Personal, Social and Humanities Education Key Learning Area
Geography Curriculum and Assessment Guide (Secondary 4-6)
Supplementary Notes

Jointly prepared by the Curriculum Development Council and
the Hong Kong Examinations and Assessment Authority

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Introduction

These are the supplementary notes for the Geography Curriculum, prepared jointly by the Curriculum Development Council and the Hong Kong Examinations and Assessment Authority in 2025 for the purpose of enhancing teachers' understanding of how to conduct enquiry-based fieldwork for the modules in the Compulsory Part. Teachers and students are suggested to use it alongside with the Geography Curriculum and Assessment Guide (Secondary 4-6) (with updates in July 2022), jointly prepared by the Curriculum Development Council and the Hong Kong Examinations and Assessment Authority.

General notes to the document

1. Annex 1 only illustrates the major methods of primary data collection and related skills for the modules of the Compulsory Part.

2. The "Relevant guiding questions" specified in the first column of Annex 1 are extracted from Chapter 2 of the Geography Curriculum and Assessment Guide (Secondary 4-6) (updated in July 2022) (i.e. Section 2.2.1).

Supplementary Notes of Enquiry-based Fieldwork for the Modules of the Compulsory Part

The following flow diagram illustrates the types of skills that are expected to be developed when students go through the five stages of enquiry-based fieldwork.

1. Planning and preparation

- identify a geographical issue / problem / phenomenon worth investigating
- define the objectives of the enquiry, including hypothesis testing, finding out relationship, and describing the distribution pattern
- formulate an appropriate and manageable plan that includes choosing a suitable field site and time for fieldwork, identifying the types of primary and secondary data to be collected and choosing suitable data collection methods

2. Data collection

- collect the primary data and information from the field using appropriate sampling methods (including simple random, systematic, stratified, purposive and convenience sampling), data collection methods and/or instruments
- evaluate possible problems on data collection processes before / when collecting data in the field and suggest alternative solutions if problems arise
- gather relevant supplementary information from secondary data

(For details of the major methods of primary data collection and related skills for the modules of the Compulsory Part, please refer to Annex 1.)

3. Data processing, presentation and analysis

- Use appropriate methods to process data (including classification, integration and deletion of extreme data)
- review and analyse the collected data and information quantitatively by using appropriate statistical techniques (including mean, median, mode, standard deviation and correlation) and/or qualitatively to identify meanings, patterns and/or relationships
- apply appropriate presentation methods (including field sketches, annotated diagrams / photos, transects, tabulations, graphs and maps) to present data and information collected in the field and/or from secondary data

4. Interpretation and conclusion

- interpret the collected field data and other information by applying relevant geographical concepts and knowledge
- draw a precise conclusion, propose possible solutions and/or make rational decisions based on evidence, with justifiable reasons and/or support of theories

5. Evaluation

- evaluate the strengths, weaknesses, and limitations of fieldwork
- suggest solutions to the problems encountered, any possible alternative approaches and improvements, or extensions for future research

Major Methods of Primary Data Collection and their related skills for the Modules of the Compulsory Part

Module 1: Opportunities and Risks — Is it rational to live in hazard-prone areas?

Relevant guiding questions	Fieldwork related knowledge / concepts	Suggested methods of primary data collection	Related skills
• What are the related landform features found at plate boundaries? How are they formed? • What are the effects of earthquakes, volcanic eruptions and tsunamis?	1. Internal processes and their related landform features 2. Impacts of natural hazards	1. Field sketching	• Observe and identify evidences of internal processes happened and their related landform features and draw field sketches that can highlight them
		2. Observation	• Observe the physical landform features, damage to infrastructure or changes in the landscape
• Should people move away from hazard-prone areas? • Why do some people still live in hazard-prone areas? • Is their choice rational?	3. People's response to natural hazards 4. Opportunities and risks brought about by tectonic activities	1. Land use mapping	• Identify correctly the types of land use, locate and plot them accurately on the map
		2. Questionnaire or interview	• Set suitable questions for the questionnaire or interview • Apply appropriate interviewing skills

Module 2a: Managing River and Coastal Environments: A continuing challenge - River Environment

Relevant guiding questions	Fieldwork related knowledge / concepts	Suggested methods of primary data collection	Related skills
• How does water shape the landform in a drainage basin? • What are the major landform features created by the work of running water?	1. River morphology • Channel width • Channel depth • Channel cross section • Chanel gradient • River velocity • Discharge • Roughness of river bed • Fluvial landform features* 2. Characteristics of river load • Size of bed load • Roundness of bed load	1. Measurement	• Appropriate use of measuring devices to measure the channel width, depth, cross section and roughness of the river bed • Appropriate use of instruments to measure channel gradient ➢ spirit level, Abney level, measuring tape and ranging pole • Appropriate use of instruments to measure river velocity and make use of channel cross section and river velocity to calculate discharge ➢ floating objects, measuring tape and timer • Appropriate use of instruments and tools to measure the size of bed load ➢ Vernier Caliper ➢ meter ruler ➢ grain size chart • Appropriate use of Powers scale of roundness to measure the roundness of bed load
		2. Field sketching* (for fluvial landform features)	• Observe and identify the fluvial landform features and draw field sketches that can highlight them
• How do human activities influence the river environment and	3. Impact of human activities on river environment	1. Land use mapping	• Identify correctly the types of land use, locate and plot them accurately on the map

what are the resulting consequences?	• Human activities near the river (including agriculture, industry, recreation) and their impact 4. River water quality • Water temperature • pH value • Turbidity and clarity of water • Nutrient levels • Pollutants • Dissolved oxygen • Presence of living organisms	2. Measurement	• Appropriate use of instruments to measure the water quality ➢ thermometer ➢ pH paper ➢ water quality testing equipment ➢ testing kits
		3. Observation and counting	• Identify and observe the presence of living organisms and/or pollutants in the water • Smelling
• How does the management of river system pose a continuing challenge for people?	5. River management strategies and their effectiveness • Types of river management strategies • Changes in river morphology and water quality	1. Questionnaire or interview	• Set suitable questions for the questionnaire or interview • Apply appropriate interviewing skills
		2. Measurement	• Appropriate use of measuring devices to measure the channel width, depth, cross section and roughness of the river bed • Appropriate use of instruments to measure channel gradient ➢ spirit level, Abney level, measuring tape and ranging pole • Appropriate use of instruments to measure river velocity and make use of channel cross section and river velocity to calculate discharge ➢ floating objects, measuring tape and timer • Appropriate use of instruments and tools to measure the water quality ➢ thermometer

			➢ pH paper ➢ water quality testing equipment ➢ testing kits
		3. Observation and counting	• Identify and observe the presence of living organisms and/or pollutants in the water • Smelling

Module 2b: Managing River and Coastal Environments: A continuing challenge - Coastal Environment

Relevant guiding questions	Fieldwork related knowledge / concepts	Suggested methods of primary data collection	Related skills
• How does water operate along coasts? • What are the major landform features created by the work of wave?	1. Weather elements • Wind direction • Wind speed 2. Coastal morphology • Beach gradient • Beach profile • Coastal landform features* 3. Wave characteristics • Wave frequency • Strength of swash and backwash • Direction and distance of longshore drift 4. Beach sediments • Grain size • Composition	1. Setting of transect	• Choose appropriate places, set the transect to an appropriate length
		2. Measurement	• Appropriate use of weather instruments • Appropriate use of instruments to measure beach gradient and profile ➢ spirit level, Abney level, measuring tape and ranging pole • Appropriate use of instruments to measure wave characteristics ➢ timer and ranging pole ➢ swingometer ➢ timer, floating object and measuring tape • Appropriate use of instruments and tools to measure beach sediments ➢ Vernier Caliper ➢ meter ruler ➢ hand lens ➢ grain size chart
		3. Field sketching* (for coastal landform features)	• Observe and identify the coastal landform features and draw field sketches that can highlight them
• How do human activities influence the coastal environment and what are the resulting consequences?	5. Impact of human activities on the coastal environment • Human activities near the coast (including agriculture, recreation) and their impact 6. Coastal water quality	1. Land use mapping	• Identify correctly the types of land use, locate and plot them accurately on the map
		2. Measurement	• Appropriate use of testing kits to measure the water quality

	• Turbidity and clarity of water • Pollutants • Dissolved oxygen • Presence of living organisms	3. Observation and counting	• Identify and observe the presence of living organisms and/or pollutants in the water • Smelling
• How does the management of coastal system pose a continuing challenge for people?	7. Coastal management strategies and their effectiveness • Types of coastal management strategies • Changes in coastal morphology	1. Questionnaire or interview	• Set suitable questions for the questionnaire or interview • Apply appropriate interviewing skills
		2. Measurement	• Appropriate use of instruments to measure coastal morphology ➢ spirit level, Abney level, measuring tape and ranging pole

Module 3: Changing Industrial Location – How and why does it change over space and time?

Relevant guiding questions	Fieldwork related knowledge / concepts	Suggested methods of primary data collection	Related skills
• Where was the manufacturing industry of Hong Kong located in the past? Where is it now? • Where are the major iron and steel industrial centres in China? • Why are they there? • Why does the same group of factors not influence the location of the US IT industry? • What determines its location there? • What impacts have globalisation and technological advances had on the location of manufacturing industry and its mode of production? • What are the likely social, economic and environmental impact of changes in industrial location and modes of production?	1. Location factors for different types of industries 2. Transformation of major functions and characteristics of the industrial land use 3. Future prospects and challenges faced by industry in terms of globalisation and technological advancements 4. Impact of changes in industrial location and mode of production	1. Land use mapping	• Identify correctly the types of land use, locate and plot them accurately on the map
		2. Questionnaire or interview	• Set suitable questions for the questionnaire or interview • Apply appropriate interviewing skills
		3. Observation and conducting survey	• Set suitable criteria for distinguishing and assessing the major functions and characteristics of the building / area • Use secondary data to supplement the primary data to study the transformational changes of the building / area
		4. Categorising and counting	• Identify, count and categorise the economic activities of the building/area into manufacturing and non-manufacturing industry • Identify, count and categorise the types of vehicles passing through the field site
		5. Measurement	• Appropriate use of instruments to measure the environmental quality, including noise level and air quality

Module 4: Building a Sustainable City – Are environmental conservation and urban development mutually exclusive?

Relevant guiding questions	Fieldwork related knowledge / concepts	Suggested methods of primary data collection	Related skills
• How does the internal structure of a city change as it grows? • What are the processes involved in such a change?	1. Land use pattern of an area	1. Land use mapping	• Identify correctly the types of land use, locate and plot them accurately on the map
	2. Degree of urban decay, urban sprawl and encroachment, urban redevelopment and renewal	1. Observation and conducting survey	• Set suitable criteria for distinguishing and assessing the quality of the building / environment • Set suitable criteria for assessing the order of the commercial activities
		2. Categorising and counting	• Identify, count and categorise the characteristics of the pedestrian passing through the field site
• What problems does a growing city bring? • What solutions are there for these problems? • What kinds of conflict will be created when solving the above problems? • In what ways and with what success are these conflicts being dealt with? • Why is the concept of "sustainable development" helpful in dealing with these conflicts?	3. Urban problems 4. Solutions for urban problems 5. Level of sustainability	1. Land use mapping	• Identify correctly the types of land use, locate and plot them accurately on the map
		2. Observation and conducting survey	• Set suitable criteria for distinguishing and assessing the quality of the building / environment
		3. Measurement	• Appropriate use of instruments to measure the environmental quality, including noise level and air quality
		4. Categorising and counting	• Identify, count and categorise the types of vehicles passing through the field site • Identify, count and categorise the characteristics of the pedestrian passing through the field site
		5. Questionnaire or interview	• Set suitable questions for the questionnaire or interview • Apply appropriate interviewing skills

Module 5: Combating Famine – Is technology a panacea for food shortage?

Relevant guiding questions	Fieldwork related knowledge / concepts	Suggested methods of primary data collection	Related skills
• What are the factors that affect agricultural production in an area? How do these factors shape the characteristics of farming in an area? • Why are agricultural characteristics so varied even in similar natural environmental settings? • How true is it to say that human factors are becoming more and more dominant than physical factors in influencing agriculture?	1. Characteristics of a farming system • Types of farming inputs • Farming processes • Types of farming outputs • Farm characteristics 2. Locational factors for farming 3. Factors affecting agricultural characteristics	1. Agricultural land use mapping	• Identify correctly the different types of agricultural land uses, locate and plot them accurately on the map
		2. Measurement	• Appropriate use of weather instruments • Appropriate use of methods to test the soil grain size and texture ➢ feel test ➢ soil sieving • Appropriate use of testing kits to test the composition and nutrient level of the soil • Appropriate use of measuring devices to measure the size of the farm
		3. Observation and counting	• Identify and describe the types of farming inputs, processes and outputs
		4. Questionnaire or interview	• Set suitable questions for the questionnaire or interview • Apply appropriate interviewing skills
• To what extent can technology help to increase agricultural production and alleviate food shortage? • Is it possible for us to minimise the negative impact of using technology in agriculture, and at the	4. Impact of technology, including environmental impact 5. Sustainable farming	1. Measurement	• Appropriate use of instruments and tools to assess environmental quality ➢ pH paper ➢ testing kits
		2. Observation and counting	• Observe the impact of farming technology on the environment, including the presence of living organisms, pollutants, habitat loss, land degradation, soil erosion and impact on rural landscape • Smelling

same time produce enough food for everyone?		3. Questionnaire or interview	• Set suitable questions for the questionnaire or interview • Apply appropriate interviewing skills

Module 6: Disappearing Green Canopy – Who should pay for the massive deforestation in rainforest regions?

Relevant guiding questions	Fieldwork related knowledge / concepts	Suggested methods of primary data collection	Related skills
• What would a tropical rainforest look like before large-scale deforestation? • Why does it look like that? • What is the evidence for saying that the tropical rainforest is a complex but fragile ecosystem? • What is the impact of large-scale deforestation in tropical rainforest regions?	1. Woodland / Tropical rainforest ecosystem • Abiotic components • Biotic components 2. Characteristics of woodland / tropical rainforest • Degree of stratification • Tree height • Height of vegetation in the shrub layer • Crown width • Circumference of tree trunk • Canopy density • Undergrowth cover • Amount of climbers / epiphytes / parasitic plants • Litter 3. Impact of human activities	1. Setting of transect and sample plot	• Choose appropriate places, set the transect to an appropriate length and sample plot to an appropriate size
		2. Measurement	• Appropriate use of weather instruments • Appropriate use of methods to test the soil grain size and texture ➢ feel test ➢ soil sieving • Appropriate use of testing kits to test the soil composition and nutrient level • Appropriate use of instruments to measure height of tree and vegetation in the shrub layer, crown width and circumference of tree trunk ➢ measuring tape and Abney level ➢ meter ruler • Appropriate use of densiometer to measure canopy density
		3. Categorising and counting	• Identify, count and categorise the types of vegetation and living organisms • Count and estimate the coverage of undergrowth with the use of a grid quadrat • Sort and weigh the litter collected
		4. Field sketching	• Identify the characteristics of the vegetation and draw the woodland/tropical rainforest profile
		5. Land use mapping	• Identify correctly the types of land use, locate and plot them accurately on the map
		6. Questionnaire or interview	• Set suitable questions for the questionnaire or interview

			• Apply appropriate interviewing skills

Module 7: Climate Change – Long-term fluctuation or irreversible trend?

Relevant guiding questions	Fieldwork related knowledge / concepts	Suggested methods of primary data collection	Related skills
• Is our climate also changing at a local scale? • How is the climate of our urban areas different from our rural areas? Why is there such a difference? • What are the effects of urban growth and development on the climate of our city?	1. Weather elements in different parts of the urban and/or rural areas 2. Factors affecting the microclimate in different parts of the urban and/or rural areas 3. Effects of urban growth and development on microclimate	1. Land use mapping	• Identify correctly the types of land use, locate and plot them accurately on the map
		2. Measurement	• Appropriate use of weather instruments
		3. Observation and counting	• Identify, count and categorise the factors affecting microclimate, including the number of vehicles, building density and materials, open areas and vegetation cover
		4. Observation and conducting survey	• Set suitable criteria for assessing the different factors affecting microclimate