Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel International GCSE (9–1)

Friday 17 May 2024

Afternoon (Time: 1 hour 10 minutes)

Paper reference **4GE1/01R**

Geography

PAPER 1: Physical geography

You must have:
Resource Booklet (enclosed), calculator

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- In Section A, answer **two** questions from Questions 1, 2 and 3.
- In Section B, answer **one** question from Questions 4, 5 and 6.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- Calculators may be used.
- **Where asked you must show all your working out with your answer clearly identified at the end of your solution.**

Information

- The total mark for this paper is 70.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

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P 7 4 6 3 9 A 0 1 3 2

Pearson

SECTION A

Answer TWO questions from this section.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

If you answer Question 1, put a cross in the box ☒ .

1 River environments

(a) Identify the best definition of the term precipitation.

(1)

☒ **A** any form of water that falls from the sky

☒ **B** the emission of water vapour from leaves

☒ **C** water changing from a gas to a liquid

☒ **D** water changing from a liquid to a gas

(b) (i) Identify the best definition of abrasion.

(1)

☒ **A** particles are dissolved in water

☒ **B** particles carried in water wear away river bed and banks

☒ **C** rocks bump into each other becoming smaller and rounder

☒ **D** sheer power of water increases size of cracks

(ii) State **one** physical cause of river flooding.

(1)

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(iii) Explain **one** way temperature can affect river regimes.

(2)

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(c) Study Figure 1a in the Resource Booklet.

Suggest **two** reasons the river channel cross section changes along a river.

(4)

1 .....

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2 .....

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(d) Study Figure 1b in the Resource Booklet.

Identify the river landform labelled **X**.

(1)

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(e) Explain **one** reason why rivers deposit sediment.

(3)

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(f) Explain **two** ways to prevent river flooding.

(4)

1 .....

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2 .....

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(g) Study Figure 1c in the Resource Booklet.

Analyse the possible reasons for water surpluses.

You **must** refer to the resource in your answer.

(8)

(Total for Question 1 = 25 marks)

If you answer Question 2, put a cross in the box ☒ .

2 Coastal environments

(a) Identify the best definition of chemical weathering.

(1)

☒ **A** acids in water dissolve rock

☒ **B** movement of rock from one place to another

☒ **C** plant roots burrow into cracks

☒ **D** water freezing and thawing breaks rocks

(b) (i) Identify **one** type of coastal mass movement.

(1)

☒ **A** saltation

☒ **B** slumping

☒ **C** suspension

☒ **D** traction

(ii) State **one** characteristic of a destructive wave.

(1)

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(iii) Explain **one** type of coastal erosion.

(2)

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(c) Explain **two** physical factors that can affect coastal erosion.

(4)

1 .....

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2 .....

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(d) Explain **one** characteristic of a sand dune ecosystem.

(3)

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(e) Study Figure 2a in the Resource Booklet.

Suggest **two** reasons soft engineering is suitable for this stretch of coastline.

(4)

1 .....

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2 .....

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(f) Study Figure 2b in the Resource Booklet.

Identify the landform labelled **X**.

(1)

.....

(g) Study Figure 2c in the Resource Booklet.

Analyse the possible reasons why the populations of some countries are less at risk from coastal flooding than others.

You **must** refer to the resource in your answer.

(8)

(Total for Question 2 = 25 marks)

If you answer Question 3, put a cross in the box ☒ .

3 Hazardous environments

(a) Identify **one** hazard associated with tropical cyclones.

(1)

- ☒ **A** faulting
- ☒ **B** ground shaking
- ☒ **C** liquefaction
- ☒ **D** strong winds

(b) (i) Identify **one** reason why volcanoes occur at hotspots.

(1)

- ☒ **A** forms a caldera with a ridge of higher land around it
- ☒ **B** hot plumes of magma break through crust away from plate boundaries
- ☒ **C** runny lava erupts at constructive plate boundaries
- ☒ **D** sticky lava erupts at destructive plate boundaries

(ii) State the name of **one** scale used to measure volcanic eruptions.

(1)

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(iii) Explain **one** reason volcanoes **do not** occur at conservative (transform) plate boundaries.

(2)

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(c) Explain **two** reasons short-term responses to earthquakes can be more effective in some countries than others.

(4)

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2 .....

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(d) Explain **one** reason people live in areas at risk of earthquakes.

(3)

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(e) Study Figure 3a in the Resource Booklet.

Identify the volcanic hazard labelled **X**.

(1)

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(f) Study Figure 3b in the Resource Booklet.

Suggest **two** reasons for the distribution of tropical cyclones.

(4)

1 .....

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2 .....

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(g) Study Figure 3c in the Resource Booklet.

Analyse the impacts of tropical cyclones on people.

You **must** refer to the resource in your answer.

(8)

(Total for Question 3 = 25 marks)

TOTAL FOR SECTION A = 50 MARKS

SECTION B

Geographical enquiry

Answer ONE question from this section.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

If you answer Question 4, put a cross in the box ☒ .

4 Investigating river environments

A group of students has undertaken an enquiry to investigate changes in a river channel at different points along its course.

(a) (i) Identify the best definition of secondary data.

(1)

☒ **A** direct collection of original data

☒ **B** information collected by other people

☒ **C** information collected by you

☒ **D** your own fieldwork data

(ii) State **one** type of qualitative data the students could have used in their enquiry.

(1)

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.....

(b) Suggest **one** possible health and safety risk of measuring river depth.

(2)

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(c) Study Figure 4a in the Resource Booklet.

Calculate the median of the river channel widths.

You **must** show all your working in the space below.

(2)

..... cm

(d) (i) Study Figure 4b in the Resource Booklet.

Plot the data for sites 1 and 3, from Figure 4b (shown in the Resource Booklet), on Figure 4c (below).

(2)

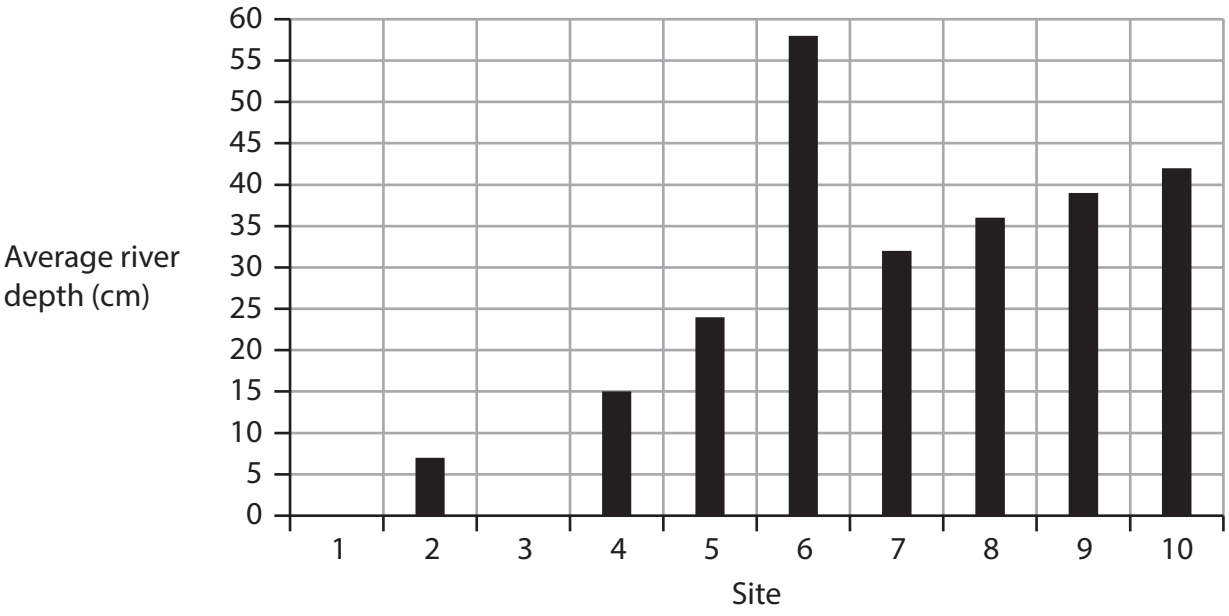

Figure 4c

Average river depth at each site

(ii) Identify at which site there is an anomaly.

(1)

.....

(iii) Suggest **one** possible reason for the anomaly in the river depth on Figure 4c.

(3)

(e) You have studied river processes as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate the accuracy and reliability of your conclusions.

(8)

Geographical enquiry title

(Total for Question 4 = 20 marks)

If you answer Question 5, put a cross in the box ☒ .

5 Investigating coastal environments

A group of students has undertaken an enquiry to investigate changes in beach characteristics along a stretch of coastline.

(a) (i) Identify the best definition of secondary data.

(1)

☒ **A** direct collection of original data

☒ **B** information collected by other people

☒ **C** information collected by you

☒ **D** your own fieldwork data

(ii) State **one** type of qualitative data the students could have used in their enquiry.

(1)

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(b) Suggest **one** possible health and safety risk of measuring beach gradients.

(2)

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(c) Study Figure 5a in the Resource Booklet.

Calculate the median of the beach gradients.

You **must** show all your working in the space below.

(2)

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(d) (i) Study Figure 5b in the Resource Booklet.

Plot the data for sites 3 and 5, from Figure 5b (shown in the Resource Booklet), on Figure 5c (below).

(2)

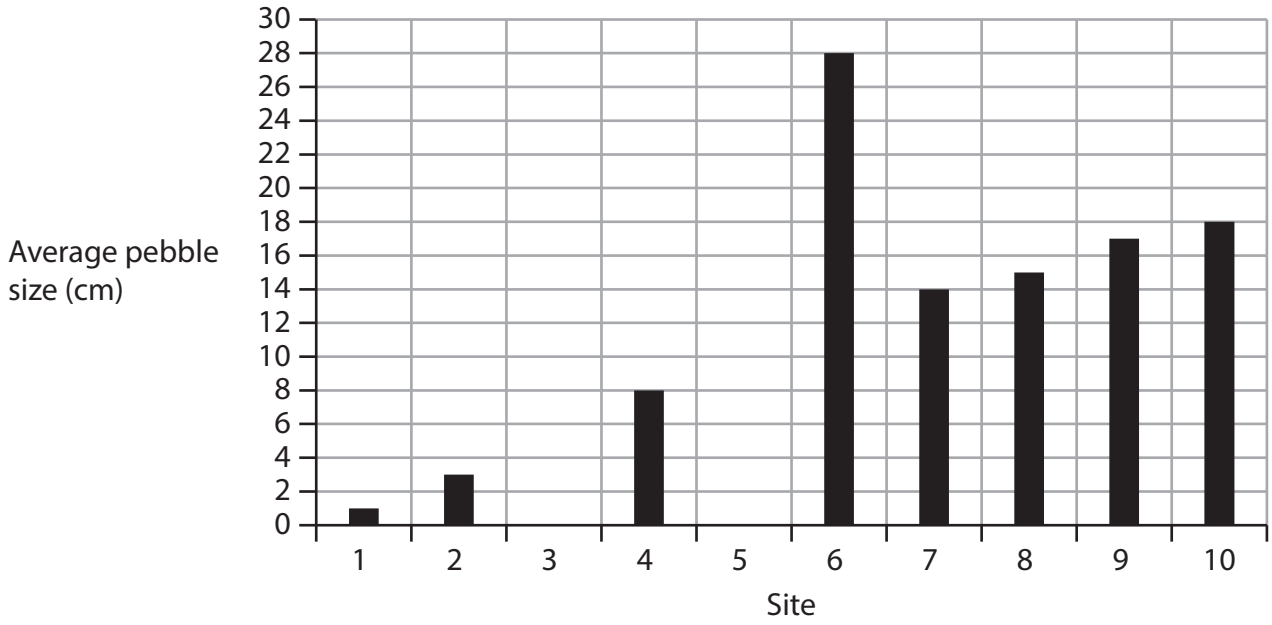

Figure 5c

Average pebble size at each site

(ii) Identify at which site there is an anomaly.

(1)

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(iii) Suggest **one** possible reason for the anomaly in average pebble size on Figure 5c.

(3)

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(e) You have studied a coastal environment as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate the accuracy and reliability of your conclusions.

(8)

Geographical enquiry title

(Total for Question 5 = 20 marks)

If you answer Question 6, put a cross in the box ☒ .

6 Investigating hazardous environments

A group of students has undertaken an enquiry to investigate changes in the weather as part of their studies into hazardous environments.

(a) (i) Identify the best definition of secondary data.

(1)

☒ **A** direct collection of original data

☒ **B** information collected by other people

☒ **C** information collected by you

☒ **D** your own fieldwork data

(ii) State **one** type of qualitative data the students could have used in their enquiry.

(1)

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(b) Suggest **one** possible health and safety risk of measuring wind strength.

(2)

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(c) Study Figure 6a in the Resource Booklet.

Calculate the median of the air pressures.

You **must** show all your working in the space below.

(2)

..... mb

(d) (i) Study Figure 6b in the Resource Booklet.

Plot the data for sites 2 and 4, from Figure 6b (shown in the Resource Booklet), on Figure 6c (below).

(2)

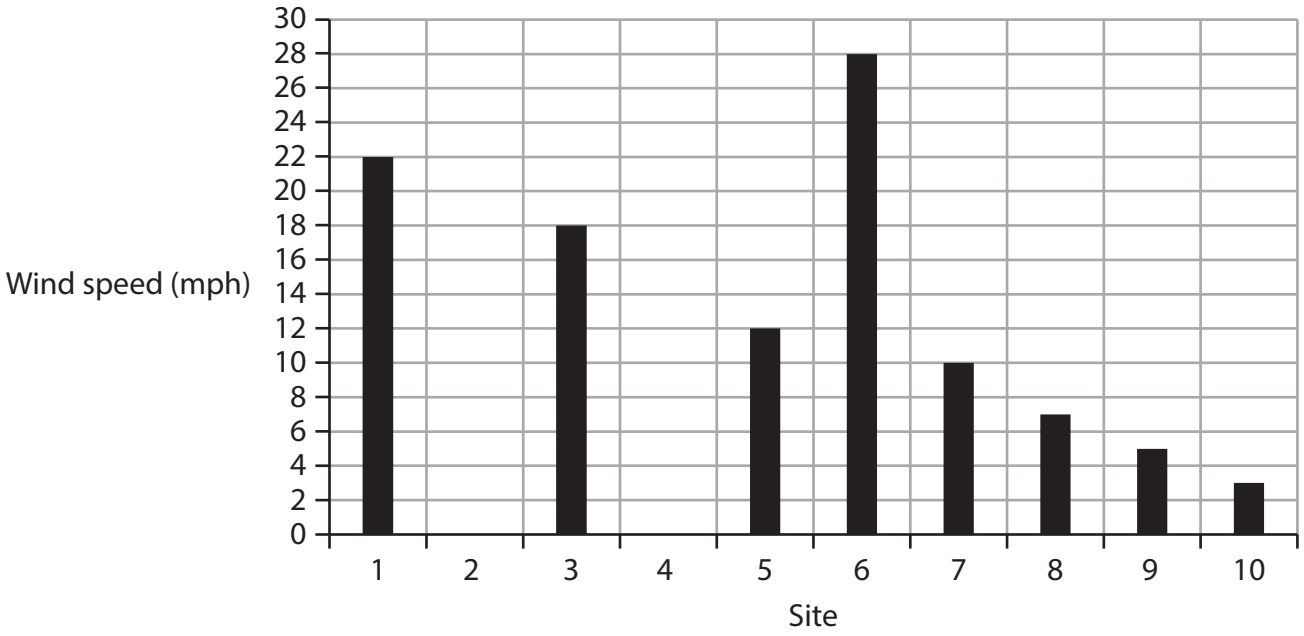

Figure 6c

Wind speed at each site

(ii) Identify at which site there is an anomaly.

(1)

.....

(iii) Suggest **one** possible reason for the anomaly in wind speed on Figure 6c.

(3)

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(e) You have studied a hazardous environment as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate the accuracy and reliability of your conclusions.

(8)

Geographical enquiry title

(Total for Question 6 = 20 marks)

TOTAL FOR SECTION B = 20 MARKS
TOTAL FOR PAPER = 70 MARKS

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Pearson Edexcel International GCSE (9–1)

Friday 17 May 2024

Afternoon (Time: 1 hour 10 minutes)

Paper reference **4GE1/01R**

Geography

PAPER 1: Physical geography

Resource Booklet

Do not return this Booklet with the question paper.

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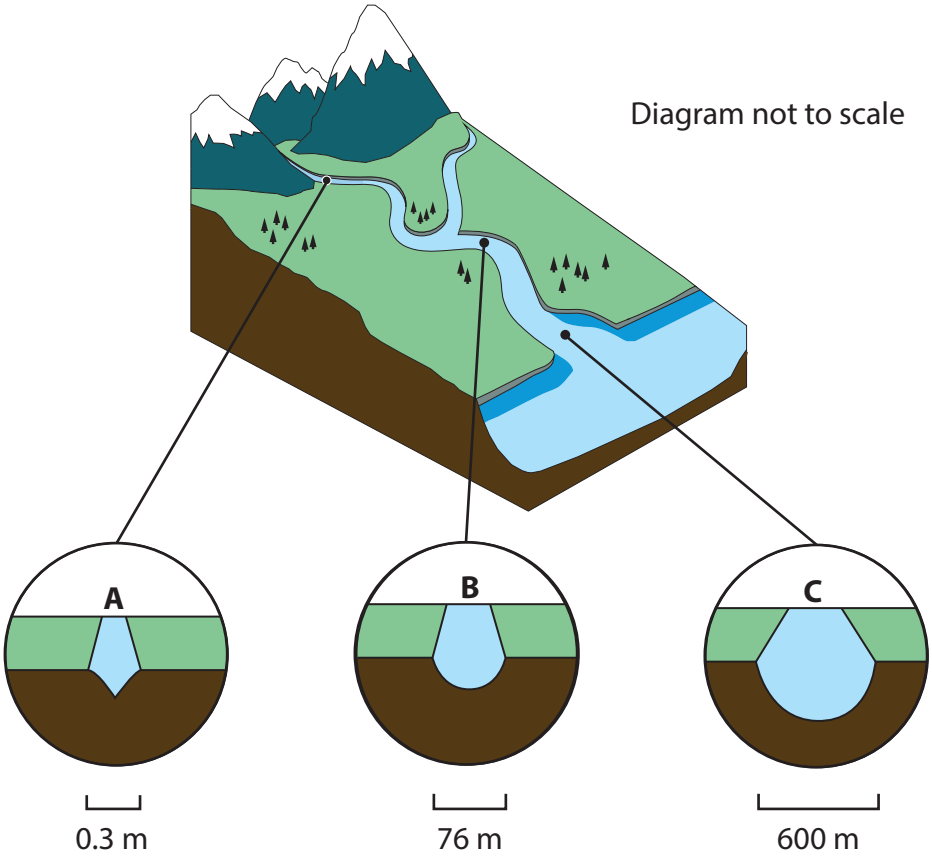


Figure 1a

Changes in channel cross section along a river's long profile (from source to mouth)

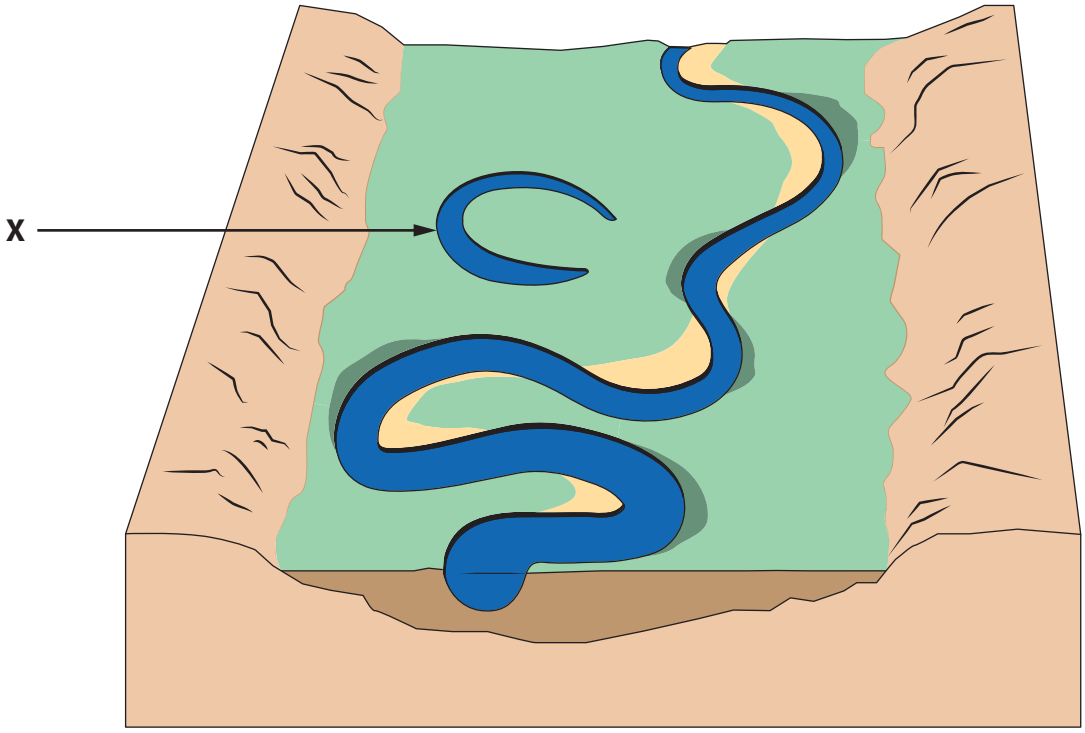
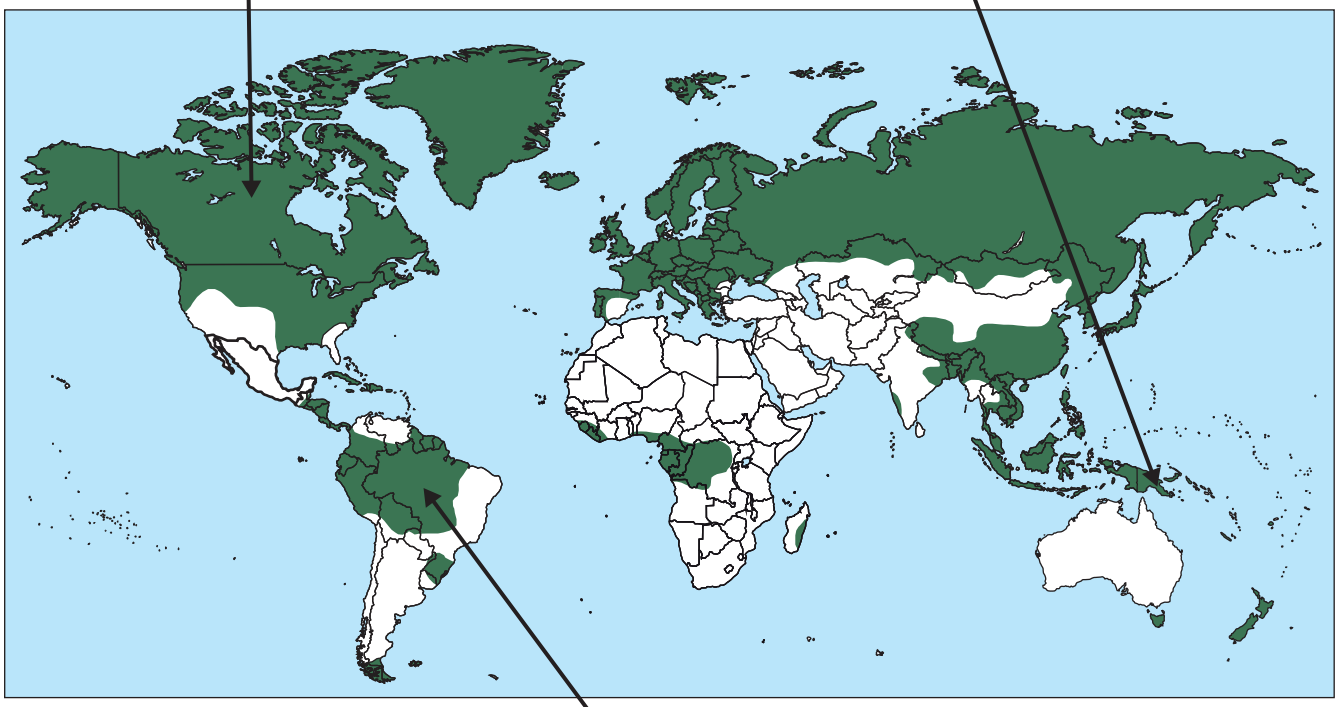


Figure 1b

River landscape

Canada
Population density: 4 people/km^2
Average annual precipitation: 500 mm
Average annual evaporation: 200 mm

Papua New Guinea
Population density: 22 people/km^2
Average annual precipitation: 3,000 mm
Average annual evaporation: 1,500 mm



Key

Areas of high water surplus

Brazil
Population density: 25 people/km^2
Average annual precipitation: 1,400 mm
Average annual evaporation: 1,000 mm

Figure 1c

Map showing areas of water surplus and selected country data

Figure 2a

OS map showing a coastal landscape

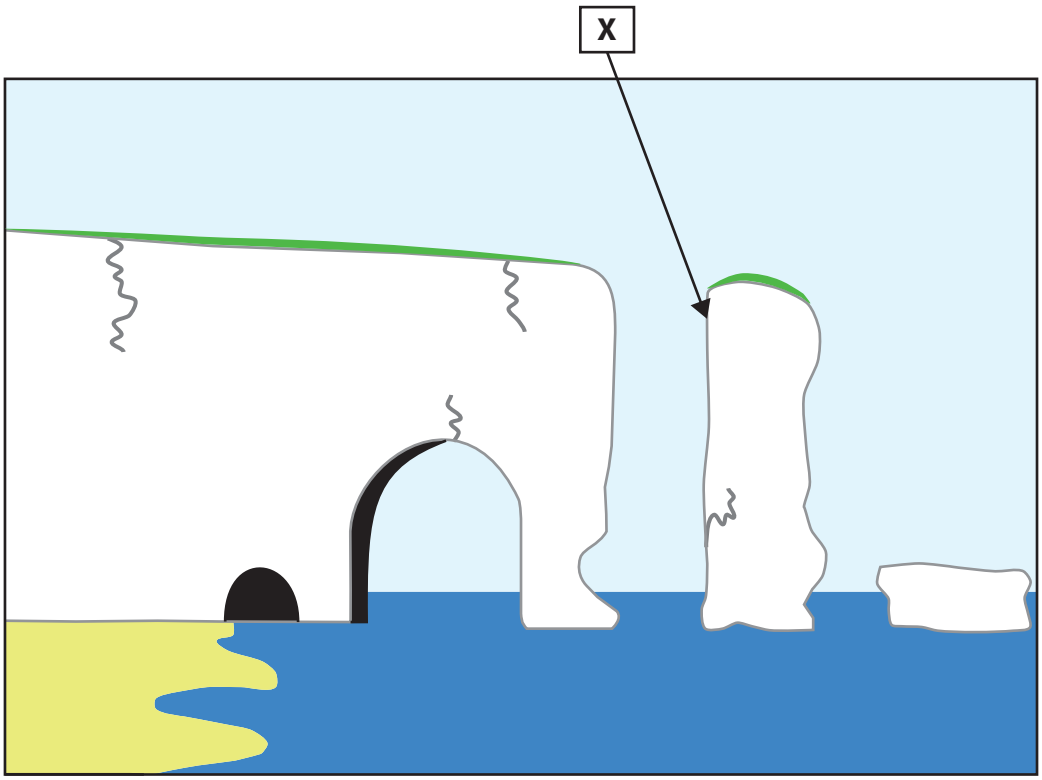
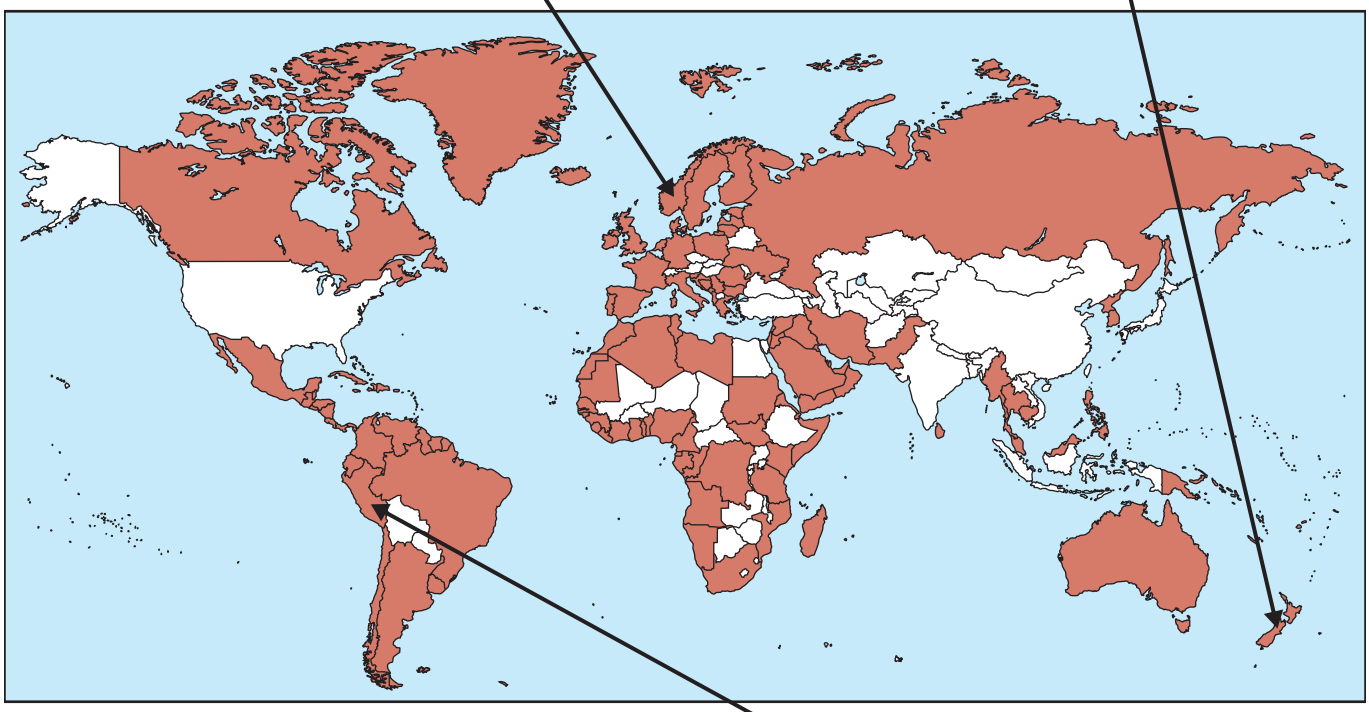


Figure 2b

Coastal landforms

Norway
Total number of people living in low-lying coastal areas: 389,000
Percentage of total urban population living in low-lying urban areas: 3%
Predicted sea level rise: 3 mm per year

New Zealand
Total number of people living in low-lying coastal areas: 169,000
Percentage of total urban population living in low-lying urban areas: 2%
Predicted sea level rise: 3.5 mm per year



Key

Countries with small populations living in low-lying coastal areas

Peru
Total number of people living in low-lying coastal areas: 24,000
Percentage of total urban population living in low-lying urban areas: 0%
Predicted sea level rise: 3 mm per year

Figure 2c

Countries with a small population living in low-lying coastal areas and selected data

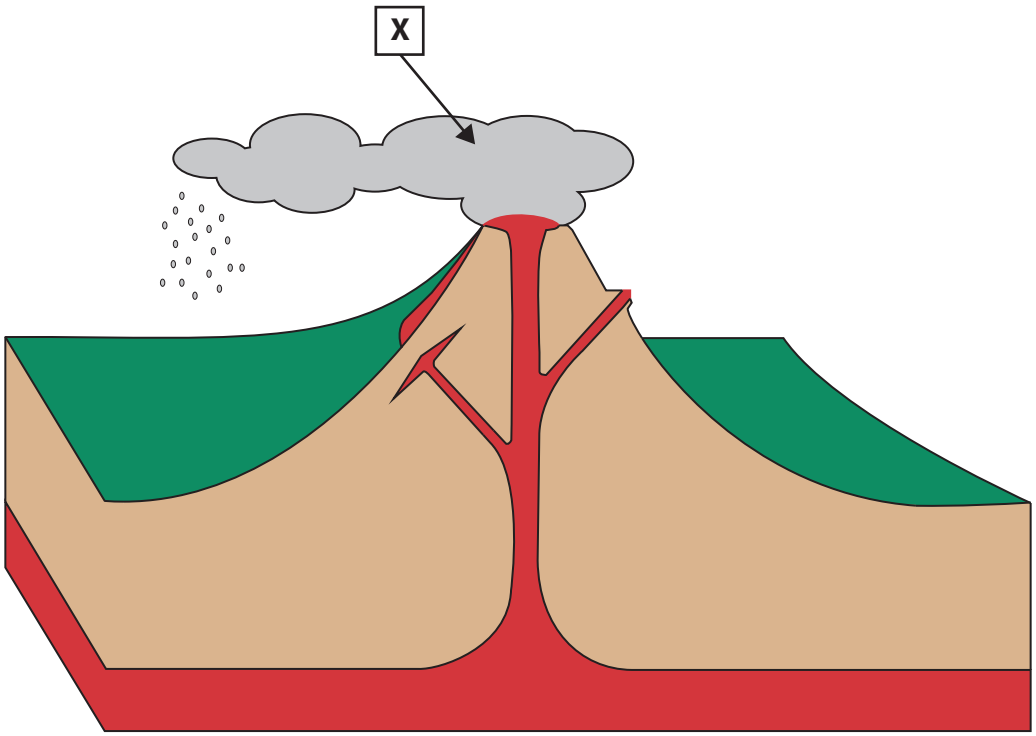
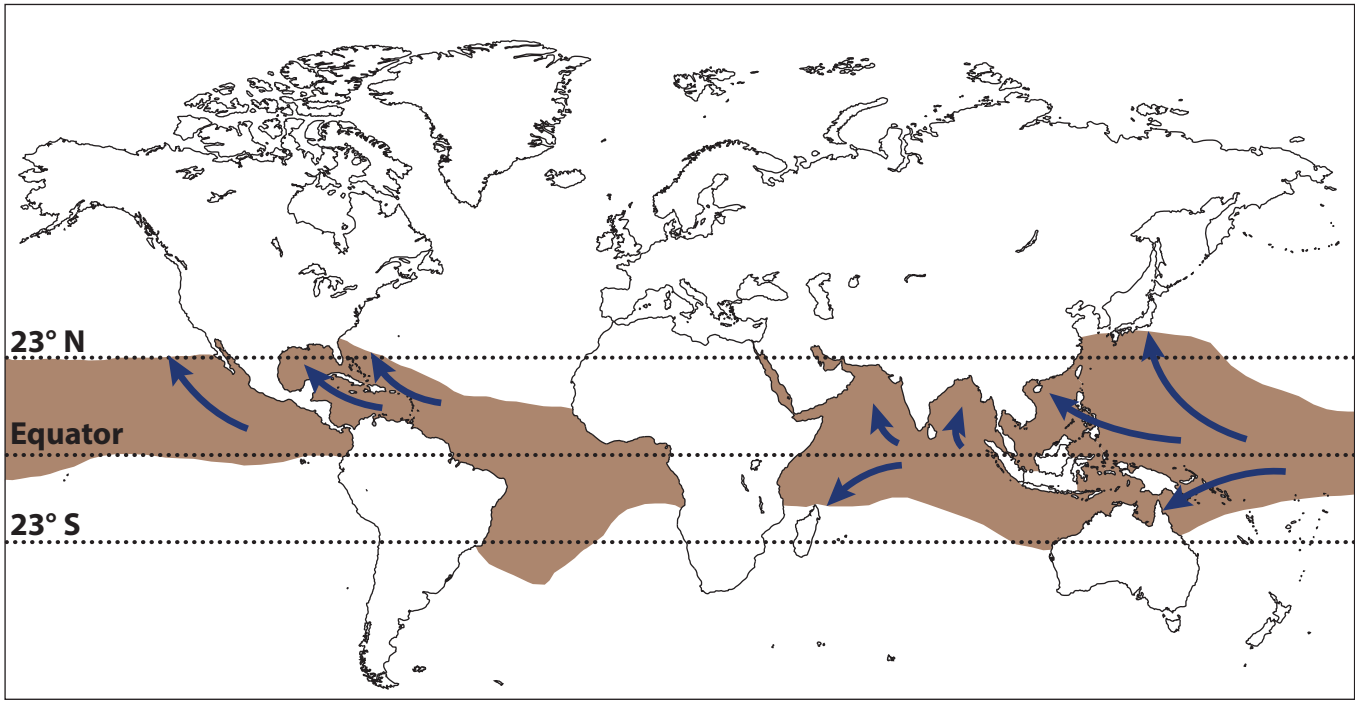


Figure 3a

Features of a volcanic eruption



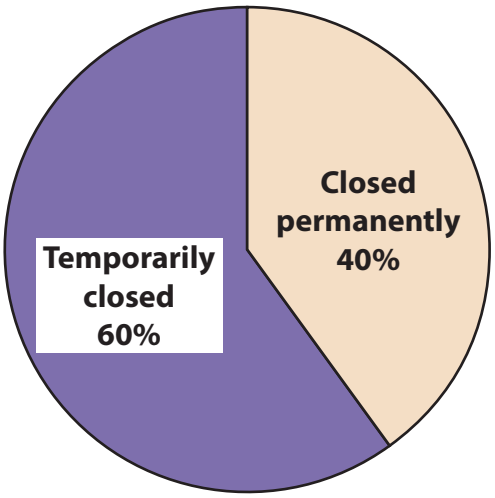
Key

cyclone tracks

locations where tropical cyclones occur

Figure 3b

Global distribution of tropical cyclones



Impact on businesses

Flooding after 30 rivers burst their banks due to 20 cm of rainfall in 24 hours. Coastal flooding from a 2 m storm surge.

25% of homes in Florida Keys were destroyed. 65% of the remaining homes were damaged.

Power cuts affected 73% of Florida residents. People had to queue for gas to power homes.

Figure 3c

Selected impacts from Hurricane Irma, Florida, 2017

Site	Channel width (cm)
1	5
2	12
3	17
4	20
5	31
6	21
7	31
8	40
9	31
10	40

Figure 4a

River channel width data for each site

Site	Average river depth (cm)
1	**5**
2	7
3	**10**
4	15
5	24
6	58
7	32
8	36
9	39
10	42

Figure 4b

Average river depth data for each site

Site	Distance up the beach (m)	Beach gradient (angle °)
1	0	2
2	5	2
3	10	3
4	15	4
5	20	8
6	25	15
7	30	12
8	35	15
9	40	15
10	45	20

Figure 5a

Distance from water up the beach and change in beach gradient data

Site	Average pebble size (cm)
1	1
2	3
3	**6**
4	8
5	**10**
6	28
7	14
8	15
9	17
10	18

Figure 5b

Average pebble size at each site

Site	Air pressure (mb)
1	994
2	995
3	994
4	1000
5	1002
6	1008
7	1004
8	1008
9	1007
10	1008

Figure 6a

Air pressure data for each site

Site	Wind speed (mph)
1	22
2	**20**
3	18
4	**14**
5	12
6	28
7	10
8	7
9	5
10	3

Figure 6b

Wind speed data for each site

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Acknowledgements

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