



Mark Scheme (Results)

June 2026

Pearson Edexcel International GCSE in Geography
Physical Geography
4GE1/01R

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

QUESTION 1

Question number	Answer	Mark
	Identify one river landform created by deposition.	
1(a)	<p style="text-align: center;">AO1 (1 mark)</p> <p>B (levee)</p> <p>The answer cannot be A, C or D as all types of erosional landform.</p>	(1)

Question number	Answer	Mark
	Identify the best definition of water deficit.	
1(b)	<p style="text-align: center;">AO1 (1 mark)</p> <p>B (not enough water to meet demand)</p> <p>The answer cannot be A (water surplus), C (irrigation), D (sewage)</p>	(1)

Question number	Answer	Mark
	Define the term watershed.	
1(c)(i)	<p style="text-align: center;">AO1 (1 mark)</p> <p>Award one mark for any of the following:</p> <ul style="list-style-type: none"> a ridge of land which separates waters flowing to different rivers (1). A boundary/line between two drainage basins (1). an area of high land forming the edge of a river drainage basin (1). <p>Accept any other appropriate response</p>	(1)

Question number	Answer	Mark
	Identify the river drainage basin feature which can be found at X.	
1(c)(ii)	<p style="text-align: center;">AO3 (1 mark)</p> <p>Award one mark for the following:</p> <ul style="list-style-type: none"> (river) mouth (1) 	(1)

Question number	Answer Explain two types of mass movement that take place in river valley environments.	Mark
1(d)	<p style="text-align: center;">AO1 (2 mark)/AO2 (2 mark)</p> <p>Award 1 mark (AO1) for the identification of a type of mass movement and a further mark for explanation (AO2) up to a maximum of two marks each.</p> <ul style="list-style-type: none"> • Slumping (1) occurs when land is saturated (1). • Landslides/when a block of land moves along a straight plain (1) which happens as slopes are steep/undercut by the river (1). • Soil creep/occurs gradually as soils flows down the slope (1) due to gravity (1). • Rockfalls (1) occur when cracks widen due to weathering (1). <p>Accept any other appropriate response.</p>	(4)

Question number	Answer Explain one human cause of river water pollution.	Mark
1(e)	<p style="text-align: center;">AO2 (2 marks)</p> <p>Award 1 mark for initial point and a further mark for explanation up to a maximum of two marks.</p> <ul style="list-style-type: none"> • Factories discharge/release wastewater into rivers (1) which contain chemical/heavy metals (1). • Agricultural land contaminates rivers as pesticides/fertilisers/animal waste (1) infiltrates the groundwater/enters rivers through overland flow (1). • Rainwater washes off roads/car parks (1) and picks up oil/grease/litter and carries them to the river (1). • Untreated sewage (1) introduces organic matter/pathogens/nutrients into the river (1). • Deforestation can increase soil erosion (1) which carries more sediment into rivers reducing water quality (1). • Accidents involving oil tankers (1) can release large quantities of oil directly into the river (1). <p>Accept any other appropriate response</p> <p>Do not credit responses focused on impact of pollution.</p>	(2)

Question number	Answer Suggest two negative impacts of using this dam as a flood prevention strategy.	Mark
1(f)	<p style="text-align: center;">AO2 (2 marks)/AO3 (2 marks)</p> <p>Award 1 mark (AO3) for the identification of a disadvantage of the flood prevention strategy and a further mark for explanation (AO2) up to a maximum of two marks each.</p> <ul style="list-style-type: none"> • People who work in fishing will lose their jobs (1) as the dam affects the flow of the river (1). • People have to leave (1) as an area needs to be flooded to create the reservoir (1). • Some habitats will be destroyed (1) which can reduce biodiversity (1). • The reservoir can suffer from sedimentation (1) which makes it shallower/holds less water (1). • The vegetation which is drowned releases greenhouse gases when it decomposes (1) which contributes to climate change (1). <p>Accept any other appropriate response</p>	(4)

Question number	Answer Explain one way climate can affect rates of river erosion.	Mark
1(g)	<p style="text-align: center;">AO2 (3 mark)</p> <p>Award 1 mark for identifying a climate factor and 2 marks for further explanation up to a maximum of 3 marks.</p> <ul style="list-style-type: none"> • Warmer temperatures increase evaporation (1) which decreases river discharge (1) leading to less erosion as the river has less energy (1). • Very hot temperatures can increase evaporation (1) which causes (convective) rainfall (1) which increases discharge and rates of erosion (1). • Below freezing temperatures can cause water to be stored on land (as snow/ice) (1) this reduces river water levels (1) meaning the river has little energy to erode (1). • A prolonged period of rainfall/heavy rainfall can saturate the ground (1) this increases surface runoff (1) (which means the river levels increase) making erosion more powerful (1). <p>Accept any other appropriate response</p>	(3)

Question number	Answer Analyse the factors affecting the discharge of this river.	Mark
1(h)	<p style="text-align: center;">AO3 (4 marks)/AO4 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited.</p> <p>This question is about analysing the significance of factors contributing to fluctuations in the river discharge. Candidates should discuss the role of each factor and make some judgement regarding which factor(s) is/are dominant.</p> <p>AO3</p> <ul style="list-style-type: none"> • The river discharge is the amount of water flowing in a river over a specific period of time. • Climate can affect a rivers discharge as temperature and precipitation are key drivers of river discharge levels. • A river in an equatorial/tropical climate would have consistently high discharge all year. • A river in an arid climate would have a consistently low discharge all year. • A river in a very seasonal climate (with pronounced hot/cold/wet/dry seasons) would have a greater fluctuation in discharge over the year. • Periods of drought (less than expected rainfall) would have a direct influence on the river discharge for that time period. • A rising temperature can increase evaporation leading to a falling discharge. • Human actions can directly influence river discharge. • Agriculture/farming require water to irrigate crops/for livestock reducing water levels in rivers (during hotter periods). • Large areas of urbanisation/population require water for domestic use. • Water can be held in reservoirs which can reduce the discharge along the river are certain time of year. <p>AO4</p> <ul style="list-style-type: none"> • Figure 1c shows the largest reason for human water use is for agriculture. • Figure 1c shows 18% of water withdrawals are for households/cities/industry. • Figure 1c shows 11% of water withdrawal is due to evaporation from reservoirs. • Figure 1c shows the average flow volume of the river is decreasing from about 20 billion m³ to 16 billion m³. 	(8)

	<ul style="list-style-type: none"> • Figure 1c shows the river has a wetter and drier seasonal fluctuation pattern. • Figure 1c shows there were three periods of drought. • Figure 1c shows the most recent drought has lasted for 20 years. • Figure 1c shows the average temperature in this drainage basin has risen by 1.3°C. 	
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Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7–8	<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

QUESTION 2

Question number	Answer Identify one coastal landform created by erosion.	Mark
2(a)	<p style="text-align: center;">AO1 (1 mark)</p> <p>B (headland)</p> <p>The answer cannot be A, C, D as all depositional landforms.</p>	(1)

Question number	Answer Identify the best definition of coastal deposition.	Mark
2(b)(i)	<p style="text-align: center;">AO1 (1 mark)</p> <p>A (dropping sediment)</p> <p>The answer cannot be B (transport), C (mass movement), D (erosion).</p>	(1)

Question number	Answer Define the term weathering.	Mark
2(b)(ii)	<p style="text-align: center;">AO1 (1 mark)</p> <p>Award one mark for any of the following:</p> <ul style="list-style-type: none"> • The breakdown of rock in situ (1). • Breakdown rock without moving them (1). • Rock that is broken down and left where it is (1). <p>Accept any other appropriate response.</p>	(1)

Question number	Answer Explain the process of longshore drift.	Mark
2(b)(iii)	<p style="text-align: center;">A02 (3 marks)</p> <p>Award 1 mark for the identification of one characteristic of constructive waves and 2 marks for further explanation up to a maximum of 3 marks.</p> <ul style="list-style-type: none"> • Sediment is carried along the beach (1) as the swash carries sediment up the beach at an angle (1) while the backwash carries material at right angles/straight down the beach (1). • Swash travels up the beach at an angle (1) but backwash carries the sediment vertically down the beach (1) leading to a zigzag pattern of movement (along the beach) (1). • Waves travel at the same angle as the prevailing wind (1) this makes the wave travel up the beach at an angle (1) whilst the backwash travels straight back down the beach (due to gravity) (1). 	

	Accept any other appropriate response.	(3)
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Question number	Answer Explain one advantage of coastal soft engineering.	Mark
2(c)	<p style="text-align: center;">AO2 (2 marks)</p> <p>Award 1 mark for stating an advantage of hard engineering and a further mark for development up to a maximum of two marks.</p> <ul style="list-style-type: none"> • Soft engineering is generally less expensive (1) which is vital for poorer areas (1). • Soft engineering works with natural processes (1) reducing the impact on marine ecosystems (1). • Some strategies create/enhance natural habitats (1) which can increase biodiversity (1). • Soft engineering works with nature (1) making it more sustainable long-term (1). • Soft engineering often blends into the natural coastline (1) meaning people/tourists do not complain (about them spoiling the view) (1). <p>Accept any other appropriate response.</p>	(2)

Question number	Answer Suggest two reasons this shoreline management plan may need to be changed in the future.	Mark
2(d)	<p style="text-align: center;">AO2 (2 marks)/AO3 (2 marks)</p> <p>Award 1 mark (AO3) for the identification of a reason change may be required evidenced in the resource and a further mark for explanation (AO2) up to a maximum of two marks each.</p> <ul style="list-style-type: none"> • The east of England is expected to have 13.4 m of sea level rise by 2400 drowning large areas of land (1) but the cost of hard engineering to hold the line will be unsustainable (1). • The current plan is to hold the line in the east of England however there is a large predicted sea level rise (1) which no hard engineering can be built to withstand (1). • Lowestoft will have spent £53.3 million on coastal protection by 2055 (1) which is likely to be damaged/destroyed as the area is expecting high levels of sea level rise (1). 	

	<ul style="list-style-type: none"> Sea level rise is predicted to be large in the east of England (1) which means it's economically unviable to continue spending huge sums of money on protecting the area in the future (1). The area plans to maintain a hold the line approach into 2055 (1) which is going to waste lots of money as large areas of land will be lost (through erosion and flooding) by this point (1). <p>Accept any other appropriate response.</p>	(4)
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Question number	Answer Identify one transfer shown on the nutrient cycle.	Mark
2(e)	<p>A03 (1 mark)</p> <p>Award one mark for the following:</p> <ul style="list-style-type: none"> (Input from) rivers/eroded rock (1) Uptake by organisms (1) (Fallout as) organisms die (1) (Nutrients released as) litter decomposes (1) 	(1)

Question number	Answer Explain two features of a coral reef ecosystem.	Mark
2(f)	<p>A01 (2 marks)/A02 (2 marks)</p> <p>Award 1 mark (A01) for the identification of a feature of a coral reef ecosystem and a further mark for explanation (A02) up to a maximum of two marks each.</p> <ul style="list-style-type: none"> Corals survive in water 26°C (1) as this prevents coral bleaching (1). Corals survive in shallow water (depths) (1) so (the algae) can absorb sunlight/photosynthesise (1). Corals provide a habitat/nursery for small sea creatures (1) which means it has high biodiversity (1). Corals have a symbiotic relationship with algae (1) which produces food/oxygen for the coral (1). Coral polyps attach themselves to hard substrates (1) which helps them to resist currents/prevent them from being swept away (1). Some corals produce toxic compounds (1) which protect them from predators (1). Some corals have fluorescent pigments (1) which help them resist bleaching as they reflect UV rays (1). <p>Accept any other appropriate response.</p>	(4)

Question number	Answer Analyse how the coastal flood prediction and prevention methods may reduce flood risk.	Mark
2(g)	<p style="text-align: center;">A03 (4 marks)/A04 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited.</p> <p>This question is about analysing the flood prevention/prediction strategies used in Japan and requires some judgement about whether they are effective.</p> <p>A03</p> <ul style="list-style-type: none"> • Coastal flooding is the inundation of dry land along the coast by seawater. • Coastal flooding is often caused by high tides, storms, storm surges, tsunamis and climate change. • The level of risk to flooding can be assessed to help plan for flood events. • Prediction strategies can suggest when a flood is likely but does not do anything to prevent a flood. • Prevention strategies fall into two categories: hard and soft engineering. • Hard engineering aims to prevent flooding by building barriers. • Soft engineering aims to work with nature to reduce the impacts of a flood. • Flooding has significant economic impacts on communities/regions/countries. <p>A04</p> <ul style="list-style-type: none"> • Figure 2c shows almost all of Japan remains at high risk from coastal flooding. • Figure 2c shows that all of coastal Japan is at either high or medium risk from coastal flooding. • Figure 2c shows with the worst case future scenario there will be over 10,300 deaths in just three cities in Japan. • Figure 2c shows there is potentially \$790 billion of economic damage if the worst case scenario occurs in the future. • Figure 2c shows that 3.9 million people's homes will be flooded in the three cities. • Figure 2c shows that Tokyo is predicted to be the severely affected by future coastal flooding. 	

	<ul style="list-style-type: none"> Figure 2c shows that hard engineering strategies are in place to protect areas in Japan. Figure 2c shows 3 different flood prevention strategies. 	
		(8)

Question number	Answer	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7–8	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

QUESTION 3

Question number	Answer Identify the best definition of a tectonic hazard.	Mark
3(a)	<p style="text-align: center;">AO1 (1 mark)</p> <p>A (hazard that occurs as a result of Earth crust movements)</p> <p>Answer cannot be B (climatic hazard), C (human hazard), D (climate change hazard)</p>	(1)

Question number	Answer Identify one characteristic of a tropical cyclone.	Mark
3(b)(i)	<p style="text-align: center;">AO1 (1 mark)</p> <p>D (vortex)</p> <p>Answer cannot be A (volcano), B (hazard), C (landform)</p>	(1)

Question number	Answer Define the term Coriolis force.	Mark
3(b)(ii)	<p style="text-align: center;">AO1 (1 mark)</p> <p>Award one mark for any of the following:</p> <ul style="list-style-type: none"> • The invisible force that appears to deflect wind (1). • The deflection of circulating air due to Earth's rotation (1). • Appearance that air deflects due to Earth's rotation (1). <p>Accept any other appropriate response.</p>	(1)

Question number	Answer Explain how wind shear can affect the formation of tropical cyclones.	Mark
3(b)(iii)	<p style="text-align: center;">A02 (2 marks)</p> <p>Award 1 mark for initial point and a further mark for development up to a maximum of two marks.</p> <ul style="list-style-type: none"> • A weak wind shear (enables the cyclones vertical structure to form) (1) which enables the upwards movement of air (which fuels the cyclone) (1). 	

	<ul style="list-style-type: none"> • A strong wind shear (can disrupt the vertical structure of the cyclone) (1) this can rip the cyclone apart (preventing it from fully developing) (1). • A vertical wind shear (can cause the cyclone to tilt) (1) which disrupts the updraft (preventing the cyclone from intensifying) (1). • Horizontal wind shear (can change the direction the storm is travelling) (1) which can make it move into cooler waters which prevents its development (1). <p>Accept any other appropriate response.</p>	(2)
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Question number	Answer Explain one reason for the distribution of tropical cyclones.	Mark
3(c)	<p style="text-align: center;">A02 (3 marks)</p> <p>Award 1 mark for the initial explanation and 2 marks for further explanation up to a maximum of 3 marks.</p> <ul style="list-style-type: none"> • Cyclones need sea surface temperatures above 27°C (1) these are only consistently found in the tropics (1) which allows a cyclone to form and intensify (1). • Cyclones need a strong Coriolis force (1) which is most significant between 5° and 30° latitudes (1) which causes them to spin (1). • Cyclones are most common in regions where the trade winds blow (1) as these winds mainly occur between the inter-tropical convergence zone (1) between the Tropics of Cancer and Capricorn (1). <p>Accept any other appropriate response.</p>	(3)

Question number	Answer Suggest one advantage and one disadvantage of using earthquake hazard mapping.	Mark
3(d)	<p style="text-align: center;">A02 (2 marks)/A03 (2 marks)</p> <p>Award 1 mark (A03) for the identification of an advantage/disadvantage based on evidence from resources and a further mark for explanation (A02) up to a maximum of two marks each.</p> <p>Advantage:</p> <ul style="list-style-type: none"> • It is quick and easy to see which regions are red and at highest risk from earthquake damage (1) meaning these areas can be prioritised for earthquake proof buildings (1). 	

	<ul style="list-style-type: none"> You can see that Alaska, Hawaii and the very west of the USA are at greatest risk of damage (1) which makes it easier to formulate response plans/evacuation routes (1). It shows that the most populated areas of the USA are in the eastern half of the country (1) which means the government know most people are at little risk. You can see the areas in the centre and east are at little risk (1) which means the government knows not to focus their protection strategies here as it would be a waste of money (1). <p>Disadvantage:</p> <ul style="list-style-type: none"> It does nothing to prevent damage (1) as we know the west coast of the USA is going to be damaged by an earthquake (1). It does not predict how much damage will be done as it just shows low/medium/high risk areas (1) meaning you wouldn't know how to respond until it happens (1). There are still at least 3 areas in the red/green zones with a population density over 250 people/km² (1) which means people have ignored the risk (1). This map only shows risk of earthquake hazards (1) despite the fact the USA is also at risk from volcanic eruptions, hurricanes, tsunamis which are not represented on the map (1). <p>Accept any other appropriate response.</p> <p>Do not double credit direct mirrors</p>	(4)
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Question number	Answer Identify the type of hazard this scale is used to measure.	Mark
3(e)	<p>AO3 (1 mark)</p> <p>Award one mark for the following:</p> <ul style="list-style-type: none"> (tropical) cyclones/hurricanes/typhoons (1) 	(1)

Question number	Answer Explain two long-term impacts of an earthquake.	Mark
3(f)	<p>AO1 (2 marks)/AO2 (2 marks)</p> <p>Award 1 mark (AO1) for the initial reason and a further mark explanation (AO2) up to a maximum of two marks each.</p> <ul style="list-style-type: none"> Earthquakes can damage/destroy habitats/ecosystems (1) which can lead to extinction of species (1). 	

	<ul style="list-style-type: none"> • The infrastructure can be damaged/destroyed (1) which can increase the vulnerability /destruction when the next earthquake happens (1). • People can be left without a home (1) which take a long time to rebuild (1). • Loss of income from tourism (1) as tourists are scared to visit for fear of another earthquake happening (1). • Economic growth of the country slows (1) as they are unable to trade/have to spend millions on repairs (1). <p>Accept any other appropriate response.</p>	(4)
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Question number	Answer Analyse the reasons why people continue to live in areas that have volcanoes on destructive plate boundaries.	Mark
3(g)	<p style="text-align: center;">A03 (4 mark)/A04 (4 mark)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited.</p> <p>This question is about analysing the reasons people choose to live near volcanoes on destructive plate boundaries and make judgements regarding to which factor is most significant in influencing people's behaviour.</p> <p>A03</p> <ul style="list-style-type: none"> • Destructive/convergent plate boundaries occur where two tectonic plates are moving towards one another. • Volcanoes often found at these boundaries are composite/strato volcanoes. • Volcanoes are often less active at destructive plate boundaries. • Volcanoes at these plate boundaries tend to have more violent eruptions. • Violent eruptions increases the range of hazards meaning pyroclastic flows/lahars/landslides are more likely to occur. • Volcanoes often offer good mining opportunities as lots of valuable metals and gemstones can be found in these regions. • Mining from volcanic areas can contribute to the country's economy. • These areas are prone to higher quantities of ashfall leading to fertile soils. 	

	<ul style="list-style-type: none"> The increase in altitude (as these volcanoes are often tall and steep sided) means a larger variety of different crops can be farmed as the increasing altitude suits different crops. <p>AO4</p> <ul style="list-style-type: none"> Figure 3c shows that Mexico has 11 volcanoes. Figure 3c shows that there are 2 volcanoes located close to Mexico's capital city New Mexico. Figure 3c shows that Mexico is the largest silver mining country in the world. Figure 3c shows the soil in Mexico is rich in silica and potassium meaning corn, beans, coffee and avocados are grown. Figure 3c shows that there have only been 6 eruptions since 1913. Figure 3c shows that half of the eruptions since 1913 have been 4 (or above) on the VEI scale. 	
		(8)

Question number	Answer	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7–8	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

QUESTION 4

Question number	Answer Identify one advantage of having a hypothesis for this geographical enquiry.	Mark
4(a)	<p style="text-align: center;">A03 (1 mark)</p> <p>D (prevents research becoming unfocused)</p> <p>Cannot be A, B, C are all limitations of having a hypothesis.</p>	(1)

Question number	Answer State one type of sampling strategy the students could have used in their enquiry.	Mark
4(b)	<p style="text-align: center;">A03 (1 mark)</p> <ul style="list-style-type: none"> • Stratified (1) • Systematic (1) • Random (1) • Opportunistic (1) <p>Accept any other acceptable response.</p>	(1)

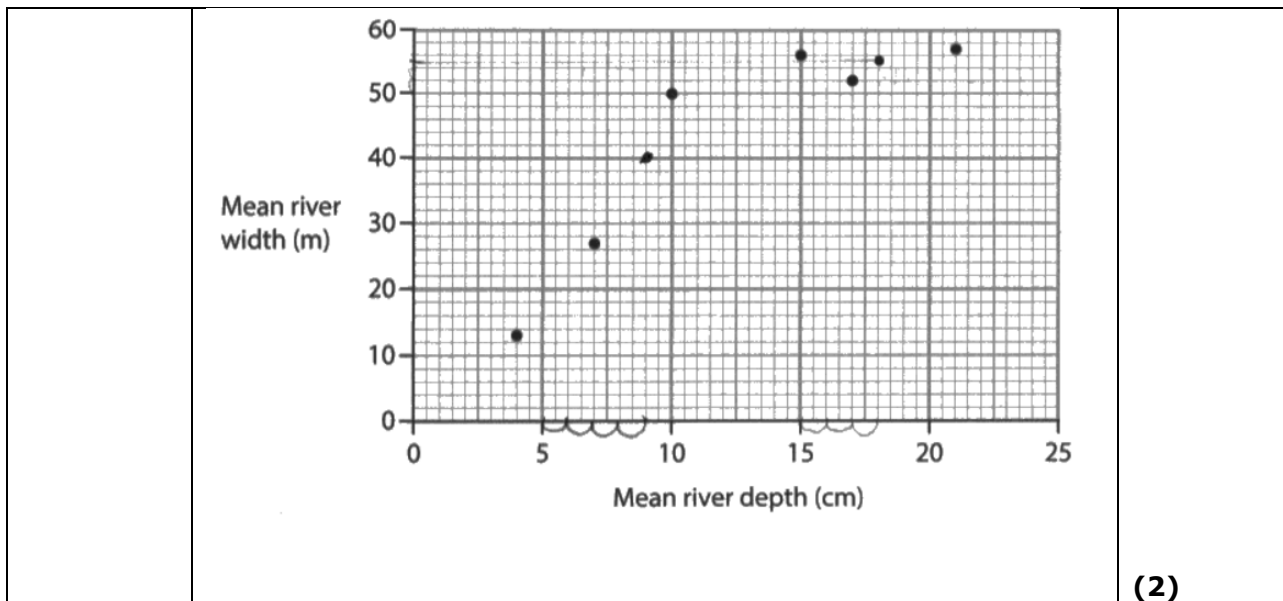
Question number	Answer Explain one advantage of using quantitative data in the students' enquiry.	Mark
4(c)	<p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for initial point and a further mark for development up to a maximum of two marks.</p> <ul style="list-style-type: none"> • Quantitative data collection is often faster (1) meaning it can be collected in a short time frame (1). • It relies on numerical measurements which allows for statistical analysis (1) which reduces bias/subjectivity (1). • As the data collected is objective (1) it makes the enquiry easier to replicate (1). • Quantitative data can be presented in graphs easily (1) meaning trends/anomalies can be easily identified/it's easy to analyse (1). 	

	Accept any other acceptable response.	(2)
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Question number	Answer Calculate the lower quartile for the river velocity at site 4.	Mark
4(d)(i)	<p style="text-align: center;">AO4 (2 marks)</p> <p>Award 2 marks for correct answer. Where incorrect answer is provided credit 1 mark for correct working.</p> <p>Lower Quartile: $0.3 + 0.6 / 2$</p> <p>Answer = 0.5</p>	(2)

Question number	Answer Calculate the interquartile range for the river velocity at site 4.	Mark
4(d)(ii)	<p style="text-align: center;">AO4 (1 mark)</p> <p>Award 1 mark for correct answer.</p> <p>Interquartile range: $1.1 - 0.5$</p> <p>Answer = 0.6</p>	(1)

Question number	Answer Plot the data for site 3 and site 7 from Figure 4b (shown in the Resource Booklet) to complete Figure 4c in the Question Paper.	Mark
4(e)	<p style="text-align: center;">AO4 (2 marks)</p> <p>Award 1 mark for each correct plot.</p> <p>Site 3 plot – 9 cm and 40 m</p> <p>Site 7 plot – 18 cm and 55 m</p>	



Question number	Answer	Mark
4(f)	<p>A03 (3 marks)</p> <p>Award 1 mark for initial point and a further mark for development up to a maximum of two marks.</p> <ul style="list-style-type: none"> Secondary data can provide a broader context (1) which makes it easier to understand the study area (1) making it easier to identify bias/errors in primary data (1). Secondary data can be used to validate/back up primary data (1) which increases confidence in the conclusions (1) as it can reduce bias/inference (1). Secondary data can provide detail on historical trends (1) which is not possible to do with primary data collection (1) which increases the understanding of the investigation (1). Secondary data can be more time/cost effective (1) which can reduce the time required for primary data collection (1) which can be useful if the location is a far away and cannot be revisited easily (1). <p>Accept any other acceptable response.</p>	(3)

Question number	Answer	Mark
4(g)	<p>A03 (4 marks)/A04 (4 marks)</p>	(8)

Marking instructions

Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below.

Indicative content guidance

The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited.

This question is about evaluating the accuracy and reliability of the students own data presentation techniques. The candidate needs to evaluate the strengths and weaknesses of several different data presentation techniques they used in their enquiry and reach an overall judgement on how effective these were enabling them to analyse and reach a conclusion in their enquiry.

A03

- Data analysis is the practice of working with data to determine useful information.
- Data analysis is used to help make informed decisions/reach conclusions.
- Data presentation is the process of turning raw data into a visual format.
- Data presentation techniques should enable audiences to quickly identify trends/patterns/anomalies.
- Data presentation can take different forms, such as graphs, charts, maps, photographs/sketches.
- Some data presentation techniques can only be used to present quantitative data.
- Some data presentation techniques can show more than one variable which allow for comparisons between data sets.
- A judgement about which data presentation techniques were most useful to identify trends.
- A judgement about overall usefulness of their data presentation techniques in helping them reach a conclusion.

A04

- Detail about the specific data presentation techniques used in their own enquiry.
- Detail about the trends/anomalies shown in their own data presentation.
- Detail about data presentation techniques used to compare more than one variable.
- Detail about the equipment used for each technique and why this made it accurate/less accurate.
- Detail about rationale for choosing the data presentation technique.

Question number	Answer
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Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7–8	<ul style="list-style-type: none"> Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

QUESTION 5

Question number	Answer	Mark
	Identify one advantage of having a hypothesis for this geographical enquiry.	
5(a)	<p style="text-align: center;">A03 (1 mark)</p> <p>D (prevents research becoming unfocused)</p> <p>Cannot be A, B, C are all limitations of having a hypothesis.</p>	(1)

Question number	Answer	Mark
	State one type of sampling strategy the students could have used in their enquiry.	
5(b)	<p style="text-align: center;">A03 (1 mark)</p> <ul style="list-style-type: none"> • Stratified (1) • Systematic (1) • Random (1) • Opportunistic (1) <p>Accept any other acceptable response.</p>	(1)

Question number	Answer	Mark
	Explain one advantage of using quantitative data in the students' enquiry.	
5(c)	<p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for initial point and a further mark for development up to a maximum of two marks.</p> <ul style="list-style-type: none"> • Quantitative data collection is often faster (1) meaning it can be collected in a short time frame (1). • It relies on numerical measurements which allows for statistical analysis (1) which reduces bias/subjectivity (1). • As the data collected is objective (1) it makes the enquiry easier to replicate (1). • Quantitative data can be presented in graphs easily (1) meaning trends/anomalies can be easily identified/it's easy to analyse (1). <p>Accept any other acceptable response.</p>	(2)

Question number	Answer	Mark
	Calculate the lower quartile for the beach profile (gradient) at site 4.	
5(d)(i)	<p>A04 (2 marks)</p> <p>Award 2 marks for correct answer. Where incorrect answer is provided credit 1 mark for correct working.</p> <p>Lower Quartile: $1.5 + 1.7/2$</p> <p>Answer = 1.6</p>	(2)

Question number	Answer	Mark
	Calculate the interquartile range for the beach profile (gradient) at site 4.	
5(d)(ii)	<p>A04 (1 mark)</p> <p>Award 1 mark for correct answer.</p> <p>Interquartile range: $2.4 - 1.6$</p> <p>Answer = 0.8</p>	(1)

Question number	Answer	Mark
	Plot the data for site 3 and site 7 from Figure 5b (shown in the Resource Booklet) to complete Figure 5c in the Question Paper.	
5(e)	<p>A04 (2 marks)</p> <p>Award 1 mark for each correct plot.</p> <p>Site 3 plot – 4 cm and 2</p> <p>Site 7 plot – 8 cm and 5</p> <p>Power's roundness index (class score)</p> <p>Length of pebbles longest side (cm)</p>	(2)

Question number	Answer Explain one reason secondary data could have improved the reliability of the students' conclusions.	Mark
5(f)	<p style="text-align: center;">A03 (3 marks)</p> <p>Award 1 mark for initial point and a further mark for development up to a maximum of two marks.</p> <ul style="list-style-type: none"> • Secondary data can provide a broader context (1) which makes it easier to understand the study area (1) making it easier to identify bias/errors in primary data (1). • Secondary data can be used to validate/back up primary data (1) which increases confidence in the conclusions (1) as it can reduce bias/inference (1). • Secondary data can provide detail on historical trends (1) which is not possible to do with primary data collection (1) which increases the understanding of the investigation (1). • Secondary data can be more time/cost effective (1) which can reduce the time required for primary data collection (1) which can be useful if the location is a far away and cannot be revisited easily (1). <p>Accept any other acceptable response.</p>	(3)

Question number	Answer Evaluate how effective your data presentation techniques were in helping you to analyse your data and reach a conclusion.	Mark
5(g)	<p style="text-align: center;">A03 (4 marks)/A04 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited.</p> <p>This question is about evaluating the accuracy and reliability of the students own data presentation techniques. The candidate needs to evaluate the strengths and weaknesses of several different data presentation techniques they used in their enquiry and reach an overall judgement on how effective these were enabling them to analyse and reach a conclusion in their enquiry.</p> <p>A03</p>	(8)

	<ul style="list-style-type: none"> • Data analysis is the practice of working with data to determine useful information. • Data analysis is used to help make informed decisions/reach conclusions. • Data presentation is the process of turning raw data into a visual format. • Data presentation techniques should enable audiences to quickly identify trends/patterns/anomalies. • Data presentation can take different forms, such as graphs, charts, maps, photographs/sketches. • Some data presentation techniques can only be used to present quantitative data. • Some data presentation techniques can show more than one variable which allow for comparisons between data sets. • A judgement about which data presentation techniques were most useful to identify trends. • A judgement about overall usefulness of their data presentation techniques in helping them reach a conclusion. <p>AO4</p> <ul style="list-style-type: none"> • Detail about the specific data presentation techniques used in their own enquiry. • Detail about the trends/anomalies shown in their own data presentation. • Detail about data presentation techniques used to compare more than one variable. • Detail about the equipment used for each technique and why this made it accurate/less accurate. • Detail about rationale for choosing the data presentation technique. 	
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Question number	Answer	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)

Level 2	4–6	<ul style="list-style-type: none">• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)• Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7–8	<ul style="list-style-type: none">• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3)• Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

QUESTION 6

Question number	Answer Identify one advantage of having a hypothesis for this geographical enquiry.	Mark
6(a)	<p style="text-align: center;">A03 (1 mark)</p> <p>D (prevents research becoming unfocused)</p> <p>Cannot be A, B, C are all limitations of having a hypothesis.</p>	(1)

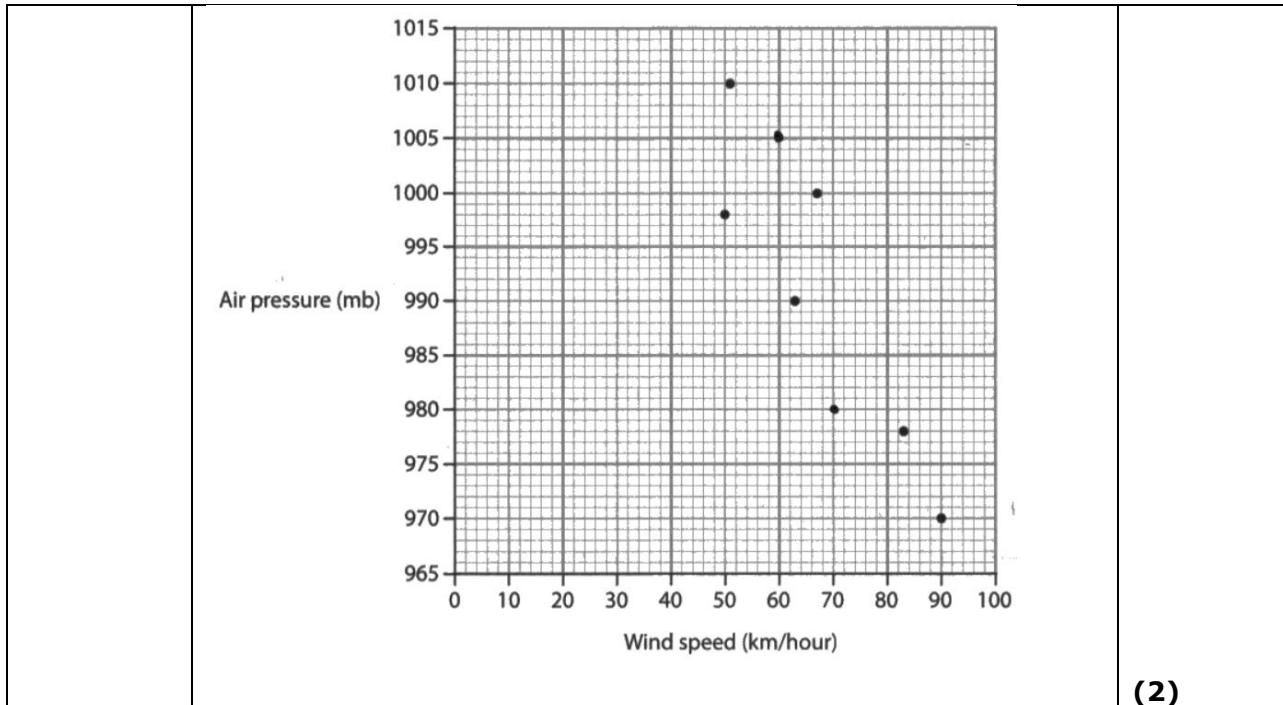
Question number	Answer State one type of sampling strategy the students could have used in their enquiry.	Mark
6(b)	<p style="text-align: center;">A03 (1 mark)</p> <ul style="list-style-type: none"> • Stratified (1) • Systematic (1) • Random (1) • Opportunistic (1) <p>Accept any other acceptable response.</p>	(1)

Question number	Answer Explain one advantage of using quantitative data in the students' enquiry.	Mark
6(c)	<p style="text-align: center;">A03 (2 marks)</p> <p>Award 1 mark for initial point and a further mark for development up to a maximum of two marks.</p> <ul style="list-style-type: none"> • Quantitative data collection is often faster (1) meaning it can be collected in a short time frame (1). • It relies on numerical measurements which allows for statistical analysis (1) which reduces bias/subjectivity (1). • As the data collected is objective (1) it makes the enquiry easier to replicate (1). • Quantitative data can be presented in graphs easily (1) meaning trends/anomalies can be easily identified/it's easy to analyse (1). <p>Accept any other acceptable response.</p>	(2)

Question number	Answer	Mark
	Calculate the lower quartile for the temperature at site 4.	
6(d)(i)	<p style="text-align: center;">AO4 (2 marks)</p> <p>Award 2 marks for correct answer. Where incorrect answer is provided credit 1 mark for correct working.</p> <p>Lower Quartile: $23.8 + 25.8 / 2$</p> <p>Answer = 24.8</p>	(2)

Question number	Answer	Mark
	Calculate the interquartile range for the temperature at site 4.	
6(d)(ii)	<p style="text-align: center;">AO4 (1 mark)</p> <p>Award 1 mark for correct answer.</p> <p>Interquartile range: $34.1 - 24.8$</p> <p>Answer = 9.3</p>	(1)

Question number	Answer	Mark
	Plot the data for site 3 and site 7 from Figure 6b (shown in the Resource Booklet) to complete Figure 6c in the Question Paper.	
6(e)	<p style="text-align: center;">AO4 (2 marks)</p> <p>Award 1 mark for each correct plot.</p> <p>Site 3 plot – 70 km/hour and 980 mb</p> <p>Site 7 plot – 60 km/hour and 1005 mb</p>	



Question number	Answer	Mark
	<p>Explain one reason secondary data could have improved the reliability of the students' conclusions.</p>	
6(f)	<p>A03 (3 marks)</p> <p>Award 1 mark for initial point and a further mark for development up to a maximum of two marks.</p> <ul style="list-style-type: none"> Secondary data can provide a broader context (1) which makes it easier to understand the study area (1) making it easier to identify bias/errors in primary data (1). Secondary data can be used to validate/back up primary data (1) which increases confidence in the conclusions (1) as it can reduce bias/inference (1). Secondary data can provide detail on historical trends (1) which is not possible to do with primary data collection (1) which increases the understanding of the investigation (1). Secondary data can be more time/cost effective (1) which can reduce the time required for primary data collection (1) which can be useful if the location is a far away and cannot be revisited easily (1). <p>Accept any other acceptable response.</p>	

(3)

Question number	Answer Evaluate how effective your data presentation techniques were in helping you to analyse your data and reach a conclusion.	Mark
6(g)	<p style="text-align: center;">A03 (4 marks)/A04 (4 marks)</p> <p>Marking instructions</p> <p>Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below.</p> <p>Indicative content guidance</p> <p>The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited.</p> <p>This question is about evaluating the accuracy and reliability of the students own data presentation techniques. The candidate needs to evaluate the strengths and weaknesses of several different data presentation techniques they used in their enquiry and reach an overall judgement on how effective these were enabling them to analyse and reach a conclusion in their enquiry.</p> <p>A03</p> <ul style="list-style-type: none"> • Data analysis is the practice of working with data to determine useful information. • Data analysis is used to help make informed decisions/reach conclusions. • Data presentation is the process of turning raw data into a visual format. • Data presentation techniques should enable audiences to quickly identify trends/patterns/anomalies. • Data presentation can take different forms, such as graphs, charts, maps, photographs/sketches. • Some data presentation techniques can only be used to present quantitative data. • Some data presentation techniques can show more than one variable which allow for comparisons between data sets. • A judgement about which data presentation techniques were most useful to identify trends. • A judgement about overall usefulness of their data presentation techniques in helping them reach a conclusion. <p>A04</p> <ul style="list-style-type: none"> • Detail about the specific data presentation techniques used in their own enquiry. • Detail about the trends/anomalies shown in their own data presentation. • Detail about data presentation techniques used to compare more than one variable. 	(8)

	<ul style="list-style-type: none"> • Detail about the equipment used for each technique and why this made it accurate/less accurate. • Detail about rationale for choosing the data presentation technique. 	
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Question number	Answer	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4–6	<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7–8	<ul style="list-style-type: none"> • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)