



**General Certificate of Secondary Education
2024**

Geography

Unit 1

Understanding Our Natural World

[GGY11]

FRIDAY 17 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.

Assessment objectives

Below are the assessment objectives for GCSE Geography.

Candidates must show they are able to:

AO1 Demonstrate geographical knowledge and understanding of:

- Places, environments, processes and concepts; and
- The inter-relationships between places, environments and processes;

AO2 Apply knowledge and understanding to analyse, interpret and evaluate geographical information and issues and to make judgements; and

AO3 Select, adapt and use a variety of skills and techniques to investigate questions and issues and communicate findings.

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 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 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.

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.

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.

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 basic.

Level 2: Quality of written communication is good.

Level 3: Quality of written communication is excellent.

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

Level 1

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

Level 2

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

Level 3

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

- 1 (a) A drainage basin has many features. Answer the question which follows.

Complete **Table 1** by matching each geographical term with the correct definition. One has been completed for you.

Table 1

Source	●	●	A boundary which separates one drainage basin from another
Watershed	●	●	The end of a river where it meets the sea, ocean or lake
River mouth	●	●	Where a river begins; this is usually in mountainous locations

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(2 × [1])

[2]

- (b) (i) State the meaning of the term **discharge**.
 Award [0] for a response not worthy of credit
 Award [1] for a partial definition,
 e.g. discharge is the amount of water in the river
 Award [2] for a full definition,
 e.g. Discharge is the amount of water passing a certain point, at a certain time in the river channel. (It is measured in cumecs.)
 e.g. Discharge is the amount of water in the river and is calculated by multiplying the cross sectional area of the river by the velocity. [2]
- (ii) Using **Fig. 1**, describe and explain how discharge levels vary along the long profile of the River Derwent.

Level 1 ([1]–[2])

A basic description or explanation outlining how discharge levels vary along the long profile of the River Derwent.

Max L1 marks if there is no explanation or if there are no figures quoted from the resource.

e.g. The discharge levels increase with distance downstream. [1]

e.g. The discharge levels increase with distance downstream. The discharge levels in Location A is 0.78 cumecs. However, this increases to 5.11 cumecs by Location C. [2]

e.g. The discharge levels increase with distance downstream. Between Location A and C, discharge levels have increased by 4.33 cumecs. [2]

e.g. Discharge levels increase with distance downstream due to more tributaries joining the river. [2]

Level 2 ([3]–[4])

A full description but limited explanation of how discharge levels vary along the long profile of the River Derwent.

e.g. The discharge levels increase with distance downstream. The discharge levels in Location A is 0.78 cumecs. However, this increases to 5.11 cumecs by Location C. This is due to more tributaries joining the river. [3]

e.g. The discharge levels increase with distance downstream. The discharge level in Location A is 0.78 cumecs. However, this increases to 5.11 cumecs by Location C. This is due to more tributaries joining the river helping to increase the volume of water within the river channel. [4]
Accept reference to the low discharge at Site A because it is near the source of the river as a partial explanation.

Level 3 ([5])

A detailed description with figures and two explanations of how discharge levels vary along the long profile of the River Derwent.

Two reasons are required to access Level 3 i.e. tributaries and urban areas and also credit reference to the National Park.

e.g. The discharge levels increase with distance downstream. The discharge levels in Location A is 0.78 cumecs. However, this increases to 4.9 cumecs at Location B and 5.11 cumecs by Location C. This is due to more tributaries joining the river, helping to increase the volume of water within the river channel. Additionally, there are more urban areas in the lower section of the River Derwent, this inevitably will increase surface runoff due to impermeable surfaces. Therefore, discharge levels increase by 0.21 cumecs between Location B and C. [5]

- (c) River processes shape many features found along the river. Complete Table 2 by drawing an arrow to show whether each river feature listed has been formed by erosion or deposition. One has been completed for you.

Table 2

Formed by Erosion	River Feature	Formed by Deposition
(given) ←	Waterfall	
	Levee	→
	Slip off slope	→
←	River cliff	
	Floodplain	→

(4 × [1])

[4]

- (d) With reference to a named river in the British Isles, explain **one** physical reason why it flooded.

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

No mark for name of river in the British Isles, e.g. Derwent.

Max Level 1 if river outside British Isles or if no named river.

Level 1 ([1])

A basic response relating to a physical cause of flooding. There may be no reference to a named river in the British Isles.

e.g. It flooded in England due to heavy rain.

e.g. It flooded due to silt building up in river.

Level 2 ([2]–[3])

A limited explanation of one physical cause of flooding for a named river in the British Isles.

e.g. The River Derwent flooded in March due to heavy rainfall which fell on saturated ground. [2]

e.g. The River Derwent flooded in March due to heavy rainfall which fell on saturated ground. This resulted in surface runoff causing the river levels to rise quickly. [3]

Level 3 ([4])

One physical cause of flooding is explained in detail for a named river in the British Isles,

e.g. The River Derwent flooded in March due to heavy rainfall. Over 250 mm of rain fell onto the North York Moors. This meant the soil became saturated and resulted in surface runoff causing the river levels to rise quickly. [4]

- (e) For a named river outside the British Isles which you have studied, evaluate the sustainability of the river management strategy used to manage its floods.

Award [0] for a response not worthy of credit or e.g. a coastal strategy.

Note: no mark for name of river.

Max Level 1 if UK river/or no named river.

Level 1 ([1]–[2])

Candidates provide a basic description of the strategy used on a named river outside the British Isles, e.g. Levees were built along stretches of the Mississippi [1] and meanders were straightened [2].

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

Level 2 ([3]–[5])

Candidates provide a limited description of the strategy used or may refer to only one method used on a named river outside the British Isles with limited evaluation of the extent to which the strategy can be considered sustainable.

e.g. They have tried to control the Mississippi by building or strengthening levees and straightening meanders. Although this has improved navigation along the river, major flooding in 2011 shows this strategy has not worked [3]. Both methods required continual maintenance and are considered very expensive [4]. To achieve [5] need additional detail, e.g. 15m levees/or how they work

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

Level 3 ([6]–[8])

More than one engineering method is needed for Level 3. Candidates provide a detailed description of the river management strategy used on a river outside the British Isles. There is clear evaluation of the sustainability of the strategy in managing the floods.

e.g. The Mississippi River in the USA has been managed for over 100 years to improve navigation and prevent flooding. The levees were raised to 15 metres along 3000 km of the river. This allows much of the Mississippi floodplain to be developed for farming, trade and the growth of urban areas such as New Orleans. However, these methods are not sustainable as they are very expensive and require regular maintenance. Additionally, New Orleans now sits 4.3m below the river level due to silt being deposited onto the river-bed rather than the floodplains. 106 dams have also been constructed on the Mississippi to hold back flood waters. [6] Although they help control the flow of the Mississippi, they also prevent silt travelling further downstream which has meant the Mississippi delta is decreasing in size. They have planted trees in the Tennessee Valley to act as a soft approach to river management, which is more sustainable. However, trees take a long time to mature and so they still need to rely on hard approaches. [7] Overall hard engineering methods are more suitable/better at controlling river floods in the short term [8].

Spelling, punctuation and the rules of grammar are used with almost faultless accuracy so that meaning is clear. Candidates present and organise effectively relevant information in a form and using a style of writing which suits its purpose. The text is fluent and legible. A wide range of specialist terms is used skilfully and with precision. [8]

AVAILABLE
MARKS

25

Theme B: Coastal Environments

AVAILABLE
MARKS

- 2 (a) Study the Ordnance Survey extract of part of the coast at Aberdeen, Scotland and answer the questions which follow.
- (i) State the height of the land shown by the triangulation pillar west of the beach at GR 9507.
- 28 m [1]
- (ii) State the straight line distance between the amusement park GR 953067 and the picnic site at GR 965035.
- 3.4 to 3.6 km award [2]
3.3 to 3.39 or 3.61 to 3.7 km award [1] [2]
- (iii) State the direction of the nature reserve GR 9302 from Duthie Park GR 9304.
- South [1]
- (iv) Estimate the approximate area of coniferous wood found mainly in GR 8998. Underline your answer in the list below.
- 0.5 km² 1.0 km² 2.0 km² [1]
- (v) Much of the coastline on the map extract has been shaped by destructive waves. Complete **Table 3** by placing a tick (✓) opposite three correct statements about destructive waves.

Table 3

Statement about destructive waves	Tick (✓) three correct statements
They have a strong backwash compared to their swash.	✓
They are long in relation to their height.	
They are frequent waves (break at a rate of 15 per minute).	✓
They have strong erosive power.	✓
They are more common in springtime.	

(3 × [1]) [3]

Note: If 5 are ticked, deduct [2]

If 4 are ticked, deduct [1]

- (vi) Aberdeen beach extends 3.5km from the mouth of the River Don in the North, GR 9509, to the River Dee and Aberdeen Harbour, GR 9505. Using map evidence **only**, identify **three** reasons for coastal defences along this beach.

Award [0] for responses which are not related to the area adjacent to the beach or not evidenced from the O.S. map. Do not credit tourism alone or general responses e.g. properties need protection from flooding.

Award [1] for each valid piece of map evidence identified.

- Old town or King's Links (accept golf links/course)
- Hospital
- Science Centre
- (Sandy) beach
- Road
- Footdee
- Amusement park
- Football stadium
- Nature Reserve
- Important buildings e.g. Churches/Cathedral, Aberdeen University, recreation/sports centre.
- Aberdeen Harbour/Port

(3×[1])

[3]

- (b) Aberdeen City Council has attempted to manage this stretch of coast using:

- groynes
- a sea wall
- beach nourishment

Evaluate the sustainability of one hard and one soft engineering method used in the Aberdeen area.

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

Answers should include reference to one hard and one soft engineering method listed, that is, groynes or a sea wall and beach nourishment.

Two hard engineering methods cannot be credited for full marks. If two hard engineering methods are used credit the more detailed answer. It is not necessary to explicitly state which method is hard and which is soft engineering.

- Hard Engineering – groynes and sea wall
- Soft Engineering – beach nourishment.

Level 1 ([1]–[2])

One or two brief statements about a hard and/or soft engineering method (either positive or negative) or one method evaluated with both a positive and negative statement.

e.g. Groynes slow down longshore drift and trap sand on the beach reducing erosion. [1]. Beach Nourishment builds up the beach by adding (dredged) sand to the beach replacing eroded material [2].

e.g. Sea walls (are structures made of concrete), built at the back of the beach deflect wave energy and protect the land and property behind them [1]. However, they are expensive to build and need constant maintenance [2]

Level 2 ([3]–[4])

An answer which evaluates **both** a hard and a soft engineering method with a positive and negative statement on each. Alternatively one method could

be evaluated in detail with reference to sustainability and the other simply stated.

e.g. Groynes slow down longshore drift and trap sand on the beach reducing erosion. However, wooden groynes erode in a short time and rock groynes can cause problems of public access to the beach. Beach Nourishment builds up the beach by adding (dredged) sand to the beach replacing eroded material [3] However, this is a very expensive method [4].

e.g. Sea walls (are structures made of concrete), built at the back of the beach deflect wave energy and protect the land and property behind them. However, they are expensive to build and they need maintenance. Nevertheless, they can be considered sustainable as while expensive, they can offer protection for many years and are therefore economically viable.

Level 3 ([5]–[6])

An answer which evaluates both a hard and soft engineering method and makes reference to the **sustainability** of both methods discussed. To achieve top Level 3 an overall conclusion or statement is required and a fact figure on one of the two methods.

e.g. Groynes slow down longshore drift and trap sand on the beach reducing erosion. This can be considered an economically sustainable method to protect the beach in tourist locations. However, wooden groynes erode in about 20 years and rock groynes can cause problems of public access to the beach/ lead to extra erosion further down the coast as beach material cannot move naturally by longshore drift. Beach Nourishment builds up the beach by adding (dredged) sand to the beach replacing eroded material or by sand being transported by lorry. However, this is a very expensive method. It can have negative social and environmental effects such as noise pollution/ unpleasant beach views/and habitat disruption [5]. Nevertheless by building up the beach it can be considered sustainable for the protection of the tourist industry [6]. In general, these methods may be considered environmentally unsustainable but can be justified as economically sustainable [6].

e.g. Sea walls (are structures made of concrete), built at the back of the beach deflect wave energy and protect the land and property behind them. However, they are expensive to build costing millions of pounds and they need maintenance. Nevertheless, they can be considered sustainable as while expensive they can offer protection for 50 -100 years and are therefore economically viable. Beach Nourishment builds up the beach by adding (dredged) sand to the beach replacing eroded material or by sand being transported by lorry. However, this is a very expensive method costing approximately £1 million per mile and it can affect the shipping industry and transport links [5]. Nevertheless by building up the beach, beach nourishment can be considered sustainable for the protection of the tourist industry [6]./In general while soft engineering methods are considered more sustainable, hard methods can be justified as sustainable in economic terms where they protect coastal areas that are important economically [6]. [6]

- (c) Future climate change with more extreme weather is predicted to threaten the Aberdeen coastline. Study **Fig. 2** which shows some information about predicted precipitation change in this area and answer the questions which follow.

- (i) Describe the predicted changes in precipitation over time as shown in **Fig. 2**.

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

Award [1] for an answer which states a projected trend. If no figures quoted maximum 1 mark.

e.g. Precipitation (Rainfall) levels are predicted to increase (between the 2020s and 2080s.)

e.g. Rainfall levels are predicted to increase in both autumn and winter (by the 2080s.)

Award [2] for an answer which identifies **two** projected changes over the time ranges and uses figures to illustrate the trends.

e.g. Winter rainfall is projected to increase by 36% by 2080 while summer rainfall is expected to decrease by 1% from the 2010 level.

e.g. Both autumn and winter are predicted to have the largest increases in rainfall, autumn rainfall increasing by 34% and winter rainfall by 36% from the 2010 levels.

Award [3] for an answer which identifies **three** projected changes over the time ranges and uses figures to illustrate these trends.

e.g. Winter rainfall is projected to show the greatest increase steadily increasing by 11% in the 2020s, and 36% by the 2080s. Autumn rainfall is also expected to increase by 34%. Meanwhile while summer rainfall is expected to increase initially, spring rainfall is expected to increase steadily from 7% to 10% by the 2080s it is then predicted to drop to -1% by the 2080s. [3]

- (ii) Describe briefly one other way, apart from more extreme weather, in which climate change could affect the coastline.

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

Award [1] for stating a rise in sea level.

e.g. Climate change can lead to sea level rises [1]

Award [2] for increase in sea levels and the potential impact of this on a coastline.

e.g. Climate change can lead to sea level rises [1] which increase the vulnerability of coastal areas to damage from the sea due to the increased risk of flooding/and damage to the natural environment and property. [2]

e.g. Climate change could lead to an increase in the temperature of the sea water which increases its volume leading to a rise in sea levels [1] requiring coastal defences to be put in place to protect the coastline from flooding. [2] [2]

- (d) A spit is an example of a depositional coastal landform. List **three** conditions which are necessary for a spit to form.

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

Award [1] for each correct condition necessary for the formation of a spit.

e.g. A spit is formed where the coastline has a sudden change in direction (such as at a river mouth) [1]

e.g. A spit is formed in shallow seas or areas with a shallow continental shelf. [1]
 e.g. A spit is formed on coastlines where longshore drift operates. [1]
 e.g. A spit is formed where there is a steady supply of sand from further up the coast. [1]
 e.g. A spit occurs on beaches with a relatively weak backwash. [1]
 (3 × [1]) [3]

AVAILABLE
MARKS

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- 3 (a) (i) Complete **Fig. 3** by naming the correct source of data for a weather forecast in the boxes provided.
- Land-based weather station [1]
Rainfall radar [1]
(2 × [1]) [2]
- (ii) Using the data in **Table 4**, complete **Fig. 4** by drawing the correct bar for Northern Ireland.
- [1] for accurately drawing bar to 30
[1] for full shading [2]
(2 × [1])
- (iii) State the total number of land-based weather stations in the United Kingdom.
- 430 [1]
- (b) Study **Fig. 5** which shows a weather forecast. Answer the questions which follow.
- (i) Using the information in **Fig. 5**, complete **Table 5** by inserting the correct day of the week. One has been completed for you.

Table 5

Weather experienced	Day of the week
Highest temperature	SATURDAY
Snow expected	MONDAY
A wind speed of 13mph with the wind coming from the north east	FRIDAY (given)
10°C with sunshine and cloud	THURSDAY

Accept shortened versions of days as given in **Fig. 5**, such as Sat
(3 × [1]) [3]

- (ii) Describe **one** limitation of forecasting the weather.
- Accept valid alternative answers
Award [1] for a limited answer referring to range or accuracy
e.g. it's not always accurate
e.g. you can only make forecasts for the short term.
Award [2] for a more detailed answer which expands on the range or accuracy of weather forecasts
e.g. it's not always accurate as different air masses bring different weather
e.g. it's not always accurate as rain may fall in different areas than predicted
e.g. you can only make forecasts for the short term as long term weather forecasts are more unpredictable.
e.g. Forecasts are not always accurate as the weather is always changing. [2]

- (c) (i) Using **Fig. 6** to help you, describe and explain how altitude influences temperature.

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

Level 1 ([1]–[2])

A basic description and/or explanation of how altitude influences temperature,

e.g. It gets colder as we go up the mountain. [1]

e.g. The air is thinner the higher up we go. [1]

e.g. At the top of Mount Everest it is -28°C . The temperature has fallen from sea level [2]

Height	Temperature
0	24
3000	6
6000	-12
8850	-28

Level 2 ([3]–[4])

A sound description of how altitude influences temperature with limited explanation. Alternatively, at this level, an answer may address only one aspect of the question. If the response only describes the temperature change it is restricted to bottom of Level 2. [3] If a brief explanation is provided the response can access top of Level 2,

e.g. At the top of Mount Everest it is -28°C . The temperature has fallen from sea level where it is 24°C . This is because air is thinner in higher altitudes. [3]

e.g. At sea level the temperature is 24°C . As we reach 3000 m it has fallen to 6°C . (By the time we get to 6000 m it's now -12°C). By the time we reached the summit it has fallen to -28°C . [3]

e.g. With an increase in altitude, temperature decreases. At 3000 m the temperature is 6°C however temperature drops to -12°C when altitude increases to 6000 m. By the time we get to the summit at 8,850 m it is -28°C . Air pressure decreases with an increase in altitude. This lowers the ability of the air to hold its heat. Therefore, temperature decreases. [4]

e.g. At sea level the temperature is 24°C . As we reach 3000 m it has fallen to 6°C . By the time we get to 6000 m it's now -12°C . By the time we reached the summit it has fallen to -28°C . When the sun's rays are absorbed by the Earth's surface it is radiated back to the atmosphere. As more heat is absorbed closer to the ground, temperature is higher here. Energy is lost as it travels higher into the atmosphere. [4]

Level 3 ([5])

A detailed response which describes the changes in temperature using figures from the resource and explains in full why temperature decreases, including the rate at which temperatures drop every 100 m.

e.g. With an increase in altitude, temperature decreases. At 3000 m the temperature is 6°C however temperature drops to -12°C when altitude increases to 6000 m. By the time we get to the summit at 8,850 m it is -28°C . Air pressure decreases with an increase in altitude. This lowers the ability of the air to hold its heat. Therefore, temperature decreases. [4]. Temperatures generally fall at the rate of 1°C every 100 m. (some may quote 0.6°C every 100 m). [5]

e.g. At sea level the temperature is 24°C. As we reach 3000 m it has fallen to 6°C. By the time we get to 6000 m it's now –12°C. By the time we reached the summit it has fallen to –28°C. When the sun's rays are absorbed by the Earth's surface it is radiated back to the atmosphere. As more heat is absorbed closer to the ground, temperature is higher here. Energy is lost as it travels higher into the atmosphere.[4] Temperatures generally fall at the rate of 1°C every 100 m. (some may quote 0.6°C every 100 m). [5]

- (d) (i) Using **Fig. 7** suggest **three** weather characteristics/elements (other than high pressure) expected on this day.

This is a winter anticyclone. So possible answers may include

- Cold temperatures / Freezing temperatures
- No rain / Dry conditions
- Clear blue skies / No clouds in the sky / Little cloud / 0 okta / Sunny
- Calm wind speeds / No winds / Low windspeed
- Fog / Low visibility / Mist

(3 × [1]) [3]

- (ii) Name **one** other type of weather system that can affect the British Isles.

Accept Low Pressure / Depression / Low [1]

- (e) With reference to your case study of an extreme weather event outside the British Isles which you have studied (tornado, drought or hurricane) describe the impacts this event had upon people.

Do not credit answers which outline a flooding or earthquake event or focus solely on impacts on property.

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

Max Level 1 if no place/extreme weather event is named

Max Level 1 if no fact figures

Level 1 ([1]–[2])

A basic description of the impact of a relevant extreme weather event,

e.g. Typhoons have strong winds which destroy people's homes. [1]

e.g. Haiyan killed 6190 people. [1]

e.g. Typhoons have strong winds which destroy people's homes. This results in people becoming homeless. [2]

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

Level 2 ([3]–[4])

A limited description of the impact of a specific extreme weather event with some elaboration on each impact. At least two impacts and reference to the country needed for top Level 2.

e.g. Typhoon Haiyan affected the Philippines. 6190 were killed (as a result of the high winds and storm surge). This caused widespread grief and trauma for the survivors of the storm. [3] 400,000 people were evacuated to

shelters as their homes had been destroyed [4]. This left these people homeless. [4]

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

Level 3 ([5]–[6])

A detailed description of the impact of a specific extreme weather event on people, more than two impacts are elaborated upon. At least three impacts needed for Level 3

e.g. Typhoon Haiyan affected the Philippines. 6190 were killed (because of the high winds and storm surge). This caused widespread grief and trauma for the survivors of the storm. 400,000 people were evacuated to shelters as their homes had been destroyed (by 230 km/h winds). This left these people homeless. 2.5 million people were at risk from food shortages [5] and starvation as the crop seed for the following year was destroyed. [6] Decaying corpses and raw sewage resulted in an outbreak of dysentery. This made many people ill. [6]

Spelling, punctuation and the rules of grammar are used with almost faultless accuracy so that meaning is clear. Candidates present and organise effectively relevant information in a form and using a style of writing which suits its purpose. The text is fluent and legible. A wide range of specialist terms is used skilfully and with precision. [6]

- 4 (a) Rocks are usually grouped into three different types. Complete **Table 6** below by naming the correct type of rock and give one named example of this rock. One has been completed for you.

Award [1] for each correct answer

Table 6

How rock was formed	Rock type	Named example
Rocks that are formed by sediments that have been built up over a long time, usually under water.	Sedimentary rock (given)	Limestone (given)
Rocks that are formed by the cooling and solidifying of molten rock or lava.	Igneous	Basalt / Granite
Rocks that have been changed due to pressure or heat.	Metamorphic	Slate / Marble

(4 × [1])

[4]

- (b) Describe the global distribution of earthquake zones shown on **Fig. 8**, referring to places in your answer.

Award [0] for a response not worthy of credit

Level 1 ([1])

A basic statement or one named location,

e.g. Earthquakes are found along plate boundaries [1]

e.g. Earthquakes are found on the West side of North America/ the North American plate [1]

Level 2 ([2]-[3])

A limited statement with some accurately named locations (where two named plates meet) [2] and reference to plate boundaries for full Level 2 [3], e.g. Earthquakes are found along the West side of the North American plate where it meets the Pacific plate. [2] There is a belt of earthquakes between the African and Eurasian plate around Southern Europe. [3]

Level 3 ([4])

A detailed answer with accurate named locations, 3 named belts or 2 belts and named area with few earthquakes.

e.g. Earthquakes are found along the West side of the North American plate where 2 plates meet the Pacific plate. There is a belt of earthquakes that runs through the Mediterranean Sea between the African and Eurasian plates.

There are very few earthquakes found away from the edge of plates, such as on the African Plate.

[4]

- (c) Explain why volcanoes might be found at constructive plate boundaries

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

Answers that refer to volcanoes located at the side of a rift valley where continental crust is pulling apart can be credited.

Level 1 ([1])

A basic statement relating to the location of volcanoes

e.g. Volcanoes are found when plates are pulled apart.

Level 2 ([2]–[3])

A limited statement which shows some understanding of why volcanoes are found at constructive boundaries.

e.g. Volcanoes are found where plates are pulled apart and magma rises to the surface through cracks in the seabed [2]; the rising magma forms a line of volcanoes [3]

Level 3 ([4])

A detailed explanation which shows understanding of why volcanoes occur at constructive plate boundaries.

e.g. Volcanoes are found where plates are pulled apart due to the convection currents in the mantle layer. Magma rises to the surface through cracks in the seabed and the rising magma will create a series of mid-ocean ridges [4]. Or this causes volcanoes and new crust to be formed [4]. [4]

- (d) Describe how a tsunami might impact people and property

Award [0] for a response not worthy of credit

Award [1] for a basic statement that identifies some impact of a tsunami on either people or property

e.g. A tsunami can cause a large wave that will destroy buildings.

Award [2] for a limited statement that will either explain one impact (on people or property) in some detail or will explain both impacts (people and property) in basic detail.

Award a Max of [2] if there is no reference to a wave.

e.g. A tsunami can cause a large wave that will destroy buildings and the flood waters will drown people.

Award [3] for a detailed description of the impacts on both people and property.

e.g. A tsunami can cause a large wave that will destroy buildings as the power and surge of the wave will cause buildings to fall. The flood waters might rise (to about 20 m high) and people who have not climbed to the top of buildings will drown. [3]

- (e) Describe the differences between a composite and a shield volcano

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

Award [1] for a basic answer which is accurate about one of the two terms, e.g. A shield volcano is a volcano with gentle slopes.

Award [2] for a limited statement which accurately describes the difference, e.g. A shield volcano is a volcano with gentle slopes but a composite volcano is a taller, cone-shaped volcano.

Award [3] for a detailed description of the differences between the composite and shield volcanoes.

e.g. A shield volcano is a wide volcano with gentle slopes that is formed by runny lava but a composite volcano is a taller, cone-shaped volcano that is formed by layers of ash and lava. [3]

- (f) Name an earthquake in a MEDC or LEDC which you have studied. Outline the cause of this earthquake and evaluate how the country prepared for the earthquake.

Accept any valid MEDC or LEDC earthquake

e.g. Japan 2011

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

Max Level 1 if no named earthquake, or preparations only, or cause only.

Max Level 2 if earthquake is named but no country identified.

Max Level 2 if no Cause is outlined.

Level 1 ([1]–[2])

A basic answer which briefly outlines the cause and/or preparations used without any evaluation

e.g. Japan is on a destructive boundary [1]. They hold an earthquake drill each year [1]

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

Level 2 ([3]–[5])

A limited response which outlines the cause and precaution used, in some detail for a named earthquake in a MEDC or LEDC,

e.g. Japan sits on a destructive plate boundary. A large amount of pressure built up between the plates and was released. The Japanese invested a large amount of money to try and plan for earthquakes [3]. They spent over £70 million on equipment like seismographs, tilt meters and on earthquake drills to try and predict where any earthquake might occur [4] but these were not accurate enough to give time to prepare [5] / Japan also spent a lot of money in constructing earthquake-proof buildings. [5]

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

Level 3 ([6]–[7])

A detailed response covering both the cause and the preparations used for a named earthquake in a MEDC or LEDC. An evaluative comment is needed on the success of the preparations to get into this level.

e.g. Japan sits on a destructive plate boundary between 3 different plates – the Pacific, Eurasian and Philippine plate. A large amount of pressure built up between the plates and was released in the form of a 9.0 magnitude earthquake in 2011. This also triggered a tsunami. The Japanese invested a large amount of money to try and prepare for earthquakes. They spent over £70 million on equipment like seismographs, tilt meters and on earthquake drills to try and predict where any earthquake might occur. However, they still were not able to predict this with any accuracy. They also spent a lot of money, making earthquake-proof buildings. Some of these did survive but many failed and despite the investment – over 20,000 people died in the earthquake [6]. Overall the preparations were aimed at earthquakes that were smaller (7.0 magnitude) and therefore their plans were not a success [7].

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

[7]

Total

AVAILABLE MARKS
25
100