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)

Monday 22 May 2023

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.

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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) Name the landform created by erosion in a river.

(1)

☐ **A** salt marsh

☐ **B** meander

☐ **C** spring

☐ **D** delta

(b) (i) Identify when deposition in a river is most likely to take place.

(1)

☐ **A** when a river flows through a V-shaped valley

☐ **B** when a river begins at its source

☐ **C** when a river flows over a waterfall

☐ **D** when a river has a slow velocity

(ii) State what is meant by the term **drainage basin**.

(1)

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(iii) Explain **one** reason for poor water quality in a river.

(2)

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

Explain **two** transfers in the hydrological cycle shown.

(4)

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(d) Explain how **one** physical factor can affect river regimes.

(3)

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

Identify the feature of a river valley labelled **X**.

(1)

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(f) Explain why water shortages can occur.

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

Analyse the causes of the river flood.

Refer to the resources in your answer.

(8)

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(Total for Question 1 = 25 marks)

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

2 Coastal environments

(a) Identify the soft engineering technique used on coastlines.

(1)

☒ **A** rock armour

☒ **B** groynes

☒ **C** sea wall

☒ **D** beach replenishment

(b) (i) Identify the best definition of a coral reef ecosystem.

(1)

☒ **A** an ecosystem consisting of sandy deposits

☒ **B** an ecosystem made of small animals (polyps) living together in water with a temperature of 23–27°C

☒ **C** an ecosystem consisting of small shrubs and trees

☒ **D** an ecosystem where plants and animals are adapted to both salt and fresh water

(ii) State **one** abiotic feature of an ecosystem.

(1)

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(iii) Explain **one** factor that can affect the distribution of mangrove ecosystems.

(2)

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

Suggest **two** ways deposition can affect coastal landforms.

(4)

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(d) Explain **one** factor that affects the rate of coastal erosion.

(3)

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

Name the type of weathering taking place at **X**.

(1)

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(f) Explain the formation of a coastal arch.

(4)

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

Analyse why conflicts between development and conservation occur in coastal areas.

Refer to the resources in your answer.

(8)

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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 the natural hazard.

(1)

☒ **A** car emission pollution

☒ **B** nuclear meltdown

☒ **C** oil slick from a ship

☒ **D** volcanic eruption

(b) (i) Identify a factor that affects development of tropical cyclones.

(1)

☒ **A** large areas of high pressure

☒ **B** warm sea surface temperatures

☒ **C** an undersea earthquake

☒ **D** pyroclastic flows

(ii) State **one** measure of tropical cyclone intensity.

(1)

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(iii) Explain how the Coriolis force affects tropical cyclones.

(2)

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(c) Explain the formation of a constructive plate margin.

(3)

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

Suggest **two** short-term impacts of the earthquake shown.

(4)

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

Identify the feature shown at **X** on the diagram.

(1)

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(f) Explain the long-term impacts of tropical cyclones.

(4)

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

Analyse the reasons why people continue to live in areas prone to volcanic eruptions.

Refer to the resources in your answer.

(8)

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(Total for Question 3 = 25 marks)

TOTAL FOR SECTION A = 50 MARKS

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SECTION B

Geographical enquiry

Answer ONE question from this section.

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

4 Investigating river environments

You have studied a river environment as part of your own geographical enquiry.

Title of your geographical enquiry

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(a) Explain why your fieldwork location was suitable for this enquiry.

(2)

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(b) Explain **one** quantitative method you chose for data collection.

(3)

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(c) Explain **one** advantage of a technique you used to present your fieldwork data.

(3)

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(d) Explain **two** techniques you used to analyse your data.

(4)

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(e) Study Figure 4a and Figure 4b in the Resource Booklet. They show some information about data collection methods from a student's enquiry.

The aim of the student's enquiry was to determine the most important factor affecting river discharge.

Evaluate how far the data collection methods used supported the student in achieving their aim.

(8)

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(Total for Question 4 = 20 marks)

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

5 Investigating coastal environments

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

Title of your geographical enquiry

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(a) Explain why your fieldwork location was suitable for this enquiry.

(2)

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(b) Explain **one** quantitative method you chose for data collection.

(3)

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(c) Explain **one** advantage of a technique you used to present your fieldwork data.

(3)

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(d) Explain **two** techniques you used to analyse your data.

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(e) Study Figure 5a and Figure 5b in the Resource Booklet. They show some information about data collection methods from a student's enquiry.

> The aim of the student's enquiry was to determine the most important factor affecting a beach profile.

Evaluate how far the data collection methods used supported the student in achieving their aim.

(8)

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(Total for Question 5 = 20 marks)

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

6 Investigating hazardous environments

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

Title of your geographical enquiry

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(a) Explain why your fieldwork location was suitable for this enquiry.

(2)

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(b) Explain **one** quantitative method you chose for data collection.

(3)

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(c) Explain **one** advantage of a technique you used to present your fieldwork data.

(3)

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(d) Explain **two** techniques you used to analyse your data.

(4)

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(e) Study Figure 6a and Figure 6b in the Resource Booklet. They show some information about data collection methods from a student's enquiry.

> The aim of the student's enquiry was to determine the most important characteristic that influences local weather conditions.

Evaluate how far the data collection methods used supported the student in achieving their aim.

(8)

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(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)

Monday 22 May 2023

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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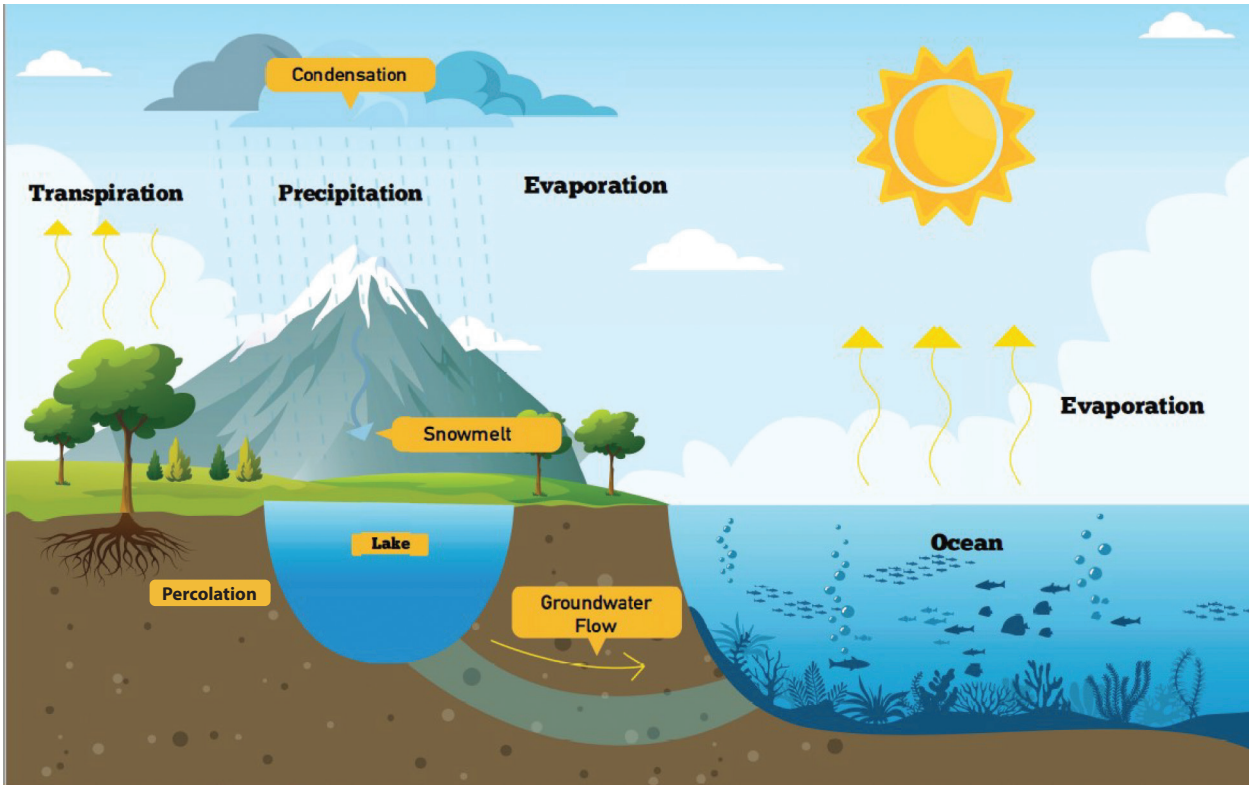


Figure 1a

The hydrological cycle

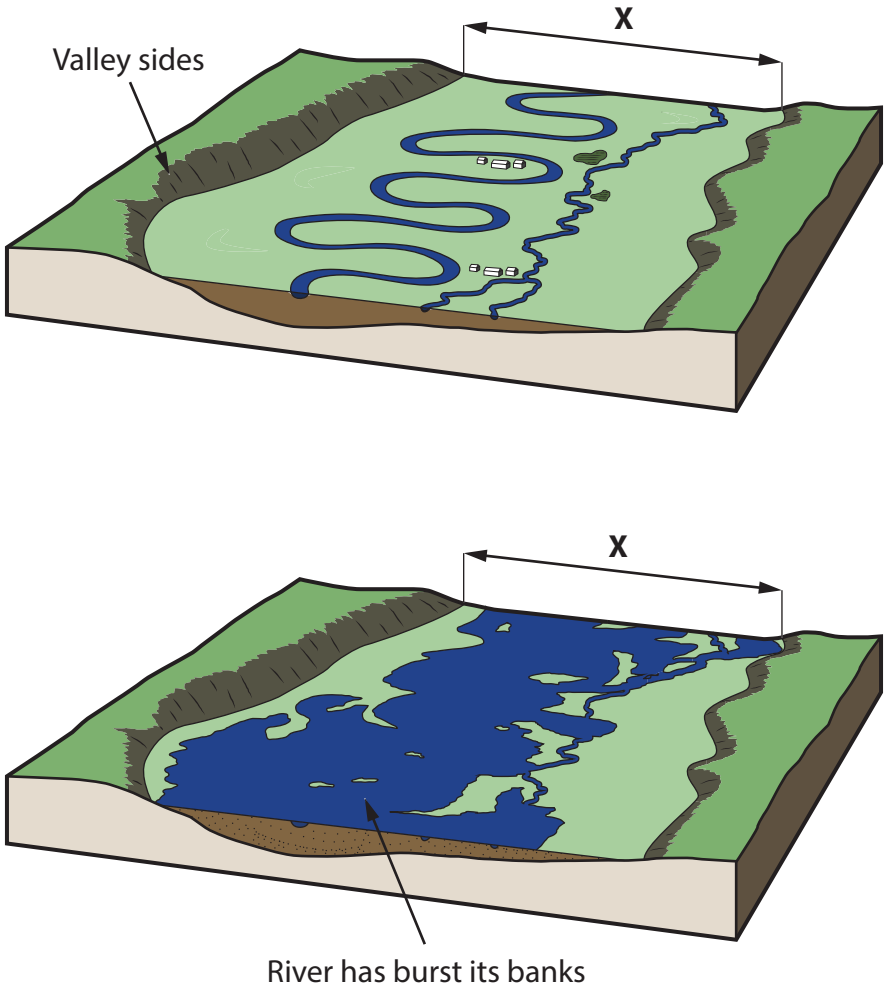


Figure 1b

River features

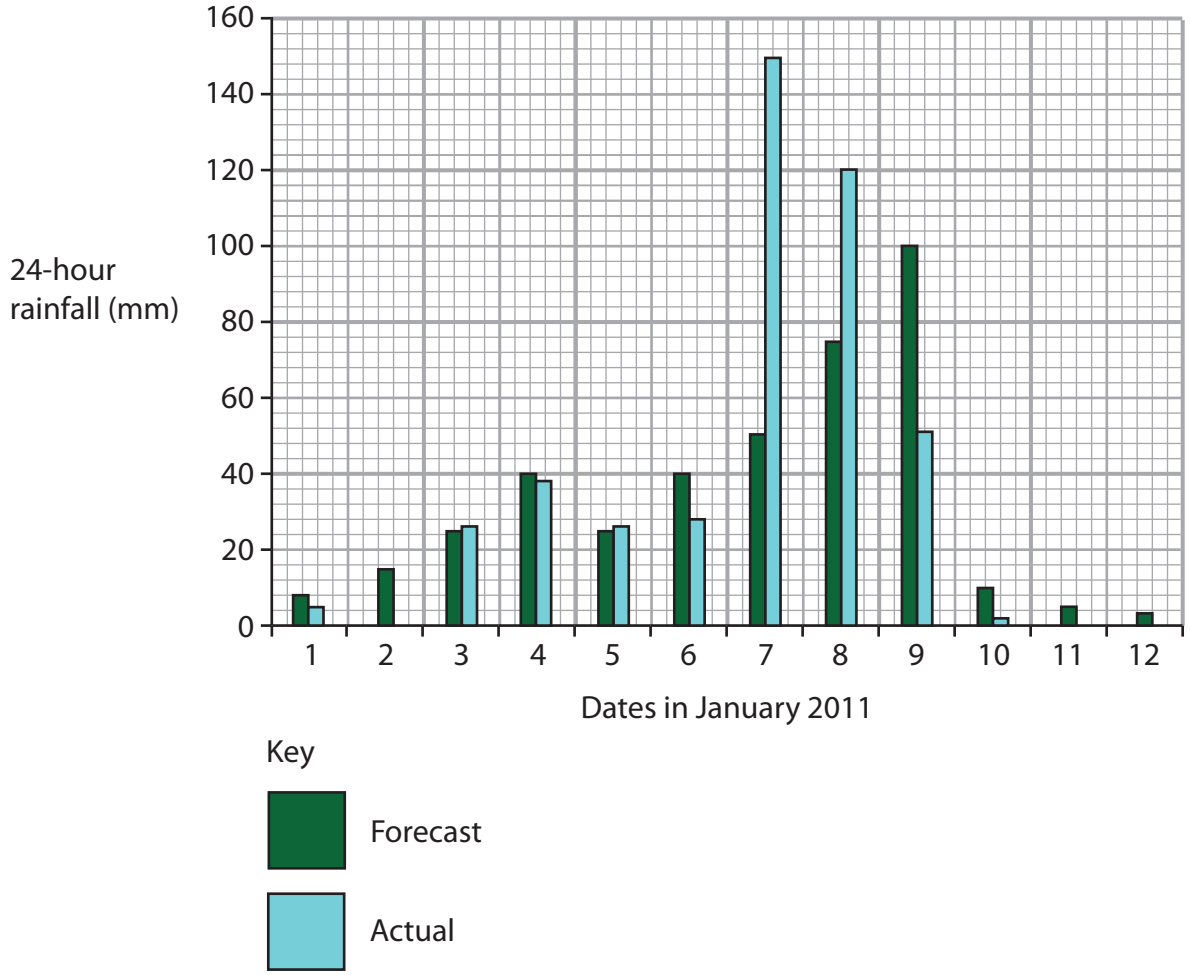
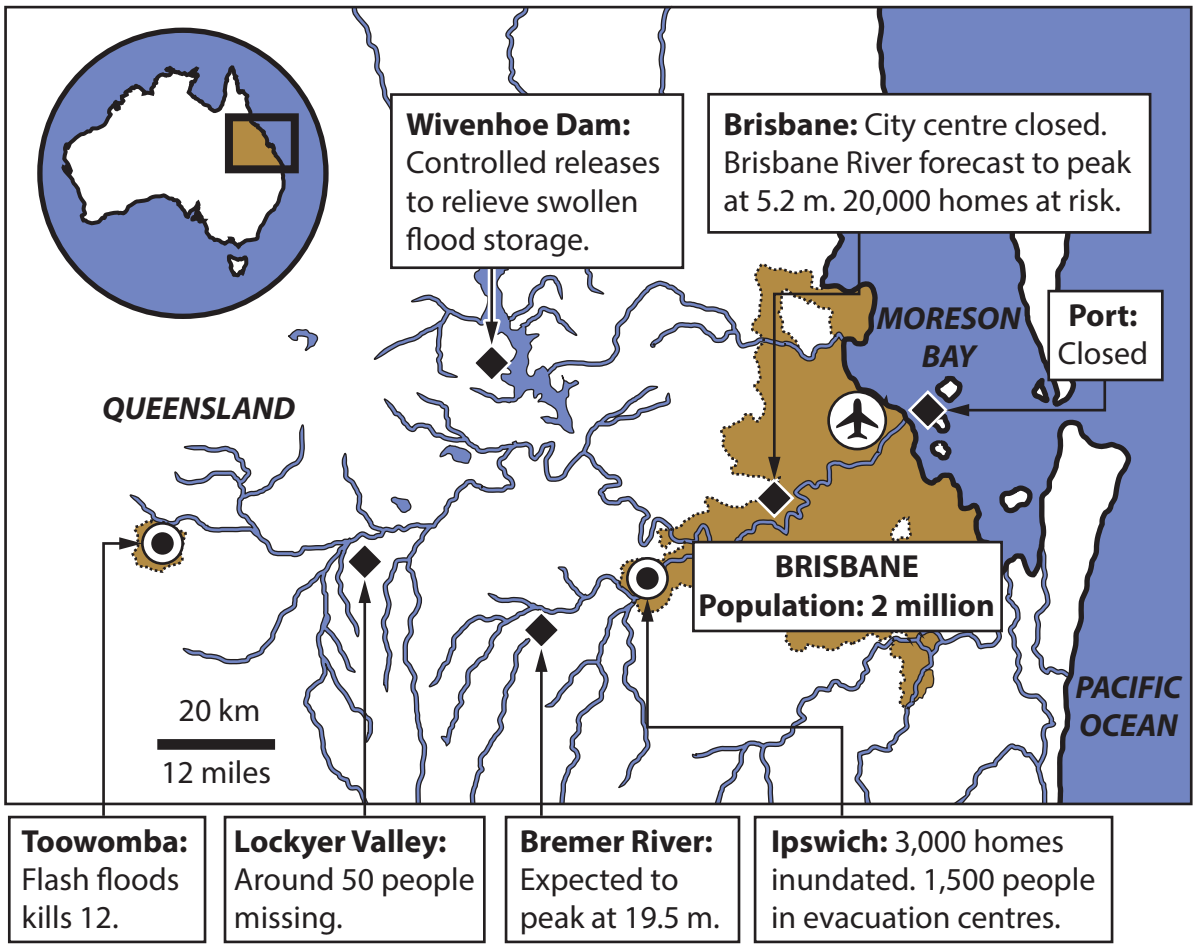


Figure 1c

Actual and predicted rainfall for 12 days in January 2011 for River Brisbane catchment

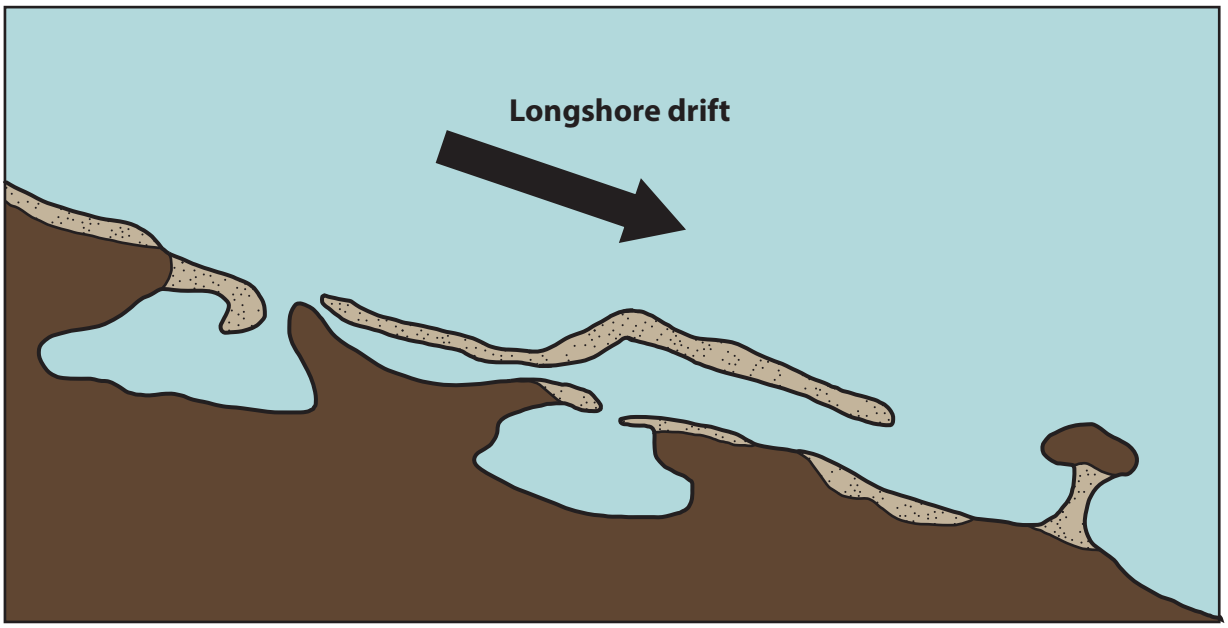


Key

- Airport
- Cities
- Point of interest
- Flooded area

Figure 1d

Map showing an area around Brisbane where flooding occurred in 2011



Key

Sand

Rock

Figure 2a

Features caused by coastal deposition

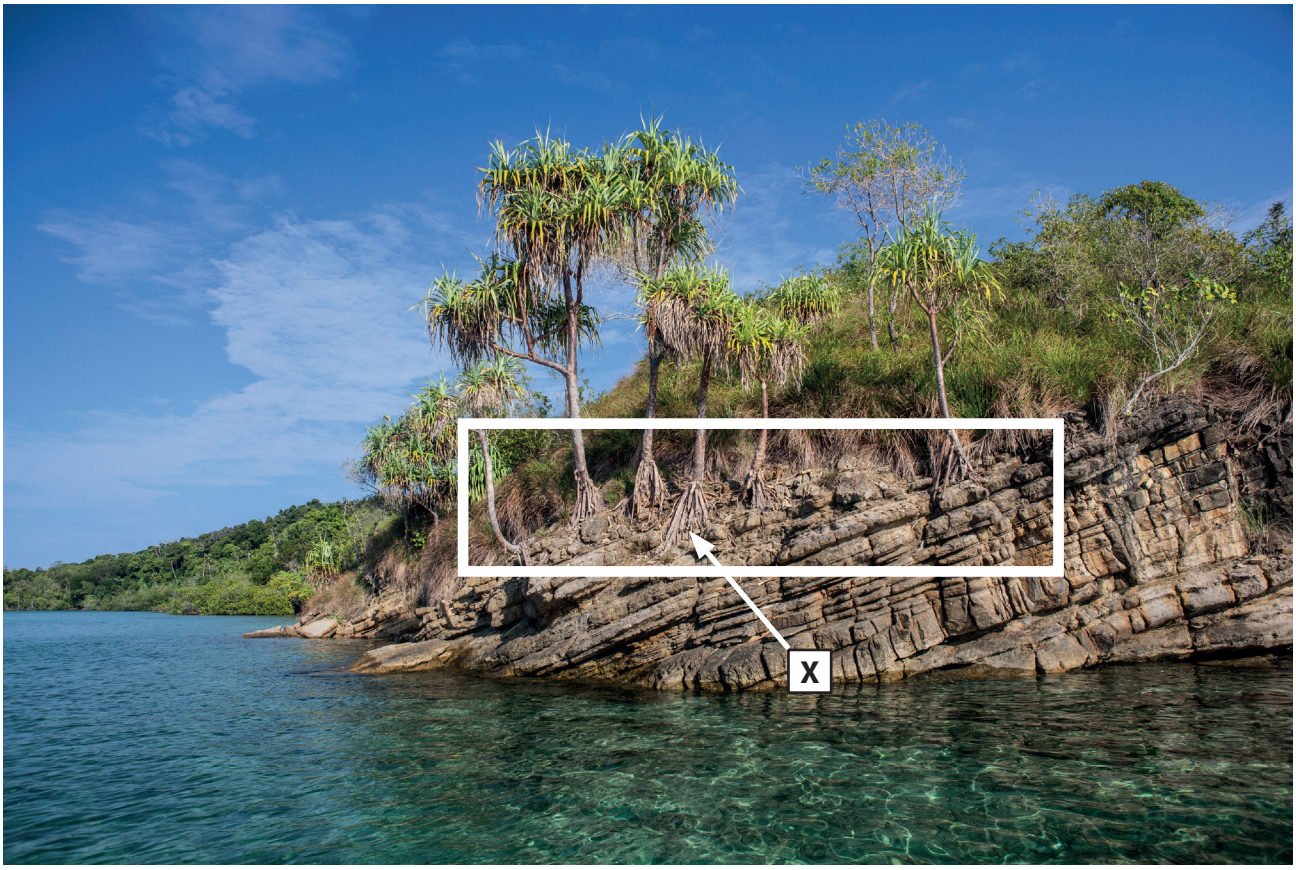


Figure 2b

A coastline in Raja Ampat, Indonesia

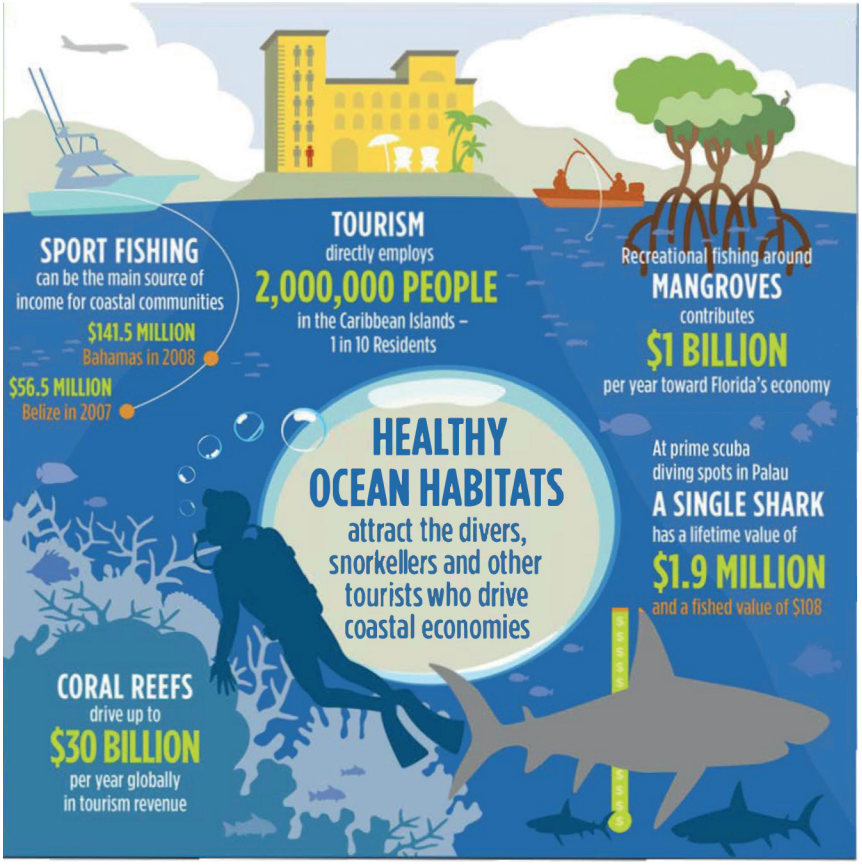


Figure 2c

Reasons for development of coastlines

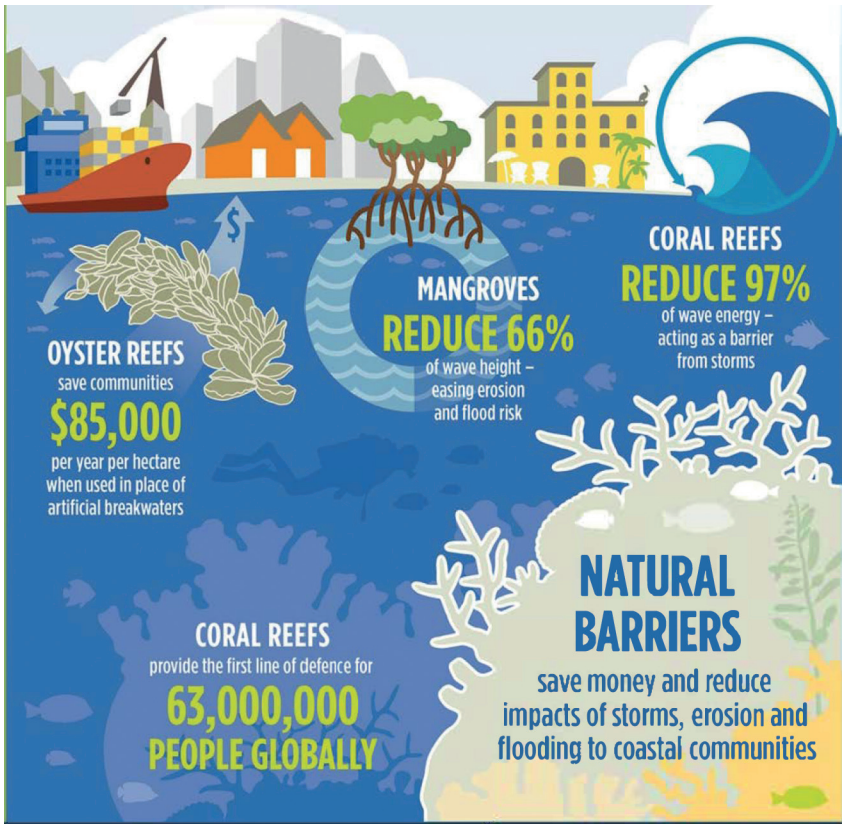


Figure 2d

Reasons for conservation of coastlines

Figure 3a

Earthquake impacts

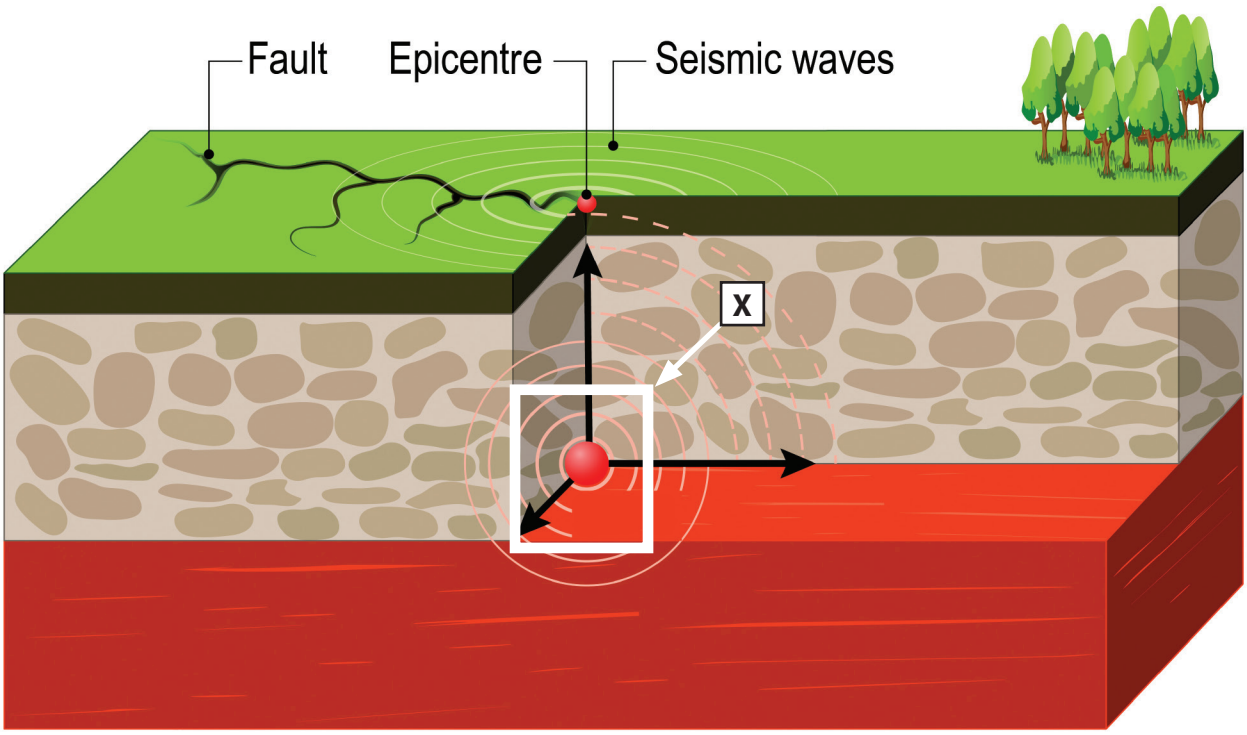


Figure 3b

Cross section of an earthquake zone

Farming with fertile soil in the shadow of a volcano in Indonesia.

Geothermal energy production from volcanic areas in Iceland.

Figure 3c

Areas prone to volcanic eruptions

Country/ state	Role	GDP per capita in 1000's US $ (2020)	Comment
New Zealand	Government scientist	42	We have excellent prediction and prevention techniques, which means we can manage the volcanic risk effectively.
Italy	Tourism guide	32	I live by Mt Etna as it provides a source of income for my family. I would have great difficulty getting a job in tourism elsewhere.
Papua New Guinea	Fisherman	3	We have no choice. We cannot afford to go anywhere else. If the volcano erupts that is our fate.

Figure 3d

Responses from a range of people when asked for comment on why they continued to live in areas prone to volcanic eruptions

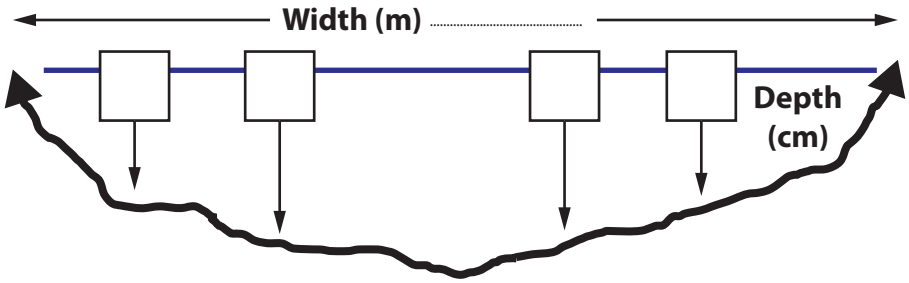
- Choose 5 sites along a river, at 300m intervals.
- Measure river depth, width and velocity.
- Record sediment characteristics.
- Identify land use and draw a field sketch.

Figure 4a

Information on the student's data collection methods

River fieldwork recording sheet

- Measure river depth.



Mean depth (m) .....

- Measuring river velocity.

Site	**1**	**2**	**3**	**4**	**5**
Distance					
Time					
Velocity					

- Measure sediment size and roundness at each site.

Site	**1**	**2**	**3**	**4**	**5**
Sediment size (cm)					
Sediment roundness					

Figure 4b

Data collection sheet

- Choose 5 sites along a beach, at 300m intervals.
- Measure slope angle to make beach profiles.
- Record any coastal management techniques.
- Record sediment characteristics.

Figure 5a

Information on the student's data collection methods

Beach profile recording sheet

- Measure angle at every change in the gradient of the beach.

	Angle (°)	Distance between ranging poles (m)
1		
2		
3		
4		
5		

- Measure sediment size and roundness at each site.

Site	**1**	**2**	**3**	**4**
Pebble size (cm)				
Pebble roundness				

Figure 5b

Data collection sheet

- Choose 5 sites at 500m intervals moving away from the school.
- Measure temperature, humidity and windspeed.
- Measure rainfall.
- Record land use.

Figure 6a

Information on the student's data collection methods

Weather characteristics recording sheet

- Measure rainfall and humidity at each site every day for 2 weeks.

	Rainfall (mm)	Humidity (mb)
1		
2		
3		
4		
5		

- Record land use and windspeed at each site.

Site	Land use	Windspeed (km/h)
1		
2		
3		
4		

Figure 6b

Data collection sheet

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Acknowledgements:

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