



MINISTRY OF EDUCATION, SINGAPORE
in collaboration with
CAMBRIDGE ASSESSMENT INTERNATIONAL EDUCATION
General Certificate of Education Advanced Level
Higher 2

GEOGRAPHY

9173/02

Paper 2

For examination from 2024

SPECIMEN INSERT

3 hours

READ THESE INSTRUCTIONS FIRST

This Insert contains all the Resources referred to in the questions.

This document consists of **10** printed pages.



Singapore Examinations and Assessment Board



Cambridge Assessment
International Education

Resource 1 for Question 1

Map of Bishan-AMK Park, Singapore showing sites A and B on the Kallang River



Key

- | | |
|--|--|
|  fast food restaurant |  residential area |
|  paths for cyclists and walkers |  park |
|  river |  mixed commercial/residential and other |

Resource 2 for Question 1
Photographs of sites A and B

Site A



Site B



Resource 3 for Question 1

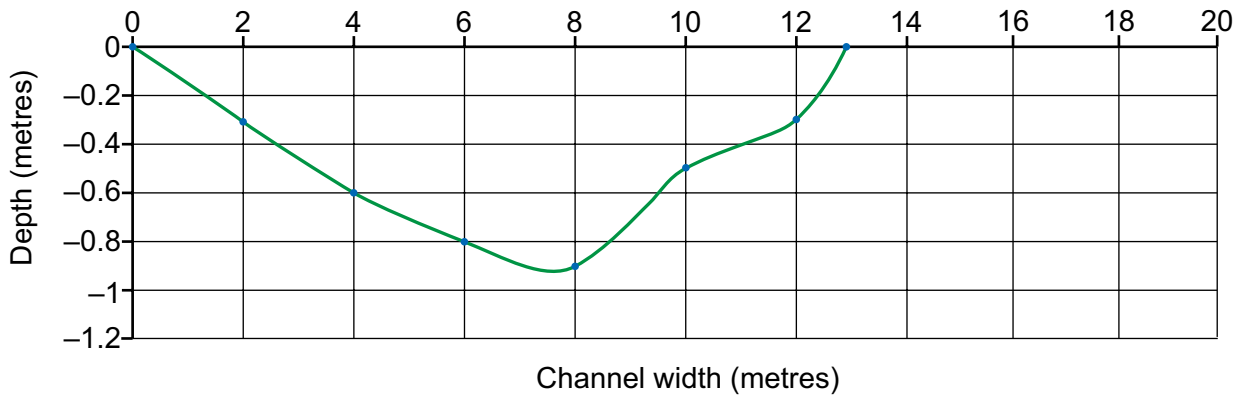
Data collection sheet used by the students

Location	Site B			
	distance travelled by orange (m)	time taken (seconds)	river velocity (metres/sec)	comments
Reading 1	5	70	0.071	Leaf and twigs
Reading 2	5	69	0.073	At the edge
Reading 3	5	61	0.082	Near the middle
		Average velocity. (AV)	0.075	
		Velocity adjusted for depth (AV × 0.6)	0.045	

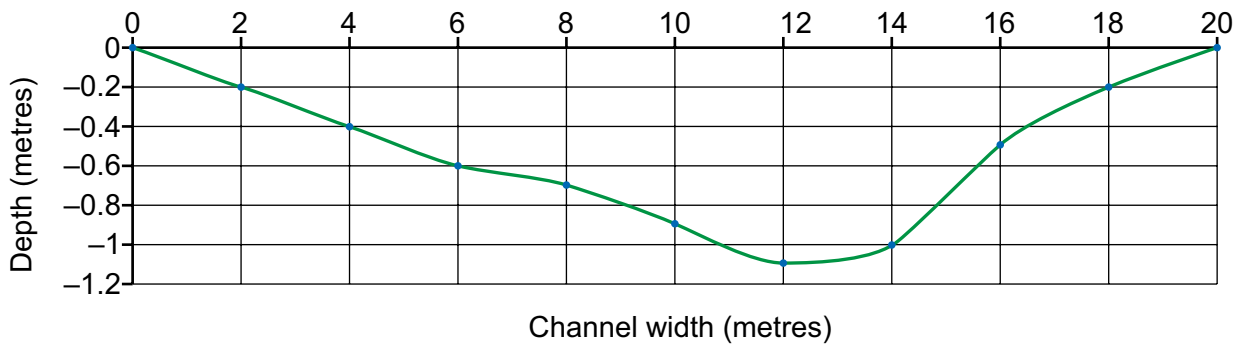
Resource 4 for Question 1

Findings of the investigation at sites A and B

Site A: Channel Cross Section



Site B: Channel Cross Section

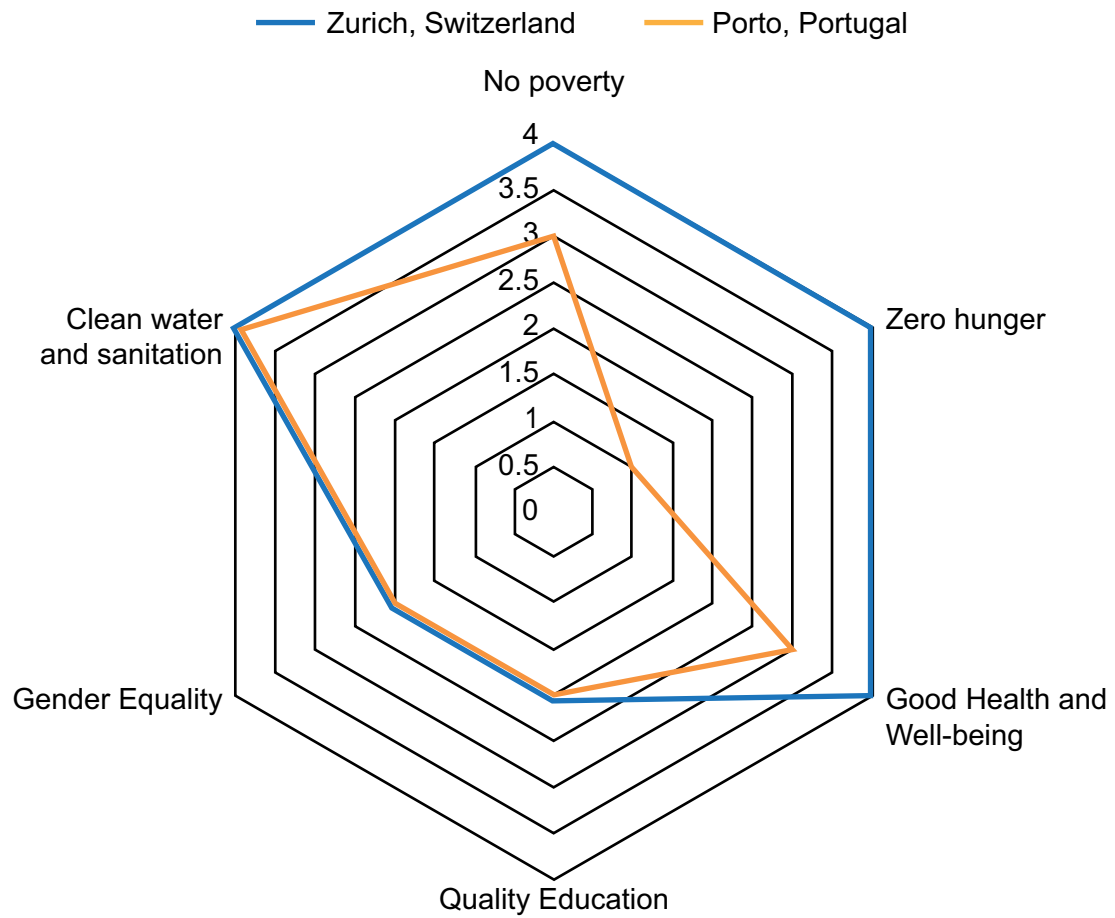


	cross sectional area (m ²)	wetted perimeter * (m)	hydraulic radius** = area/wetted perimeter
site A	6.65	15.07	0.44
site B	10.80	21.07	0.51

* wetted perimeter is the length of the perimeter of a river channel cross section which is in contact with the water.

** hydraulic radius is a measure of the efficiency of a river channel. The larger the hydraulic radius, the more efficient the channel is at moving water.

Resource 5 for Question 2

Progress in achieving sustainable urban development in two cities,
Zurich, Switzerland and Porto, Portugal**Key**

Progress towards the SDG

- 4 SDG achieved
- 3 Challenges remain in achieving the SDG
- 2 Significant challenges remain
- 1 Major challenges remain

Resource 6 for Question 2

Cartoon about challenges related to achieving Sustainable Development Goal 6



Resource 7A for Question 2

Water collection in a slum in Nairobi, Kenya



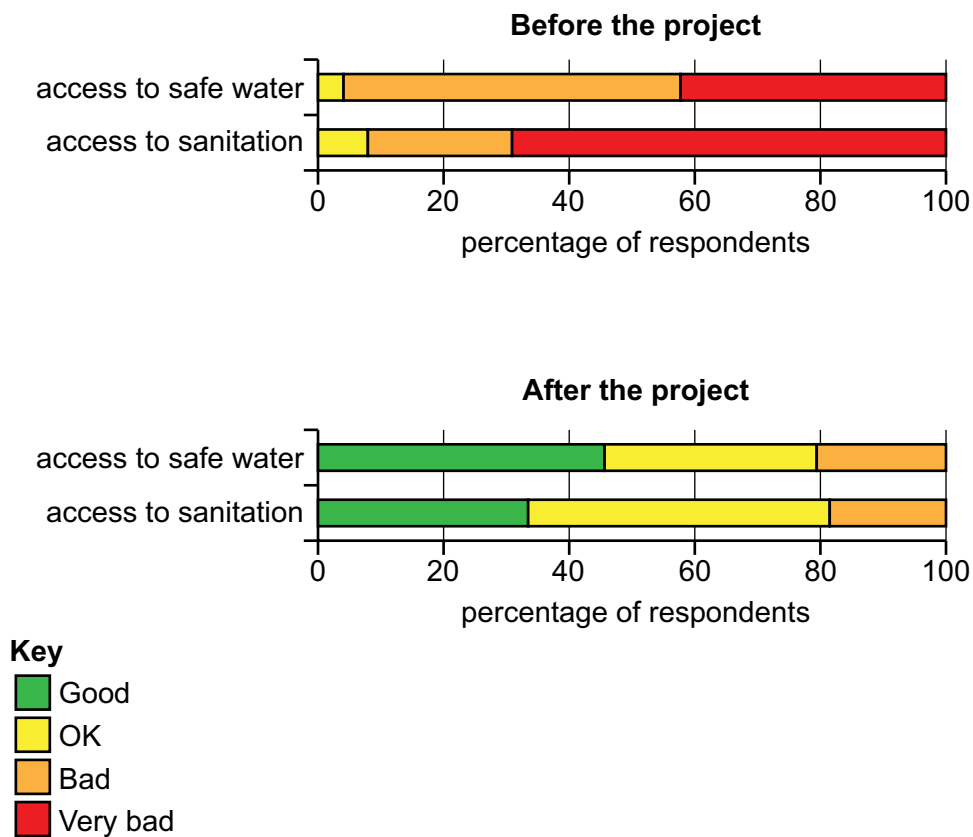
Resource 7B for Question 2

Waste management in a slum in Nairobi, Kenya



Resource 8 for Question 2

Survey results before and after the completion of an improvement project in a slum in Nairobi, Kenya



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