



General Certificate of Secondary Education  
2012

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## Geography

Unit 1:  
Understanding Our Natural World

Foundation Tier

[GGG11]

THURSDAY 14 JUNE, MORNING

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# MARK SCHEME

**Theme A: The Dynamic Landscape**

**AVAILABLE  
MARKS**

1 (a) (i) State the height of the land at it's highest point in grid square 0177.

125 metres [1]

(ii) State the straight line distance from the Visitor Centre at Swanage (GR 036787) to the hotel at the end of the spit (GR 038871).

Answer is 8.3 km

**Level 1 ([1])**

8.0–8.19 km or 8.41–8.5 km

**Level 2 ([2])**

8.2–8.4 km [2]

(iii) Underline the direction of Old Harry (GR 0582) from the World Heritage Site at Swanage (GR 0378)

north west      north east      south west      south east [1]

(iv) What method is used to protect the beach from longshore drift north of Swanage (GR 0379)?

Groynes [1]

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

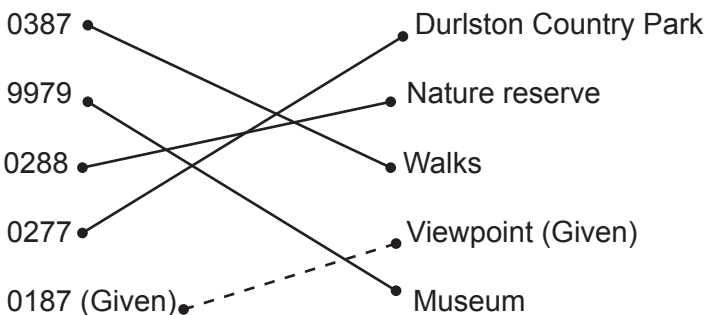
**Level 1 ([1])**

The movement of material along a beach.

**Level 2 ([2])**

The movement of sand and shingle by the waves in a zigzag motion along a beach. [2]

(vi) Many holidaymakers visit this area. Match the following attractions to their locations. One has been completed for you.



(4 × [1]) [4]

- (b) Complete **Table 1** by matching the correct statement to the number in **Fig. 1**. This will explain the formation of a stack. One has been completed for you.

**Table 1**

Statement	Number in Fig.1
If the cave is eroded right through the headland an arch is formed.	3
The weather and sea attack the stack until only a stump is left.	5 (Given)
Cracks show weaknesses in rock.	1
The arch will eventually collapse as it is widened by the sea leaving a crack.	4
As the crack is eroded further a cave is formed.	2

(4 × [1]) [4]

- (c) Study **Fig. 2** which shows how people use the coast. Answer the questions which follow.

- (i) State **one** human activity shown at the coast in **Fig. 2**.

Accept tourism, holidays, swimming, sunbathing, or other recreational activities on a beach. [1]

Do **not** accept beach.

- (ii) Describe the conflicting nature of **one** human activity in a coastal area. Refer to a place in your answer.

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

**Level 1 ([1])**

A basic statement (maybe only one side of the argument), e.g. tourists want lots of activities to go to and enjoy.

**Level 2 ([2])**

A statement that shows how the activity can cause conflict, or mention of a relevant activity and place without stating the conflict e.g. tourists want lots of activities to go to and places to stay and enjoy whereas environmentalists don't want the land to be destroyed by developers.

**Level 3 ([3])**

A detailed answer showing how the activity causes conflict and refers to a place, e.g. tourists want lots of activities to go to and places to stay and enjoy whereas environmentalists don't want the land to be destroyed by developers, such as Costa del Sol in Spain. [3]

Accept valid alternative such as jet skiing and swimming.

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MARKS

- (d) Attempts have been made to protect some coastal areas from erosion. Select **one** method from the list below and explain how it works.

Must choose sea wall, gabions or beach nourishment.

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

**Level 1 ([1])**

A simple statement.

e.g. a sea wall is made of concrete.

**Level 2 ([2])**

A statement and a consequence, e.g. a sea wall is made of concrete. It stops the waves from eroding the cliff.

**Level 3 ([3])**

A statement, consequence and elaboration, e.g. a sea wall is made of concrete. It stops the waves from eroding the cliff. The sea wall helps to absorb the energy of the wave by taking the full force of the wave.

[3]

Accept explanations relating to gabions or beach nourishment.

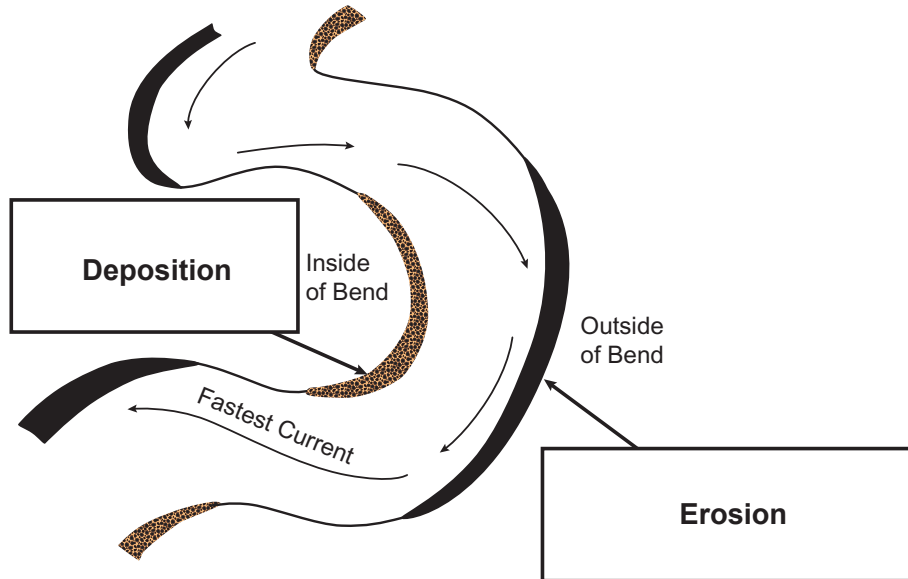
AVAILABLE  
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(e) Study **Fig. 3** which shows a river feature. Answer the questions which follow.

(i) Name the feature shown in **Fig. 3**. Underline your answer in the list below.

Meander                  Delta                  Waterfall                  [1]

(ii) Complete **Fig. 3** by writing **deposition** and **erosion** in the correct boxes.



[2]

(iii) Two of the processes carried out by a river are erosion and transportation. Complete the following sentences about these river processes. Choose your answer from the list below.

1. **Abrasion** is caused by rock fragments hitting against the bed and banks.
  2. Solution is the process by which river water reacts chemically with the rock and **dissolves** them.
  3. The river's **load** is the solid material carried by the river.
  4. Large rocks are rolled along the river bed by the process of **traction**.
  5. **Vertical** erosion is when the river eroded downwards into its bed.
- (5 × [1]) [5]

(iv) State the meaning of the term **deposition**.  
Award [0] for a response not worthy of credit.

**Level 1 ([1])**

A basic statement, e.g. When a river drops off or deposits its material.

**Level 2 ([2])**

A more detailed statement, e.g. When a river drops or deposits its material due to the river having insufficient energy. [2]

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MARKS

(f) Study **Fig. 4** which shows the drainage basin cycle. Answer the questions which follow.

(i) Using **Fig. 4**, complete **Table 2** by giving one example of each aspect of the drainage basin.

**Table 2**

Input	Store	Flow	Output
Precipitation	Interception by vegetation	Throughflow	River Discharge (Given)
	Surface store	Groundwater flow	
	Soil store	Surface run-off	
	Groundwater store	Infiltration Percolation	

(3 × [1])

[3]

(ii) Explain **one** effect on the drainage basin cycle if the vegetation was removed.

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

**Level 1 ([1])**

A basic statement, e.g. more rain will reach the ground or there will be flooding.

**Level 2 ([2])**

A statement and consequence, e.g. more rain will reach the ground and this will cause flooding.

**Level 3 ([3])**

A statement, consequence and elaboration of the process, e.g. more rain will reach the ground which means the soil will become saturated. When the ground is saturated with water there will be more surface run-off and flooding as a consequence. [3]

Accept valid alternatives such as increased soil erosion from the slopes may cause deposition in river channel thereby causing flooding.

(g) Study **Fig. 5** which shows a drainage basin which experienced flooding in Co. Tyrone. Answer the questions which follow.

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(i) State the name of the highest mountain in the drainage basin as shown in **Fig. 5**.

Mullaghcarn [1]

(ii) Using **Fig. 5**, state the name of the two rivers which join at Omagh to form the River Strule.

Drumragh and Camowen [2]

(iii) State fully **one** possible human cause of flooding.

Answers here can be varied, e.g. building of an urban area, river engineering or deforestation.

Do **not** credit physical causes of flooding.

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

**Level 1 ([1])**

A basic statement, e.g. the building of a town can cause flooding.

**Level 2 ([2])**

A statement and consequence, e.g. the building of an urban area can cause flooding because of the impermeable surfaces such as tarmac and concrete.

**Level 3 ([3])**

A statement, consequence and elaboration, e.g. the building of an urban area can cause flooding because of the impermeable surfaces such as tarmac and concrete. This prevented infiltration into the ground. As a result the water flooded the land. [3]

(h) Study **Fig. 6** and **Fig. 7** which shows different ways to prevent flooding. Answer the questions which follow.

(i) Indicate the type of engineering shown in both **Fig. 6** and **Fig. 7** by writing either **Hard** or **Soft** engineering.

Dam – **Hard engineering**

Afforestation – **Soft engineering**

(2 × [1])

[2]

(ii) Using a case study of a river from outside the British Isles, describe **one** river engineering strategy used.

Any appropriate river [1] – most will choose Mississippi

[1]

Candidates must have case study detail to access Level 3.

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

**Level 1 ([1])**

e.g. levees were used to prevent flooding.

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 ([2])**

e.g. levees were used to prevent flooding. These are structures placed along the banks of the river which keep floodwater in the channel.

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 ([3])**

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 and allow people to develop and industrialise the floodplain.

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 skilfully and with precision.

[3]

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



**Theme B: Our Changing Weather and Climate**

**AVAILABLE MARKS**

**2 (a)** Study **Fig. 8** which shows a weather system over Britain for a day in July 2009. Answer the following questions.

**(i)** Complete each of the following to describe this weather map.

Pressure at X	1028 mb	
Wind direction at Weymouth	north east	
Cloud cover at Weymouth	1 okta	
(3 × [1])		[3]

**(ii)** The weather system in **Fig.8** is an anticyclone. Explain how this weather system caused hot, sunny weather which allowed people to enjoy the beach in Weymouth on this summer day as shown in **Fig. 9**.

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

**Level 1 ([1])**

A simple statement referring to high pressure, e.g. it is sunny/dry/not raining in areas of high pressure. No mark for statement of weather in question stem e.g. sunny/hot. Answers referring to no clouds acceptable.

**Level 2 ([2])**

A simple reason or consequence, e.g. high pressure brings dry weather because there are no fronts or it is sunny because there are no clouds in a high pressure system.

**Level 3 ([3])**

A reason which is elaborated, e.g. in areas of high pressure the air is sinking/warming up and so there are no clouds and this means it is warm/sunny during the day. [3]

**(b) (i)** Complete **Table 3** by naming **two** instruments used to measure the following elements of the weather. One has been completed for you.

**Table 3**

Element	Instrument
Rainfall	Rain gauge (Given)
Temperature	<b>Thermometer</b>
Pressure	<b>Barometer/Barograph</b>





[2]

**(ii)** Weather stations on land collect data which is used to create a weather forecast. Name **two** other sources of data which can be used to create a weather forecast.

Any **two** of weather balloons, ships, aircraft, satellites, buoys.  
(2 × [1]) [2]

- (c) Depressions are weather systems which can have both positive and negative effects on the people and economy of places. Complete **Table 4** below to show whether the effects listed are positive or negative. One has been completed for you.

**Table 4**

Positive	Effects of Depressions	Negative
	Cold front brings long period of heavy rain which stops a cycle race 	
	Strong winds mean the Belfast–Stranraer ferry cannot sail 	(Given)
	Light summer rainfall helps wheat crop to grow	
	Rain at the warm front in summer avoids hosepipe ban in southern England	

(3 × [1])

[3]

- (d) Study **Fig. 10** which shows two causes of climate change. Answer the question which follows.  
Identify the causes of climate change shown in **Fig. 10**.

A: burning fossil fuels/gases from power stations/power stations/industry/pollution

B: gases from volcanoes/ash clouds from volcanoes/volcanoes

(2 × [1])

[2]

- (e) Name a country you have studied and describe **two** possible effects (one positive and one negative) of climate change on this country.

Name of country (The country may be a MEDC or LEDC)

[1]

**Two** effects – one positive and one negative

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

**Positive**

**Level 1 ([1])**

A simple statement of an effect, e.g. it will get warmer.

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 ([2])**

A simple reason or consequence, e.g. it will be warmer and so there will be higher yields of crops.

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.

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**Level 3 ([3])**

A reason which is elaborated and gives at least one fact/figure/place related to the specific country named, e.g. it will be warmer and so there will be higher yields of crops such as maize or sugar beet in SE England so farmers will make more profit.

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 skilfully and with precision.

**Negative****Level 1 ([1])**

A simple statement of an effect, e.g. it will get warmer/or wetter.

A simple statement of an effect, e.g. it will get warmer.

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 ([2])**

A simple reason or consequence, e.g. it will be warmer and so there will be more pests and diseases to attack crops.

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.

Accept valid alternatives such as cooler or less sunshine.

**Level 3 ([3])**

A reason which is elaborated and gives at least one fact/figure/place related to the specific country named, e.g. it will be warmer and so there will be more pests and diseases such as aphids and mites to attack crops, or people in the UK could suffer from malaria due to the spread of mosquitoes into the UK.

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 skilfully and with precision. [6]

- (f) It is difficult to deal with climate change. Describe **one** sustainable solution to the problem of climate change. This could focus on renewable energy or reduction of deforestation or international agreements etc. but must indicate how this solution prevents climate change in the future for Level 3.

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

**Level 1 ([1])**

A simple statement, e.g. stop cutting down trees.

**Level 2 ([2])**

A simple reason or consequence, e.g. if trees were protected in the Amazon rainforest they would act as carbon sinks because they take in CO<sub>2</sub>.

**Level 3 ([3])**

A reason which is elaborated, e.g. if trees were protected in the Amazon rainforest they would act as carbon sinks because they take in CO<sub>2</sub> and this means there would be less pollution to act as a blanket trapping heat, and reducing the rise of temperatures in the future causing climate change.

Accept alternatives such as alternative energy or international agreements like Koyoto or promoting public transport. [3]

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MARKS

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Theme C: The Restless Earth

AVAILABLE  
MARKS

- 3 (a) Describe the world distribution of volcanoes shown on the map. Refer to named places in your answer.  
Credit each valid correct statement up to a maximum of [4].

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

**Level 1 ([1])**

A simple general statement, e.g. volcanoes are along plate boundaries or e.g. along the west side of the Pacific Ocean.  
or e.g. volcanoes are found in the Ring of Fire around the Pacific Ocean

**Level 2 ([2]–[3])**

A statement with two accurate named places 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 (Cascade Range).

**Level 3 ([4])**

A statement with **three** accurate named places and reference to plate boundaries, e.g. volcanoes are along plate boundaries, e.g. around the Pacific Ocean/Ring of Fire and down the west side of North America (Cascade Range). There is a North/South belt down the middle of the Atlantic Ocean and an East/West belt across the Mediterranean Sea. [4]

- (b) Answer the question which follows. Explain how a volcanic plug such as Slemish was formed.

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

**Level 1 ([1])**

A simple statement, e.g. it is made from magma.

**Level 2 ([2])**

A statement with consequence, e.g. a plug is made from magma which hardens as it rises to form a volcano.

**Level 3 ([3])**

A statement with a consequence and elaboration which uses correct geographical terminology, e.g. a plug is made from magma which hardens as it rises inside the vent to form a volcano and the surrounding rock is eroded away leaving the hard rock behind. This is the plug. [3]

- (c) (i) Complete **Table 5** below to show **one** other example of an igneous and a sedimentary rock.

**Table 5**

<b>Igneous</b>	<b>Sedimentary</b>
Granite (Given)	Sandstone (Given)
<b>Basalt</b>	<b>Limestone</b>

(2 × [1])

[2]

- (ii) Sedimentary rocks are formed over a long period of time. Complete **Table 6** by placing the statements into the correct order to show how sedimentary rocks have been formed.

**Table 6**

Statement	Order
Sediments are laid down on the sea bed.	2 (Given)
The layers of sediment are compressed.	<b>3</b>
Erosion of land creates small fragments of rock or sediments which are carried into the sea.	<b>1</b>
The sediments build up in layers over a long period of time to form sedimentary rock.	<b>5</b>
Compression of the layers squeezes out air and water.	<b>4</b>

(4 × [1])

[4]

- (d) Study **Fig. 13** which shows a collision plate boundary. Answer the questions which follow.

Add labels at A and B on **Fig. 13** to indicate the following – Mantle; Crust.

A = Crust

B = Mantle

(2 × [1])

[2]

- (e) Attempts have been made to manage the impacts of earthquakes. Complete **Table 7** by sorting the following methods of managing earthquakes into short term and long term actions by drawing arrows to the correct box. Two have been completed for you.

Table 7

AVAILABLE MARKS

Short Term Actions	ACTION to manage an Earthquake	Long Term Actions
←	set up tents to shelter earthquake victims	
	build far away from landfill or soft ground	(Given) →
	set up a tsunami warning system	→
(Given) ←	provide clean drinking water	
	practise earthquake drills	→
	have strict building codes to strengthen buildings	→

(4 × [1]) [4]

- (f) Earthquake may occur far from plate boundaries. Name an earthquake in the British Isles which you have studied. Outline the cause of this earthquake and describe and explain fully **one** impact this earthquake had.

**Name**, e.g. Market Rasen in Lincolnshire [1]

Award [0] for a response not worthy of credit, e.g. earthquake outside the British Isles. However, if earthquake outside British Isles credit cause and impact to maximum Level 1.

**Cause**

**Level 1 ([1])**

A simple statement, e.g. The rocks moved or answer relating to earthquake outside British Isles.

**Level 2 ([2])**

A statement with a consequence, e.g. The rocks moved because stress had built up at a fault and was suddenly released. [2]

**Impact**

**Level 1 ([1])**

A simple general statement, e.g. People were hurt or answer relating to earthquake outside the British Isles.

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 ([2])**

A statement with a consequence, e.g. Some people were hurt when a chimney collapsed.

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 ([3])**

A statement with a consequence and elaboration containing a fact/figure/ place relating to the named earthquake, e.g. Some people were hurt when chimneys/roofs of houses collapsed in South Yorkshire, or e.g. The old church in Market Rasen is a Grade II listed building and a stone cross fell, causing £10,000 worth of damage.

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 skilfully and with precision.

[3]

**Total**

**AVAILABLE  
MARKS**

25

**100**