



**General Certificate of Secondary Education
2022**

Geography

Unit 1

Understanding Our Natural World

[GGY11]

MONDAY 23 MAY, MORNING

**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.

COVID-19 Context

Given the unprecedented circumstances presented by the COVID-19 public health crisis, senior examiners, under the instruction of CCEA awarding organisation, are required to train assistant examiners to apply the mark scheme in case of disrupted learning and lost teaching time. The interpretation and intended application of the mark scheme for this examination series will be communicated through the standardising meeting by the Chief or Principal Examiner and will be monitored through the supervision period. This paragraph will apply to examination series in 2021–2022 only.

- 1 (a) The work of a river includes erosion and transportation. Complete **Table 1** by sorting the river processes below into erosion or transportation by drawing an arrow for each. One has been completed for you.

Table 1

Erosion	River Process	Transportation
←	Attrition	
	Traction	→
←	Hydraulic Action	
	Saltation	→ (given)

Award [1] for each correct answer
(3 × [1])

[3]

- (b) State the meaning of the term **deposition**

Award [0] for an answer not worthy of credit

Award [1] for a brief statement,
e.g. when material is dumped/laid down/dropped in the river.

Award [2] for a detailed statement,
which refers to the conditions under which deposition occurs e.g. energy falls
e.g. when the river load becomes too heavy for the river to carry and
material is dumped/laid down/dropped (along the course of the river). [2]

- (c) Study **Photograph 1** which shows a waterfall in Iceland.
Explain how a waterfall is formed

Award [0] for an answer not worthy of credit

Level 1 ([1])

A basic answer with little explanation of the formation of a waterfall,
e.g. waterfalls are formed by erosion.

Level 2 ([2]–[3])

A limited response that identifies processes and features of the waterfall.
e.g. There is a layer of hard rock over a layer of softer rock and the softer
rock is more easily eroded so it is undercut because of erosion. [2] The river
falls into a plunge pool and the hard rock overhangs this pool. [3]

Level 3 ([4]–[5])

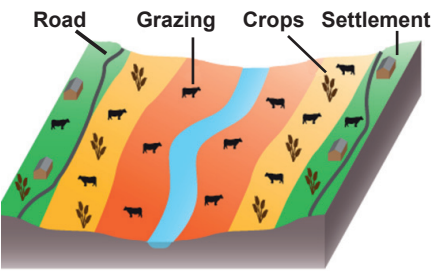
A detailed response with an accurate use of the major processes and
features involved in waterfall formation. There must be **reference** to at least
2 types of erosion (e.g. hydraulic action and corrasion/abrasion) and features
(e.g. plunge pool, undercutting and overhang) for [5] marks,
e.g. There is a layer of hard rock over a layer of softer rock and the softer
rock is more easily eroded so it is undercut because of erosion such as
abrasion. The river falls into a plunge pool caused by hydraulic action which
causes undercutting [4]. The hard rock begins to overhang until eventually

the rock becomes too heavy and collapses (and the waterfall will retreat backwards/upstream). [5] [5]

(d) Study **Table 2** below, which shows four flood management methods. Answer the questions which follow.

(i) Complete **Table 2** by identifying each flood management method. One has been completed for you.

Table 2

Flood management method	Name of method
	Dam Not a reservoir
	Land use zoning Accept other alternatives e.g. safe (flood) zone no build area washlands land management Do not accept wetlands
	Flood wall (given)
	Afforestation/ Reforestation accept planting trees Do not accept interception process

Award [1] for each correct answer
(3 × [1])

[3]

Sources: Photos 1,3 and 4 © Getty Images. Photo 2 © Principal Examiner

- (ii) Choose **one** hard engineering method and describe how it helps to manage flooding

Do not accept Coastal methods of Hard engineering

The specification lists hard engineering methods as being – dams, floods walls, levees, embankments, and straightening and deepening the river.

Accept dredging and widening of the channel.

Hard engineering method: No mark for naming a method but this must match the description given.

Award [0] for an answer not worthy of credit, e.g. an answer where the method and description do not match.

Award [1] mark for a brief statement that clearly describes how the method works to manage flooding,
e.g. dams can be built across a river to control the flow of water downstream.

Award [2] marks for a detailed statement,
e.g. a dam is a wall that is built across the river channel to stop the river from moving downstream. It controls the amount of water by storing heavy rainfall in reservoirs. [2]

- (iii) Describe **one** way that flooding might impact the environment either positively or negatively.

Award [0] for an answer not worthy of credit, any answer relating to people, e.g. a flood destroys crops.

Award [1] for a basic statement,
e.g. a flood can cause pollutants to be washed into the river. A flood can add alluvium.

Award [2] for a limited description,
e.g. a flood can cause pollutants to be washed into the river. Oil and other chemicals can spread disease.

Award [3] for a detailed description,
e.g. a flood can cause pollutants to be washed into the river. Oil and other chemicals can spread disease. This could kill animals and fish. [3]

- (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 an answer not worthy of credit, 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. Major flooding in 1993 shows this strategy has not worked [3]. Both methods required continual maintenance [4]. To achieve [5] need additional detail, e.g. 15 m 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]–[7])

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. An overall conclusion/judgement is required for top Level 3, 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 and meanders were straightened over a 1750 km stretch allowing much of the Mississippi floodplain to be developed for farming, trade and the growth of urban areas such as New Orleans. 106 dams have also been constructed on the Mississippi to hold back floodwaters. However, these methods are not sustainable as they are very expensive and require regular maintenance. [6] Recently the US Conservation Service has spent \$25 million buying farmland prone to flooding and converting it to natural conditions which do not require any maintenance and have no obvious negative environmental impacts. Overall hard engineering methods are more suitable/better at controlling river floods in the short term [7].

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2 Study **Fig.1**, which shows two types of waves. Answer the question which follows.

(a) Underline the correct word to complete the sentences below about coasts and waves.

- Constructive waves have a strong/weak swash.
- Destructive waves break at a rate of 5–9/over 15 per minute.
- A strong backwash builds up/erodes a beach.
- Constructive/destructive waves help to form cliffs

(4 × [1])

[4]

(b) Explain how a wave cut platform is formed.

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

Level 1 [1]

A basic statement relating to the process or some of the stages involved in the formation of a wave cut platform,

e.g. A wave cut platform forms because of erosion of a cliff

Level 2 [2]–[3]

A limited explanation which refers both to the stages and the simple process of erosion.

e.g. A wave cut platform is formed when waves attack the base of a cliff and erosion [by hydraulic pressure of the waves] creates a notch [or crack] at the bottom of the cliff [2] and the cliff collapses leaving the wave cut platform at the foot of the cliff [3]

Level 3 [4]–[5]

A detailed explanation which refers both to the stages and the erosion of a cliff which retreats as it collapses; the answer makes clear the wave cut platform is the rocky shore at the foot of the cliff/or the rock is exposed at a low tide,

e.g. A wave cut platform is formed when waves attack the base of a cliff and erosion by abrasion [or hydraulic pressure of the waves] creates a notch [or crack] at the bottom of the cliff; this notch is widened so the cliff is undercut by erosion and eventually the cliff collapses and retreats leaving a rocky shore at the foot of the cliff and this flat rock below the cliff is the wave cut platform.

[5]

(c) State the meaning of the term **longshore drift**.

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

Award [1]

A basic statement relating to longshore drift,

e.g. Longshore drift is a transportation process by waves/in the sea.

e.g. Longshore drift moves sand/material along a beach.

Award [2]

A detailed statement which refers to the sawtooth/zigzag movement of sand along the beach or to how the swash and /or backwash operate,

e.g. Longshore drift is a transportation process in the sea whereby sand particles move along a beach by waves moving up the beach at an angle, carrying sand and then waves taking sand directly down the beach so the

sand is moved along the beach.

Answers may also refer to the swash taking sand at an angle up the beach and then directly down the beach in the backwash out to sea so that the sand is carried along the beach.

[2]

- (d) Study **Fig. 2** which shows three economically important land uses at the coast. Answer the questions which follow.

- (i) Match each economic land use in Table 3 to the correct photograph. One has been completed for you.

Economic land use	Photograph
Tourist resort	C
Port activity	A (given)
Fishing port	B

[2]

- (ii) Explain why coastal areas with ports may require coastal defences both now and in the future.

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

Credit answers which elaborate on both economic development and future sea levels rising.

Level 1 [1]

A basic statement which may refer briefly to the human or economic use of the coast,

e.g. This area provides plenty of work to people so the port needs protected

or e.g. This port area is valuable to the economy so it needs defended

Level 2 [2]–[3]

A limited explanation which refers to the use of the coast and/or to the likelihood of sea level changes requiring defences,

e.g. This port is valuable to the economy so it needs defended especially as flooding may occur [2] as sea levels may rise destroying facilities [3]

Level 3 [4]

A detailed explanation which refers to both the economic value of the port and to the fact that sea levels may rise due to climate change,

e.g. This port is valuable to the economy so it needs defended especially as flooding may occur as sea levels may rise because ice caps may melt due to global warming affecting trade locally/nationally.[4]

[4]

- (e) Evaluate a coastal management strategy used to protect a named area of coast in a sustainable way in the British Isles.

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Award [0] for an answer not worthy of credit, e.g. a river strategy

Additional instructions for answers on only **one soft engineering** method:

If managed retreat or beach nourishment **only** is discussed, then answer can be marked into Level 3 [6 marks].

If *other* unsustainable methods [sea walls/groynes etc] are also discussed then 7 marks.

If there is *also* a concluding judgement on the methods, then 8 marks.

NB.

At Newcastle there has been no beach nourishment yet implemented, but only planned for the future as part of the strategy.

If it is **not** made clear that beach nourishment is part of the strategy, [and it is the only method discussed], then answer is Max Level 2 [5].

Max Level 1 if there is no named coastline

Max Level 2 if there is only one method of coastal management fully described with fact/figure/place detail and good evaluation [5]

Level 1 [1]–[2]

A basic response referring to a coastal management strategy. The answer may not refer to a specific named coastline in the British Isles. There is no evaluation or reference to sustainability,

e.g. Gabions were placed near the river mouth to reduce erosion; groynes and a sea wall were also built.

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 account of a coastal management strategy for a named coastline in the British Isles. The answer evaluates the strategy so both positive and negative aspects are referred to in the methods discussed

Some example answers include

- good detail on the strategy used but no discussion of sustainability [3]
- good depth on the strategy with a basic attempt to evaluate but only the positive or negative aspects are referred to [4]
- some evaluation of the strategy but lacking in accurate factual detail [4]
- an answer with accurate detail but only focused on the positive OR the negative aspects of the strategy [5]

e.g. At Newcastle there have been several methods used to manage the coast in a sustainable way; a major method was the new sea wall which was built in 2007 as part of the promenade development. The sea wall was built 1 metre higher than the old sea wall. It was designed to stop the sea from flooding the town. Also gabions and groynes were used to protect the land. [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]–[8]

A detailed answer on a management strategy for a named coastline in the British Isles. The answer has an evaluation which clearly discusses both the positive and negative aspects of the methods and their sustainability. The answer also includes a full evaluative comment in the conclusion.

Differentiation in this level is based on the breadth of evaluation in relation to how sustainable the strategy is,

e.g. At Newcastle there have been several methods used to manage the coast in a sustainable way; a major method was the new sea wall which was built in 2007 as part of the promenade development. The sea wall was built 1 metre higher than the old sea wall and has a recurved top [wave return design] so that the force of the waves is deflected back to sea; this is sustainable as, despite the cost of the whole development being £4 million, it does not require much maintenance and was designed to stop the sea from flooding the town for at least 50 years.

Also gabions, rock armour and groynes were used to reduce wave impact and help build up sand on the beach. Gabions are wire cages of local stone and were used to protect the land at the mouth of the river Shimna. Although the wire can rust and debris collect in the cages, there were a less expensive and so more sustainable method of defence as it fits in with the character of the local area. However the groynes that were used to stop longshore drift cost £1250 per 20 metres, have decayed and are no longer effective and also they are not sustainable as they prevent sand from reaching further along the coast at Murlough Bay.

Overall the strategy is successful at protecting the town from flooding which makes it sustainable but overall it was very expensive. Some local people are concerned about the changes at the coast reducing access to the beach where there are gabions and that the sea wall actually increases erosion of the sand from the beach in front of it, which may not be sustainable in the longer term at Newcastle.

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[8]

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- 3 (a) Study **Fig. 3**, which shows rainfall occurring over parts of the British Isles. Answer the questions which follow.

- (i) Name the city not experiencing rainfall in **Fig. 3**.

Edinburgh

[1]

- (ii) Complete **Table 4** by ranking the cities in order of temperature, starting with the lowest temperature. One has been completed for you.

Table 4

City	Rank
Belfast	3 (given)
Dublin	2
Edinburgh	1
Manchester	4

All 3 correct [2]

One or two incorrect [1]

All 3 incorrect [0]

[2]

- (iii) Describe how rainfall radar collects information which can then be used in a weather forecast.

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

Award [1] for a basic statement,

e.g. it is a device that records where rainfall occurs/or shows the amount or intensity of rainfall [in different places].

e.g. a device which sends out waves.

Award [2] for a limited description,

e.g. it is a device which sends out microwaves to see where rain is occurring. Electro-magnetic waves or microwaves, not just waves.

Award [3] for a detailed description which elaborates on how it works

NB

there is no necessity to refer to a weather map or forecast.

e.g. A rainfall radar unit consists of a transmitter and a receiver. The transmitter sends out microwaves. Rainfall scatters these microwaves and this information can be displayed on a map to show where rainfall is occurring.

[3]

- (iv) A geostationary satellite is another source of data for a weather forecast.

State the meaning of the term **geostationary satellite**.

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

Award [1] for a basic statement, e.g. it has a fixed position [1] / or it takes images from space [1].

Award [2] for a detailed description (must say that it is fixed in space rotating with the Earth), e.g. it orbits with the Earth taking images. It is fixed in the same location rotating in the same direction as the Earth. [2]

- (b) A tornado is an example of extreme weather. Study **Fig. 4** which gives information on a tornado in the USA. Answer the questions which follow

- (i) Using **Fig. 4**, state the number of tornado reports on 3rd March 2019.

13 [1]

- (ii) Underline the total number of people who have been affected by this tornado as shown in **Fig. 4**

8 23 81 150 [1]

- (iii) Using **Fig. 4**, state **one** impact this tornado had on property.

The tornado destroyed 120 buildings. [1]

- (c) Anticyclones occur in winter and summer. Complete **Table 5** by writing the word SIMILAR or DIFFERENT to compare the weather characteristics of summer and winter anticyclone. One has been completed for you.

Table 5

Weather characteristic	SIMILAR/DIFFERENT
Temperature	DIFFERENT
Wind speed	SIMILAR
Rainfall	SIMILAR
Air mass influencing it	DIFFERENT (given)

(3 × [1]) [3]

- (d) Study **Fig. 5** which shows a frontal depression or low pressure system. Answer the questions which follow.

- (i) Underline the correct word to complete the sentences below relating to low pressure systems.

- Low pressure systems have air pressures which are **above** / **below** 1013 millibars
- The warm sector has the **highest** / **lowest** temperatures within a low pressure system.
- Winds blow **anticlockwise** / **clockwise** in a low pressure system.

(3 × [1])

[3]

- (ii) Explain why rainfall occurs at the warm front

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

Award [1] for a basic statement,
e.g. clouds are found here/air is rising.

Award [2] for a limited explanation,
e.g. warm air is rising causing clouds to form.
e.g. warm air rises and cools [2].
e.g. warm air rises, cools and condenses [2].

Award [3] for a detailed explanation with a consequence,
e.g. warm air (tropical maritime) is rising over cold air (polar maritime). This causes the air to cool and condense which causes clouds to form which will lead to precipitation.
e.g. warm and cold air meet at the warm front and the warm air is forced to rise and cool and [the water vapour] condenses to form clouds and rain will fall. [3]

- (e) Explain how prevailing winds can affect the climate.

To achieve Level 3 both temperature and rainfall must be addressed. One must be fully explained.

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

Level 1 ([1])

A basic statement which explains how the prevailing wind affects climate,
e.g. Winds coming from warm places will increase the temperature.

Level 2 ([2]–[3])

A limited explanation relating to how the prevailing wind affects the climate. Some sense of direction or named areas should be introduced for Level 2, e.g. Winds coming from warm places such as the south (tropical areas) will increase the temperature [2] whereas winds coming from cold places such as the north (polar areas) will lower the temperature. [3]

Award up to top of Level 2 [2–3] for answers with description only, if they refer to both temp and rainfall.

Level 3 ([4]–[5])

A detailed explanation of how the prevailing wind affects climate. Both temperature and rainfall are addressed with directions or source areas stated;

e.g. Winds coming from warm places such as the south (tropical areas, e.g. Caribbean) will increase the temperature whereas winds coming from cold places such as the north (polar areas, e.g. Greenland) will lower the temperature. Winds blowing over seas or oceans (such as the Atlantic) will bring wet conditions to coastal areas as they pick up moisture from the sea. [4] Winds blowing over continents usually have little moisture contained within them so therefore will bring dry conditions. [5]

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- 4 (a) The structure of the earth is composed of four different layers. Complete **Fig. 6** by drawing a line to join each layer to its correct description. One has been completed for you.

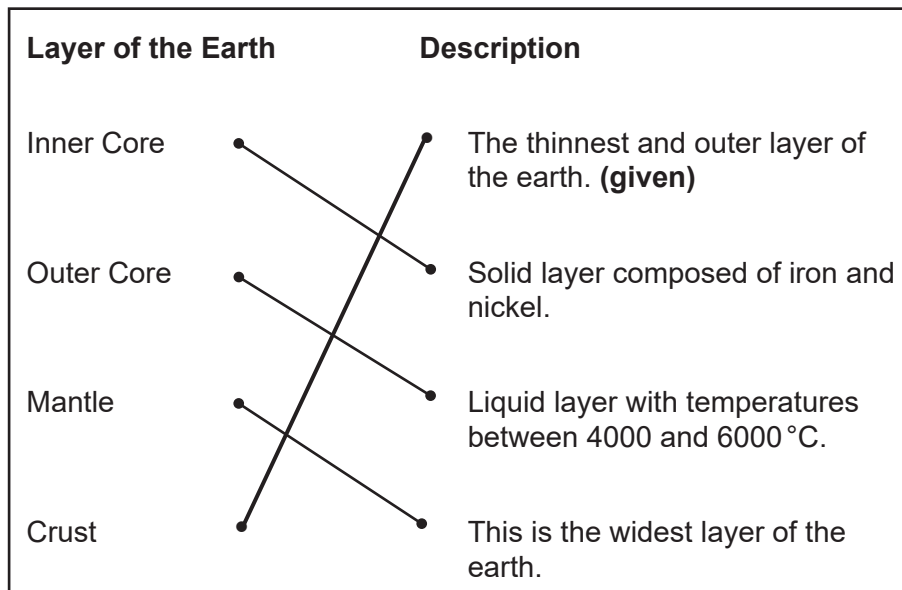


Fig. 6

(3 × [1])

[3]

- (b) Plates are always moving due to a process within the earth's mantle. State the process which causes plates to move.

Convection Currents

[1]

- (c) Explain the formation of an **ocean trench** at a destructive plate boundary.

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

Level 1 ([1])

A basic explanation of the formation of an ocean trench.

e.g. An ocean trench forms when one plate goes under the other plate

Level 2 ([2]–[3])

A limited explanation of the formation of an ocean trench.

e.g. An ocean trench forms when an oceanic plate goes under a continental plate. [2]

e.g. An ocean trench is found where two plates move towards each other. [1]

e.g. An ocean trench forms when a heavier ocean plate goes under a continental plate. [3]

Level 3 ([4])

A detailed explanation of the formation of an ocean trench,

e.g. Convection currents and the heavier oceanic plate sinking under are the two ideas needed for forming a deeper ocean floor known as an ocean trench. [4]

- (d) State the meaning of the term **Richter scale**.

Award [1] for a basic statement,
e.g. The Richter scale describes the strength of the earthquake.

Award [2] for a detailed statement,
e.g. A numerical scale for expressing the magnitude of an earthquake.
e.g. A scale of 1–9/10 or logarithmic scale which measures the strength or magnitude of an EQ. [2]

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

Do not credit answers which do not state a clear difference but only a description of either a shield or composite volcano.

Award [1] for one comparison,
e.g. Composite volcanoes are steeper (than shield volcanoes).
Accept taller as one of the differences.

Award [2] for a comparison of at least one valid difference between a shield and composite volcano **with** an additional description on either,
e.g. Composite volcanoes are steeper than shield volcanoes and are usually found at destructive plate boundaries.

Award [3] for two comparisons,
e.g. Composite volcanoes are steeper than shield volcanoes and are usually found at destructive plate boundaries. Whereas shield volcanoes are more commonly associated with constructive plate boundaries.

NB

Reference to plate boundaries not essential for Level 3, just two differences on shape, type of lava, severity of eruption/explosions etc. [3]

- (f) Name two examples of a metamorphic rock.

Marble and slate
Credit any correct alternative answers
(2 × [1]) [2]

- (g) Describe **one** potential impact on people if a supervolcano which you have studied erupted.

Max Level 1 if no place is named.

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

Award [1] for a basic description of an impact on people,
e.g. If Yellowstone were to erupt many people may potentially be killed.

Award [2] for a limited description of an impact on people.
e.g. If Yellowstone were to erupt it potentially could upset global rainfall patterns resulting in drought conditions and widespread famine.

Award [3] for a detailed factual description of an impact on people,
e.g. If Yellowstone were to erupt it potentially could upset global rainfall and temperature patterns. For example, monsoon rains in Asia may fail resulting in drought conditions and widespread famine. This could cause hardship or even death for many people throughout Asia. [3]

- (h) Name an earthquake in a MEDC or LEDC which you have studied. Evaluate how the country prepared for and responded to this event.

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Do not credit answers which outline impacts of a volcanic/flooding or other natural disasters.

Max Level 1 if no place is named.

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

Award [0] for answers that describe **impacts ONLY** of an EQ, without using the impacts to evaluate both preparation and response.

Max Level 2 - [3]–[5] marks if EQ is identified, but no country is named within the answer.

e.g. The Indian Ocean EQ of 2004.

e.g. The Boxing Day Tsunami in 2004.

Level 1 ([1]–[2])

A basic response describing either preparation or response to an earthquake event the candidate has studied,

e.g. In Japan they have built many earthquake proof buildings throughout the region. [1]

e.g. In Japan they are planning to strengthen sea walls as many were destroyed following the Great Tohoku earthquake. [1]

e.g. In Japan they have built many earthquake proof buildings. After the Great Tohoku earthquake, the government are planning to strengthen sea walls.

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 covering the preparation and/or response to an earthquake event the candidate has studied. To access upper level two [3–5 marks] the candidate must evaluate both the preparation and response to the earthquake event,

e.g. In Japan they have built many earthquake proof buildings throughout the region. However, during the Great Tohoku earthquake many buildings were still badly damaged, [3]

e.g. In Japan they are planning to strengthen sea walls as many were destroyed following the Great Tohoku earthquake. However, many argue this causes a false sense of security. [3]

e.g. In Japan they have built many earthquake proof buildings throughout the region. However, during the Great Tohoku earthquake nearly 200,000 buildings were badly damaged or destroyed. [4]

e.g. In Japan strict building regulations are enforced ensuring many of their buildings are earthquake proof. However, in the Great Tohoku Earthquake nearly 200,000 buildings were still damaged or destroyed costing the government a lot of money to repair. Following this event, the Japanese government are planning to heightened sea walls. However, many argue this is a poor strategy as the sea walls only provide a false sense of security. [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 evaluation of both the preparation and response to an earthquake event they have studied. A concluding sentence is required to achieve upper Level 3,

e.g. In Japan strict building regulations are enforced ensuring many of their buildings are earthquake proof. In the Great Tohoku Earthquake only 250 deaths were related to building collapse therefore many lives were saved due to these strict codes. However nearly 200,000 buildings were still damaged or destroyed costing the government a lot of money to repair. Following this event, the Japanese government are planning to heighten and further strengthen sea walls in order to improve protection from the tsunami waves which was the main cause of death (18,000). However, many argue this is a poor strategy as the sea walls only provide a false sense of security. [6] In conclusion the Japanese are continually trying to improve their preparation and response to earthquake events.

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