Rewarding Learning

General Certificate of Secondary Education
2017

Geography

Unit 1:
Understanding Our Natural World

Foundation Tier

[GGG11]

MONDAY 22 MAY, AFTERNOON

MARK SCHEME

General Marking Instructions

Introduction

Mark schemes are intended to ensure that the GCSE examinations are marked consistently and fairly. The mark schemes provide markers with an indication of the nature and range of candidates' responses likely to be worthy of credit. They also set out the criteria which they should apply in allocating marks to candidates' responses. The mark schemes should be read in conjunction with these general marking instructions.

Assessment objectives

Below are the assessment objectives for GCSE Geography.

Candidates must show they are able to:

- recall, select and communicate their knowledge and understanding of places, environments and concepts (AO1);
- apply their knowledge and understanding in familiar and unfamiliar contexts (AO2); and
- select and use a variety of skills, techniques and technologies to investigate, analyse and evaluate questions and issues (AO3).

Quality of candidates' responses

In marking the examination papers, examiners should be looking for a quality of response reflecting the level of maturity which may reasonably be expected of a 15- or 16-year-old which is the age at which the majority of candidates sit their GCSE examinations.

Flexibility in marking

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which candidates may produce. In the event of unanticipated answers, examiners are expected to use their professional judgement to assess the validity of answers. If the answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner.

Positive marking

Examiners are encouraged to be positive in their marking, giving appropriate credit for what candidates know, understand and can do rather than penalising candidates for errors or omissions. Examiners should make use of the whole of the available mark range of any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected of a 15- or 16-year-old GCSE candidate.

Awarding zero marks

Marks should only be awarded for valid responses and no marks should be awarded for an answer which is completely incorrect or inappropriate.

Types of mark schemes

Mark schemes for tasks or questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication.

Other questions which require only short answers are marked on a point for point basis with marks awarded for each valid piece of information provided.

Levels of response

Tasks and questions requiring candidates to respond in extended writing are marked in terms of levels of response. In deciding which level of response to award, examiners should look for the 'best fit' bearing in mind that weakness in one area may be compensated for by strength in another. In deciding which mark within a particular level to award to any response, examiners are expected to use their professional judgement. The following guidance is provided to assist examiners.

- **Threshold performance:** Response which just merits inclusion in the level and should be awarded a mark at or near the bottom of the range.

- **Intermediate performance:** Response which clearly merits inclusion in the level and should be awarded a mark at or near the middle of the range.

- **High performance:** Response which fully satisfies the level description and should be awarded a mark at or near the top of the range.

Marking calculations

In marking answers involving calculations, examiners should apply the 'own figure rule' so that candidates are not penalised more than once for a computational error.

Quality of written communication

Quality of written communication is taken into account in assessing candidates' responses to all tasks and questions that require them to respond in extended written form. These tasks and questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication.

For conciseness, quality of written communication is distinguished within levels of response as follows:

Level 1: Quality of written communication is limited
Level 2: Quality of written communication is satisfactory
Level 3: Quality of written communication is of a high standard.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below.

Level 1 (Limited): Candidates present some relevant information in a form and using a style of writing which suits its purpose. The text is reasonably legible. Spelling, punctuation and the rules of grammar are used with some accuracy so that meaning is reasonably clear. A limited range of specialist terms is used appropriately.

Level 2 (Satisfactory): Candidates present relevant information in a form and using a style of writing which suits its purpose. The text is legible. Spelling, punctuation and the rules of grammar are used with considerable accuracy so that meaning is clear. A good range of specialist terms is used appropriately.

Level 3 (High Standard): Candidates present, and organise effectively, relevant information in a form and style of writing which suits its purpose. The text is fluent and legible. Spelling, punctuation and the rules of grammar are used with almost faultless accuracy so that meaning is clear. A wide range of specialist terms is used skillfully and with precision.

Assessment of spelling, punctuation and the accurate use of grammar.
Marks for spelling, punctuation and the accurate use of grammar will be allocated to specific questions where there is a requirement for sufficient extended writing to enable the accurate application of Performance descriptions (see below). These marks will be identified to candidates on the question papers.

Performance descriptions

(i) Threshold performance
Candidates spell, punctuate and use the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.

(ii) Intermediate performance
Candidates spell, punctuate and use the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.

(iii) High performance
Candidates spell, punctuate and use the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision.

As shown by the performance descriptions, SPaG marks are awarded in the context of the demands of the question. If the candidate's response does not address the question then no SPaG marks are available. However, if the candidate has attempted to answer the question but produced nothing of credit, SPaG marks may still be awarded.

Theme A: The Dynamic Landscape

AVAILABLE MARKS

1 (a) (i) Underline the highest spot height from the list below found within GR 9477.

177 m 189 m 123 m [1]

(ii) Using the Ordnance Survey map, complete **Table 1** by stating what the contour pattern shows about the slope of the land in GR 9379 and GR 9580.

Grid reference	Contour pattern found	slope of the land
9379		Steep slopes, hilly –V shaped valley
9580		Flat land or gentle slope

Table 1

(2 x [1]) [2]

(iii) State the distance from the nature reserve in Teignmouth GR 931743 to the nature reserve on Dawlish Warren GR 988798.

Award [1],
7.7 – 7.79 km or 8.01 – 8.1 km.

Award [2],
7.8 – 8.0 km. [2]

(iv) Underline the direction of Starcross (GR 9781) from Exmouth (GR 0081).

West South East [1]

(v) Using map evidence state three parts of the transport network which may need protection.

Award [1] for each correct answer.

Road (A379) [1] Train station/tunnel/embankment/rail/track/bridge [1]
Railway track/line/cycle path [1] Coastal Path/footpath/bridleway/ national trail [1]

Any **three** valid transport links.
(3 × [1]) [3]

AVAILABLE MARKS

(vi) A floodplain has formed in GR 9584. State the meaning of the term **floodplain**.

Award [1] for a simple definition,
e.g. An area of flat land on either side of the river.
An area of land that floods.
Award [2] for a complete definition,
e.g. An area of flat land on either side of the river that holds flood water.
An area of flat land made up of alluvium. [2]

(b) A spit has formed at Dawlish Warren (GR9879). Answer the questions that follow.

(i) Name **two** land uses on this spit.

Do not accept road/train station as they are outside the spit.

Award [1] for any of the following:

A visitor centre, a nature reserve, non-coniferous wood, track/path/other road, golf course/club house, parking/buildings, sand/sand dunes, wind pump/wind turbine/beach/marsh/forest.
(2 x [1]) [2]

(ii) Explain how the process of longshore drift leads to the formation of a spit.

Award [0] for a response not worthy of credit.

Award [1] for a basic response that makes reference to the movement of sand,
e.g. A spit is formed when sand moves along a beach.

Award [2] for a sound response that makes reference to waves and the movement of sand but lacks detail,
e.g. Sand is moved along the beach in a zigzag sawtooth movement.
Over time the sand gets deposited allowing a spit to form.

Award [3] for a detailed explanation that refers to both waves and the movement of sand,
e.g. Sand is moved along the beach in a zigzag sawtooth movement by the swash and the backwash. This sand gets deposited as the beach extends out to sea. Over time a spit will build up.
Accept detailed answers using terms such as erosion, transportation and deposition. [3]

(c) Study **Photograph 1** which shows some stones found on a beach. Answer the questions that follow.

(i) Underline a type of erosion which is responsible for shaping these rocks.

Attrition Biological Deposition [1]

(ii) Describe **one** other type of erosion that may be responsible for shaping these rocks.

Candidates can only choose Abrasion/corrasion, Hydraulic pressure/ action or solution.

AVAILABLE MARKS

Award [1] for stating correct erosion process.

Award [2] for a simple definition, e.g. abrasion is the grinding of pebbles hitting the cliff. [2]

(d) Study **Fig. 1** which shows the drainage basin. Answer the questions that follow.

(i) Using **Fig. 1** to help you complete **Table 2** by drawing an arrow to show if the term is a store or transfer. One has been completed for you.

STORE	TERM	TRANSFER
←	Rock	
	Infiltration	→
(given) ←	River Channel	
	Percolation	→
	Overland flow	→

Table 2 [4]

(ii) Describe the difference between a tributary and a confluence in a drainage basin.

A tributary is a small stream or river [1] whereas a confluence is where two streams/tributaries meet. [1] [2]

(iii) Explain the impact on the stores and transfers within the drainage basin if the trees are cut down.

Level 1 ([1]) for a simple statement,
e.g. Less water will soak into the ground.

Level 2 ([2]–[3]) for statements that start to explain the impact on the stores or transfers. Two named transfers or stores needed for Top L2,
e.g. Runs off the surface. More water will reach the land as the trees no longer take it in.

AVAILABLE MARKS

e.g. Less water will soak into the ground because the soil will become saturated. This will mean greater surface run-off to the river.
Level 3 ([4]) for detailed explanations which mention the impact on at least three transfers or stores,
e.g. If trees are to be removed, this will reduce the interception layer. Water will reach the ground more quickly leading to an increase in surface run off. This will increase the discharge of the river and the possibility of a flood occurring. [4]

(e) Study **Table 3** which shows how the load has changed on a stretch of river in Co. Tyrone. Answer the questions which follow.

(i) Using **Table 3**, complete **Fig. 2** to show the shape of the load at site 3.

Award [1] each for correctly shading each segment with correct key. [2]

(ii) Using **Table 3**, describe how the load size and shape change downstream.

Level 1 ([1]) A simple statement which addresses only size or shape,
e.g. the bedload gets smaller

Level 2 ([2]–[3]) An answer which addresses size and/or shape.
The bedload become smaller and more rounded.
The bedload decreases from 18.7 cm to 4.9 cm.
The bedload decreases from 18.7 cm to 4.9 cm and it becomes more rounded.
If only size or shape mentioned – award [2] maximum.

Level 3 ([4]) An answer which addresses size and shape; percentages should be quoted for Top Level 3.
The bedload decreases from 18.7 cm to 4.9 cm and the bedload shape changes from 50% of stones being angular shape at Site 1 to becoming more rounded at Site 5 where 60% of stones are very rounded. [4]

(iii) Describe **one** method by which the load is transported downstream.

Award [1] for any of the following.

Traction, Saltation, Suspension or Solution. [1]

Describe

Award [1] for a simple statement,
e.g. Traction occurs when the bedload rolls on the river bed.
OR
Suspension occurs when the bedload is carried in the water.
OR
Solution occurs when the bedload has dissolved in the water.

Award [2] for a more detailed statement that makes reference to the size of the load,
e.g. Traction occurs when the bedload rolls on the river bed. The bedload must be quite large for traction to occur,
OR
Suspension occurs when the load is carried in the water. The load is quite small and light,

AVAILABLE MARKS

OR
Solution occurs when the load has dissolved in the water. The load can't be seen as it is now part of the water.
If description is valid but doesn't refer to the chosen method – award a maximum of [1] [2]

(f) Study **Fig. 3**, which shows some information about flooding in the UK. Answer the questions which follow.

(i) Using **Fig. 3**, state the day when the flood risk was at its highest.

Wednesday. [1]

(ii) Using **Fig. 3**, state **two** impacts these floods had on the environment.

- In Northern England 5000 hectares of farmland were under water.
- Underground reservoirs filled up.

(2 × [1]) [2]

(g) Explain fully **one** physical cause of flooding on a river in the British Isles which you have studied.

Award [0] for a response not worthy of credit or a human cause of flooding.

Award [1] for a human cause of flooding with a physical consequence.

Award [1] for correctly named river.

Name of river, e.g. Derwent. [1]

If river outside of British Isles max L1, or no named river max L1.

Award [1] for a brief accurate physical cause of flooding,
e.g. Heavy rainfall caused the river to flood.

Award [2] for an accurate statement physical cause with explanation on a named river,
e.g. The River Derwent experienced heavy rainfall. The land became waterlogged, so all the water went to the river. This caused the river to burst its banks.

Award [3] for an accurate physical cause explained and elaborated with a relevant fact/figure/place related to the named river,
e.g. The River Derwent experienced 250 mm of rainfall (over a 2 week period) (This caused the land to become waterlogged) increasing surface runoff which led to flooding. [3]

(h) For a named river outside the British Isles which you have studied, explain the sustainability of **one** engineering strategy used to manage its floods.

Accept valid hard or soft engineering strategies such as dams, afforestation, land use zoning, etc.

Award [1] for any appropriate river – most will choose Mississippi. [1]

Candidates must have case study detail to access Top Level 2 [3].
Candidates must have case study detail and address sustainability to access Level 3.

Award [0] for a response not worthy of credit.

AVAILABLE MARKS

Level 1 ([1])
e.g. Levees were used to prevent flooding.

Level 2 ([2]–[3])
e.g. Levees were used to prevent flooding. These are structures placed along the banks of the river which keep floodwater in the channel.

Levees were used to prevent flooding. 3600 km of the river have levees along their banks. These hard engineering structures keep floodwater in the channel.

Level 3 ([4])
e.g. Levees were used to prevent flooding. 3600 km of the river have levees along their banks. These hard engineering structures keep floodwater in the channel. However, these may not be sustainable as they cost a lot of money to maintain. Reference to sustainability required for Level 3 mark. [4]

Assessment of spelling, punctuation and the accurate use of grammar

If the answer does not address the question then no SPaG marks are available. If the candidate has attempted to answer the question but produced nothing of credit, SPaG marks may still be awarded.

Threshold performance ([1])
Candidates spell, punctuate and use the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.

Intermediate performance ([2]–[3])
Candidates spell, punctuate and use the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.

High performance ([4])
Candidates spell, punctuate and use the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision. SPaG [4] 54

AVAILABLE MARKS

2 (a) Study **Fig. 4**, which shows a rain gauge, and answer the questions which follow.

(i) Explain how a rain gauge works.

Award [0] for answer not worthy of credit.

Award [1] A brief explanation,
e.g. The rain falls into a collecting jar

Award [2] A more detailed explanation which uses at least one key term,
e.g. The rain falls into a container through the funnel and is measured in a glass jar.

Award [3] A detailed explanation, using key terms and units of measurement/scale,
e.g. The rainfall is directed into the cylinder through the funnel and is collected in a glass jar and is measured in mm/ml or is measured using the scale. [3]

(ii) State and explain **one** factor that should be considered when choosing a site for a rain gauge.

Award [0] for answer not worthy of credit.

Accept answers referring to stability of instrument being sunk into the ground.

Award [1] A correct statement,
e.g. In an open space/not in a sheltered place/on grass, not tarmac/away from trees or buildings.

Award [2] A statement with some correct explanation,
e.g. In an open area so that nothing can stop the rain entering the opening.

Award [3] A statement with a full explanation,
e.g. In an open area so that trees or buildings do not shelter the rain gauge and also cause wind eddies which blow raindrops past the gauge. [3]

(b) Study **Fig. 5**, which shows a cross section of a depression. Answer the questions which follow.

(i) Name the following at each location shown in the depression in **Fig. 5**.

The sector at A in the depression	Warm Sector [1]
The type of front at B	Cold [1]
The cloud type which is associated with the approach of the depression	Cirrus [1]

(3 × [1]) [3]

AVAILABLE MARKS

(ii) State the direction in which the depression is moving.

West to East/to the East/from the West/East. [1]

(iii) Underline the correct statement about isobars when there are strong winds in a depression.

The isobars are close together.

Award [1] for underlined answer. [1]

(iv) Describe **one** positive and **one** negative effect of a depression on the economy.

Award [0] for answer not worthy of credit or answers which are not linked to the economy.

Award [1]–[2] Simple, accurate statements for both a positive and a negative effect on the economy,
e.g. Rain can ruin crops/strong winds can delay ships/depressions bring rain/roads can be flooded.

Award [3]–[4] A developed answer which includes a positive and negative effect each with a consequence/elaboration [4],
e.g. Heavy rain can cause floods and destroy harvests so farmers lose income,
e.g. Strong winds can delay ships, so the trade of goods is disrupted,
e.g. Depressions can bring rainfall, so farmers do not need to spend money on irrigating crops,
e.g. Depressions can bring rainfall after a heatwave in summer, so the government does not have to pay to deliver water to homes. [4]

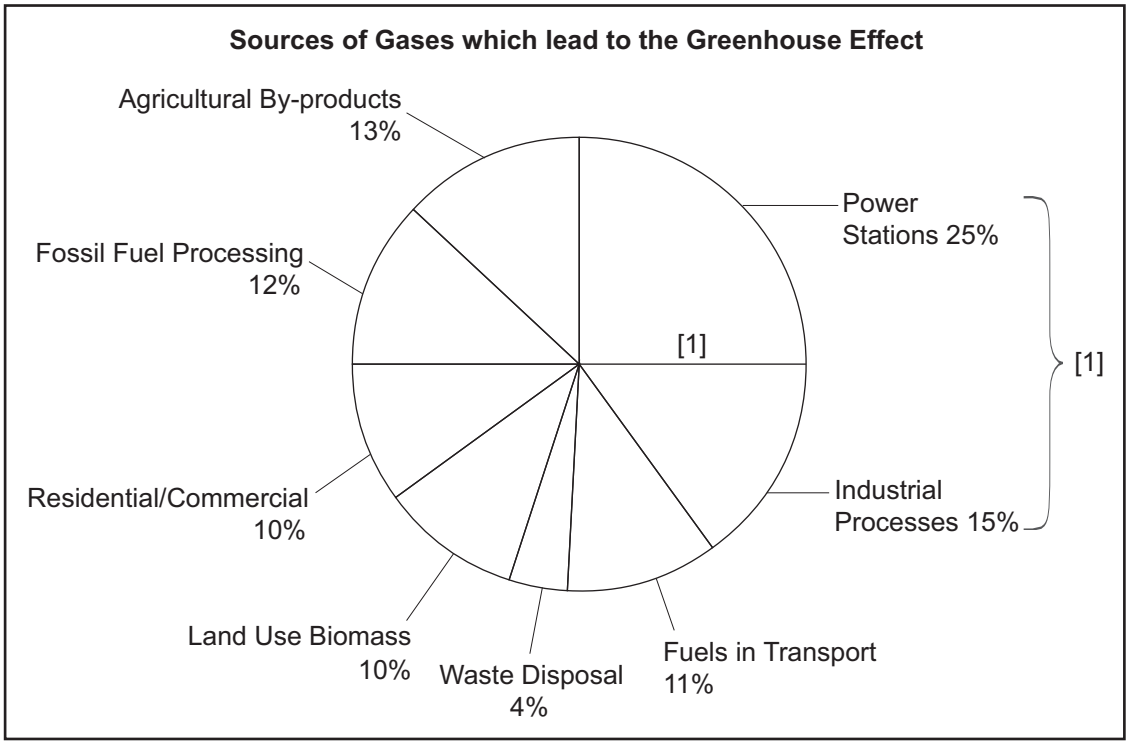
AVAILABLE MARKS

(c) Study **Fig. 6**, which shows some sources of greenhouse gases. Answer the questions which follow.

(i) Complete **Fig. 6** using the information in Table 4 to label Power Stations and Industrial Processes.

Award [1] Line drawn accurately dividing the space into 25% for Power Stations and 15% for Industrial Processes.

Award [2] Line drawn accurately dividing the space into 25% and 15% and both Power Stations [25%] and Industrial Processes [15%] named accurately. No requirement to label 25% and 15% with the labels. [2]



Source: Principal Examiner

Fig. 6

(ii) Indicate **two** greenhouse gases in the list below by placing a tick beside each. One has been completed for you.

Name of Gas	Tick if it is a greenhouse gas
Carbon dioxide	✓ [given]
Oxygen	
Methane	✓
Nitrous Oxide	✓
Argon	

[2]

AVAILABLE MARKS

(d) Study **Fig. 7**, which illustrates how the greenhouse effect works. Answer the question which follows.

Number the following list of steps shown in **Table 5** to describe how the greenhouse effect works. Two have been completed for you.

Award [1] for correct answer.

Table 5

Stage in how the greenhouse effect works	
The Earth is surrounded by its atmosphere, containing greenhouse gases like water vapour and carbon dioxide	1 [given]
Much of this heat radiates out into space, cooling the planet	4
The Earth radiates heat into the atmosphere	3
Some heat is trapped by greenhouse gases which warm up the atmosphere	5
Energy comes from the Sun and warms the Earth's surface	2
This makes the Earth heat up causing climate change	6 [given]

[4]

(e) Study **Photograph 2**, which shows multi-storey parking for bicycles in Amsterdam. Answer the questions which follow.

Outline how the use of this means of transport, shown in **Photograph 2**, would help to reduce climate change.

Award [1] A simple statement about bicycles, meaning there are fewer cars, e.g. Using bicycles encourages people to cycle to work. Or bicycles cause no pollution.

Award [2] The use of bicycles is related to a reduction of pollution and less heating,
e.g. Encouraging people to cycle to work will reduce pollution from cars or buses and so less heat will be trapped. [2]

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AVAILABLE MARKS

3 (a) Study **Fig. 8**, which shows the world's distribution of crustal plates and volcanoes. Answer the question which follows.

Describe the world distribution of volcanoes shown on **Fig. 8**.
Refer to named places in your answer.

Award [0] for a response not worthy of credit.

Award [1] for a simple general statement or one named place,
e.g. Volcanoes are along plate boundaries or along the west side of the Pacific Ocean **or** list of places with no mention of plate boundaries, e.g. Japan/Iceland.

Award [2]–[3] for a statement with two accurate named places [2] and reference to plate boundaries for full Level 2 [3],
e.g. Volcanoes are along plate boundaries, e.g. around the Pacific Ocean/ Ring of Fire and down the west side of North America.

Award [4] for a statement with three accurate named places and reference to plate boundaries or to one exception such as volcanoes in the centre of the Pacific Ocean for full Level 3,
e.g. Volcanoes are along plate boundaries such as around the Pacific Ocean/ Ring of Fire and down the west side of North America. There is an East/West belt through the Mediterranean Sea and a North/South belt down the middle of the Atlantic Ocean. There are also volcanoes in the middle of the Pacific Ocean which are not on a plate boundary. [4]

Assessment of spelling, punctuation and the accurate use of grammar

If the answer does not address the question then no SPaG marks are available. If the candidate has attempted to answer the question but produced nothing of credit, SPaG marks may still be awarded.

Threshold performance ([1])
Candidates spell, punctuate and use the rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.

Intermediate performance ([2]–[3])
Candidates spell, punctuate and use the rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.

High performance ([4])
Candidates spell, punctuate and use the rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision. SPaG [4]

AVAILABLE MARKS

(b) Study **Fig. 9**, which shows a plate boundary. Answer the questions which follow.

(i) Underline the type of plate boundary shown on **Fig. 9**.

Conservative Constructive Destructive [1]

(ii) Write **A** or **B** in the table below to name the two layers of the Earth shown on **Fig. 9**.

A [1]	**Crust/Plate**
B [1]	**Mantle**

(2 × [1]) [2]

(iii) Using **Fig. 9** to help you, explain how a mid-ocean ridge is formed.

Award [0] for a response not worthy of credit.

Award [1] for a simple statement about convection currents or plate boundaries,
e.g. A mid-ocean ridge forms where plates pull apart,
e.g. A mid-ocean ridge forms due to the action of currents in the mantle.

Award [2] for an answer which links the plate movement to the convection currents,
e.g. A mid-ocean ridge forms due to convection currents in the mantle which cause plates to pull apart.

Award [3] for an answer which explains that the plates are moving apart due to convection currents in the mantle and that the magma, which spills onto the surface through fissures/lines of weakness builds up the ridge,
e.g. Convection currents moving in opposite directions in the mantle move two plates apart. As the plates move apart this leaves cracks and fissures or lines of weakness, that allow magma from the mantle to escape. This creates the ridge of undersea mountains and volcanoes called the mid-ocean ridge. [3]

(c) Study **Photograph 3**, which shows basalt columns at the Giant's Causeway. Answer the question which follows.

Explain how basalt columns are formed.

Award [0] for an answer not worthy of credit.

Award [1] for a simple explanation that links the formation of basaltic columns to (extrusive) volcanic activity,
e.g. Basaltic Columns are formed when lava erupts and cools on the surface.

Award [2] for an explanation with some development,
e.g. Basaltic Columns are formed when lava erupts and cools on the surface and splits into shapes that look like columns.

Award [3] for a full explanation which refers to fissures and cooling,
e.g. About 60 million years ago lava flowed out over the North coast of Northern Ireland through large cracks called fissures. This lava flowed into hollows and cooled very slowly into basalt. On cooling it contracted into regular hexagonal and pentangular columns. [3]

AVAILABLE MARKS

(d) **(i)** State two ways by which sedimentary and igneous rocks are changed into metamorphic rocks.

Pressure [1] Heat [1].
(2 × [1]) [2]

(ii) Underline the name of the metamorphic rock which is formed from limestone.

Shale Marble Quartzite [1]

(e) Earthquakes can have physical consequences. Label the **two** physical consequences shown below. Select your answer from the list.

Award [1] for each correct label.

 ©grimgram/iStock/Thinkstock	 ©Naypong/iStock/Thinkstock
Tsunami [1]	**Liquefaction** [1]

[2]

(f) Describe one short and one long term impact of an earthquake on the environment of a LEDC which you have studied.

Name of LEDC earthquake, e.g. Indian Ocean, Haiti, etc. [1]

Accept any valid alternatives. Award [0] for MEDC earthquake.
If no LEDC named or candidate uses a MEDC earthquake then maximum top Level 2.

Level 1 ([1]–[2])
A simple statement referring to short and/or long term impacts on the environment,
e.g. A large wave travelled across the ocean. [1]
e.g. A large wave travelled across the ocean and flooded many coastal areas. [2]

Level 2 ([3]–[4])
A more detailed answer referring to both short term and long term impacts on the environment. One may be covered in more detail than the other,
e.g. The earthquake triggered a large tidal wave that circled the Indian Ocean. The seabed rose up causing sea levels to rise. Many coastal ecosystems were flooded and took months to recover. [3]
The Earth vibrated due to the energy released by this movement and the release of energy shortened the Earth's day. [4]

	AVAILABLE MARKS
Level 3 ([5]–[6]) A very detailed answer referring to both short term and long term impacts on the environment. One fact/figure needed for [5]. Two facts/figures needed to access [6]. Answers relating to the shortening of the length of the day and energy released are valid. (The Earth vibrated by 1 cm due to the energy released by this plate movement and the release of energy shortened the Earth's day by 2.68 microseconds). e.g. In the short term the 9.0 earthquake triggered a large tidal wave which reached 30 m in some places. It circled the Indian Ocean affecting all the countries with a coastline there. In the long term many coastal ecosystems around the Indian Ocean, such as mangroves and forests, were flooded, as well as coral reefs destroyed. These will take months or possibly years to recover. [6]	29
Quality of written communication Quality of written communication is taken into account in assessing candidates' responses to all tasks and questions that require them to respond in extended written form. These tasks and questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication. For conciseness, quality of written communication is distinguished within levels of response as follows: Level 1: Quality of written communication is limited Level 2: Quality of written communication is satisfactory Level 3: Quality of written communication is of a high standard. In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below. **Level 1 (Limited):** Candidates present some relevant information in a form and using a style of writing which suits its purpose. The text is reasonably legible. Spelling, punctuation and the rules of grammar are used with some accuracy so that meaning is reasonably clear. A limited range of specialist terms is used appropriately. **Level 2 (Satisfactory):** Candidates present relevant information in a form and using a style of writing which suits its purpose. The text is legible. Spelling, punctuation and the rules of grammar are used with considerable accuracy so that meaning is clear. A good range of specialist terms is used appropriately. **Level 3 (High Standard):** Candidates present, and organise effectively, relevant information in a form and style of writing which suits its purpose. The text is fluent and legible. Spelling, punctuation and the rules of grammar are used with almost faultless accuracy so that meaning is clear. A wide range of specialist terms is used skillfully and with precision.	
Total	**108**