GCSE

Chief Examiner's Report
Geography

Foreword

This booklet outlines the performance of candidates in all aspects of this specification for the Summer 2019 series.

CCEA hopes that the Chief Examiner's and/or Principal Moderator's report(s) will be viewed as a helpful and constructive medium to further support teachers and the learning process.

This booklet forms part of the suite of support materials for the specification. Further materials are available from the specification's section on our website at www.ccea.org.uk.

Contents

GCSE GEOGRAPHY

Chief Examiner's Report

Overview

This year, the first award of the revised specification at qualification level, saw a significant increase in the number of candidates cashing in. The subject outcomes revealed that both teachers and their students have adapted well to the new specification, which differs from the legacy specification having an examined paper addressing the fieldwork aspect of the course rather than controlled assessment. This has proved to be a positive experience for candidates and the move to an examined paper was successful as an assessment tool for centres. No issues were identified by examination centres, which were well prepared through guidance provided in circular format by CCEA in April and May 2019. In the revised specification there is no tiered entry, but there was no evidence that candidates who would have formerly been entered for foundation tier were disadvantaged in any way. This year saw the introduction of the C* grade and the grade outcomes for A*-C were slightly better than in 2018. Furthermore, outcomes in the A*-A grade category were the highest in recent years.

As was the case last year, it was evident on papers 1 and 2, that many candidates knew their case study material well and could accurately complete most of the skills based questions so were able to achieve high marks, that is, over 70 out of 100. Some challenging questions tested the understanding of higher ability candidates who were able to respond well, demonstrating their knowledge and good understanding in extended writing. However, some weaker students produced answers which did not include clear explanation, even when appropriate case studies were used, and the quality of their evaluation was often limited. The short questions, usually at the start of each theme, were easily accessed although definitions were often not learned precisely enough to obtain full marks.

There was much variety in question style throughout the suite of papers, including Ordnance Survey map skills, multiple choice, tick box, underline, labelling diagrams, interpretation of a range of resources, putting stages in order and using connecting lines, all of which candidates could attempt with many offering a high standard of response. There was no evidence that candidates were unable to complete any of the papers in the allotted time. No marks for spelling, punctuation and grammar are awarded in the revised specification but the quality of written communication continues to be assessed through specific questions using a levels of response mark scheme. The use of key geographical terms was good and is to be encouraged. It is important that candidates understand the command words used and respond appropriately to them, e.g. describe, explain, and evaluate. As was highlighted last year, candidates need to be made aware of the requirement to include a final concluding statement in questions requiring evaluation. Furthermore, evaluation type questions require consideration of both positive and negative aspects and failure to include both will result in marks at a lower level.

It is important that candidates note the number of marks available for each question and write an appropriate and relevant amount of information using the lines provided as guidance. As was highlighted last year, it should be noted that there is usually no necessity for a supplementary answer booklet as candidates frequently wrote only one or two lines which could easily have been written in the space below the lines printed on the examination paper. Some even avoided using the labelled 'Extra Space' provided below the question and just went straight to completing their answer in the supplementary booklet! There is also no necessity for candidates to write in the space above the next question or in the page margins. Now that on-line marking is being used, the practice of using a Supplementary Answer Booklet should be very strongly discouraged.

Assessment Unit 1   Understanding Our Natural World

Overview

GCSE Geography Unit 1 comprises four themes based on physical geography: Theme A River Environments, Theme B Coastal Environments, Theme C Changing Weather and Climate and Theme D Restless Earth. The total marks for this paper is 100. The time allowed is 1 hour 30 minutes.

It was pleasing to note that many candidates demonstrated good examination technique by structuring longer answers clearly. For example, many candidates adopted the good practice of underlining key words in the question such as sustainability in Questions 1 & 2 and global (not local) and environmental (not human) in Question 4 (f)(iii). However, some answers indicated that candidates sometimes do not take adequate note of command words in questions and fail to fully answer all aspects of the question e.g. when asked to describe and explain (often for two variables) or to evaluate whilst others confused questions on impact with causes.

Candidates found this unit straightforward overall although there were some weak responses to some of the map skills questions.

Theme A: River Environments

Q1   Many candidates performed well in this question giving detailed answers relating to river processes and features. The case study information was generally accurate; the longer case study question was often answered in detail allowing many candidates to access Level 3.

    (a) **(i)**   Most candidates correctly identified the land use at the given grid references.

        (ii)   Many candidates seemed unfamiliar with the spelling of the term 'loch' as the name of a lake, although it was clearly labelled on the Ordnance Survey map.

        (iii) The definition of a drainage basin was often confused with candidates not being able to express accurately the meaning of this key geographical term.

    (b) **(i)**   The drainage basin characteristics as shown on the Ordnance Survey map were well known; many candidates accurately labelled the sketch map to gain full marks.

        (ii)   The name of the main river shown in the sketch map was often incorrectly stated as Freswick, candidates taking the answer from the bay labelled on the sketch map instead of the river on the Ordnance Survey map extract.

    (c)   This was a challenging question for many candidates. Many failed to read carefully this question on load based on data from three sites along a river. Sometimes only figures for the load size were provided, percentage figures for shape were often omitted and in some cases the command word 'explain' was completely ignored. Some candidates misinterpreted the question and only described general trends in size, with no supporting figures, but gave a good explanation of attrition. Others failed to provide sets of figures to show how load size and shape changed but only described load at one site, although some relevant explanation was offered on attrition or transportation processes that would lead to change. This question was a good discriminator of level of ability.

(d) Although some candidates failed to mention the name of a river either at the start of the answer or within it, most answers used the river Mississippi or the Yangtze. Only a few confused the question and used their case study of flooding often based on the Somerset Levels. The best answers referred to the sustainability of the river strategy within the discussion of the methods used rather than leaving it to their judgment of sustainability in the conclusion. Some candidates still wrote answers on only one method which is not discussing the strategy and so their marks were confined to Level 2 as were answers which did not discuss sustainability at all.

Theme B: Coastal Environments

Q2 Overall there were good answers on coastal processes and features and the longer question on a coastal management strategy was answered to Level 3 standard by many candidates.

(a) The Ordnance Survey skills questions (i) – (iv) were often answered very competently but weaker candidates lost marks as they could not state height, measure scale or use compass points to indicate direction accurately. Despite being given a choice of area, many candidates incorrectly thought the answer was 1km² in Part (iv).

(b) Table 3 on the stages in the formation of a wave cut platform was accurately completed by the majority of candidates.

(c) The explanation of the formation of a stack was sometimes completed accurately but more often posed great difficulty. Some candidates confused a stack with a wave cut platform. Others did not refer to erosion through a headland as two caves back to back are attacked by wave erosion, leaving a pinnacle of rock separated from the coast.

(d) This question was often poorly answered, despite it being clearly part of the specification which requires knowledge of three reasons for the necessity of coastal defences (page 13). Many candidates did not state clearly that climate change means sea levels could rise, resulting in more erosion or possible flooding at the coast, perhaps requiring sea defences.

(e) Many candidates stated facts, figures and place names but did not explain clearly the sustainability of the methods of protection at their choice of coastline. A variety of coasts such as Hornsea and Withernsea were used in the answer, although Newcastle Co. Down was the most common case study location. Case study details with facts and figures/place names for at least two methods and an evaluation of their sustainability were demonstrated by the majority. Excellent answers with good evaluation and a concluding judgement were offered by the best candidates, who demonstrated good geographical understanding.

Theme C: Changing Weather and Climate

Q3 This theme is always challenging for candidates. There was much evidence that candidates did not know the features of two cloud types or understand the causes of rainfall or temperature change in a depression. There were however, several short questions such as Part (b) which enabled weaker candidates to score some marks.

(a) Several candidates did not correctly name the weather recording instruments shown in Table 4, especially the anemometer (the spelling of which varied considerably).

(b) Most candidates correctly completed Fig. 2 relating to factors that affect climate.

(c) This was a straightforward question on the difference in two cloud types which surprisingly very few candidates of all abilities answered well. Many answers lacked a clear difference in the height, colour or appearance of the two cloud types; the clearest answers compared cumulus with cirrus clouds.

(d) **(i)** Many candidates correctly named the weather system (a depression), rather than just stating low pressure.

(ii) Table 5 was not always attempted or accurately completed, with wind direction especially confused. Many candidates scored zero marks as they failed to use the weather map in Fig. 3 and tried to add compass points to the last space, incorrectly thinking that units were to be added, rather than the actual values for the three weather elements.

(iii) This was a question which stretched many candidates who ignored the command word 'explain' and only indicated the weather will be colder and wetter as the cold front replaces the warm sector at Edinburgh. Where explanation was attempted there was often confusion on the change from Tropical Maritime (Tm) to Polar Maritime (Pm) air mass causing temperatures to fall plus the cold front undercutting the warm air, making it rise, cool and the water vapour condense to cause heavy rain. Many candidates did not read the question carefully and wrote general descriptive answers on the passing of a depression, starting incorrectly from Edinburgh's position ahead of the warm front, rather than its position in the warm sector.

(e) There were many candidates who obtained Level 3 marks in this question with the description of the impacts of Typhoon Haiyan being the most frequently quoted case study. However, as in the previous year, some candidates gave confused responses stating their chosen extreme weather event was a hurricane but describing an earthquake, with facts/figures on thousands of deaths around the Indian Ocean tsunami or other disaster. Too many candidates just listed, rather than described the impacts and some answers did not focus on people.

Theme D: The Restless Earth

Q4 The majority of candidates handled this final question fairly well. Candidates were able to demonstrate their knowledge and interpreted most questions correctly, although the term 'distribution' was often not well understood.

(a) **(i)** This was often poorly tackled as candidates did not understand the term 'distribution' and described the causes of fold mountains and so did not state clearly that they were located at plate boundaries. Some idea of the pattern of the location of fold mountains around the world was required. The best answers included named pairs of plates and stated they were at collision zones and some named mountain ranges. Weak candidates just listed plates as shown on Fig. 4. Very few candidates used compass points or named the east-west belt through the Mediterranean Sea to the Himalayas or the north-south belt down the west coast of north and south America.

(ii) There was limited knowledge of the formation of sedimentary rocks with many answers confusing them with igneous rock and referring to magma cooling.

(b) There were some good answers on the difference between the epicentre and focus of an earthquake, although many candidates lost marks for this question as they muddled up the two terms, describing them in reverse.

(c) Most candidates correctly stated the meaning of the term tsunami, obtaining full marks.

(d) This question on volcanoes at constructive boundaries was often not well answered. In many cases the boundary stated in the question was confused with a destructive boundary, there was no mention of convection currents or the ridge of new crust/land pushed up to form a volcano.

(e) Many candidates correctly ticked the three characteristics which are true of a supervolcano although some candidates incorrectly ticked a 'high cone of layers of ash and lava' instead of forms from a collapsed caldera.

(f) **(i)** The name of the town located in the supervolcano area, Pozzuoli, was usually accurately identified.

   (ii) Most explained how ash would kill many people in Naples if this supervolcano at Campi Flegrei should erupt.

   (iii) Many candidates failed to score full marks as they misinterpreted local impact on people instead of global impact on the environment. This highlights the importance of reading the questions carefully. The best answers referred to global cooling and gave details of a mini Ice Age.

Assessment Unit 2   Living in Our World

Overview

Unit 2 in GCSE Geography consists of four themes based on human geography: Theme A Population and Migration, Theme B Changing Urban Areas, Theme C Contrasts in World Development and Theme D Managing our Environment. The total marks for this paper is 100. The time allowed is 1 hour 30 minutes.

Theme A: Population and Migration

Q1 **(a)** **(i)** This was a TRUE/FALSE question based on two graphs relating to global population changes. The majority of candidates scored two out of the three marks available as they incorrectly accepted that 3.1 million people would be over 60 in 2100 when in fact the number would be 3.1 billion.

   (ii) The majority of candidates scored two out of the three marks available as they were able to explain why births rates decreased. Only a small number achieved the full three marks by mentioning LEDC/MEDC in the answer. The question specified global fertility decreases, this was lost on most candidates.

   (iii) A difficult question to achieve the full three marks. Many candidates chose to write about the economic implications of an ageing population such as increased pensions leading to increased taxation on the working population. These answers scored only one mark. Candidates needed to focus on social implications such as family stress, loneliness and quality of healthcare etc.

(b) Nearly all candidates correctly identified that Portugal had between 0-999 refugees.

(b) (ii) Candidates were asked to complete a bar graph showing the 220,000 refugees who travelled to Germany. Many were able to draw the bar graph correctly but, as in previous years, they did not shade the bar fully or used diagonal lines which were not appropriate. Therefore, many candidates only scored one mark.

(iii) This question required candidates to describe the difference between an economic migrant and a refugee. Almost all acknowledged the fact that a refugee is forced to leave an area. The candidates also knew that economic migrants moved for work purposes but more importantly, did not state that this was voluntary. This omission meant the candidate scored three out of the four marks available.

(iv) Candidates were required to describe how one physical feature may act as a barrier to migration. Unfortunately, many chose a wall as a physical barrier. This wasn't accepted as people must build the wall and thus it cannot be seen as a physical feature. We wanted to see natural physical barriers such as mountains, oceans and deserts etc. Some description of how these were barriers was also required e.g. oceans are cold, so people cannot survive very long if they fall in.

(v) This question was based on their case study of the challenges faced by both refugees and the destination country. It was pleasing to see that last year's advice to include the refugee group and destination country at the start of the answer was followed. Many candidates wrote about the Syrian refugees' journey to Greece. This case study was answered very well with many candidates accessing Level 3.

Theme B: Changing Urban Areas

Q2 (a) The majority of candidates correctly identified the three zones within a city.

(a) (ii) This question required candidates to list three characteristics of the CBD. A variety of answers was seen. Candidates had to give some description of the characteristic. Vague answers which could apply to any part of the city were not accepted e.g. shops, offices. Answers which were acceptable included high-end shops, high rents, most accessible part of the city etc.

(b) This was a resource-based question on the changing population characteristics of Mumbai. Candidates were required to describe and explain the change on the percentage of people living in shanty town areas in Mumbai. They were required to base their answer on two reasons for the growth of the shanty towns. Almost all identified that the shanty towns had grown from 28% to 60% over the 30-year period. Unfortunately, the explanations were generally weak. Most candidates explained one reason of rural-urban migration quite well. The second reason of natural increase was largely ignored. This meant that the majority of responses were restricted to Level 2.

(c) This proved to be a challenging question for many. Candidates were required to discuss the issues of cultural mix and housing within the inner city in MEDCs. Candidates were also required to 'refer to places' to illustrate their answer. For cultural mix we were looking for two out of the three issues listed in the specificiation to be discussed (ethnic tension, language barriers or religious problems) with some elaboration on the issue, e.g. hate crimes reported, to get the full 4 marks. Many candidates did not name a city so were restricted to Level 2 marks.

In relation to housing, many candidates knew the issues of the run-down nature of the homes and the process of gentrification. However, just as in the cultural mix part, if there was no named city then the candidate was restricted to Level 2 marks.

When teaching this part of the specification schools must ensure that candidates are referring to a city. It would be better if they referred to an actual named inner city area such as Camden, Shankill or the Falls (or any other appropriate area).

(d) This was the case study question on an urban planning scheme. The candidates were required to focus on the transport and environment improvements. Unfortunately, examiners reported that this question was poorly answered. Many candidates did not have enough detail on the transport and environment improvements to access full marks. It was noted that the transport improvements lead to environmental improvements e.g. the new Glider bus reduces the amount of greenhouse gases. In future it would be beneficial if each improvement was treated separately with its own facts and figures and not intertwined with each other. This would make it easier to access Level 3. As in other years, many candidates wrote about housing and employment and thus received no credit.

Theme C: Contrasts in World Development

Q3 **(a)** **(i)** This was an accessible question requiring candidates to choose the correct statement based on a global map showing access to the internet. Many candidates achieved full marks.

(ii) Many candidates seemed unsure how to tackle this question. They went off on tangents as wide as slow broadband speeds and the inability of older people to use the internet. Those who did see it was only an economic indicator, did not realise that social indicators are also required to help make a more accurate assessment of development. To access Level 3 candidates needed to show that a composite measure such as the Human Development Index (HDI) was the best.

(b) A significant number of candidates found this question challenging and only gained half marks because they incorrectly classified the factors which hindered development.

(c) This sub-section was very poorly answered, with most candidates giving the aim of a goal, rather than the full and correct name of the goal as stated on the UN website (www.un.org), e.g. No poverty, Zero Hunger, Quality Education etc.

(d) **(i)** Some candidates defined technology in general, rather than the term appropriate technology.

(ii) A well answered question. The Hippo Water Roller was the most popular named appropriate technology product although we did see others including the fishing boats in India, Play pump and a new one, the Life Straw.

(e) Most candidates were able to name and discuss a country from the BRICS group of nations, India and China being the most popular choices. Candidates had been well prepared to quote 'help and hinder' figures but very few carefully described general changes due to globalisation. This limited such responses to Level 2. It is important that schools are teaching how globalisation is helping or hindering. It is important to discuss the role of TNCs, foreign investors and the breaking down of trade barriers etc. If candidates did not do this, they were restricted to Level 2.

Theme D: Managing our Environment

Q4 **(a)** **(i)** This was well answered by almost all candidates as they correctly identified the main sections of the waste hierarchy.

(ii) Universally answered correctly. Candidates underlined the correct terms and in doing so, achieved full marks.

(b) **(i)** Almost all candidates correctly identified the smallest offshore wind farm zone.

(ii) This question was not well answered as very few candidates used both direction and named sea areas to describe the distribution of wind farm zones. These were needed to access top level marks.

(iii) Most candidates were able to access Level 2 but were unable to fully elaborate the disadvantage of their chosen renewable energy source.

(c) **(i)** A well answered question requiring candidates to identify the trend shown in Fig. 9. Most candidates identified the trend and quoted relevant figures. However, some candidates only noted the 2014 and 2017 figures and did not look at the intervening years, this restricted the candidates to 2 out of the 3 available marks.

(ii) Examiners reported good answers to this question and commented that it was encouraging to see so many candidates able to describe how to be a responsible tourist.

(iii) Most candidates found this a challenging question as they had learnt more on ecotourism and as a result wrote about Nam Ha. Unfortunately, this type of response was inevitably restricted to Level 1. Reference to places was needed to obtain better marks, and apart from the Hawaiian Hula dancers, few regular places were quoted. Also, the command word "evaluate" was not always handled well and only negative aspects of mass tourism were written about. Some candidates wrote about economic advantages/disadvantages of mass tourism but unfortunately this gained no credit. It would be beneficial for schools to put more emphasis into the positive cultural and environmental aspects of mass tourism as these were clearly lacking.

Assessment Unit 3   Fieldwork

Overview

This was the first time that the Unit 3 Fieldwork paper was available for candidates to take as part of the revised GCSE specification. Examiners noted that the majority of candidates were well prepared for the paper and were able to use their fieldwork experiences to respond positively to the questions set. The paper was accessible overall with adequate time for completion. The majority of candidates completed the full paper with many achieving high marks. Most of the fieldwork presented related to either river studies or urban land use studies.

The Fieldwork Report and Table of Data

Teachers had been given access to a wide range of training meetings and resources prior to the first sitting of this paper to help them to prepare their candidates for the examination. Most candidates presented appropriate information and attached it to their examination paper. However, some candidates presented too much information.

Fieldwork report

- Centres are reminded that the fieldwork statement should only include a title, a statement of the aim and hypotheses that the candidate is testing and details of the location of the study.

- The formulation of appropriate hypotheses is critical:

  - Candidates should develop a minimum of two hypotheses. In some cases four or five hypotheses would be listed and this appeared to cause confusion for some candidates.

  - Sometimes the hypotheses stated were too detailed. The hypothesis should be a simple statement of what is being tested and should not contain any information that could 'steer' the candidate as to the explanation. For example, an acceptable hypothesis might be that "The bedload of the Curly Burn River becomes smaller with distance downstream". However, an unacceptable hypothesis might be that "The bedload of the Curly Burn River decreases with distance downstream due to erosion by attrition". This second hypothesis includes a level of interpretation which is not required at this stage.

  - Teachers should ensure that each hypothesis allows for detailed investigation across all stages of the geographical enquiry process. For example, a simple hypothesis such as 'The width of the Curly Burn River increases downstream' sometimes left candidates struggling to describe the process of data collection (Question 4) in enough depth and detail to produce a Level 3 response.

  - Where a more complex hypothesis such as 'The cross-sectional area of the Curly Burn river increases with distance downstream' was used, candidates sometimes failed to describe the collection of both depth and width in order to calculate the cross-section area. Some candidates who discussed discharge also faced similar issues as they needed to describe how they measured the depth and width of the river to calculate the cross-section area, then how they measured average velocity and finally how they determined the river discharge.

  - Please note that the teacher is always best placed to determine the complexity of hypothesis that is appropriate for their students. It is acceptable to base the fieldwork on simple hypotheses such as river width or river depth.

- Examiners expressed concern that some fieldwork/hypotheses were more relevant to previous specifications than the current GCSE specification. Teachers are reminded that the fieldwork investigation should be based on an issue or question related to Units 1 or 2 (see Specification, Section 6.3).

- Some centres provided a number of maps to help with the location of the study but there really is no need to provide this amount of information. The specification allows for a map showing the data collection points if appropriate.

- Some centres included detailed information relating to the location of the study. However, some of this information was too detailed. In the future, centres are requested to restrict details of the location of the study, e.g. name of river, basic description of the course of the river (source, direction, settlements, mouth), name of settlement, street name/s, name of data collection points.

Table of data

- Many of the centres provided effective and appropriate tables of data that allowed their candidates to access their data easily.

- The majority of data was primary data and very few candidates made any reference to secondary data within the table of data.

- Teachers should ensure that tables are well organised and easy to use. Only data that is directly involved in the hypotheses presented should be included. Some centres presented complex and sometimes contradictory tables of data.

- Where appropriate, it is acceptable for values to be presented as averages or percentages; for example average river depth, average pebble size, percentage residential land use.

- Ideally, centres should present their data in the form of a summary table on one page only.

Preparation for the Examination

Guidance in the form of circulars was issued to centres prior to the examination. This will continue each April/May. Teachers are reminded to follow the guidance carefully to ensure that the necessary fieldwork statement and table of data is available to candidates in the examination. The fieldwork statement and table of data must be accompanied by the cover sheet provided by CCEA showing the candidate number and centre number. Copies of the cover sheet can be downloaded from www.ccea.org.uk/geography and following the link to GCSE Revised (Sept 2017). Teachers are reminded that the cover sheet must be signed by both the teacher and candidate.

At the end of the examination, candidates should attach the cover sheet, fieldwork statement and table of data to the back of the exam paper using a treasury tag. If students have also used a supplementary answer booklet this should also be attached securely to the question paper.

Thankfully there were no cases where a candidate had not presented either the statement or table of data.

The Examination Paper

The fieldwork paper comprised six structured questions. The total mark for the paper is 40. The time allowed is 1 hour. Examiners reported that there did not seem to be any issues relating to timing, the majority of candidates were able to answer the questions within the time given.

Q1   This question required candidates to complete Fig. 1 by naming the missing stages of the geographical enquiry process. There was a very wide range of responses to this question. Some candidates did not recognise or maybe had not learned the wording of the different stages of the geographical enquiry process.

In Stage 2 the answer was 'fieldwork techniques and methods'. A variety of relevant responses was accepted that dealt with collecting/measuring data. Candidates are reminded that they need to be precise with their language and thinking as they shape answers. Some candidates only put one word in this box, for example 'fieldwork', this was not an acceptable response as there needed to be some reference to what exactly is happening at this stage within the wider enquiry process.

Many candidates knew the names for Stage 5 and Stage 6 but mixed up the order. Stage 5 should have been labelled 'drawing conclusions' and Stage 6 'evaluating the fieldwork'. It is important that candidates are aware of the order of each stage in the geographical enquiry process.

Q2   This question required candidates to state a risk that was considered when planning their fieldwork investigation and to explain how they reduced this risk. The stated risk had to be valid and clearly linked to the fieldwork presented in the report. The statement of risk proved difficult for some candidates. Sometimes a very basic or vague risk was stated that could not be credited; for example, weather is not a risk until a candidate clearly describes how bad weather can cause hypothermia or good weather can cause sunburn.

A wide range of valid risks were accepted.

The second part of the question required candidates to explain how they reduced their stated risk. The explanation needed to be linked clearly to the stated risk and this was not always the case.

Responses to this part of the question often lacked detail. Many responses gave only basic explanations of how the stated risk could be reduced. Only a minority of candidates gained full marks in this question. This was sometimes because the stated risk did not easily lend itself to detail. Teachers should consider this carefully when preparing for this part of the specification. They should ensure that students identify a range of potential risks and how to reduce these risks.

Q3   **(i)**   A key component of any fieldwork is the ability to present the data in a graphical format. The majority of candidates seemed to have been well prepared for this question and presented high quality, effective graphs. A wide range of types of graph were noted with scatter graphs and line graphs being the most common.

Some of the common issues noted by examiners in relation to this question included:

- Some candidates mixed up their axes which made the graph meaningless.

- On occasions the graphical technique was not appropriate for the information being presented. In particular, line graphs were used to present non-continuous data. Students should be reminded that if they are plotting discrete data such as site number they should use a scatter graph. A line graph should only be used where the data plotted on the x-axis is continuous e.g. distance in metres/kilometres.

- Candidates sometimes failed to label their axes properly by including the units of measurement.

- In order to get the two marks for the title of the graph, candidates needed to make specific reference to both variables plotted on the graph.

- The main problem that resulted in candidates losing marks in this question

related to the plotting of the data. Examiners checked the accuracy of each data point carefully and often detected inaccuracies. Candidates need to ensure that they accurately plot the appropriate date.

- Candidates presenting a scatter graph are not required to include a best fit line; however it is acceptable to do so.

- A bar graph can be used where there is one quantitative scale, usually the y-axis, which shows the observed/measured data (frequency). The x-axis is used to show categories such as pebble roundness

- A histogram shows two quantitative scales with the vertical axis usually showing the frequency and the horizontal axis showing the size classes or values.

- Composite bar charts can be used with bar graph type data. Any number of sets of data can be shown on the graph; however, ideally there should be no more than four or five component categories within each of these sets of data. A key is essential.

(ii) This question was not always well answered. Candidates often struggled to explain or justify why they had chosen the particular type of graph. They needed to explain why this graph was suitable for the type of data. Sometimes candidates confused the different types of graph or tried to make their answers more plausible when they were referring to a basic type of graph. This is something that could be practised more in the classroom.

(iii) There was a wide variation of answers to this question. Candidates were able to describe the graph in some detail but often struggled to achieve full marks for the question. A good answer would contain detailed analysis of the overall pattern/trend/relationship and any anomalies present supported by relevant values. Many candidates failed to present values in their answer and this limited their marks for this question.

(iv) The final part of Question 3 required candidates to suggest a geographical explanation for the pattern shown on the graph. This question focused on the explanation (interpretation) of the graph in the light of relevant geographical reasons. This was well answered and it was obvious that candidates had practiced the possibility of this type of question. Some candidates went on to complete extended answers on additional paper. There were a few cases when candidates discussed aspects that were not connected to the graph presented in Part (i). The geography that was referenced within answers sometimes was at a very basic level. Candidates should be able to go into detail linking their findings with geographical reasons. For example, in river studies, it is not enough to simply refer to erosion as the mechanism that shaped the width of a river, greater detail is expected relating to the specific types of erosion and how these might specifically impact river width through hydraulic action or abrasion.

Q4 It was pleasing to note that candidates clearly followed the instruction to refer to their second/different hypothesis for this question. Candidates need to make sure that they choose the order of their hypotheses carefully to ensure that they get the highest mark possible.

The question required candidates to describe the data collection method that was used to collect the primary data for the stated hypothesis. There was a wide variety of data collection techniques described in answer to this question. However, in some cases, there was little or no link between the techniques described and the hypothesis listed.

The main limiting factor in this question was that candidates often failed to go into precise detail about how the data collection was managed; what the equipment was; how the equipment was used and how many times the recording was taken and at how many sites. In some cases, responses based on cross-sectional area or discharge in the hypothesis only described one element of the data collection, for example, responses based on discharge must explain how all the elements required (width/ depth and velocity) are recorded in specific detail.

In some cases it was obvious that candidates had little understanding of the processes required while collecting data and this is something that should be carefully explained in the field.

Q5 This question required candidates to consider a secondary source that was used in the fieldwork

    (i) This section required candidates to state a secondary source that was used. A wide variety of answers were accepted. However, some students failed to identify an appropriate secondary source and instead named a primary source. Some candidates gave the Powers' Roundness Index as a secondary source but this is a technique rather than a source of information.

    (ii) Again, there was a wide variety of responses to this question. Most candidates were able to answer this question well and achieved full marks. Several candidates referred to GIS maps or Ordnance Survey maps and then went on to describe how these were used to select appropriate sites or to ensure that sites chosen were accessible. However, some did not go into enough detail in their description of how the source was used.

Q6 **(i)** The final question of the exam paper required candidates to describe one possible problem of their data collection methods. Many struggled to go into sufficient detail as they described the problem. Sometimes they failed to stay focused on one problem and referred to a number of issues within their answer. Some candidates described problems with weather or access to sites which did not have much bearing on the actual data collection methods. Good answers included well developed descriptions of problems such as selecting pebbles from the river bed; using oranges to measure velocity, low river levels that limited the use of flowmeters and questionnaires that could not be completed as people failed to stop.

    (ii) Finally, candidates were required to describe how they could extend their study. It is important to note that this is not asking candidates to discuss how to improve the study but how to extend the scope of their study. Many candidates struggled to provide enough detail in their answers. For example, responses sometimes simply stated 'visit more sites along the course of the river'. It might be useful for teachers to consider additional aspects of related theory so that if a candidate had looked at width and depth separately they might consider the cross-sectional area or the hydraulic radius. If they had looked at velocity they might consider looking into discharge.

Contact details

The following information provides contact details for key staff members:

- **Specification Support Officer: Arlene Ashfield**
  (telephone: (028) 9026 1200, extension: 2291, email: aashfield@ccea.org.uk)

- **Officer with Subject Responsibility: Margaret McMullan**
  (telephone: (028) 9026 1200, extension: 2285, email: mmcmullan@ccea.org.uk)

Rewarding Learning