

Name:		Class:	
Centre Number:		Index Number:	



DUNMAN HIGH SCHOOL

PRELIMINARY EXAMINATION

Year 6

HIGHER 2 GEOGRAPHY

9173/02

PAPER 2

Friday

18 Sept 2025

3 hours

Additional materials: Insert

Section A

Cluster 4 Fieldwork

- 1 (a) Suggest a hypothesis and explain why it is appropriate for the investigation. [4]**

Award 1 mark for a valid hypothesis suggested. Award 1 mark for each explanation of why the hypothesis is appropriate, to a maximum of 3 marks.

Possible responses include:

- The **suggested hypothesis** is "Along Sungei Bedok, residential land use is subject to the highest flood risk compared to other land uses". [1 mark]
- The hypothesis is crafted at a **suitable scale** because it is focused only on a stretch of Sungei Bedok, making it manageable for 10 students to collect field data within the available time. [1 mark]
- The hypothesis is **clearly defined** as both the location (Sungei Bedok) and the variable under study (flood risk in residential areas relative to other land uses) are explicitly stated, avoiding ambiguity. [1 mark]
- The hypothesis is **researchable/measurable** as flood risk can be quantified using the bi-polar survey indicators as well as calculations of channel capacity, which allow comparisons across land uses. [1 mark]

- (b) Explain why it was important for students to go on a recce trip before the actual fieldwork. [5]**

Award 1 mark for each explanation of the importance of a recce trip, to a maximum of 5 marks. Award a maximum of 1 additional mark for further development of each explanation, where applicable.

Possible responses include:

- As part of **risk assessment**, students could identify potential hazards along the river (e.g. steep canal banks, traffic along Upper Changi Road), which helps them put in place safety measures before the actual investigation. [1 mark]
- By visiting in advance, they could determine which sites along Sungei Bedok were accessible for data collection and which ones required them to write in to ask permission for **access**. [1 mark]

- (c) Explain how features shown in Resource 2 could mitigate flood risk. [4]

Award 1 mark for each explanation of how river features could mitigate flood risk, to a maximum of 4 marks. Award a maximum of 1 additional mark for further development of each explanation, where applicable.

Possible responses include:

- The river has a **wide** cross-section, which increases its capacity to hold more stormwater before overflowing. [1 mark]
- The **smooth, unvegetated** riverbed reduces friction and obstacles, enabling water to drain away quickly without being slowed by vegetation. [1 mark]

- (d) With reference to Resource 2, describe how bankfull depth and width can be measured accurately. [5]

Award 1 mark for each explanation of how bankfull depth and width can be measured, to a maximum of 5 marks. Award a maximum of 1 additional mark for further development of each explanation, where applicable.

Possible responses include:

- Students can use **appropriate equipment** such as a long enough measuring tape or a trundle wheel to span the width of Sungei Bedok, and a ranging pole long enough to reach the channel bed from bankfull level. [1 mark]
- When measuring bankfull width, students can stretch the long measuring tape in a **level and taut** manner, across the channel from one bankfull mark to the other. [1 mark]

- (e) With reference to Resources 1 and 2, describe the risks faced by the students during data collection. [4]

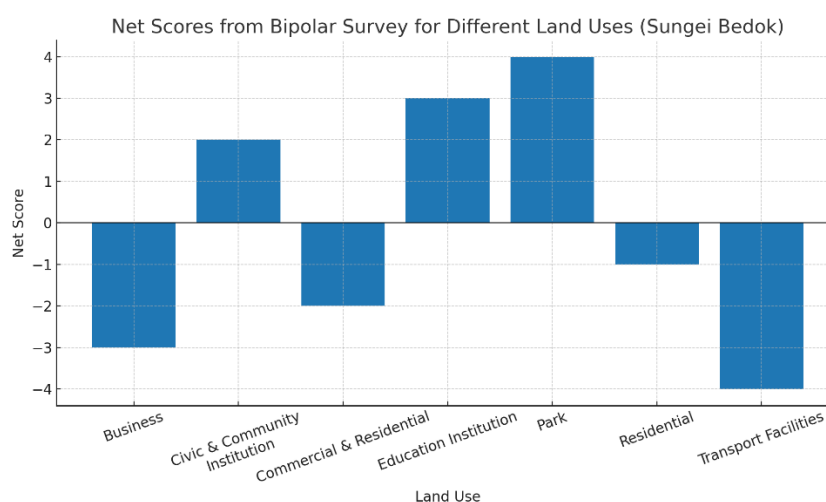
Award 1 mark for each description of risk, whether potential or actual to a maximum of 4 marks. Award a maximum of 1 additional mark for further development of each description, where applicable.

Possible responses include:

- Traffic hazards seen in R1 could pose risk of accidents to students as students have to cross Upper Changi Road to access the entire stretch of Sungei Bedok for their survey. [1 mark]
- The absence of shelter along the canal meant students faced risks to being directly exposed to adverse weather, including heavy rain or lightning. [1 mark]

- (f) Using Resource 4, sketch a graph to present the 'net score' for each land use. [4]

Award 1 mark for title, 1 mark for clearly labelled axes, 2 marks for complete and proportionate sketch which presents net score of each land use.



- (g) Suggest **two** types of additional data the students could collect to strengthen their investigation. [4]

Award 1 mark for each suggested data type, up to a maximum of 2 marks. Award 1 mark for each explanation of how data strengthens investigation, up to a maximum of 2 marks.

Possible responses include:

- Another piece of data is **perception or experience of flood risk** of people who live, work or frequent the different land uses in the Sungei Bedok area. [1 mark]
- This strengthens the investigation because it provides first-hand insights into how flood events have affected different land uses, complementing the students' own perceptions and their own field measurements. [1 mark]

- (h) Evaluate the students' investigation of flood risk across land uses along Sungei Bedok. [10]

Award marks based on Generic Level Descriptors (see below).

Generic Level Descriptors for H2 Fieldwork Evaluative Questions		
Level	Marks	Descriptors
3	9–10	Evaluation is analytical and coherent. Response addresses the question and demonstrates good knowledge and understanding of fieldwork methods relevant to the given context.
2	5–8	Evaluation is mostly analytical and coherent. Weaker responses in this level will have evaluation that is broadly analytical and generally coherent. Response generally addresses the question and demonstrates adequate knowledge and understanding of fieldwork methods relevant to the given context.
1	1–4	Response is descriptive with limited or no analysis and evaluation. Response is fragmented and lacks clarity. Response lacks focus on the question and may be largely irrelevant to it. Response shows basic knowledge and understanding of fieldwork methods. Response has some, though limited, relevance to the given context.
0	0	No creditworthy response

Candidates could approach the evaluation by noting that validity was supported through methods aligned with flood risk, though some sites were less relevant. Candidates could approach reliability by recognising issues with subjective bi-polar scoring, limited sampling, and single channel measurements. Candidates could approach accuracy by highlighting one-off readings, human error, and flawed indicators, suggesting improvements with stratified sampling, repeated measurements, and secondary data.

Section B

Cluster 3 Sustainable Future and Climate Change

2

- (a) Describe the relationship between development and sustainability of the countries shown in Resource 5. [4]

Award 1 mark for each description of the relationship, with relevant data support, to a maximum of 4 marks.

Award a maximum of 1 additional mark for further development of each description, where applicable.

General relationship: With higher level of development, sustainability decreases.

Strong relationship: Countries with very high HDIs are unsustainable; low HDIs very sustainable.

Weaker relationship: moderate and high HDIs – larger range of sustainability

- (b)** With reference to Resource 5, explain the possible challenges for the countries, with very high development and low development, in achieving sustainable urban development. [5]

Award 1m for explanation of each challenge to a maximum of 4 marks.

Award a maximum of 1 additional mark for further development of each explanation, where applicable.

Award a maximum of 2 marks for explanation of challenge for either the countries with very high development or low development.

Very high human development

Environmental integrity hard to achieve: huge demands placed on the natural environment to maintain present standards of living equated with high HDI and high EF ie high level of development (**economic**) and affluence (**socio-economic**) drive high demand for fresh resources and waste absorption [1] large amount of waste especially carbon emissions due to energy intensive services sector and economic production and affluent lifestyles and non-hazardous solid waste due to 'use & discard mentality' [additional 1m]

- (c)** With reference to Resources 6A, 6B and 6C, describe the performance of the slum settlements as shown by the indicators of the slum deprivation index. [4]

Award 1 mark for each description, with relevant data support, to a maximum of 4 marks.

Award a maximum of 2 marks when only one or two of the three indicators are described.

By settlement:

Idi Araba and Ijora (must be named) are the only slums that are the least deprived for all the three indicators: 0-0.49 (less deprived) [1]

By indicator: Out of 16 slums:

'Sanitation' has the best performance – 11 are 'less deprived' and only 2 'highly deprived' [1]

'Dwellings' have the worst performance – 8 'highly deprived' and only 6 'less deprived' [1]

- (d)** With reference to Resource 7, explain the issues of deprivation the slum residents of Oko-Baba and Abule Ila face. [6]

Award 1m for explanation of each challenge to a maximum of 5 marks.

Award a maximum of 1 additional mark for further development of each explanation, where applicable

- Residents will face many deprivation issues as the performance for the typical slum settlement is ranked 'highly deprived' for all 3 indicators eg lack of sanitation and waste disposal due to inadequate infrastructure. Highly deprived dwellings are also an issue with **poorly ventilated living spaces, poor housing materials and high housing density.** There is easy spread of infections and the lack of natural lighting due to the closely packed buildings make it challenging and hazardous to navigate within the settlement.

- (e)** Describe the distribution of mean annual global sea level change shown in Resource 8. [5]

Award 1 mark for each description, with relevant data support, to a maximum of 4 marks.

Award a maximum of 2 marks for description of either sea level rise or sea level fall only.

- All the oceans recorded sea level change of both rise and fall [1]
- The Pacific Atlantic, and the Southern oceans see sea level rise across the whole range of values [1]

But there's an uneven distribution of the sea level change in the major oceans:

Sea level rise distribution::

- Pacific Ocean: high rise on the western side of 4-6mm/yr and even higher rise 9-12mm/yr in the tropics but just 0-3mm/yr on the eastern Pacific [1]
- Arctic Ocean sees the smallest rise of just 0-3mm/yr [1]

Sea level fall distribution”

Pacific Ocean: large continuous area of decline on the eastern Pacific – 0 to -4mm/yr [1]

(f) With reference to Resource 9, explain the suitability of the proposed strategies to manage sea level rise in the South Pacific islands. [6]

Award 1m for explanation of suitability of proposed strategies to a maximum of 6 marks.

Indicative content

Advantages: low-cost, easy and fast to construct (immediacy), reliable, self-maintaining (sustainable)

Disadvantages: high cost (construction & operation), takes time to construct, unreliable

Reliability (only for hard structures)

- B: the sea wall prevents the sea from reaching the land and it's reliable as it is made of durable materials (+) [1]

Cost

- C, D & E are relatively low-cost strategies as D doesn't involve expensive construction materials or specialised equipment or technologies or minimal cost (C & E) – important consideration as the S Pacific islands are low-income countries (+) [1]

Immediacy

- A & E cannot offer immediate protection as they require a longer time period especially E as it takes a long time for the mangroves to establish & A needs time for reclaimed land to be structurally sound before it can be used (-) [1]

Sustainability

- Only E is sustainable as the mangroves serve as a buffer zone to absorb the seawater so that it does not affect the inland areas and even when sea level rises in the future, the inland areas are not likely to flood (+) [1]

Section C

Answer EITHER question 3 OR question 4.

3 'The greatest challenge countries face in implementing strategies to respond to climate change is economic.'

Evaluate this statement.

[20]

Indicative Content

Candidates could approach the question by evaluating whether economic, political, or uncertainty challenges are the greatest in implementing climate change strategies. Mitigation focuses on reducing emissions, while adaptation reduces impacts. Economic challenges centre on costs, political challenges on governance and cooperation, and uncertainties on prediction limits. The greatest challenge varies by scale, context, and country development level.

4 'The main issue faced by women living in the city is related to their economic well-being.'

Evaluate this statement.

[20]

Indicative Content

Candidates could approach the question by evaluating women's social, economic, and psychological wellbeing issues across cities with different characteristics. In CHLD cities, economic pressures and elderly loneliness dominate, while in CLLD cities, patriarchal norms and unsafe living conditions heighten social concerns. The main issue depends on magnitude, prevalence, persistence, and subgroup differences, highlighting context-specific challenges faced by women.