Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **February/March 2024**

INSERT **1 hour 30 minutes**

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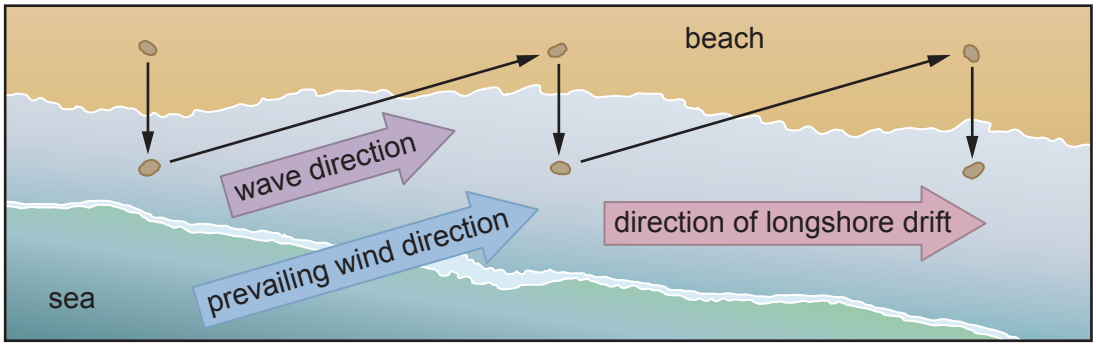
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Fig. 1.1 for Question 1

Longshore drift



Key

movement of pebble

Fig. 1.2 for Question 1

Students' fieldwork method

A fieldwork method to test Hypothesis 1

- Use brightly coloured waterproof paint to paint 50 pebbles of different sizes and shapes.
- Select a clear section of beach avoiding obstacles and groynes.
- Put the pebbles in the zone of swash and backwash and mark the position of the pebbles with a ranging pole.
- After one hour find the pebbles and work out the direction and distance that they have moved from the ranging pole.
- Collect the pebbles to use them again. Replace any missing pebbles with spare ones.
- Repeat the method three times.

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Table 1.1 for Question 1

Results of the students' measurements

distance moved east from ranging pole (m)	total number of pebbles found in the three tests	average length of long axis of pebbles (cm)
0.1 to 10	4	8.5
10.1 to 20	15	7.2
20.1 to 30	24	6.6
30.1 to 40	33	5.7
40.1 to 50	**21**	**5.5**
50.1 to 60	17	5.1
60.1 to 70	13	4.3
70.1 to 80	9	4.0
more than 80	3	3.4

Fig. 1.4 for Question 1

A student's fieldwork notes

How we investigated longshore drift

We put a cork in the sea and marked the starting position on the beach. We then timed five minutes with the stopwatch and marked on the beach the cork's finishing position. We then measured the distance between the starting and finishing positions of the cork and made a note of the direction the cork had moved. We did the test once.

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Fig. 1.5 for Question 1

Groynes



Fig. 1.6 for Question 1

Gabions



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Fig. 1.7 for Question 1

Revetments



Fig. 1.8 for Question 1

Sea wall



Fig. 1.9 for Question 1

Students' bi-polar survey recording form

Coastal protection method:

gabions groynes revetments sea wall (circle the method)

disadvantage	–2	–1	0	+1	+2	advantage
unattractive						attractive
does not protect the land						protects the land
does not stop erosion by waves						stops all erosion by waves
not safe to walk on						safe to walk on
stops access to the beach						allows access to the beach
expensive to construct						cheap to construct
construction causes lots of disturbance						construction causes little disturbance

total score .....

Table 1.2 for Question 1

Results of the students' bi-polar survey

feature being assessed	students' score			
	gabions	groynes	revetments	sea wall
attractiveness	**–1**	+1	–1	–2
protection of land behind beach	+2	–1	+1	+2
stop wave erosion	+2	–1	+1	+2
safety walking on it	–1	–1	–2	–1
access to the beach	0	+2	–1	–2
construction costs	–1	+2	+1	–2
disturbance during construction	0	+2	0	–2

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Table 1.3 for Question 1

Methods used to protect the natural environment

method	number counted
boardwalks	5
campsites	2
car parks	2
fences	3
information boards	2
litter bins	**8**
signposted footpaths	9
visitor information centres	1

Fig. 2.1 for Question 2

Students' questionnaire for workers

Worker questionnaire

I am a student at the local college. Please answer the following questions for my Geography fieldwork investigation.

1 In which part of the urban area do you live?

- ☐ Almond
- ☐ City Centre
- ☐ Craigentinny and Duddingston
- ☐ Forth
- ☐ Inverleith
- ☐ Leith
- ☐ Liberton and Gilmerton
- ☐ Pentlands
- ☐ Portobello and Craigmillar
- ☐ South Central
- ☐ South West
- ☐ Western Edinburgh

2 What is the main advantage of living in your area?

.....

.....

3 What is the main disadvantage of living in your area?

.....

.....

Thank you for your help.

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Fig. 2.2 for Question 2

Part of the students' recording sheet

Question 1: In which part of the urban area do you live?

part of the urban area	workers who develop new products	workers who make the products
Almond	𝍸 𝍸 ///	𝍸 //
City Centre	𝍸 ///	///
Craigentinny and Duddingston	𝍸	𝍸 /
Forth	𝍸	𝍸 𝍸 ///
Inverleith	𝍸 𝍸 𝍸 /	////
Leith	𝍸 𝍸 /	𝍸 𝍸

Table 2.1 for Question 2

Results of Question 1 in the questionnaire

In which part of the urban area do you live?

part of the urban area	workers who develop new products	workers who make the products
Almond	**13**	7
City Centre	8	3
Craigentinny and Duddingston	5	6
Forth	**5**	13
Inverleith	16	4
Leith	11	10
Liberton and Gilmerton	2	15
Pentlands	12	8
Portobello and Craigmillar	3	14
South Central	8	1
South West	4	11
Western Edinburgh	13	8
total	100	100

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Table 2.2 for Question 2

Results of Question 2 in the questionnaire

What is the main advantage of living in your area?

advantage	workers who develop new products	workers who make the products
safe area with little violence	40	14
local countryside areas to visit	26	3
friendly people and a community spirit	10	11
affordable house prices and rents	9	35
convenient local services such as clinics and bus routes	8	**18**
different types of shops nearby	7	**19**
total	100	100

Table 2.3 for Question 2

Results of Question 3 in the questionnaire

What is the main disadvantage of living in your area?

disadvantage	workers who develop new products	workers who make the products
congested roads on the journeys to and from work	50	6
overcrowded trains on the journeys to and from work	35	7
noise from traffic and aircraft	9	12
social disorder e.g. gangs, graffiti, vandalism	3	34
no open spaces for recreation	2	**23**
poor schools	1	**18**
total	100	100

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