Towards a Pedagogical Framework for Geographical Fieldwork



Different Levels of Geographical Knowledge



Fieldwork focuses on the all dimensions of geographical knowledge.



What is the Purpose of Fieldwork?

The purpose of geographical fieldwork is to help resolve puzzles related to geographical matters.

But what kind of puzzles that geographical inquiries could solve?



Fieldwork can be used to investigate causes, processes and effects of different spatial processes.



Possible Fieldwork Questions

How was the sense of place of villagers affected by the process of urbanisation?

In what ways do urban renewal affect the walkability of a neighbourhood?

How have the process of deforestation affect the quality of soil?



Types of Questions

Question Type	Examples
Focusing on factual information	How frequent are bus services in London?
Focusing on understanding concepts	What do you understand by urban renewal?
Focusing on geographical sources of evidence	What factors affect soil erosion?
Focusing on reasoning about process	How far can wastewater treatment solve the problem of microplastics?
Probing assumptions	What are the spatial assumptions of those residents living in Moldova?
Asking for judgements or conclusions	What are the justifications for ranking Damascus as the least liveable cities?
Asking for opinions on ethical matters	Should koalas be allowed to be kept as pets?
For private study or research only. Not for publication or further reproduction.	

(Modified from Grant Kleeman, "Inquiry-Based Learning in Geography", https://gtansw.org.au/files/resources/2015/Inquiry-Based%20Learning.pdf)

The Philosophy of Geographical Knowledge

Fieldwork is an embodied, situated practice to produce spatial knowledge. Fieldwork not only enables researchers and students to uncover the geographical specificities of different sites, but also helps them develop a sense of place.



The production of geographical knowledge is a context-dependent exercise. We need contextual knowledge to develop the research context.



Fieldwork Capacity

Fieldwork requires perceptual, cognitive and affective skills. Seeing, listening, smelling and Perceptual touching Synthesising, evaluating, Cognitive analysing Organising, characterising, Affective valuing The Education University of Hong Kong Library ivate study or research only.

Not for publication or further reproduction.

(Jackie & Catherine, 2009)

Identifying a Research Puzzle

A good research puzzle exists whenever there is disagreement about an issue.



Identifying a Research Puzzle

Maybe an answer to a research question is no longer valid or is subject to new challenges.





(Coleridge Primary School, n.d.)

Fieldwork is an intellectual practice of reconstructing natural and cultural landscapes.



What is the Field?

A field is a place where geographical concepts and theories are verified or contested through the collection of data.



Values of Fieldwork

Developing <u>Spatial Perspectives</u> to Different Issues and Problems

Developing Ethical Perspectives towards Nature and Humanity



(Caton, 2006; Hall, 2002; Job, 1999; Wilson, et al., 2017)

What Kind of Geographical Data that Fieldwork Can Produce?

Quantitative

- Often comes in the form of numbers
- Length, width or area of a feature
- Temperatures, humidity and wind speed
- Volume or sound levels of a transport system
- Costs of products indicating liveability of a settlement
- Ages and number of people in a population

For private study or research only. Not for publication or further reproduction. (BBC, n.d. ; GeogSpace, n.d.)

Spatial

- Related to spatial locations (e.g. latitude, longitude, elevation)
- Analog maps (e.g. Topography, land use, geology, climate, etc.)
- Aerial photos
- Satellite images
- Attribute data (e.g. amount of snowfall, temperature, wind speed and direction)

Qualitative

- Data in the form of word, views or feelings
- Information gained by observation
- Interview
- Questionnaires
- Field sketches and photographs
- Maps

Examples

Quantitative

- River velocity/depth/width/gradient
- Number of cars
- The amount of litter in a particular location
- Beach profile
- Measurement of the size and shape of coarse sediments
- Wave survey: height, frequency and energy

Spatial

- A particular block of land from GIS
- Data from remote sensing, e.g. aerial photos and satellite image can provide weather and oceanographic information, land use, vegetation types, fuel level and moisture loads in a particular location

Qualitative

- Maps/photographs from Google Earth/ArcGIS
- Observation: e.g. observing people behaviour; making field notes
- In-depth interview/discussion about a particular issue, e.g. focus group
- Textual analysis, e.g. information found from websites/printed matter/audio/video

The Education University of Hong Kong Library For private study or research only. Not for publication or further reproduction.

(BBC, n.d.; FSC, 2016; Royal Geographical Society, n.d.; Queensland Government, 2020)

Critical Skills and Two Traditions in Fieldwork

Interpretive approach

 Exercising geographical imagination in interpreting realities. Understanding geographical realities require 'deep interpretation'.

Explanatory Approach

 Exercising geographical sensibility in understanding the relationship between different spatial phenomena.



Geographical Inquiry through Fieldwork



Pre-	1. Identification of the questions	 What are the possible fieldwork opportunities presented by the environment? Are they practical, realistic or achievable given the circumstances of the locations, etc.?
fieldwork and planning	2. Contextualizing the fieldwork	 Research into relevant background information (internet, magazines, books), i.e. Secondary information and/or data. Opportunity to develop own ideas and models or use existing ones. Development of hypotheses and/or suitable key questions
Primary	3. Design: where and how many ?	 Number of fieldwork sites (practically); group or individual observations. Consideration of <i>appropriate sampling procedures</i> (systematic vs random vs stratified) and sample size. Consideration of health and safety and undertaken risk assessment
field skills	4. Equipment considerations; how to record. Primary collection	 Appropriate <i>data collection methods</i> that will help answer the questions being investigate Appropriate <i>equipment</i> to ensure accuracy and reliability Development of recording sheets for measurement and observation
	5. Data processing and presentation	 Use of ICT to manage, collate and process information, e.g. shared spreadsheets and VLE/cloud to store for easy retrieval. Using ICT and/or hand-drawn graphical skills to present information in a suitable way
Presentation, analysis, conclusions and evaluation	6. Analysis and conclusions	 Describe the findings, explain possible reasons and make links Simple statistics may be relevant, e.g. measures of central tendency, spread and cumulative frequency Review information and then bring it together to form a conclusion, drawing on evidence and reasoned chains of argument
7. Critically reflecting on the results The Education University of Hong Kong Library For private study or research only.		 A critical reflection on the fieldwork data, methods used, knowledge gained and how this could be applied to other fieldwork contexts Reference to the accuracy, validity and reliability of the conclusions

Not for publication or further reproduction. Modified from Pearson. (2017). Fieldwork Guide For GCSE Specification A.

Pre- fieldwork and planning	1. Identification of the questions	 How does the beach change if you move from the edge of the sea towards the land ? What physical processes were involved in the formation of the beach ? How might this place change in the future (and why) ?
	2. Contextualizing the fieldwork	 Research on the background information about the location via maps, news articles, video clips, social media, etc. E.g. possible physical causes of the changing beach profile and sediment characteristics, the main wind direction and refraction of waves Decide on the aims and hypotheses (measurable and clear): Aim: Investigation of coastal processes through landscape evidence Hypothesis: Sediment size decreases from north to south along Dawlish Warren
Primary field skills	3. Design: where and how many ?	 Decide on the sampling methods: systematic, random, stratified E.g. Random sample: Use of metre rule interval markings (to take pebble samples on the beach) Risk assessment: Identify the hazards, evaluate the risks and decide on the precautions E.g. Risk of tripping/slipping over in the grounds, causing personal injury → avoid to walk on slippery area
	4. Equipment considerations; how to record. Primary collection	 Qualitative: Annotated field sketches/annotated photographs to illustrate changes of sediment size from the beach to inland Quantitative: Measurement of sediment size
	5. Data processing and presentation	 Graphs showing the beach profiles GIS photos/maps showing the mean sediment size along a stretch of beach
Presentation, analysis, conclusions and evaluation	6. Analysis and conclusions	 Consider the following questions: What are the general trends from the data ? What comparisons can be made ? How do the patterns link to geographical theory ? E.g. The mean sediment size along the stretch of beach decreased as I moved north (data support). This is mainly due to the process of attrition Consider the following key points before drawing the conclusions: What sis the investigation prove/disprove? ; How accurately does the data support the geographical theories? ; They should summaries the possible reasons for the anomalies
The Education of Hong Kong	Universitically reflecting on the Library results	 How successful were the sampling and collection method used to gather the data ? How accurate were the results and conclusions drawn ? E.g. measurement error/operator error/sampling error

Modified from Pearson. (2017). Field work Guide For GCSE Specification A.

Key Concepts in Geographical Understanding and Fieldwork



4 Core Concepts	Place	Sp		ace Scale		Er	Environment	
Specialised Concepts	Systems	Feedback Conflict		Globalisation		Interdepende	nce	Process
	Risk			Change o Time	ver	Equilibriur	n	Sustainability



HKDSE Curriculum

Concepts	Opportunities & Risks	Managing Rivers & Coastal Environments	Changing Industrial Location	Building a Sustainable City	Combating Famine	Disappearing Green Canopy
Place						
Scale			\checkmark			
Space			\checkmark	\checkmark		
Environment	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark



HKDSE Curriculum

Concepts	Opportunities & Risks	Managing Rivers & Coastal Environments	Changing Industrial Location	Building a Sustainable City	Combating Famine	Disappearing Green Canopy
Place	 The major landform features at plate boundaries Natural hazards commonly found in areas with active tectonic activities The reasons for less developed areas being more vulnerable to natural hazards than more developed areas 	 Fluvial process and landform Coastal process and landform Drainage basin 	/	 Urban problems in Hong Kong Urban growth, urbanisation in the internal structure of a city 	 Characteristics of the physical environments of Sahel and Southern California Agricultural characteristics of nomadic farming in Sahel and irrigation farming in Southern California 	• Tropical rainforest
Scale	Degree of damage and level of development Education University	 Understand global , national and local scale of Major landform features, including gorges, waterfalls and rapids, meanders and associated landform features, flood plains, levees, braids and deltas 	• Globalisation	/	 The availability of food supplies is uneven and does not match demand on a global scale 	 Scale of development Scale of impact

For private study or research only. Not for publication or further reproduction.

Concepts	Opportunities & Risks	Managing Rivers & Coastal Environments	Changing Industrial Location	Building a Sustainable City	Combating Famine	Disappearing Green Canopy
Space	 Global distribution patterns of these natural hazards Relationship between the distribution pattern of these natural hazards and that of tectonic activities The names and types of major plates and plate boundaries in the world, as well as their location Earthquake and volcanic zones far away from plate boundaries 		 Distribution pattern of the iron and steel industry in China Location of Hong Kong manufacturing industry in the past decades Location of the US IT industry Location of manufacturing industry and headquarters of the US IT industry Industrial relocation Location factor Spatial association 	 Internal structure of a city Causes of urban growth and urbanisation 	 Patterns of trade in food Global patterns of food production and consumption in relation to population Global contrasts in diet and food consumption Location of Sahel and Southern California Factors affecting agricultural characteristics in Sahel and Southern California 	 Global distribution of tropical rainforests Deforestation in rainforest regions – rate and conditions
Environment	 Impact of technology Limitation of technology 	 Human activities on river and coastal environments: e.g. drainage, reclamation and recreation Impact and consequences: e.g. flooding, erosion and mass wasting, 	 Impact of technology 	 Urban problem Urban growth Urbanization Internal structure of a city Urban encroachment 	 Impact of technology Limitation of technology 	 Deforestation Human interference
For private study Not for publicati	ng Kong Library or research only. on or further reproduction.	pollution, and disturbance / damage to the ecosystem		Urban renewal		

Key Concepts in Geographical Understanding and Fieldwork

4 Core Concepts	Place	Spac	Space		Scale	Environment	
	Causality	Systems	Equilik	prium	Feedback	Inequality	
14 Specialised AS/A level Concepts	Representation	Identity	Globali	sation	Interdependen	ce Mitigation & Adaptation	
	Sustainability	Risk	Resili	ence	Thresholds		

The Education University of Hong Kong Library https://qualifications.pearson.com/content/dam/pdf/A%20Level/Geography/2016/teaching-and-learningmaterials/Edexcel_GCSE_and_Aidevel_Geog_Fieldwork_Guide.pdf

4 Core Concepts

Concepts	Characteristics
Place	 Understanding the physical and human characteristics of real places Developing 'geographical imaginations' of places Influence by space Tangible characteristics, e.g. landforms and people, Intangible characteristics, e.g. scenic quality and culture
Scale	 About the way that geographical phenomena and problems can be examined at different spatial levels Different scales : from personal and local to national, international and global Understand cause-and-effect relationships between scales to develop understanding of geographical ideas E.g. Global scale (climate, vegetation); Local scale (soil, drainage)
Space	 About the significance of location and spatial distribution Understanding the interactions/relationship between places and the networks created by flows of information, people and goods Knowing where places and landscapes are located, why they are there, the patterns and distributions they create, how and why these are changing and the implications for people Influence by time Interdependence between space, place and time
Environment The Education of Hong Kong For private study or resear Not for publication or furth	 About the significance of the environment in human life, and the important interrelationships between humans and the environment Related to space and place Can be natural and/or cultural Culture, population density, economy, technology, values and environmental worldviews influence chord, the different ways in which people perceive, adapt to and use similar environments

Causality	 Connections between cause (why) and consequences as part of a process In many cases processes have many causal factors, i.e. are complex
Systems	 Many interacting component parts, producing a complex "whole" E.g. the hydrological cycle; carbon cycle
Equilibrium	 Systems are in equilibrium when the input of mass and/or energy is balanced by self-adjustment of the elements and variables of a system, e.g. by the change of form or geometry E.g. the global climate system: an equilibrium in which global surface temperature fluctuates around a mean or average state
	temperature nucluates around a mean or average state
Feedback The Education Union of Hong Kong Libr For private study or research or	 Positive feedback causing further change and instability to a system Negative feedback returning a system to equilibrium
Not for publication or further re Extracted from Cameron	production. Dunn, David Redfern. Edexcel AS/A-level Geography Student Guide 4: Geographical skills, Table 26

Inequality	 At all scales, differences in opportunity, access to resources or outcomes (e.g. health) between different groups
Representation	 Concerns the (cultural) practices by which societies and places interpret and portray the world around them and present themselves to others Includes the social, cultural, economic and environmental aspects of a location. It is highly influenced by historical, cultural and political actions
Identity	 The beliefs, perceptions, characteristics that make one group of people different to another; identity is strongly related to place
Globalisation The Education Universion of Hong Kong Library For private study or research only.	 The set of processes leading to greater international integration economically, culturally and demographically
Not for publication or further reprod Extracted from Cameron Dun	uction. n, David Redfern. Edexcel AS/A-level Geography Student Guide 4: Geographical skills, Table 26

Interdependence	 Mutual reliance between groups; it is strongly linked to globalisation Interdependence between human and environment Related to place, system, processes, feedback, regions, social, cultural, economics and environmental
Mitigation & Adaptation	 Alternative approaches to management: prevention (mitigation) versus reducing vulnerability (adaptation)
Sustainability	 Passing the planet and its natural systems and resources on the next generation in as good a state as we inherited it
The Editoria University of Hong Kong Library For private study or research only. Not for publication or further reproduction Every compared from Compared Duran Data	• The potential or probability of harm/losing something of value





The Education University of Hong Kong Library

For private study or research only. NSynthesised from https://www.australiancurriculum.edu.au/f-10-curriculum/humanities-and-social-sciences/geography/structure/; http://www.adorngeo.com/concepts-in-ib-geography.html

HKDSE Curriculum

Concepts	Opportunities & Risks	Managing Rivers & Coastal Environments	Changing Industrial Location	Building a Sustainable City	Combating Famine	Disappearing Green Canopy
Causality	/	/	/	/	/	/
Systems	/	Hydrological cycle	Government policyIndustrial inertia	/	 Agriculture system Physical system Human system Agriculture factor 	 Ecosystem Energy flow Nutrient cycling Abiotic and biotic components
Equilibrium	/	/	/	/	/	 Ecological equilibrium
Feedback	/	/	 Socio- economic impact 	/	/	/
Inequality	/	/	/	/	/	/
Representation	/	/	/	/	/	/
Identity	/	1	/	1	1	/
Globalisation	/	/	 The effect of globalization and 	/	/	/
For private study or research only. Not for publication or further reproduction.			technological advances on its location and mode of production			

Concepts	Opportunities & Risks	Managing Rivers & Coastal Environments	Changing Industrial Location	Building a Sustainable City	Combating Famine	Disappearing Green Canopy
Interdependence	/	/	/	/	 Interactions: Physical, economic, social and political factors affecting agriculture Interaction between physical and human factors 	/
Mitigation & Adaptation	/	 "Hard" and "soft" management Management issues, including evaluation of methods and strategies used, and their possible impact 	/	/	 Resource management in agriculture 	 Environmental conservation and management
Risk The Education of Hong Kong For private study or resear Not for publication or furth	 Natural hazard Plate tectonics University Library ch only. 	/	/	/	/	/

Concepts	Opportunit ies & Risks	Managing Rivers & Coastal Environments	Changing Industrial Location	Building a Sustainable City	Combating Famine	Disappearing Green Canopy
Sustainability	/	/	/	 Sustainable development and methods to solve the conflicts arising from urban problems Methods and price of developing a city into a sustainable one 	 Sustainable agricultural development 	 Sustainable development of tropical rainforests
Resilience	/	/	/	/	/	/
Threshold	/	1	/	1	/	/
Conflict	/	People's views on the management of river / coast	/	Conflicts arising from solving urban problems	/	Problems of developing and protecting rainforests, such as conflict of interest among different parties (e.g. native people, local
The Education University of Hong Kong Library For private study or research only. Not for publication or further reproduction.						dwellers, private developers and environmentalists)

Concepts	Opportunit ies & Risks	Managing Rivers & Coastal Environments	Changing Industrial Location	Building a Sustainable City	Combating Famine	Disappearing Green Canopy
Change over Time			 The effect of globalisation and technological advances on its location and mode of production Changing location of the iron and steel industry in China, including the shift from the coast to the interior and the tendency to be located near large urban centres 	 Causes of urban growth and urbanisation Cycle of urbanisation, suburbanisatio n, counter- urbanisation and reurbanisation Consequences of not developing a city in a sustainable way in the long run 	A brief overview of the possible environmental, economic and social (including health) implications of genetically modified food	
Process				 Competition and succession 		
For private study or research only. Not for publication or further reproduction.						



eld Study Along Sheung Yue River The Education University of Hong Kong Library e study or research

For private study or research only. Not for publication or further reproduction.

Field Study Route



1. Identification of Questions



Field site A. Ta Shek Wu Shek Tong



Field site B. Long Valley



2. Contextualizing the Fieldwork

Secondary Data

Research on background information of field site A and B...

Ta Shek Wu Shek Tong is a village located at the upper course of Sheung Yue River.

The characteristics of natural streams are retained at this river section. Villagers recalled that the water quality was so excellent in the past that they could swim and fish in the river.

Nowadays, the water quality has deteriorated, sludge and sediments also accumulate on the riverbed. During dry season, odours often arise from polluted water in the river.

Source: HKU (

	Source: HKU (p.d.)	Table 1. Stations with WQI grad	ings in 2018 changed as c	ompared to 2017
	Source. HKO (II.u.)	River monitoring station	2017 WQI grading	2018 WQI grading
		Shing Mun River (TR19)	Good	Excellent
		Ho Chung River (PR1)	Good	Excellent
		Kam Tin River (KT1)	Bad	Fair
		Tseng Lan Shue Stream (JR3)	Fair	Bad
		River Beas (RB1)	Excellent	Good
		River Beas (RB3)	Good	Fair
		River Ganges (GR1, GR2)	Good	Fair
	The Education	Un Yuen Long Creek (YL1, YL2)	Fair	Bad
_	of Hong Kong I	Yuen*Long Creek (YL3, YL4)	Bad	Very Bad
No	r private study or researc t for publication or furthe	n aniy. er rependun River (TN4, TN5)	Excellent	Good

Long Valley is a vast wetland and floodplain at which Sheung Yue River and Shek Sheung River converge. Since it has a rich diversity of bird species and is also a major stop-over feeding and resting site for migratory birds, this area has high ecological value with over 300 bird species recorded.

Given fertile soil and abundant water supply, agricultural activities have flourished in Long Valley. Currently, vegetables are major farm produce in Long Valley. Farmers also divert water from Sheung Yue River to irrigate the farmlands there. In 2012, rice paddy was reintroduced to Long Valley under a programme called Long Valley Ecopaddy Co-operative Society (禾・花・雀・塱原生態農社), initiated by **Conservancy Association.**

Source: HKU (n.d.)

Source: EPD (2018)

2. Contextualizing the Fieldwork

Objectives:

•To examine the water quality of the field sites

•To locate and identify the sources of pollution

Enquiry Questions/Hypothesis:

•What is the water quality of field sites A and B?

•What are the sources of the river pollution?



3. Design: Where and How Many

Sampling methods:

- Subjective sampling
 - Characteristics of river appearance (water level, floating matter, turbidity, etc.)
 - Other properties of river water (pH, total dissolved solids, dissolved oxygen, etc.)

Risk Assessment:

- Risk of tripping/slipping over in the grounds, causing personal injury
- Reminder: Avoid to walk on slippery area



4. Equipment Considerations

Equipment needed:

- Measuring cylinder X1
- Bottles for collecting water samples X4
- Small bottles with lids X6
- pH paper X1
- Methylene blue solution X1
- Total dissolved solids (TDS) meter X1
- Float X1
- Stop watch X1
- Measuring tape X1
- Base map X1
- Clipboard X1
- Compass X1
- Cloth X1
- Rubber gloves X4
- Pencil X1



4. Primary Collection

Data Record Sheet

	Site A	Site B		Site A	Site B	
Characteristics of	Characteristics of river appearance		Other properties of the river			
1. Water level			1. Total Dissolved Solids			
2. Width &			(ppm)			
depth of the river			2. pH value			
3. Velocity			3. Ammonia			
4. Smell			Content (ppm)			
5. Colour			4. Dissolved Oxygen (mg/L)			
6. Turbidity						



5. Data Processing and Presentation

Data Record Sheet

of Hong Kong Library

Not for publication or further reproduction.

For private study or research only.

Fill in the blanks with the following scale:

0 None		1 Some	2 Plentif	ul	3 Abundant
		Site	e A		Site B
Characteristic	s of	f river app	earance		
1. Water level					
2. Width & depth of the river					
3. Velocity					
4. Smell					
5. Colour					
6. Turbidity	: T	· · · · · · · · · · · · · · · · · · ·			

Classify the items into very low; low; moderate; high; very high

Pollution level:

Clean

Severely polluted

Slightly polluted

Moderately polluted

	Site A	Site B
Other properties	of the river	
1. Total Dissolved Solids (ppm)		
2. pH value		
3. Ammonia Content (ppm)		
4. Dissolved Oxygen (mg/L)		

Question One

With reference to the aspects of channel characteristics and land use, explain the causes of river water quality in the field sites.

Question Two

Other than the data collected, suggest other data and information you may need in order to investigate the river pollution along Sheung Yue River.



7. Critically Reflecting on the Results

Are the sampling and collection methods used to gather the data successful?

Are the results and conclusions accurately drawn?

E.g. measurement error/operator error/sampling error



Skill sets in the Geographical Fieldwork

What would be required of students and researchers as far as skill sets of geographical fieldwork are concerned?



Primary data collection	Secondary data collection
Fieldwork skills	Investigate paper and online maps
Observation	Analyze historical photos
Sketching and annotating	Investigate population census data
Interview	Explore land use data
Field survey	
Traffic/pedestrian count	Evaluation and Analysis
Photo/video shooting	Construct and interpret charts and graphs
Data logging	Statistical analysis
Sampling	Evaluation and Analysis
Map Reading and Interpretation Skills	
Map reading of different scales	
Sketching and annotating	
Interpret aerial photos and satellite images	
Not for Measure distance and tareas on maps (Education and Manpower Bureau, 2007; Geographical Fieldwo	ork Skills, n.d.; Peasland, et al., n.d.; Yau, J., n.d.)

Geographical Skills	Ma Shi Chau	Yuen Long industrial Estate and Tung Tau Industrial area
Primary data collection		
Observation	\checkmark	\checkmark
Sketching and annotating		
• Interview		\checkmark
• Field survey	\checkmark	\checkmark
Traffic/pedestrian count		\checkmark
Photo/video shooting	\checkmark	\checkmark
Data logging		
Sampling	\checkmark	
Map Reading and Interpretation Skills		
Map reading of different scales	\checkmark	\checkmark
Interpret aerial photos and satellite images	\checkmark	\checkmark
Measure distance and areas on maps	\checkmark	\checkmark

The Education University of Hong Kong Library For private study or research only.

For private study or research only. Not for publication or further reproduction. (Education and Manpower Bureau, 2007; Geographical Fieldwork Skills, n.d.; Peasland, et al., n.d.; Yau, J., n.d.)

	Ma Shi Chau	Yuen Long industrial Estate and Tung Tau Industrial area
Secondary data collection		
 Investigate paper and online maps 	\checkmark	\checkmark
Analyze historical photos		\checkmark
 Investigate population census data 		\checkmark
Explore land use data		\checkmark
Evaluation and Analysis		
 Construct and interpret charts and graphs 		\checkmark
Statistical analysis		\checkmark
Evaluation and Analysis The Education University of Hong Kong Library	\checkmark	\checkmark
For private study or research only.		

Not for publication or further reproduction. (Education and Manpower Bureau, 2007; Geographical Fieldwork Skills, n.d.; Peasland, et al., n.d.; Yau, J., n.d.)

Self-Evaluation

Cartographic Skills

- Use and understand coordinates
- Understand numerical and statistical information
- Sketch Maps: Draw Label, Understand and Interpret
- Label and Annotate diagrams, maps, graphs, sketches and photographs

Graphical Skills

- Complete a variety of graphs and maps
- Interpret information from different types of maps

Numerical Skills

- Demonstrate understanding of number, area and scales
- Design data collection sheets
- Collect data understanding accuracy
- Understand and correctly use proportion
- Draw informed conclusions from numerical data

The Education University of Hong Kong Library

For private study or research only. Not for publication or further reproduction.

(Education and Manpower Bureau, 2007; Geographical Fieldwork Skills, n.d.; Peasland, et al., n.d.; Yau, J., n.d.)

Use of qualitative and quantitative data

•	Maps
•	Sketches
•	Graphs
Foi	rmulate enquiry and argument
•	Identify questions and sequences of enquiry
•	Write descriptively, analytically and critically
•	Communicate ideas

Draw conclusions from enquiry data about geographical questions ٠



For private study or research only. Not for publication or further reproduction. (Education and Manpower Bureau, 2007; Geographical Fieldwork Skills, n.d.; Peasland, et al., n.d.; Yau, J., n.d.)

Reference

BBC. (n.d.). Qualitative and Quantitative Data. Retrieved from https://www.bbc.co.uk/bitesize/guides/z3qrj6f/revision/3

Biddulph, M., Lambert, D., & Balderstone, D. (2015). Learning to Teach Geography in the Secondary School: A Companion to School Experience. Routledge.

Caton, D. (2006) 'Real world learning through geographical fieldwork' in Balderstone, D. (ed) Secondary Geography Handbook. Sheffield: Geographical Association.

Coleridge Primary School. (n.d.). Geography. Retrieved from https://coleridgeprimary.org/curriculum/geography/

Dummer, T. J., Cook, I. G., Parker, S. L., Barrett, G. A., & Hull, A. P. (2008). Promoting and Assessing 'deep learning'in Geography Fieldwork: An Evaluation of Reflective Field Diaries. Journal of Geography in Higher Education, 32(3), 459-479.

Dunn, C., Redfern, D. (2018). Edexcel AS/A-level Geography Student Guide 4: Geographical skills; Fieldwork; Synoptic skills. Hodder Education.

Education and Manpower Bureau. (2007). Enquiry-based Fieldwork in Geography (Part 1). Retrieved from https://cd1.edb.hkedcity.net/cd/pshe/resources/enquiry_based_fieldwork1/level2.html

Education Standards Authority. (n.d.). Geographical Concepts. Retrieved from https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/hsie/geography-k-10/geographical-concepts

Field Studies Council (FSC). (2016). Geographical Fieldwork. Retrieved from https://www.geography-fieldwork.org/a-level/coasts/lowenergy-coasts/method/#longshore

For private study or research only.

NGeographical Fieldwork Skills Retrieved from https://slideplayer.com/slide/16896105/

GeogSpace. (n.d.). Fieldwork. Retrieved from https://www.geogspace.edu.au/support-units/fieldwork/fi-overview.html

Hall, T., Healey, M. & Harrison, M. (2002). Fieldwork and Disabled Students: Discourses of Exclusion and Inclusion Transactions of the Institute of British Geographers New Series 27 213–31

Holmes, D. (2016a). Specialised Concepts in the New Specifications Part 1. Geo Factsheet 344. Retrieved from http://vle.langton.kent.sch.uk/file.php/1014/Geofactsheet_344_Specialised_concepts_part_1.pdf

Holmes, D. (2016b). Specialised Concepts in the New Specifications Part 2. Geo Factsheet 350. Retrieved from http://vle.langton.kent.sch.uk/file.php/1097/350_Specialised_Concepts_II.pdf

Jackie Crisp, Catherine Taylor, (2009), Potter & Perry's Fundamentals of Nursing , Chatswood: Elsevier.

Job, D., Day, C., & Smyth, T. (1999). Beyond the Bikesheds: Fresh Approaches to Fieldwork in the School Locality. Sheffield: The Geographical Association

John R. Gold, Alan Jenkins, Roger Lee, Janice Monk, Judith Riley, Ifan Shepherd, David Unwin. (1991). Teaching Geography in Higher Education. Oxford: Blackwell.

Kleeman. G. (2015). Inquiry-Based Learning in Geography. Retrieved from <u>https://gtansw.org.au/files/resources/2015/Inquiry-Based%20Learning.pdf</u>

Lonergan, N., & Andresen, L. W. (1988). Field-based Education: Some Theoretical Considerations. Higher Education Research and Development, 7(1), 63-77.

Oost, K., De Vries, B., & Van der Schee, J. A. (2011). Enquiry-driven Fieldwork as a Rich and Powerful Teaching Strategy–school Practices in Secondary Geography Education in the Netherlands. International Research in Geographical and Environmental Education, 20(4), 309-325. of Hong Kong Library For private study or research only.

Not for publication or further reproduction.

Peasland, E., Henri, D., Morrell, L. & Scott, G. (n.d.). Students' Perceptions of Skills Development Through Fieldwork. Retrieved from https://www.slideshare.net/fieldwork_ntf/student-perceptions-of-skills-development-through-fieldwork

Pedaste, M., Mäeots, M., Siiman, L. A., De Jong, T., Van Riesen, S. A., Kamp, E. T., ... & Tsourlidaki, E. (2015). Phases of inquiry-based learning: Definitions and the Inquiry Cycle. Educational Research Review, 14, 47-61.

Pearson. (2016). Geography Fieldwork Guide. Retrieved from https://qualifications.pearson.com/content/dam/pdf/A%20Level/Geography/2016/teaching-and-learning-materials/Edexcel_GCSE_and_A_level_Geog_Fieldwork_Guide.pdf

Pearson. (2017). Fieldwork Guide For GCSE Specification A. Retrieved from https://qualifications.pearson.com/content/dam/pdf/GCSE/Geography-A/2016/teaching-and-learning-materials/Fieldwork-Guide.pdf

Queensland Government. (2020). Using Spatial Technologies Outside the Classroom. Retrieved from https://www.qld.gov.au/education/schools/learningresources/spatial-education/using-spatial-technologies-in-fieldwork

Royal Geographical Society. (n.d.). Preparing to Undertake Fieldwork. Retrieved from https://www.rgs.org/CMSPages/GetFile.aspx?nodeguid=cd03e7e7-8332-4a85-8946-90e5931a03e9&lang=en-GB

Simasiku Frederick Simasiku. (2012). An Investigation of How Enquiry-based Fieldwork Develops Action Competence in Grade 12 Geography: A Namibian case Study

Stoltman, J. P., & Fraser, R. (2000). Geography fieldwork: tradition and technology meet. In Fieldwork in geography: reflections, perspectives and actions (pp. 37-52). Springer, Dordrecht.

For private study or research only. Not for publication or further reproduction. The Department of Education. (2012). Geography Key Concepts. The School Curriculum. Retrieved from https://webarchive.nationalarchives.gov.uk/20130103080002/http://www.education.gov.uk/schools/teachingandlearning/curriculum/seco ndary/b00199536/geography/programme/concepts

The Education Bureau (EDB). (2017). Geography Curriculum and Assessment Guide (Secondary 4 - 6). Retrieved from https://www.edb.gov.hk/attachment/en/curriculum-development/kla/pshe/Geog_C&A_Guide_e-Nov_2017_clean_ok.pdf

The Environmental Protection Department (EPD). (2018). River Water Quality in Hong Kong in 2018. Retrieved from https://www.epd.gov.hk/epd/sites/default/files/epd/english/environmentinhk/water/hkwqrc/files/waterquality/annual-report/riverreport2018.pdf

The University of Hong Kong (HKU). (n.d.). Guided Field Trip to Sheung Yue River Catchment. Handbook for Your Guide. Retrieved from http://www.socsc.hku.hk/jcwise/mrmc/sy_w/MRMC_SYR_HandbookforTourGuides_English.pdf

Wilson, H., Leydon, J., & Wincentak, J. (2017). Fieldwork in Geography Education: Defining or declining? The State of Fieldwork in Canadian Undergraduate Geography Programs. Journal of Geography in Higher Education, 41(1), 94-105.

Yau, J. (n.d.). Introduction to The Development of Fieldwork Skills in Geography. Retrieved from https://www.edb.gov.hk/attachment/tc/curriculum-development/kla/pshe/references-and-resources/geography/Introduction_to_development_of_fieldwork_skills_in_geography.pdf

