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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)

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 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.

Turn over ▶

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Q:1/1/1/1/1/1

P 7 0 8 5 9 A 0 1 2 8

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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) Identify the characteristic usually found in the upper course of a river.

(1)

- ☒ **A** frequent meanders
- ☒ **B** ox bow lakes
- ☒ **C** steep valley sides
- ☒ **D** slow river velocity

(b) (i) Identify the best definition of a river mouth.

(1)

- ☒ **A** bend in a river
- ☒ **B** starting point of a river
- ☒ **C** where two rivers meet
- ☒ **D** where a river meets the sea

(ii) State **one** store in the hydrological cycle.

(1)

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(c) Explain **one** weathering process in a river valley.

(2)

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

Explain **two** ways human activity can affect water quality.

(4)

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(e) Explain **one** river flood prevention method.

(3)

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

Identify the type of mass movement.

(1)

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(g) Explain the formation of interlocking spurs.

(4)

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

Analyse the factors that affect the river regime shown in Figure 1c.

(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 erosional landform.

(1)

☒ **A** beach

☒ **B** cave

☒ **C** sea wall

☒ **D** spit

(b) (i) Identify the best definition of a sand bar found on a coast.

(1)

☒ **A** outcrop of chalk and limestone in a bay

☒ **B** a spit that has continued to grow across a bay

☒ **C** a spit that ends in a rock arch

☒ **D** a platform formed by waves eroding a cliff

(ii) State **one** factor that encourages salt marsh ecosystems to develop.

(1)

.....

(c) Explain **one** way mangrove ecosystems are affected by human activity.

(2)

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

Explain **two** reasons why there may be conflict over the use of coral reef ecosystems.

(4)

1 .....

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(e) Explain the difference between constructive and destructive waves.

(3)

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

Identify the process shown.

(1)

(g) Explain the causes of coastal flooding.

(4)

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

Analyse the advantages and disadvantages of the coastal management plan shown.

(8)

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(Total for Question 2 = 25 marks)

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

3 Hazardous environments

(a) Identify a feature of a tropical cyclone.

(1)

- ☒ **A** crater
- ☒ **B** constructive
- ☒ **C** eye
- ☒ **D** mantle

(b) (i) Identify the best definition of an earthquake epicentre.

(1)

- ☒ **A** point on the earth's surface where tectonic plates meet
- ☒ **B** point in the earth's crust that collapses
- ☒ **C** point in the earth's crust where lava escapes
- ☒ **D** point on the earth's surface directly above the focus

(ii) State **one** factor that can affect how much damage an earthquake can cause.

(1)

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(c) Explain **one** factor that affects the distribution of tropical cyclones.

(2)

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

Explain **two** reasons why people continue to live in areas at risk of tropical cyclones.

(4)

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(e) Explain **one** way hazard mapping can help preparation for an earthquake event.

(3)

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

Suggest a long-term impact of the hazard shown.

(1)

(g) Explain why earthquakes occur at destructive plate margins.

(4)

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

Analyse reasons for the different impacts of the two volcanic eruptions shown.

(8)

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(Total for Question 3 = 25 marks)

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SECTION B

Answer ONE question from this section.

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

4 Investigating river environments

A group of students have undertaken an enquiry that explores how sediment changes along a river at two sites.

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

(i) Identify **one** type of quantitative data used by the students.

(1)

☒ **A** annotated photographs

☒ **B** newspaper articles

☒ **C** amount of rainfall

☒ **D** river management plan

(ii) State **one** way maps could be used to support the enquiry.

(1)

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(b) Study Figure 4b which shows some data collected about river velocity.

(i) Calculate the mean velocity.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

..... m/s

(ii) State **one** piece of equipment that could be used to measure river velocity.

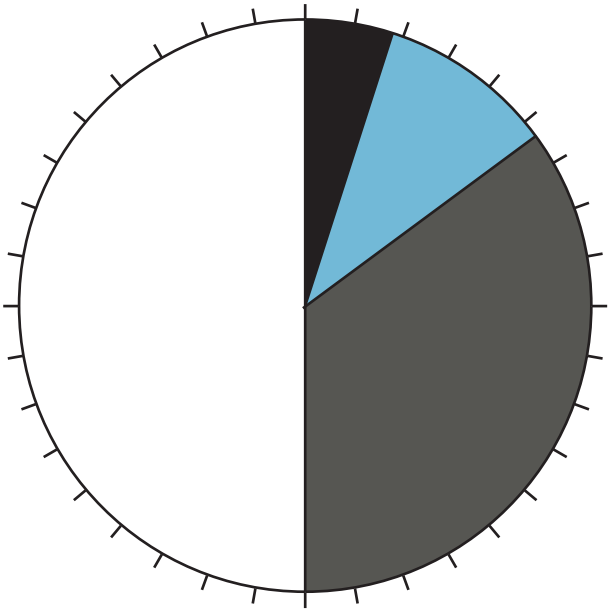
(1)

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(c) (i) Complete Figure 4d below, using data highlighted in Figure 4c in the Resource Booklet.

(2)



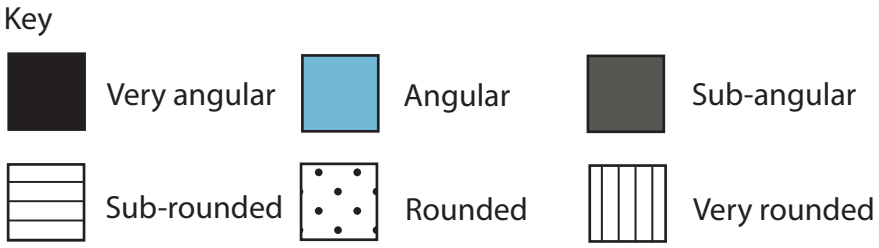


Figure 4d

Pie chart showing pebble shape

(ii) Identify **two** ways the students could have improved the reliability of the data collected.

(2)

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(d) Explain **one other** fieldwork technique the students could have used to explore river channel changes.

(3)

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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 ☒ .

5 Investigating coastal environments

A group of students have undertaken an enquiry that explores the impact of coastal management at two sites.

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

(i) Identify **one** type of quantitative data used by the students.

(1)

☒ **A** annotated photographs

☒ **B** newspaper articles

☒ **C** beach gradient

☒ **D** coastal management plan

(ii) State **one** way maps could be used to support the enquiry.

(1)

.....

.....

(b) Study Figure 5b which shows some data about beach sediment.

(i) Calculate the mean size of the pebbles in centimetres.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

..... cm

(ii) State **one** piece of equipment that could be used to measure the pebbles.

(1)

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(c) (i) Complete Figure 5d below, using data highlighted in Figure 5c in the Resource Booklet.

(2)

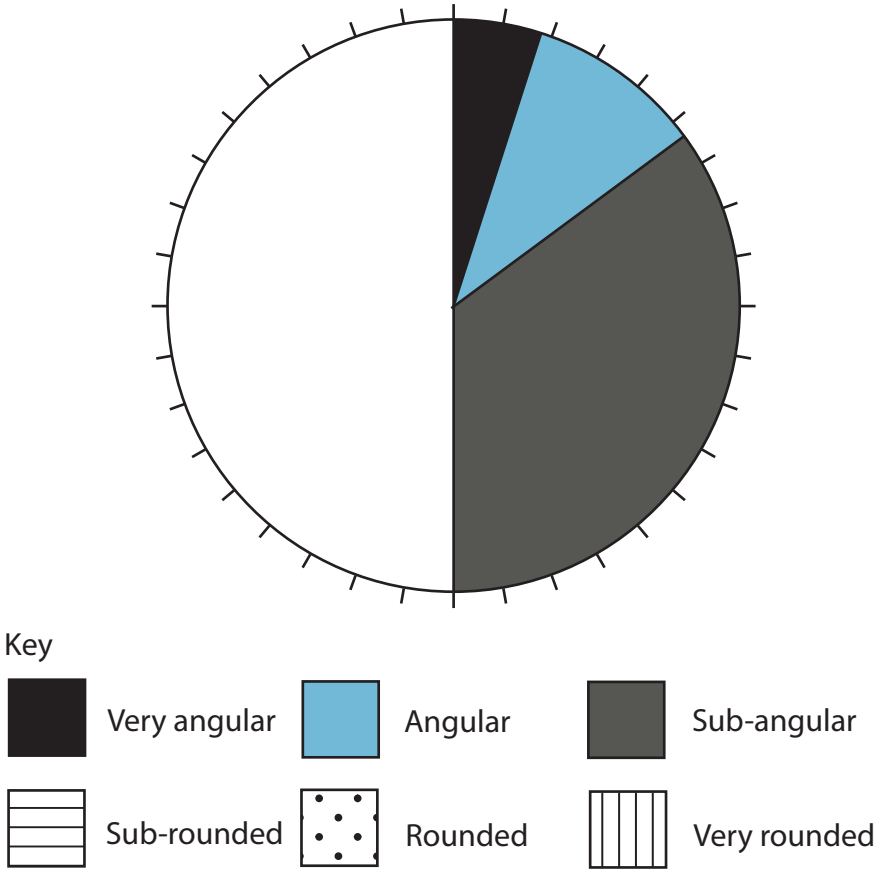


Figure 5d

Pie chart showing pebble shape

(ii) Identify **two** ways the students could have improved the reliability of the data collected.

(2)

1 .....

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2 .....

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(d) Explain **one other** fieldwork technique the students could have used to explore the impact of coastal management.

(3)

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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 ☒ .

6 Investigating hazardous environments

A group of students have undertaken an enquiry that explores local views on the importance of preparing for tropical cyclones at two sites.

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

(i) Identify **one** type of quantitative data used by the students.

(1)

☒ **A** annotated photographs

☒ **B** newspaper articles

☒ **C** amount of rainfall

☒ **D** interviews with local people

(ii) State **one** way maps could be used to support the enquiry.

(1)

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.....

(b) Study Figure 6b which shows some data about rainfall over 5 days during a tropical cyclone event.

(i) Calculate the mean rainfall.

Give your answer to one decimal place.

You must show all your workings in the space below.

(2)

..... mm

(ii) State **one** piece of equipment that could be used to measure rainfall.

(1)

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(c) (i) Complete Figure 6d below, using data highlighted in Figure 6c in the Resource Booklet.

(2)

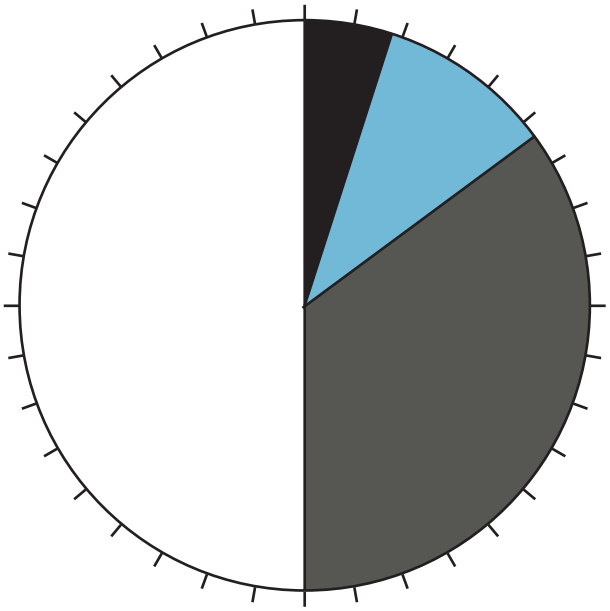


Figure 6d

Pie chart showing views on preparation for tropical cyclones

(ii) Identify **two** ways the students could have improved the reliability of the data collected.

(2)

1 .....

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2 .....

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(d) Explain **one other** fieldwork technique the students could have used to explore weather characteristics.

(3)

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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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Time 1 hour 10 minutes

Paper reference **4GE1/01R**

Geography

PAPER 1: Physical geography

Resource Booklet

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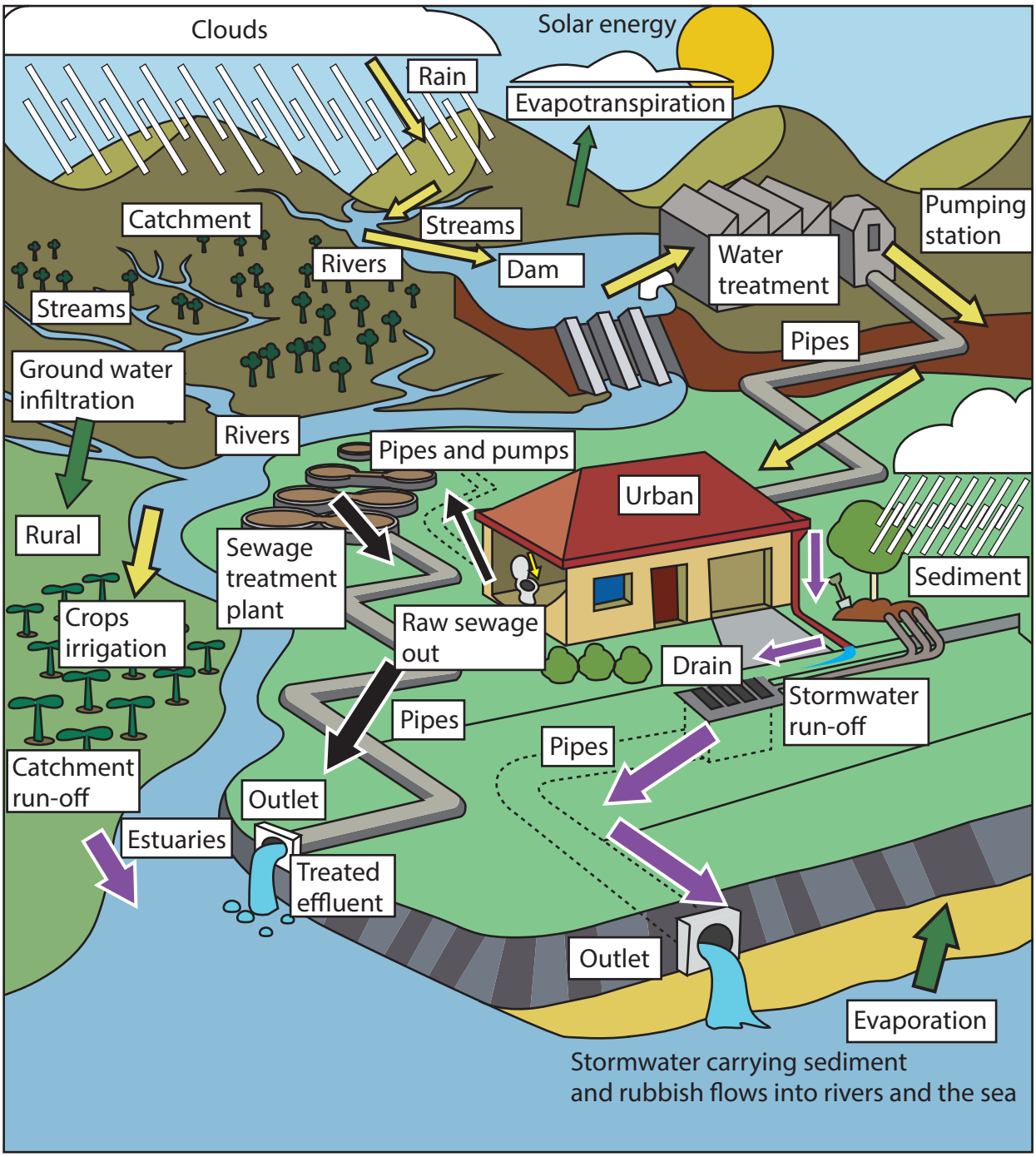
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Key

Fresh water

Storm water

Waste water

Figure 1a

Human activity in a drainage basin

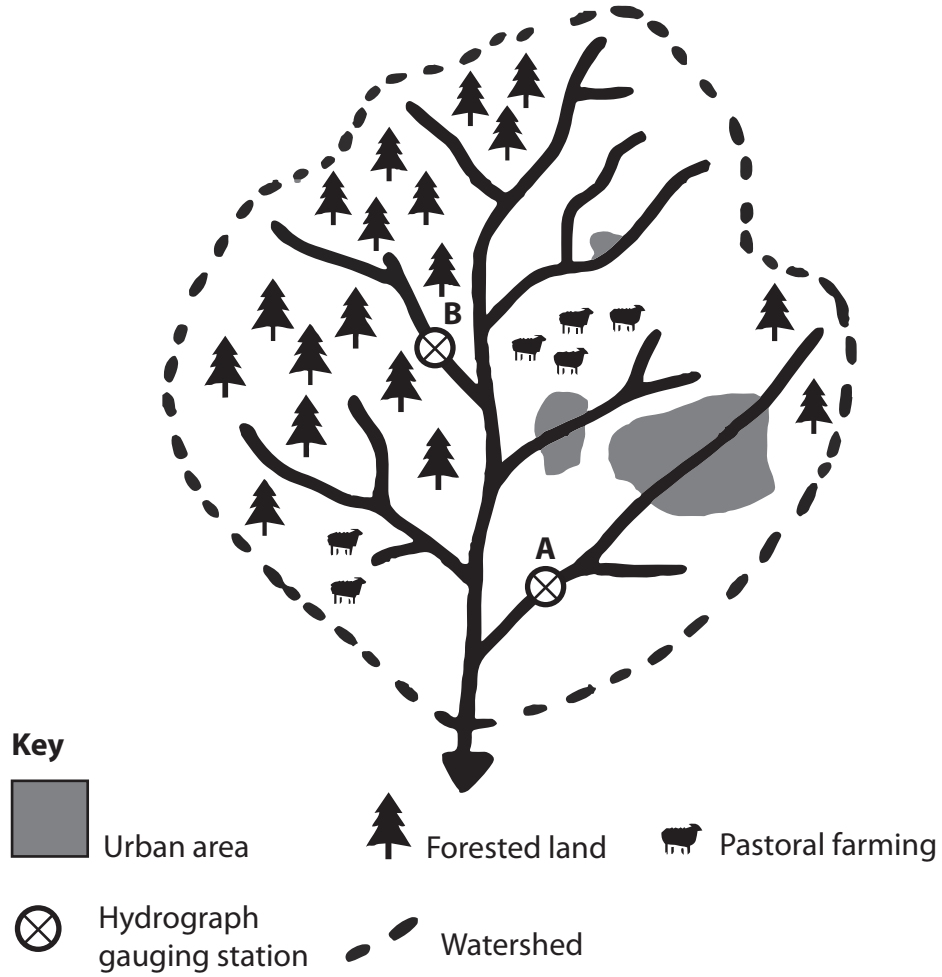
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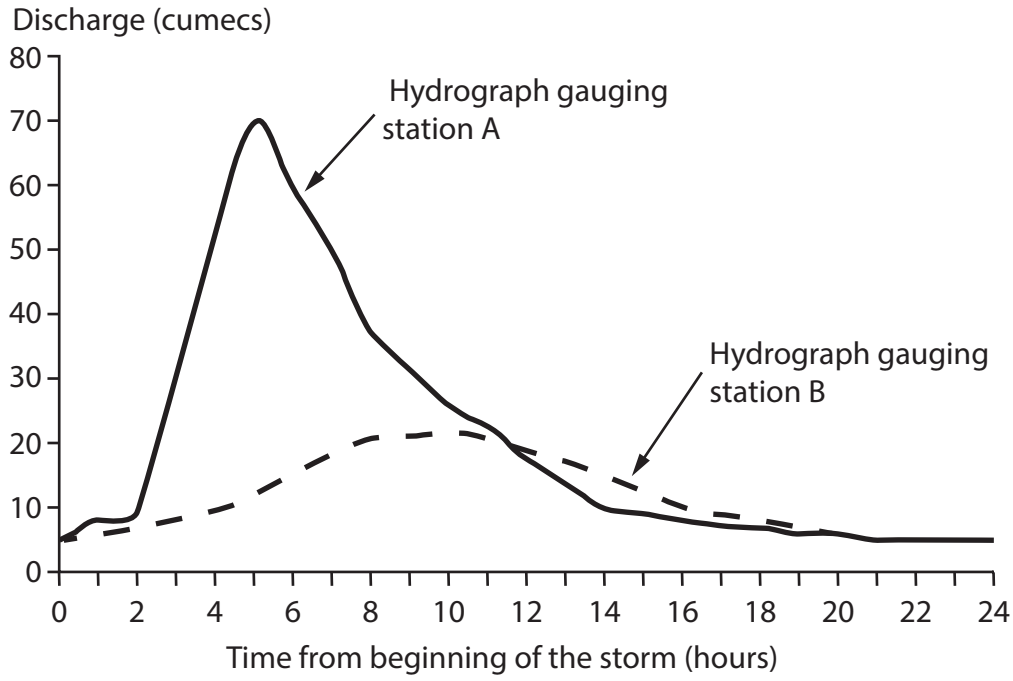


Figure 1b

Mass movement along Naches river valley in the USA

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Note: A hydrograph gauging station is where river discharge is measured.

Figure 1c

Information about a drainage basin

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The value of coral reefs

Coral reefs have a value of $9.9 trillion USD globally and are relied upon by at least 500 million people.

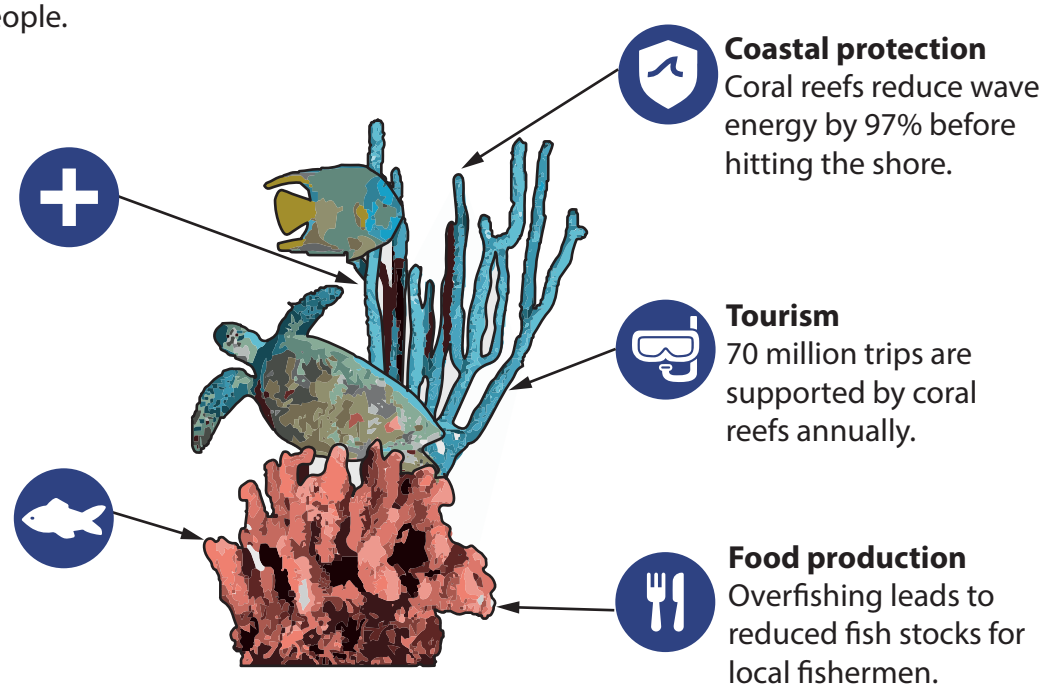
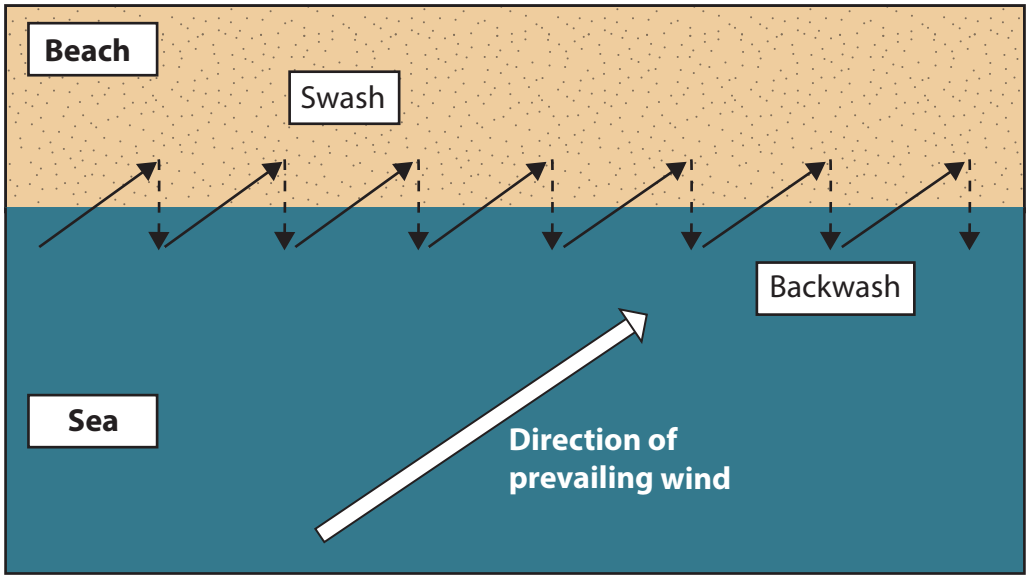


Figure 2a

Information on uses of coral reefs

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Key

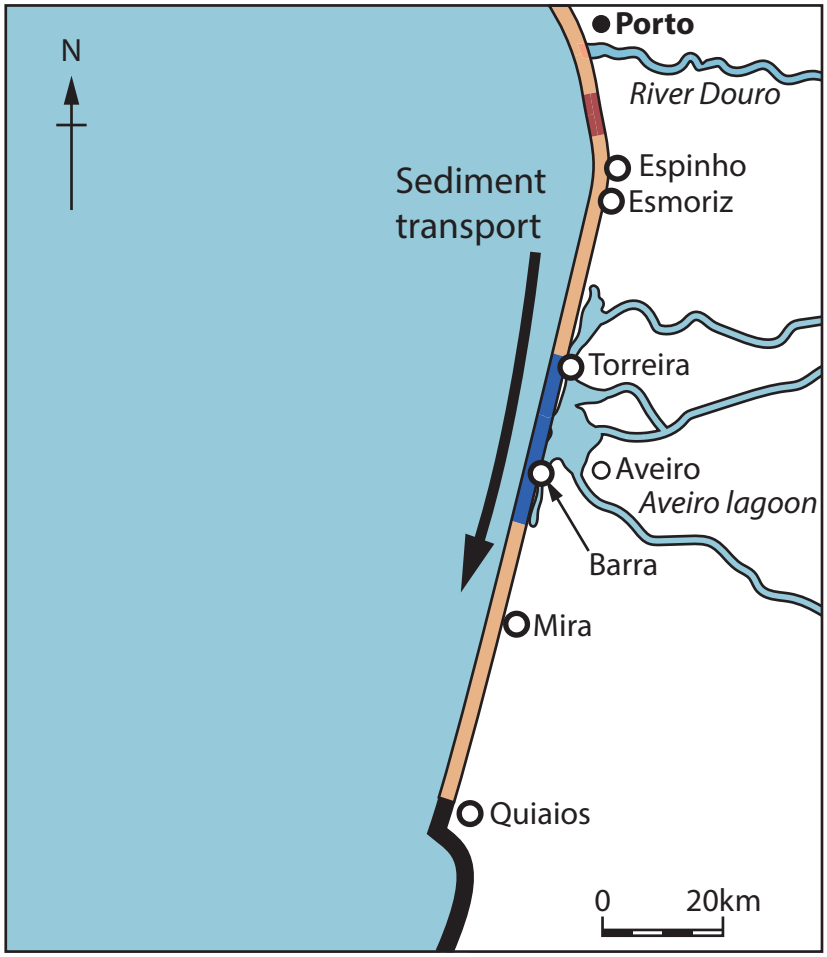
Beach

Sea

Figure 2b

Coastal transportation process

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Hard engineering: rock groyne in Espinho



Soft engineering: area of beach replenishment north of Espinho

Coastal management type

Key

- Hard engineering: groynes and sea walls
- Soft engineering: beach replenishment
- Soft engineering: beach replenishment and sand dune

Figure 2c

Information about a coastal management plan on a coastline in Portugal

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Note: Hurricanes are a type of tropical cyclone

Figure 3a

Information for people living in areas at risk of tropical cyclones in the USA

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Figure 3b

Port au Prince, Haiti, after the 2010 earthquake

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Eruption	Information
Anak Krakatau, Indonesia 2018  	• Triggered a tsunami. • 14,059 people injured. • 429 deaths. • Destroyed 2,752 houses and 510 ships. • Eruption reduced the volcano's height from 338 to 100m.
Volcán de Fuego, Guatemala 2018  	• 190 deaths. • 4,000 people evacuated. • Pyroclastic flows hit several towns and villages and blocked transport routes. • Ash reached the capital, Guatemala City, and closed the international airport.

Figure 3c

Information on two volcanic eruptions

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- Annotated photographs
- Newspaper articles
- Amount of rainfall
- River velocity
- River width
- River management plan

Figure 4a

Selected data collection methods

Measurement	River velocity (m/s)
1	1.2
2	2.0
3	1.4
4	1.2
5	1.0

Figure 4b

Data on river velocity at Site 2 (of 2)

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	Pebble shape	Percentage (%)
	Very angular	5
	Angular	10
	Sub-angular	35
	Sub-rounded	25
	Rounded	15
	Very-rounded	10

Figure 4c

Data collected on pebble shape (100 pebbles)

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- Annotated photographs
- Newspaper articles
- Beach gradient
- Pebble size
- Interviews with local residents
- Coastal management plan

Figure 5a

Selected data collection methods

Pebble size (cm)	Pebble
8.1	1
6.5	2
7.6	3
12.3	4
8.6	5

Figure 5b

Extract of data on size of pebbles at Site 2 (of 2)

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	Pebble shape	Percentage (%)
	Very angular	5
	Angular	10
	Sub-angular	35
	Sub-rounded	25
	Rounded	15
	Very-rounded	10

Figure 5c

Data collected on pebble shape

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- Annotated photographs
- Newspaper articles
- Amount of rainfall
- Interviews with local people
- Data on wind speeds from live news feed
- Data on local views from a newspaper

Figure 6a

Selected data collection methods

Rainfall (mm)	Day
22	1
12	2
33	3
16	4
8	5

Figure 6b

Daily rainfall collected

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Question: How confident do you feel about knowing how to respond in the event of a tropical cyclone?	
Response	**Percentage (%)**
Very confident	5
Confident	10
Unsure	35
Very unsure	25
Didn't feel action was necessary	15
Don't know	10

Figure 6c

Results from a questionnaire of local residents on preparation for a tropical cyclone event

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