish between land and sea; the most common failing was to show the direction of the prevailing wind which is crucial in the process. Most could identify the swash and backwash – but some candidates drew on the arrows and failed to label them. Some got the labels the wrong way around; others perceived that the swash was at right angles and the backwash at an angle. A significant number wrongly believed that the direction of the movement of material was parallel to the prevailing wind. There was description of deposition in 7(a)(ii), but not always of the reasons why material being carried was dropped. Some wrote about where it occurred, rather than why. The best answers often referred to constructive waves and the implications of these with regard to the more powerful swash and weaker backwash leading to sediment being left behind. The loss of wave energy was a common basic response.

In 7(b)(i), most could identify two landforms or more in a list-like fashion. Describing them proved more challenging. Too many described those that were not present – but which candidates assumed would/should be there. Thus, arches and stacks were prominent. There was a drift to explanation (the next question). Close observation would have given a wide variety of points to describe – such as by noting what the cliffs were like – that they were steep, had an overhanging part – or by the position of features such as the wave-cut platform at the bottom of the cliff. The explanation that was required in 7(b)(ii) was often clear and sequential. The sticking point was often clarifying the specific position of the layers of hard and soft rock. Once this was established – and diagrams were an effective way of illustrating the relative position – candidates generally went on to note the contrasts in erosion rates with reference to specific processes such as hydraulic action and abrasion and the resultant headland linked to the hard rock and soft rock forming the bay. Weaker candidates focussed on caves and arches despite the use of headlands and bays in the question.

Some case studies selected were perhaps too small for the purpose of this question – Holbeck Hall Hotel is one example; conversely others such as Dorset or East Anglia were too large, as not all of their coastlines are prone to collapse. There was a frequent drift to how the coast could be protected, but this generally did not relate to the environmental effect (although it could have done and occasionally did). Holderness and Barton were frequent examples and these had to be used specifically to access level 3, as well as there being some reference to the environment which proved more difficult than people's lives. There were some precise responses noting the number of caravan pitches lost, the threat to houses and numbers gone at places such as Barmston and Mappleton on the Holderness coast. These points were developed into impact on residents under the threat of having to move and the resultant stress. Some noted the speed of retreat here – an environmental effect, as were landslips and loss of habitat for specific species and thus these candidates fulfilled the requirements of the question. Basic low level 1 answers noted deaths, houses falling into the sea as well as cows and pigs – often generic and overstated.

In 7(d), many described the changes that were occurring – often in some detail. The measures to protect were also often described. However, a substantial proportion did not progress to explanation. The best responses made the link between areas of protection and the lack of erosion and the fact

that further south of these, erosion appeared to be accelerating. Thus, they obeyed the command 'explain'.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the Results statistics page of the AQA Website.

UMS conversion calculator www.aqa.org.uk/umsconversion