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CANDIDATE NAME

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GEOGRAPHY **0460/41**

Paper 4 Alternative to Coursework **October/November 2024**

1 hour 30 minutes

You must answer on the question paper.

You will need: Insert (enclosed)
Calculator
Protractor
Ruler

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- If additional space is needed, you should use the lined pages at the end of this booklet; the question number or numbers must be clearly shown.

INFORMATION

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [ ].
- The insert contains additional resources referred to in the questions.

LEDCs – Less Economically Developed Countries
MEDCs – More Economically Developed Countries

This document has **20** pages. Any blank pages are indicated.

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1 Students in a class in Foshan, China, did fieldwork at a large new commercial centre called Florentia Village. The centre attracts many visitors to the luxury shops which sell high-order comparison goods, has places to eat, entertainment facilities and Italian designed architecture, including fountains and large squares. Fig. 1.1 (Insert) shows part of Florentia Village.

The students wanted to investigate the following hypotheses:

Hypothesis 1: *People who travel further to Florentia Village go there less frequently*.

Hypothesis 2: *The reasons given by people who visit Florentia Village are in the same order of popularity regardless of the number of visits they had made in the previous 12 months.*

(a) To investigate the hypotheses, the students used a questionnaire with visitors to the shopping centre. This is shown in Fig. 1.2 (Insert).

(i) State **three** ways that Fig. 1.2 is a good questionnaire.

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[3]

(ii) Suggest **three** pieces of advice their teacher gave them about **using** a questionnaire with people who are shopping.

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[3]

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(b) The students plotted their results of question 1 from the questionnaire (*How many times have you visited Florentia Village in the previous 12 months?*) and question 2 from the questionnaire (*How far have you travelled to get to Florentia Village?*) on the scatter graph, Fig. 1.3.

(i) **Plot the following results** on Fig. 1.3. [2]

distance travelled (km)	number of visits in previous year
30	6
15	13

Relationship between distance travelled and number of visits to Florentia Village

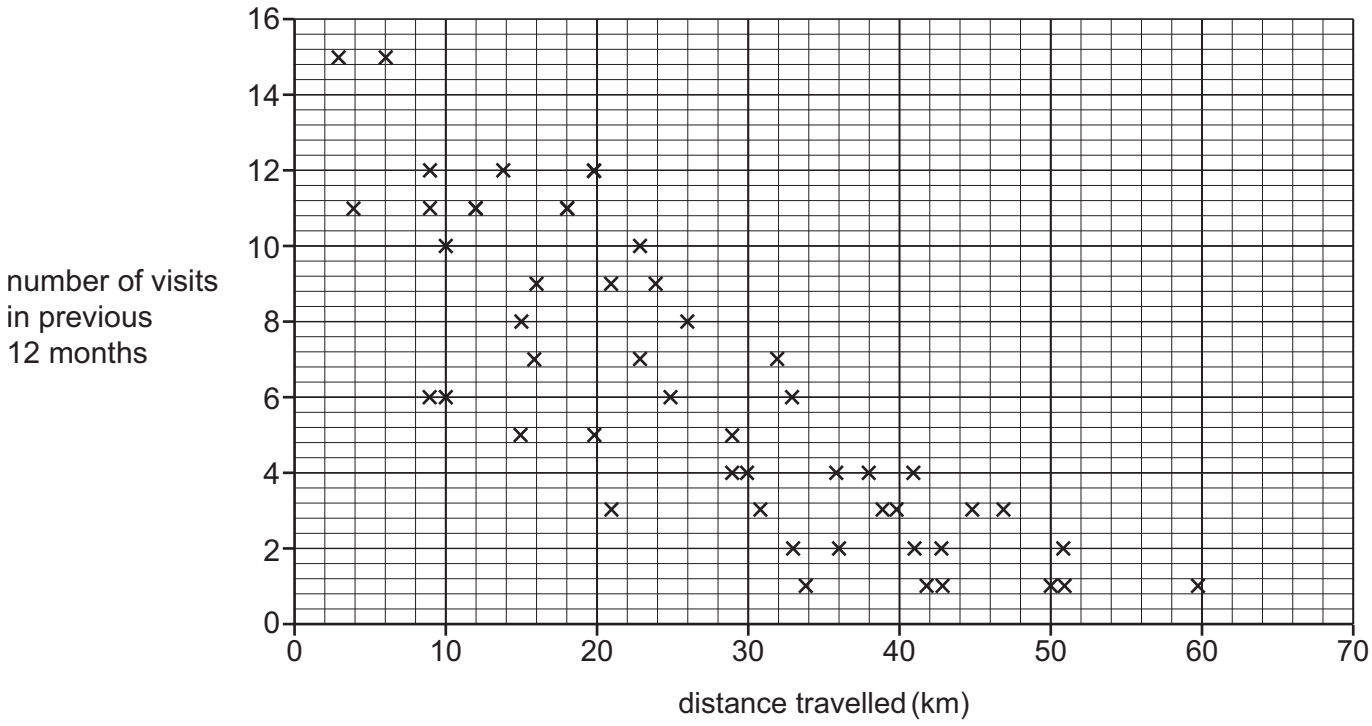

Fig. 1.3

(ii) To what extent do the students' results shown in Fig. 1.3 support **Hypothesis 1:** *People who travel further to Florentia Village go there less frequently*?
Do **not** use data in your answer.

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(iii) Suggest **one** reason why the answers to question 2 in the questionnaire (*How far have you travelled to get to Florentia Village?*) may be unreliable.

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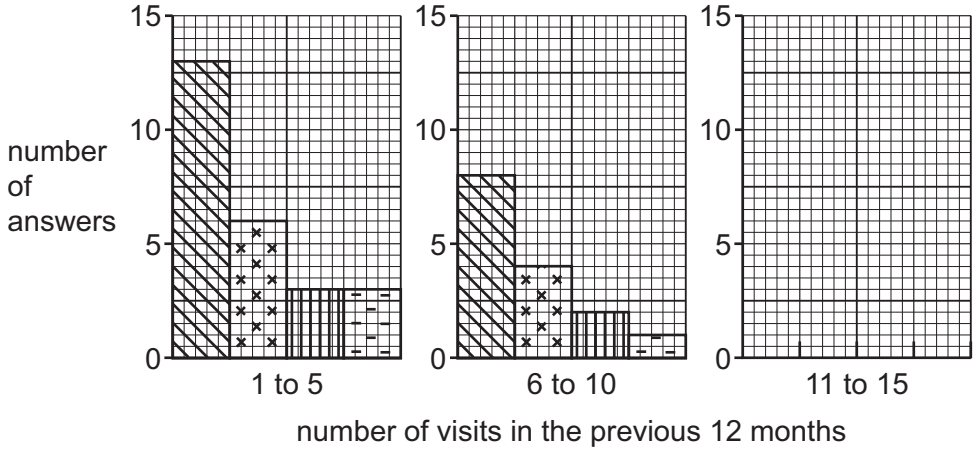
(c) To investigate **Hypothesis 2:** *The reasons given by people who visit Florentia Village are in the same order of popularity regardless of the number of visits they had made in the previous 12 months*, the students used the results from question 1 (*How many times have you visited Florentia Village in the previous twelve months?*) and question 3 in the questionnaire (*What is your main reason for visiting Florentia Village?*). Their results are shown in Table 1.1 (Insert).

(i) **Plot the results** for people who made from 11 to 15 visits on Fig. 1.4. [2]

How often people visit and the main reason for visiting Florentia Village



Key

main reason for visit

- to buy luxury comparison goods
- to eat in a restaurant
- to go to the entertainment centre
- to look at the architecture

Fig. 1.4

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(ii) The students decided that **Hypothesis 2**: *The reasons given by people who visit Florentia Village are in the same order of popularity regardless of the number of visits they had made in the previous 12 months* was **true**.
From Table 1.1 and Fig. 1.4, identify evidence that supports this decision and evidence that does not support it.

evidence that supports the decision

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evidence that does not support the decision

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[4]

(iii) Suggest **two** reasons why people go to commercial centres such as Florentia Village to buy luxury comparison goods.

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[2]

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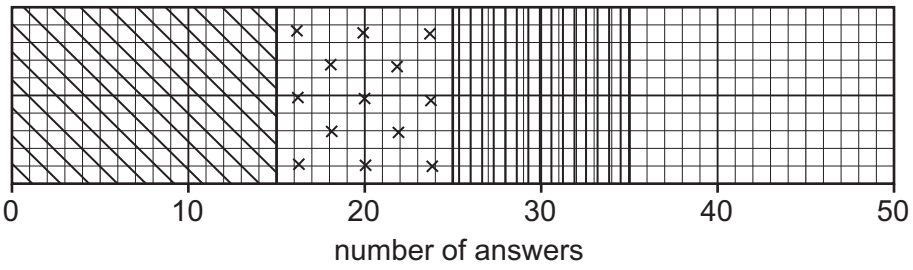
(d) To extend the fieldwork, the students asked questions 4 and 5 in the questionnaire shown in Fig. 1.2 (Insert).

(i) The results of question 4 (*What do you most like about visiting Florentia Village?*) are shown in Table 1.2 (Insert). **Plot the results** for 'traffic-free area for shopping' and 'high level of security' on Fig. 1.5. [2]

What do you like most about visiting Florentia Village?



Key

large variety of comparison shops

easy to get to by car

it is open in the evening

traffic-free area for shopping

high level of security

Fig. 1.5

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(ii) The results of question 5 (*What do you dislike about visiting Florentia Village?*) are shown in Table 1.3 (Insert). Use these results to **complete the pie graph** in Fig. 1.6. [2]

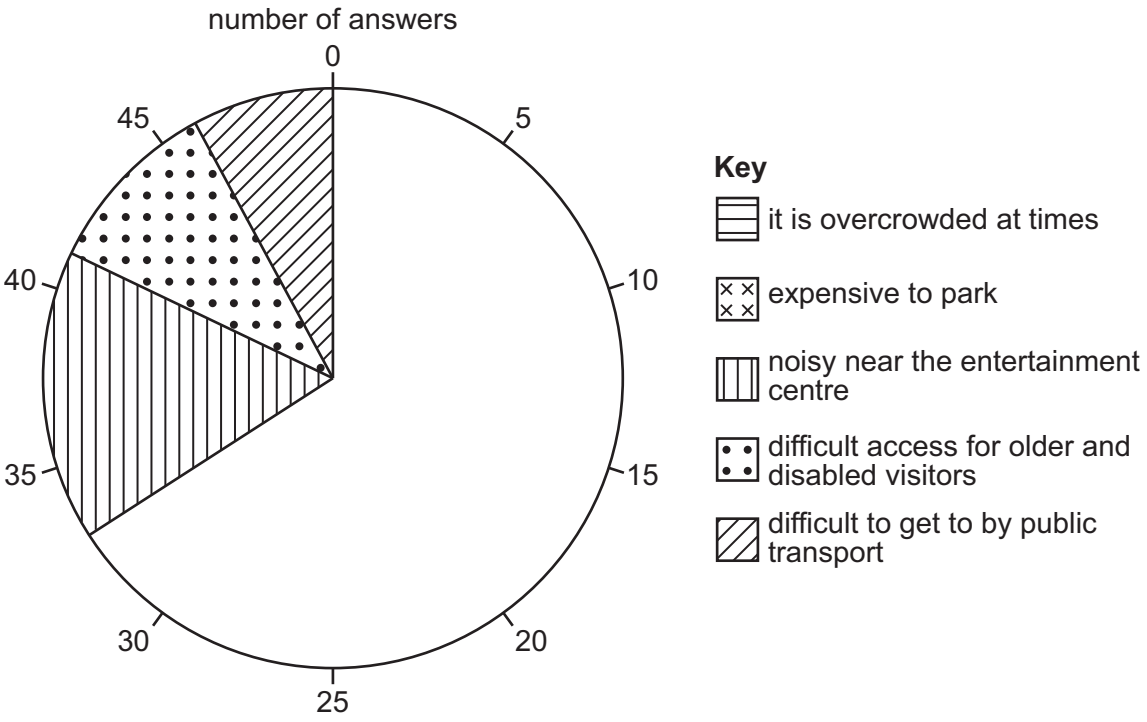

Fig. 1.6

(iii) The students thought about ways to improve the commercial centre to deal with the visitors' concerns shown in Table 1.3. Suggest different ways to solve the following problems.

difficult access for older and disabled visitors

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difficult to get to by public transport

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[2]

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(e) Some students did a pedestrian count as part of their fieldwork at the commercial centre.

(i) Suggest a hypothesis they could investigate using their pedestrian count.

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(ii) Describe how they would plan and do the pedestrian count.

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2 Students did fieldwork on a beach near to their school. They investigated different topics including wave frequency and longshore drift. They also wanted to find out what people thought about the defences built to protect the local coastline.

(a) Before they began their fieldwork, the students discussed with their teacher some possible hazards they may come across and how to stay safe. They used a scale from 1 to 5 to make their decisions about risk. Their decisions are shown in Table 2.1.

Table 2.1

Risk assessment of possible hazards

description of the hazard	**chance of the hazard happening** 1 (little chance) to 5 (greatest chance)	**how dangerous the hazard would be** 1 (little danger) to 5 (very dangerous)	**risk from the hazard** (chance of it happening x how severe the impacts would be)
slipping or falling on wet rocks on the beach	4	2	8
being hit or buried by the cliff collapsing	2	5	10
drowning in the sea	1	5	5
hypothermia from getting cold and wet	3	4	12
getting injured by sharp pebbles on the beach	5	3	15
getting lost or separated from other students	2	3	6

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(i) The students ranked the hazards based on their decisions. Use the information in Table 2.1 to complete the ranking. [1]

	hazard
greatest risk ↓	getting injured by sharp pebbles on the beach
	hypothermia from getting cold and wet
	....
	....
	....
least risk	drowning in the sea

(ii) Suggest different ways that the students might avoid each of the following hazards during fieldwork.

being hit or buried by the cliff collapsing

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hypothermia from getting cold and wet

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getting injured by sharp pebbles on the beach

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(b) First, the students measured wave frequency at the beach. Their method is described in Fig. 2.1 (Insert).

(i) Which **one** of the following is the correct definition of wave frequency?
Tick (✓) your answer. [1]

	tick (✓)
the distance between one breaking wave and the next breaking wave	
the energy each wave uses to erode the beach as it breaks	
the height of each wave which hits the beach	
the number of waves which break on the beach in a specific period of time	

(ii) Suggest why the students

used a ranging pole

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repeated the task three times along the beach.

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One student tested the following hypotheses.

Hypothesis 1: *Groynes reduce the movement of material along the beach caused by longshore drift*.

Hypothesis 2: *Coastal protection is important in the local area*.

(c) The process of longshore drift is shown in Fig. 2.2 (Insert).

(i) Which **one** of the following do the lines labelled **X** on Fig. 2.2 show?
Tick (✓) your answer. [1]

	tick (✓)
depth of the sea bed	
waves approaching the beach	
direction of the tide	
pebbles on the sea bed	

(ii) The lines labelled **Y** on Fig. 2.2 show the movement of water pulling pebbles down the beach slope. What is this process called?

..... [1]

(d) To test **Hypothesis 1:** *Groynes reduce the movement of material along the beach caused by longshore drift*, the students measured the height of each groyne above the beach. Their method is shown in Fig. 2.3 (Insert).

(i) The students' results are shown in Table 2.2 (Insert). Use these results to **plot the average height difference** between the top of groyne **D** and the beach on both the west and east sides on Fig. 2.4. [2]

Results of students' measurements

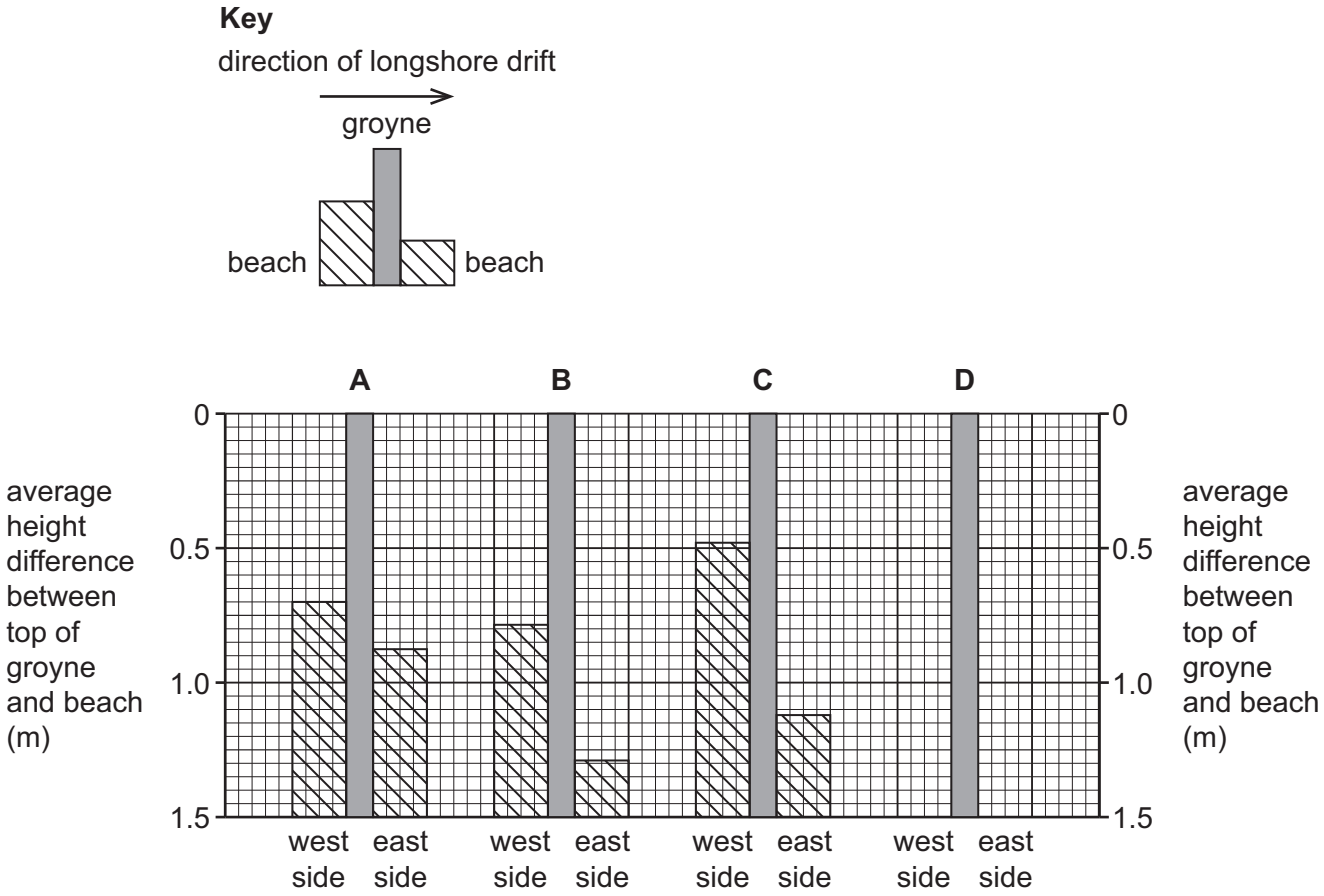

Fig. 2.4

(ii) What conclusion would the students make about **Hypothesis 1:** *Groynes reduce the movement of material along the beach caused by longshore drift*? Support your answer with evidence from Fig. 2.4 and Table 2.2.

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(iii) Suggest **two** ways that the students could have improved the reliability of their measurements.

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(iv) Describe **one** other fieldwork method to measure longshore drift along a beach.

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(e) To investigate **Hypothesis 2:** *Coastal protection is important in the local area*, the students interviewed local residents.

(i) The results of three interview questions are shown in Table 2.3 (Insert). Use the results to question 3 '*If you think that coastal defences are needed, explain why*' to **complete Fig. 2.5**. [1]

Why coastal defences are needed

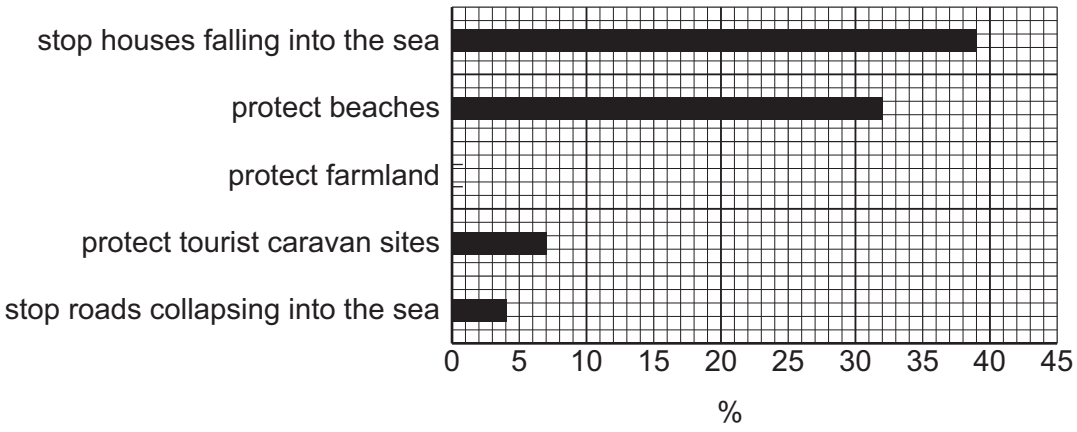

Fig. 2.5

(ii) The students' conclusion was that **Hypothesis 2:** *Coastal protection is important in the local area* was **true**. Use evidence from the three questions shown in Table 2.3 to support this conclusion.

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(f) At the end of their interviews, the students asked local residents who they thought should pay for any new coastal defences. Their answers to question 4 are shown in Table 2.4 (Insert). Suggest why the answers to this question might conflict with the opinions of local residents that coastal defences are needed.

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(g) To extend their fieldwork, one student investigated the different coastal defences used in the local area. Describe how they might do this fieldwork. Do **not** refer to a questionnaire or interview.

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Additional pages

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