Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel International GCSE (9–1)

Centre Number | Candidate Number

Time 1 hour 10 minutes

Paper reference **4GE1/01**

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 62.
- 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.
- Good luck with your examination.

Turn over

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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) (i) Identify **one** store in the hydrological cycle.

(1)

☒	**A** Evaporation
☒	**B** Infiltration
☒	**C** Lake
☒	**D** Throughflow

(ii) Identify the statement that best defines transpiration in the hydrological cycle.

(1)

☒	**A** Transfer of water from the atmosphere to land.
☒	**B** Plants take up water from the soil and release it into the atmosphere as water vapour.
☒	**C** Water moving through the soil as a result of gravity.
☒	**D** Water vapour cooling in the atmosphere to become liquid.

(b) (i) State **one** physical factor that influences deposition in a river.

(1)

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(ii) Explain how abrasion erodes the river channel.

(2)

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

Suggest **two** reasons for the different storm hydrograph shapes.

(4)

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(d) Explain **one** way agriculture can affect water quality.

(3)

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

Identify the feature labelled **X**.

(1)

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(f) Explain the formation of a waterfall.

(4)

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

Analyse the factors that can affect river flood risk.

(8)

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(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 **mechanical weathering**.

(1)

☒	**A** Where rocks are broken down by physical factors in the environment.
☒	**B** Where rocks are eroded by activities of plants and animals.
☒	**C** Where rocks are protected from physical processes on a coastline.
☒	**D** Where the chemical composition of the rocks is changed.

(b) (i) Identify an **abiotic** factor that affects coastal ecosystems.

(1)

☒	**A** Animals
☒	**B** Climate
☒	**C** Plants
☒	**D** Fungi

(ii) Identify **one** feature of coral reef ecosystems.

(1)

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(iii) Explain **one** factor that controls the distribution of coral reef ecosystems.

(2)

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

Suggest **two** marine processes forming these coastal landforms.

(4)

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(d) Explain **one** way industry can threaten coastal ecosystems.

(3)

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

Identify the feature labelled **X**.

(1)

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(f) Explain how prevention strategies can reduce the impact of coastal flooding.

(4)

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

Analyse the different viewpoints affecting the decisions on coastal management strategies.

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(Total for Question 2 = 25 marks)

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

3 Hazardous environments

(a) Identify which of the following can be used to record earthquakes.

(1)

☒	**A** Flow meter
☒	**B** Hygrometer
☒	**C** Richter scale
☒	**D** Seismograph

(b) (i) Identify a method of measuring tropical cyclones.

(1)

☒	**A** Bradshaw scale
☒	**B** Pressure scale
☒	**C** Saffir-Simpson scale
☒	**D** Wind speed scale

(ii) State **one** factor that influences the development of tropical cyclones.

(1)

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(iii) Explain **one** physical impact of a tropical cyclone hazard.

(2)

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

Suggest **two** reasons why some places are more vulnerable to tectonic hazards than others.

(4)

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(d) Explain **one** strategy to reduce the impacts from earthquake events.

(3)

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

Identify the type of plate boundary.

(1)

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(f) Explain the formation of a volcano.

(4)

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

Analyse the short- and long-term impacts of the earthquake event.

(8)

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(Total for Question 3 = 25 marks)

TOTAL FOR SECTION A = 50 MARKS

SECTION B

Geographical Enquiry

Answer ONE question from this section.

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

Investigating river environments

4 (a) (i) Identify which of the following statements refers to systematic sampling.

(1)

☒	**A** Collecting data at random sites along a river.
☒	**B** Collecting data every 100m along a river.
☒	**C** Collecting data from two different river catchments.
☒	**D** Collecting data from three sites along a river.

(ii) Name **one** piece of equipment you would use to measure river wetted perimeter.

(1)

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(iii) Describe **one** health and safety risk it is important to be aware of when carrying out fieldwork near rivers.

(2)

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(b) Study Figure 4 in the Resource Booklet. It shows information about some design, some data collection methods used, data presentation and conclusion.

> The aim of the student's enquiry was to examine change in river channel shape along the course of a river.

Evaluate how far the design and the data collection methods provided reliable evidence for the student's conclusions.

(8)

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(Total for Question 4 = 12 marks)

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

Investigating coastal environments

5 (a) (i) Identify the correct definition of systematic sampling.

(1)

☒	**A** Collecting data at random sites along a coastline.
☒	**B** Collecting data every 100m along a coastline.
☒	**C** Collecting data from two different coastline.
☒	**D** Collecting data from three sites along a coastline.

(ii) Name **one** piece of equipment you would use to measure beach gradient.

(1)

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(iii) Describe **one** health and safety risk it is important to be aware of when carrying out fieldwork in a coastal environment.

(2)

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(b) Study Figure 5 in the Resource Booklet. It shows information about some design, some data collection methods used, data presentation and a conclusion.

> The aim of the student's investigation was to examine change in beach characteristics along the stretch of coastline.

Evaluate how far the design and the data collection methods provided reliable evidence for the student's conclusions.

(8)

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(Total for Question 5 = 12 marks)

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

Investigating hazardous environments

6 (a) (i) Identify the correct definition of systematic sampling.

(1)

☒	**A** Collecting rainfall data at random sites in a town.
☒	**B** Collecting rainfall data every 1km away from the town centre.
☒	**C** Collecting rainfall data from two different towns.
☒	**D** Collecting rainfall data from three sites in a town.

(ii) Name **one** piece of equipment you would use to measure rainfall.

(1)

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(iii) Describe **one** health and safety risk it is important to be aware of when carrying out fieldwork related to hazardous environments.

(2)

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(b) Study Figure 6 in the Resource Booklet. It shows information about some design, some data collection methods used, data presentation and a conclusion.

> The aim of the student's investigation was to examine change in weather patterns using a weather diary.

Evaluate how far the design and the data collection methods provided reliable evidence for the student's conclusions.

(8)

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(Total for Question 6 = 12 marks)

TOTAL FOR SECTION B = 12 MARKS
TOTAL FOR PAPER = 62 MARKS

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Pearson Edexcel International GCSE (9–1)

Time 1 hour 10 minutes

Paper reference **4GE1/01**

Geography

PAPER 1: Physical geography

Resource Booklet

Do not return this Booklet with the question paper.

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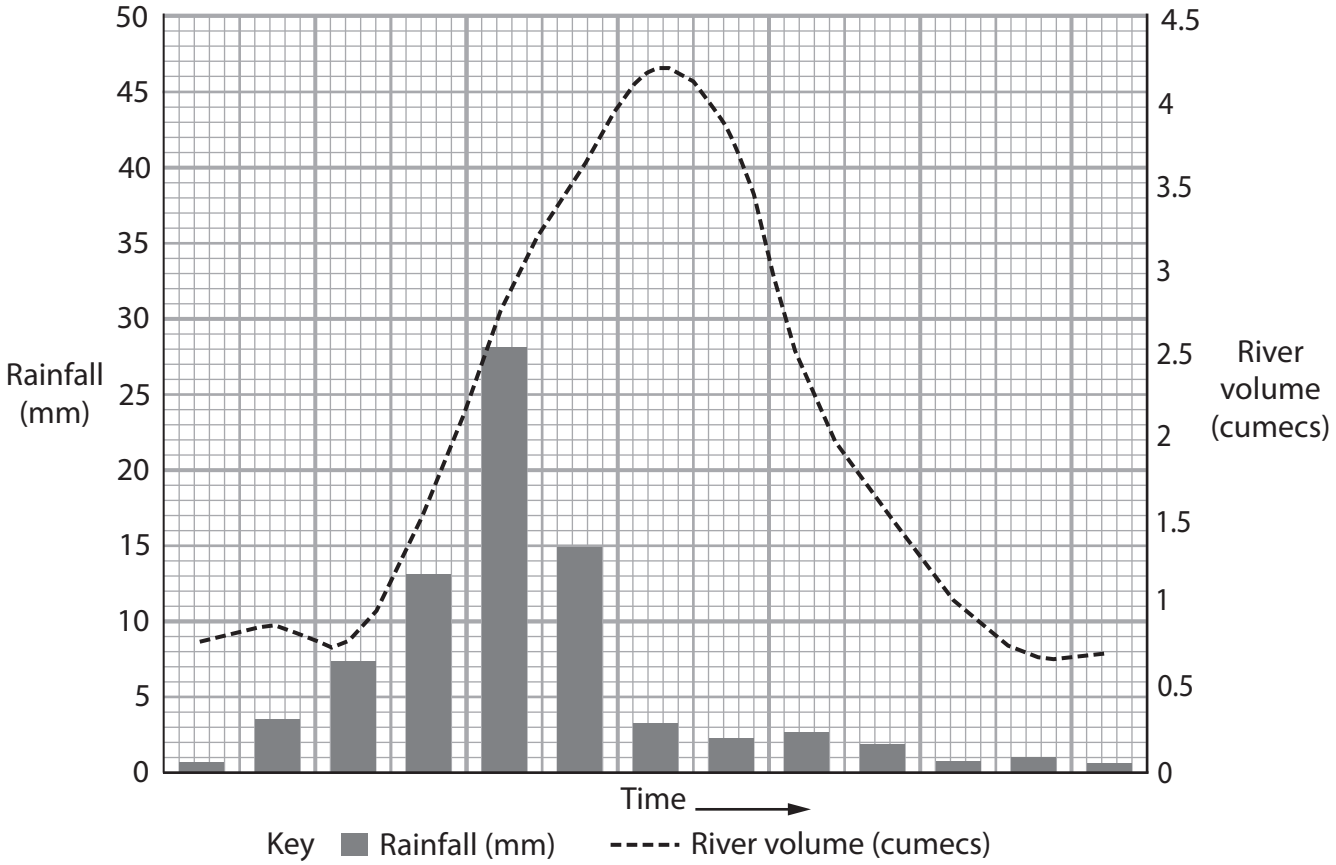
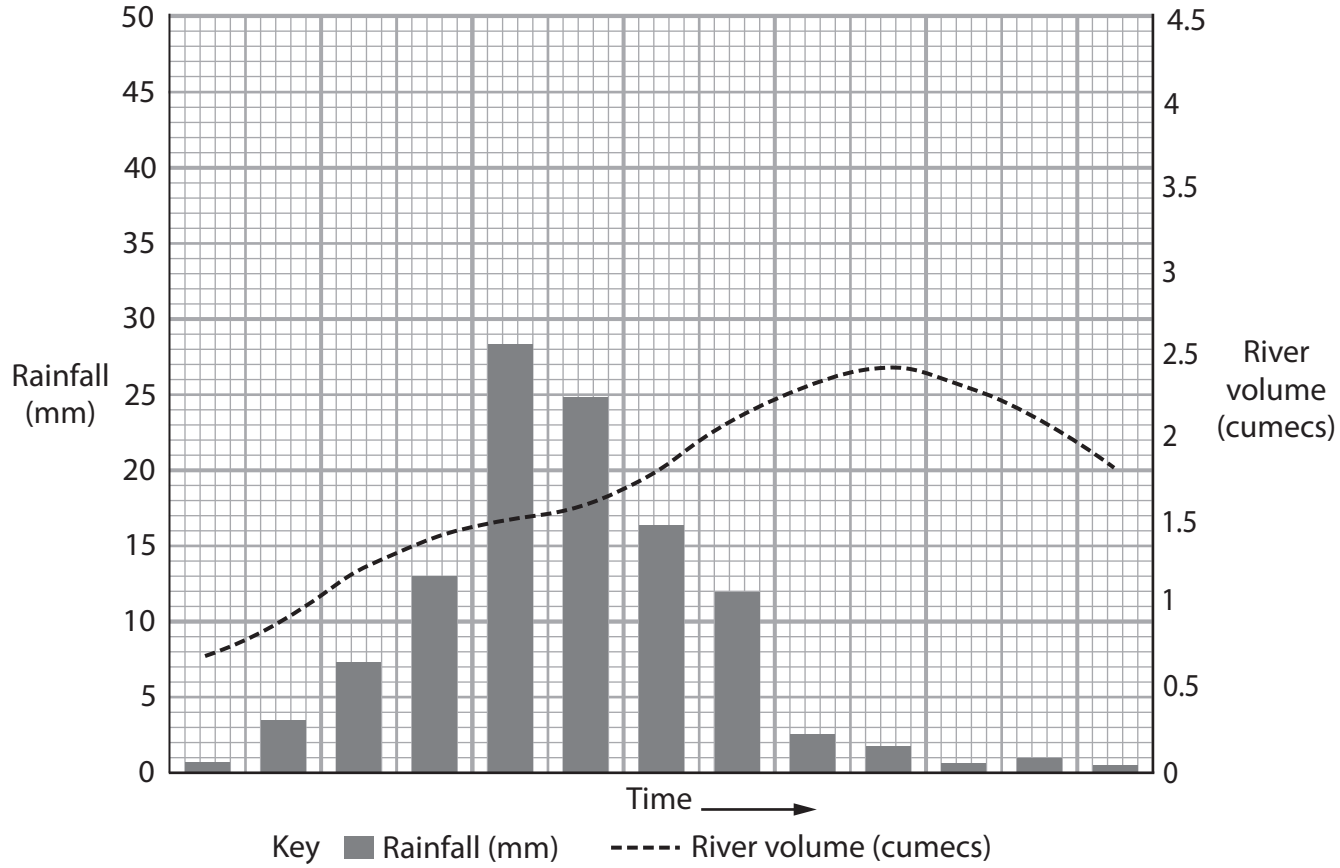


Storm hydrograph in an urban area



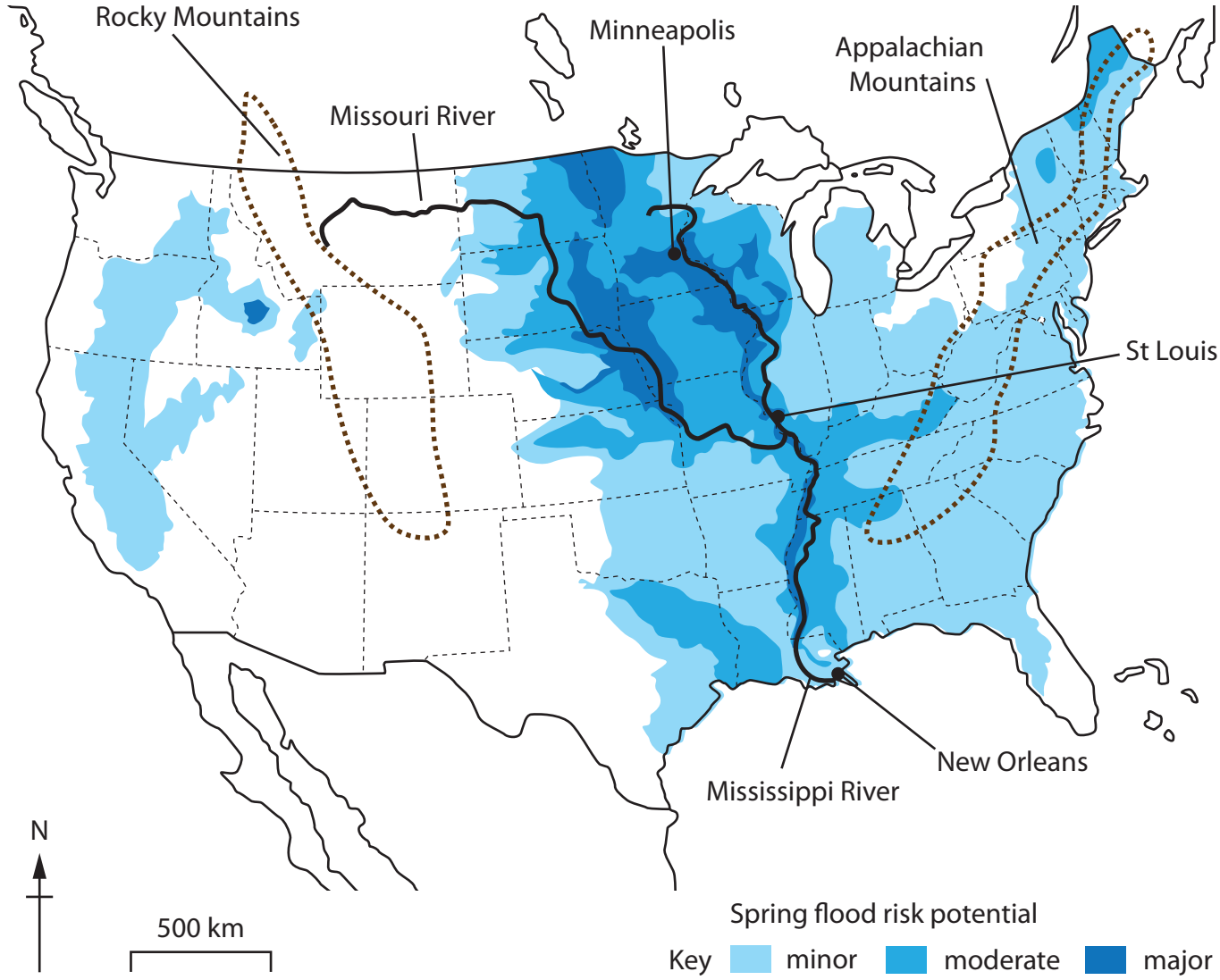
Storm hydrograph in a rural area

Figure 1a

Two storm hydrographs

Figure 1b

Vltava River in the Czech Republic



- Glacier and snowmelt from mountains occur in spring.
- 2019 January to May experienced more rainfall that any other year on record.
- 2019 Midwestern flood involving the Mississippi and Missouri rivers in the USA caused US$2.9 billion property damage.
- Flooding worst along the Missouri River.
- At least 1 million acres of farmland was flooded.

Figure 1c

Risk of flood in the USA, spring 2019

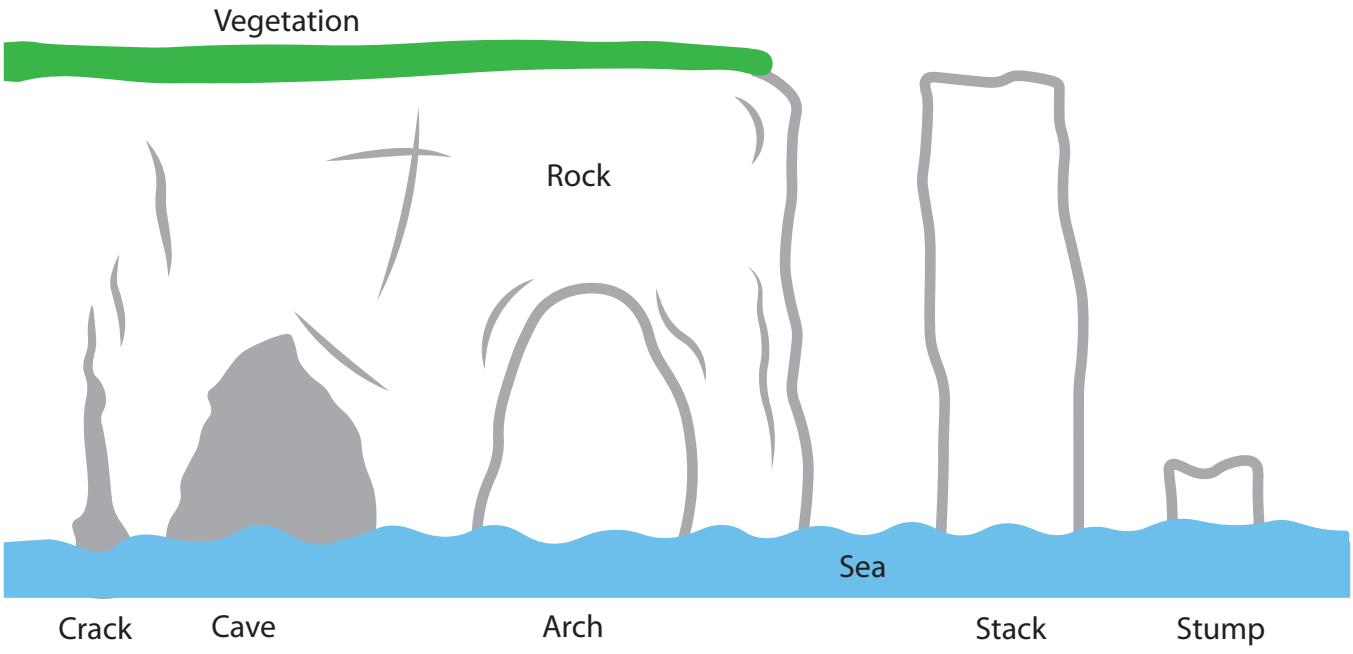


Figure 2a

Diagram of coastal landforms at a headland

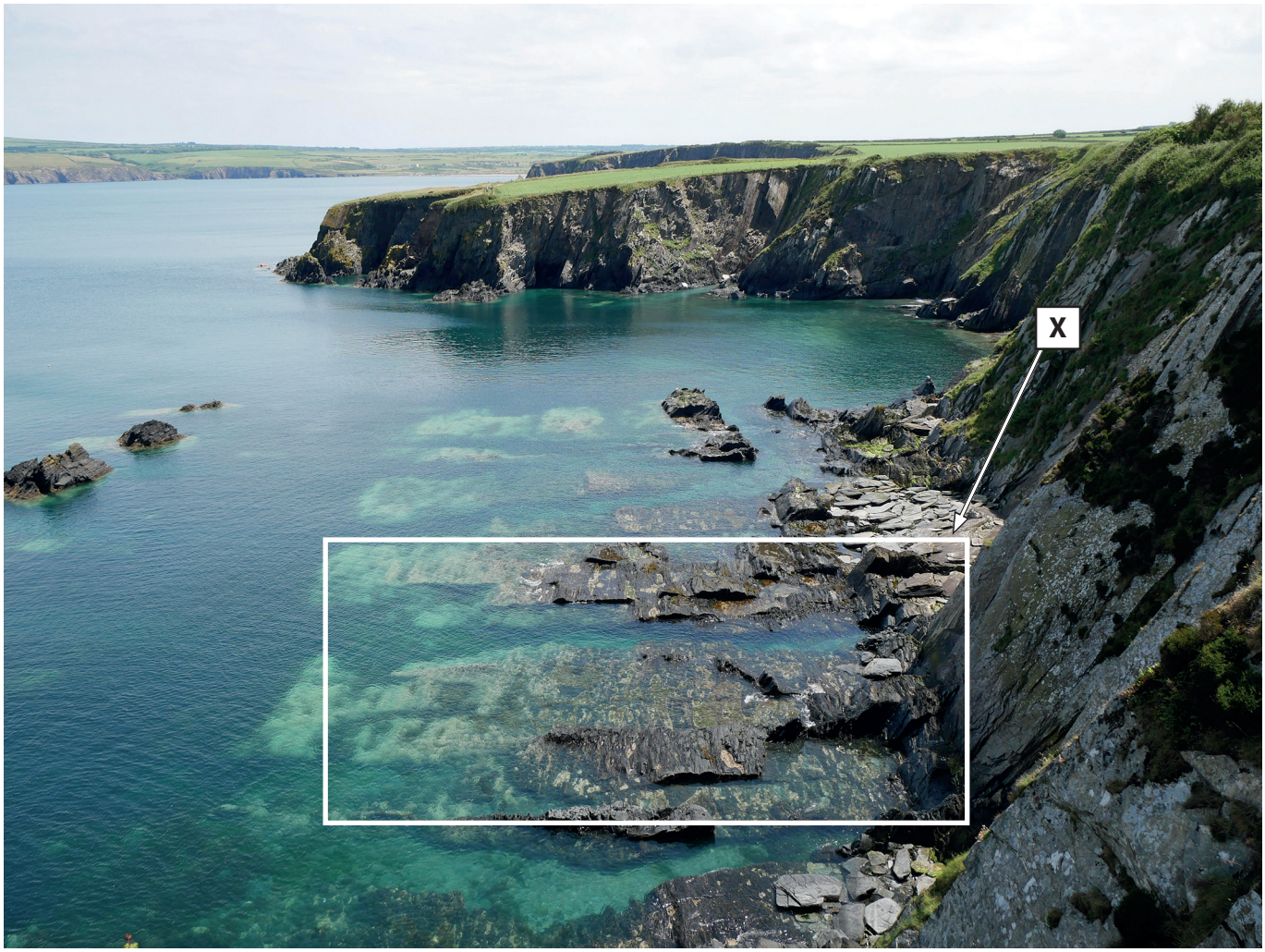


Figure 2b

Coastal landscape in Pembrokeshire, UK

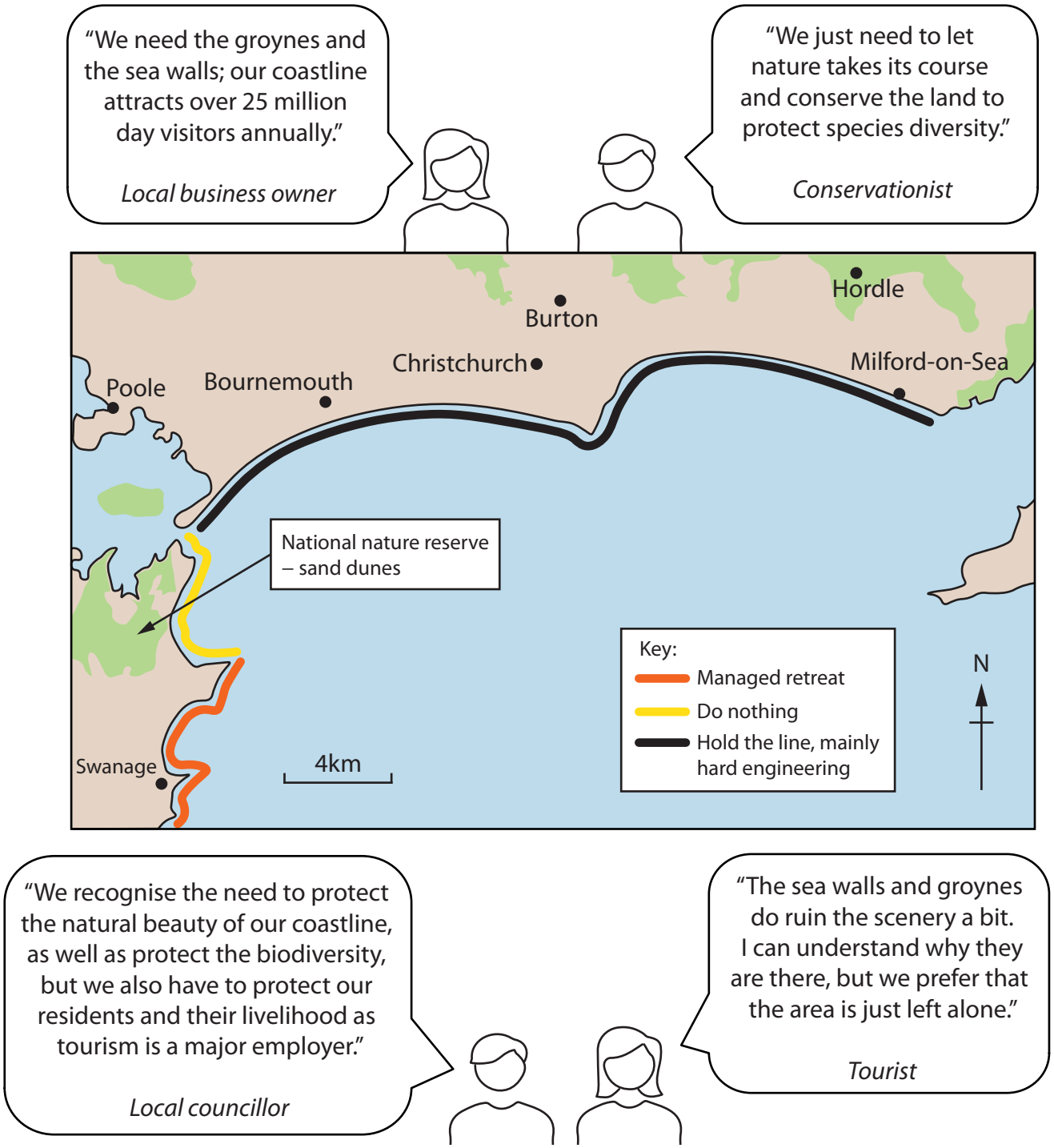


Figure 2c

Different views on coastal management strategies along the Dorset coast, UK

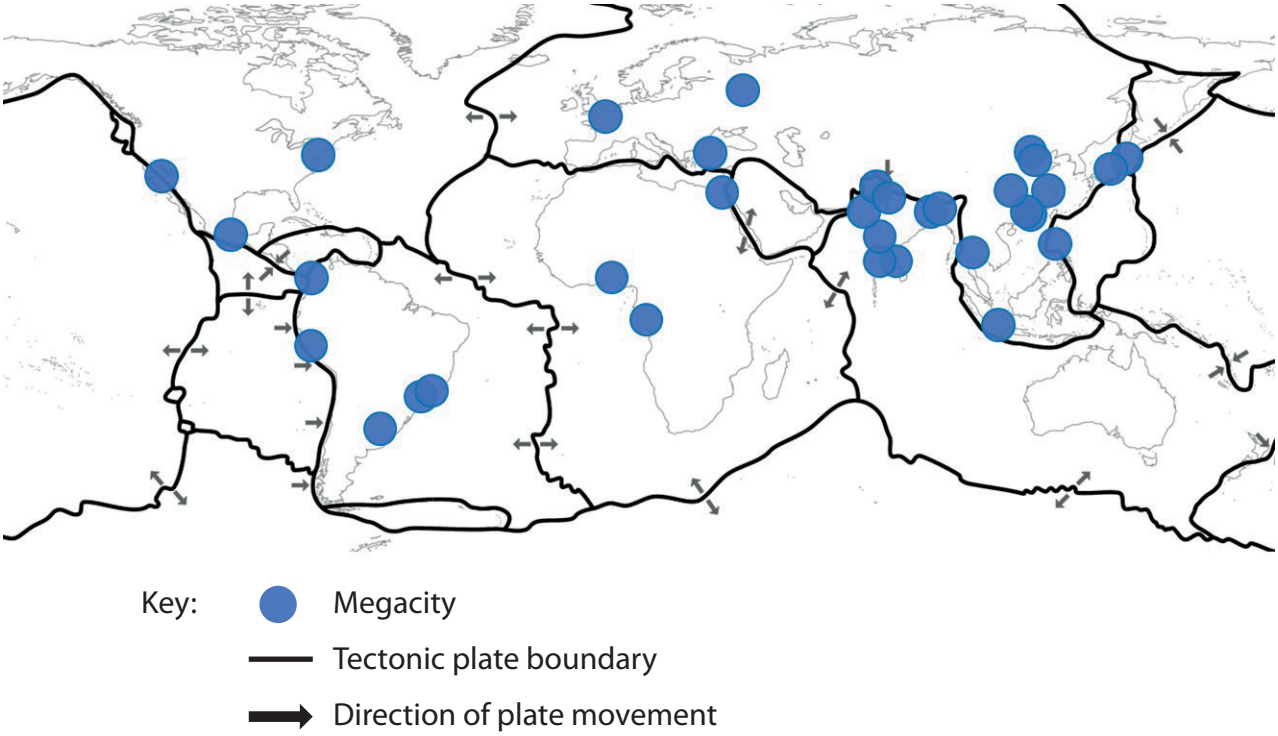


Figure 3a

Tectonic plate boundaries and megacity locations

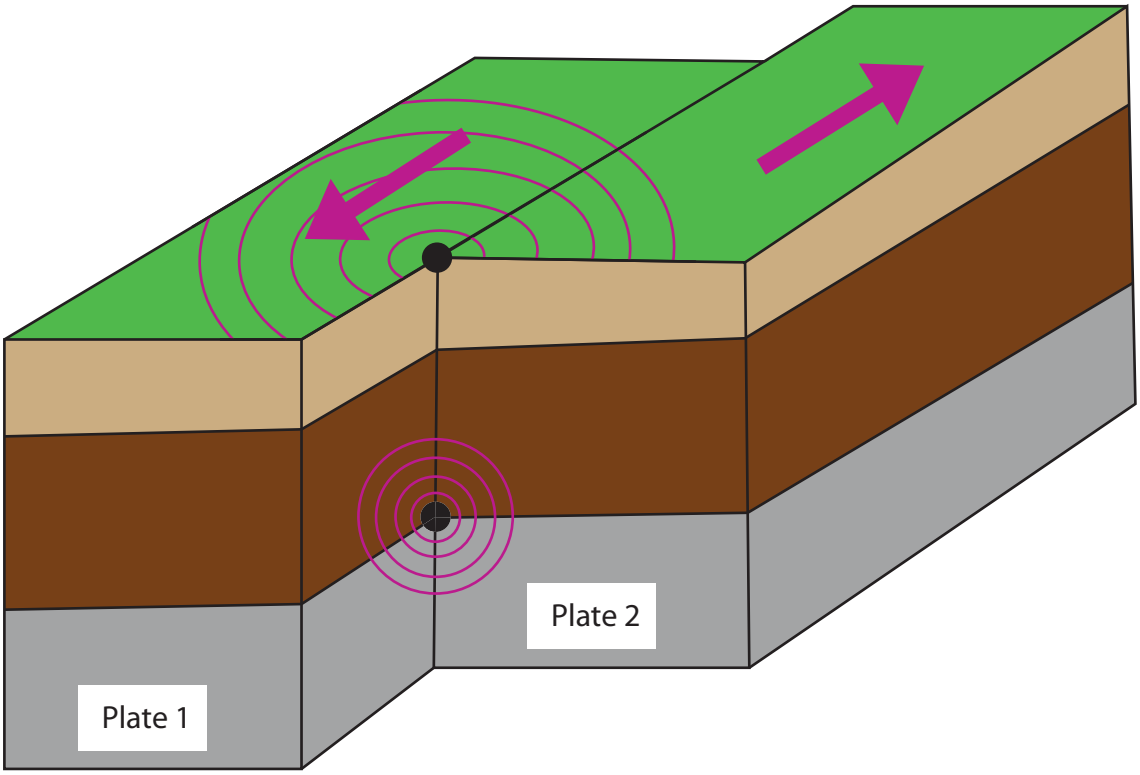
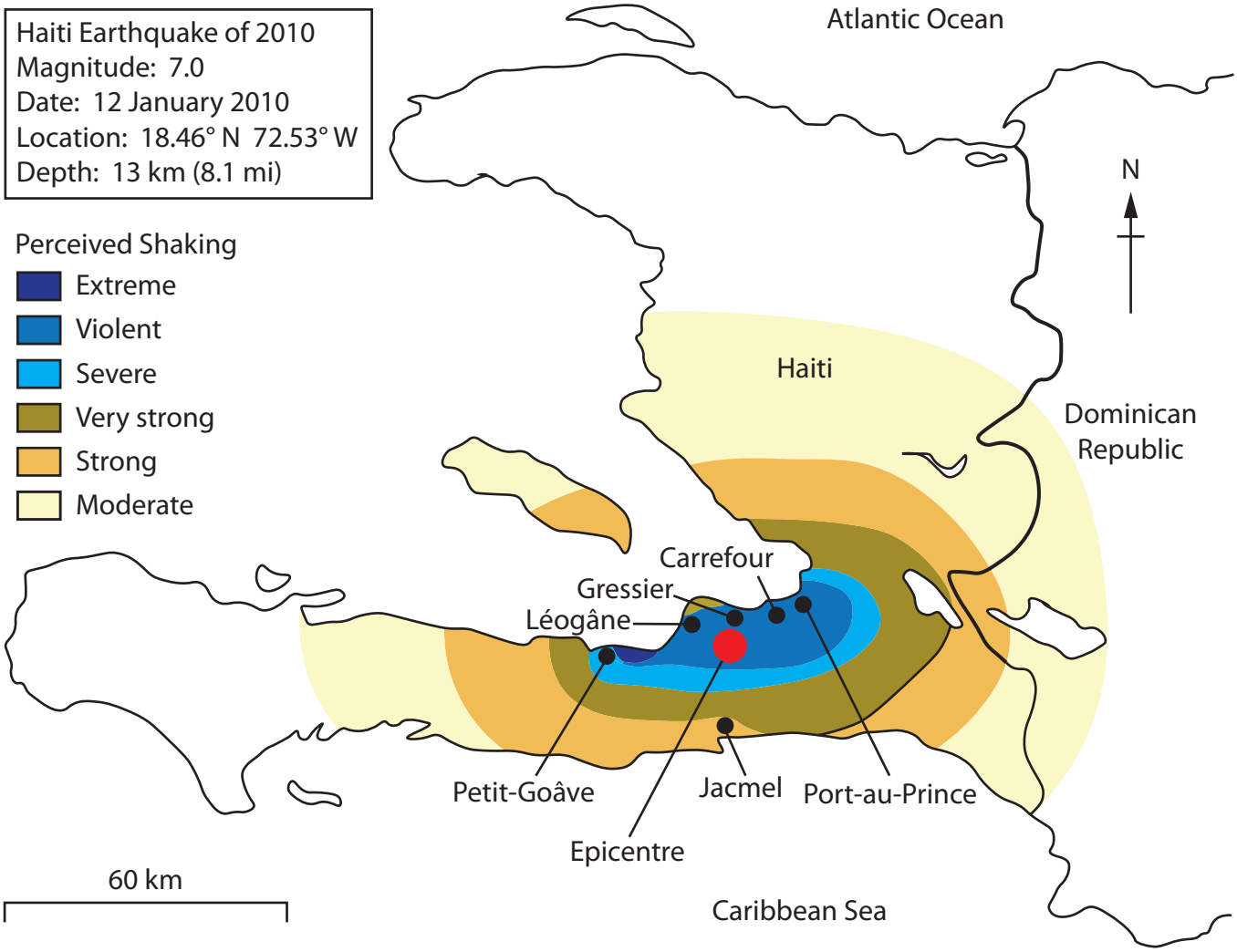


Fig 3b

Diagram of a plate boundary



Population	9.95 million
Short-term Impacts	• 220,000 people killed • 300,000 people injured • Transport and communications disrupted, airport damaged • Shortage of aid supplies due to lack of preparation
Long-term Impacts	• 2 million people with poor access to food and water • 1.3 million people homeless • Outbreaks of cholera • Many businesses were destroyed particularly the clothing industry

Figure 3c

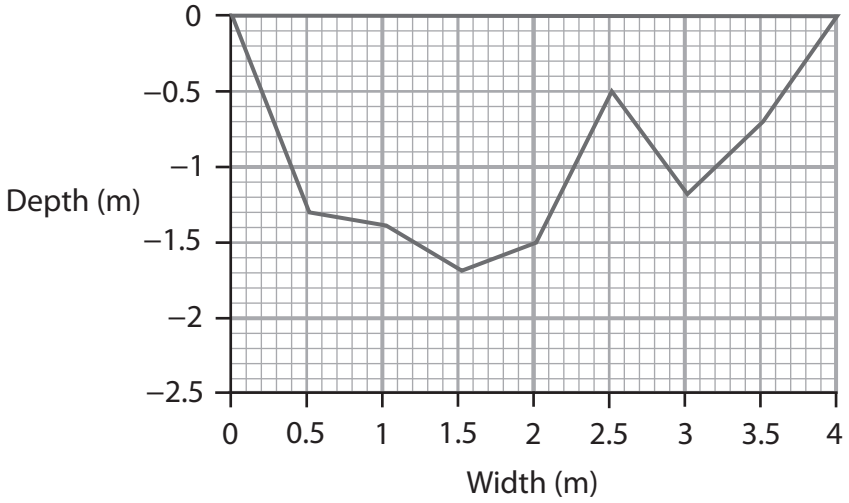
Details about an earthquake event in Haiti, a developing country in 2010

At two different sites along a river chosen at random on a map:

- Measure river width/depth
- Measure river wetted perimeter
- Measure river velocity

Figure 4a

Extract from data collection methods



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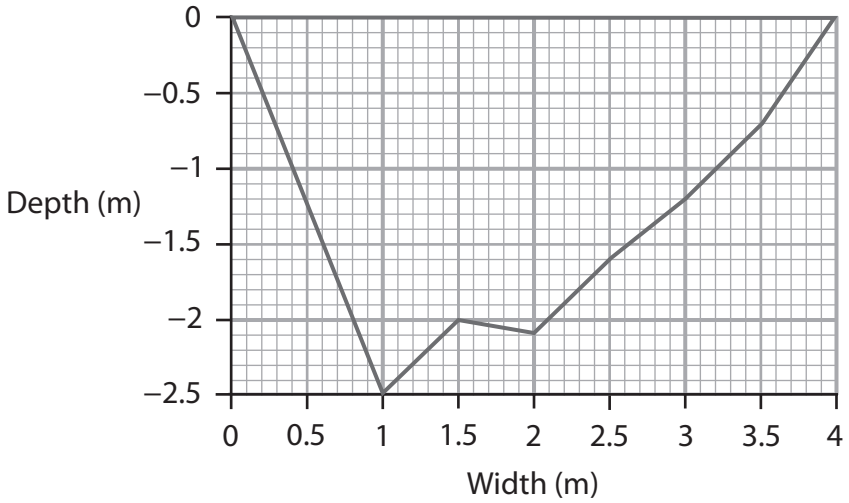


Site 2

	Conclusions
1	I found that the characteristics of the river changed along the course of the river.
2	Calculating river velocity at each site allowed me to find out that river velocity is fastest in the upper course of the river.
3	There was little difference between the width of the river between the fieldwork sites.

Figure 4b

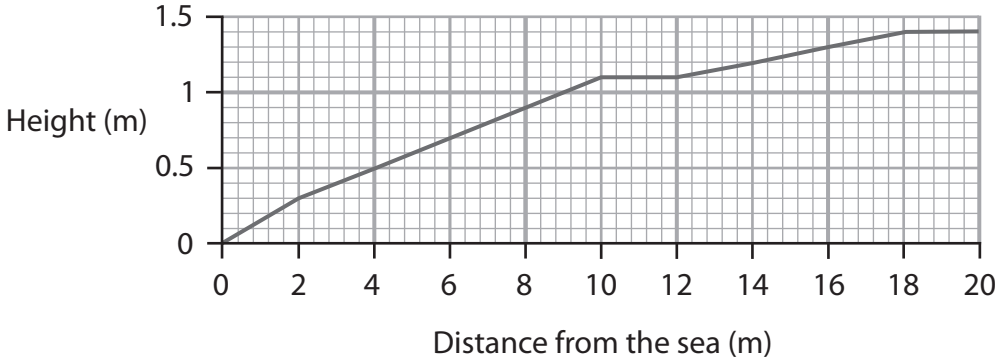
Extracts from student's data presentation and conclusion

At two different sites along a beach chosen at random on a map:

- Measure gradient of the beach at set distances
- Record sediment shape
- Measure sediment size

Figure 5a

Extract from data collection methods



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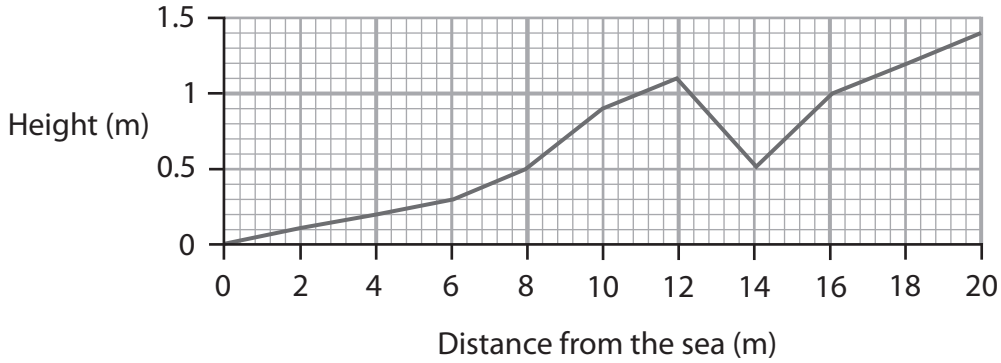


Site 2

	Conclusions
1	I found that the characteristics of the beach changed along the coastline.
2	Measuring the changes in the gradient of the beach allowed me to create a beach profile to show how characteristics changed along the coastline.
3	There was little difference between the sediment size along the stretch of the coastline.

Figure 5b

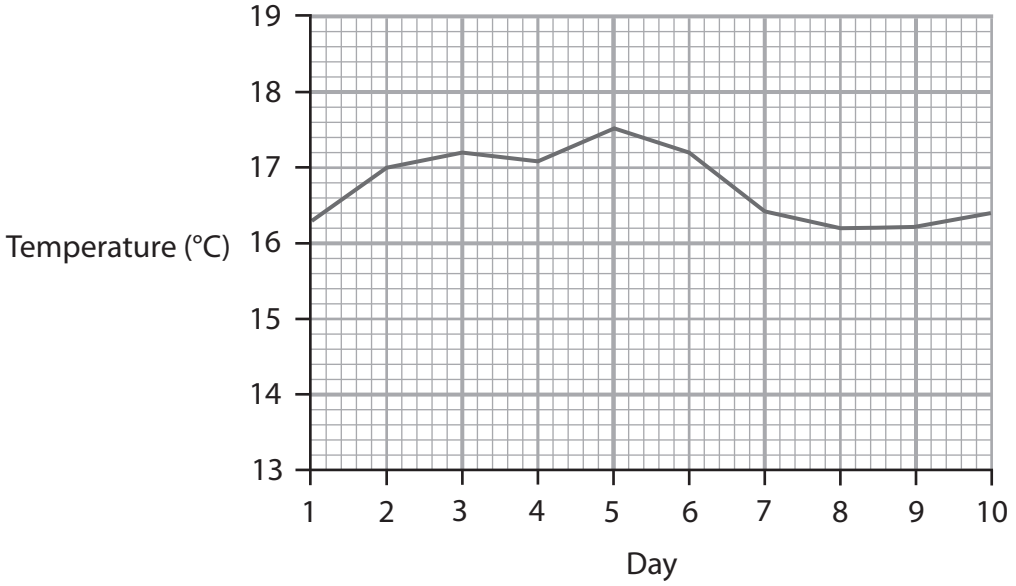
An extract from the student's data presentation and conclusion

At two different sites chosen at random on a map, data collected for a weather diary, including:

- temperature
- humidity
- rainfall

Figure 6a

Extract from data collection methods



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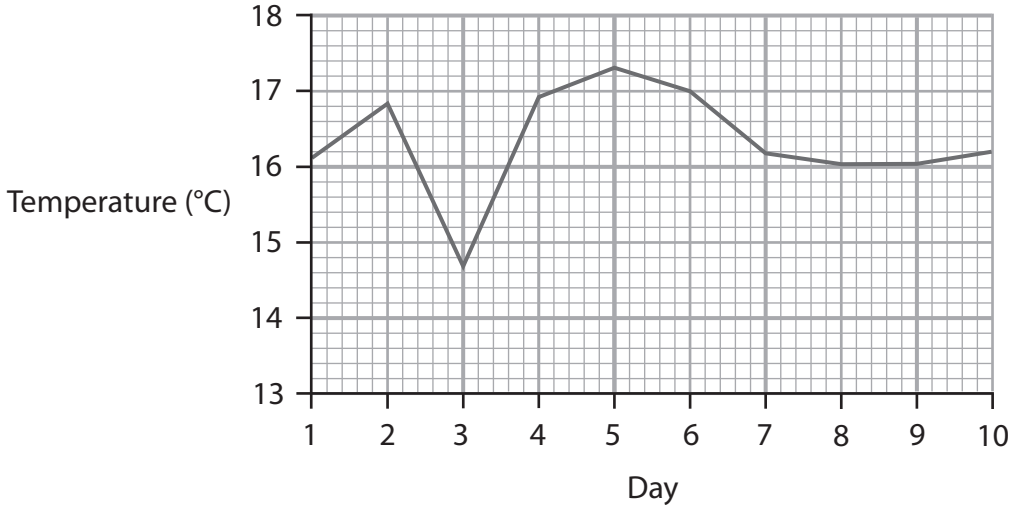

Site 2

	Conclusions
1	I found that the weather characteristics and changes in the weather were similar at both sites.
2	Changes in humidity were often linked to temperature and amount of rainfall.
3	There was little difference between the average temperatures of both sites.

Figure 6b

An extract from the student's data presentation and conclusion

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Acknowledgements
Pearson Education Ltd. gratefully acknowledges all following sources used in preparation of this paper:

Figure 1b (Source: © Thomas Dekiere/Shutterstock)

Figure 1c (Source: https://www.noaa.gov/media-release/spring-outlookhistoric-widespread-flooding-to-continue-through-may)

Figure 2b (© Alan Morris / Alamy Stock Photo)