

Elective Geography Notes

Geography in everyday life



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Extra friendly reminder:

- Bring calculator, pencil, ruler, eraser and pen (drawings of diagrams may be needed)

Topic 1: Thinking geographically

1.1 Relationship between people and the nature in their neighbourhoods

- Learn about relationship between people and nature in their neighbourhoods.

Content concepts:

- Community : A group of people in a particular place who has a sense of belonging both to the place and to the group.
- Nature area: Also known as the natural environment, it refers to the nonhuman world, which are areas that are untouched or barely affected by humans.
- Recreation: Any voluntary activity undertaken for purposes of enjoyment , pleasure, and personal satisfaction.

What is the relationship between people and nature?

1. local communities and nearby nature areas are dependent upon each other.

a. people depend on nature for many things:

- Nature provides essentials like air and water for human to survive.
- Living organisms like bees help pollinate crops for a continuous supply of food.
- Nature provides spaces for **recreation** and **leisure activities** which allows people to bond with their family and friends, thus helping to maintain human's physical and mental well-being.

b. some nature areas are also dependent on the local communities to thrive.

- People in the **neighbourhood** may tend to the health of nearby nature areas, ensuring the plants and animals living there thrive
- Individuals in local communities can encourage one another to enjoy nearby nature areas in a sustainable manner without causing irreversible damage.

How do people and nature bring about benefits to each other?

1. Nature areas benefit people by lowering temperatures, removing pollutants, and providing space for recreation.

a. lowering air temperature

- i. The presence of vegetation:
 - Provides shade and reduces the amount of direct sunlight that reaches the surface
 - Cools the surrounding air through evapotranspiration as the water that plants absorb through their roots is released into the air as water vapor. this process uses heat from the surrounding, fast cooling it.

b. removal of pollutants

- i. During photosynthesis vegetation absorbs carbon dioxide and other air pollutants and releases oxygen.
- ii. Small particles are intercepted by leaves which are washed to the ground when it rains.
- iii. what land plants can trap suspended materials and absorb excess nutrients in the water thus improving water quality.

c. Provision of recreational space

- i. Natural areas offer numerous opportunities for outdoor activities.
- ii. Direct and frequent interactions with nature can bring about health and well-being benefits to people, which reduces severity and occurrence of health conditions.

What are the disadvantages people and nature bring to each other?

1. People bring disadvantages to nature by causing soil erosion, damaging vegetation, worsening pollution and disturbing wildlife.

- a. Causing soil erosion and damaging vegetation.
 - i. When people hike along non-designated trails in nature areas
- b. Worsening pollution and disturbing wildlife
 - i. littering

2. Nature may bring disadvantages to people as wildlife from nearby nature areas may harm people and environmental protection may limit development.

- a. Human-wildlife conflicts may increase due to an increase in human-wildlife encounters:

Reasons for increase in human-wildlife encounters in Singapore		
Urban expansion	People's growing interest in outdoor recreation	Greening efforts by the state
- Singapore continues to urbanise and develop, leading to nature habitats shrinking. Wildlife may venture out of the nature areas in search of food or shelter, potentially increasing the frequency of human - wildlife encounters.	- With growing interest in outdoor recreational activities, people are now spending more time in nature areas, which increases the frequency of human - wildlife encounters	- Singapore aims to bring nature back into the city and promote human - wildlife encounters

1.2 A sense of place in the neighbourhoods

What is a sense of place?

- A sense of place is developed when people associated **meanings** and **memories** with locations.
- It reflects the relationship people have with the places around them.
- A sense of place helps to build our identity, enabling us to understand ourselves and others better.

How do people acquire a sense of place in their neighbourhood?

1. Repeated encounters with objects and people

- a. This helps us to recall the character and features of places that we come across and create meanings and memories of them.

2. Significant or memorable events at local landmarks and gathering places.

- a. We may acquire a sense of place from significant or memorable events that occur at local landmarks and gathering places.
- b. Landmarks are highly visible and easy for most people to remember
- c. They may serve symbolic or historical purposes

How is sense of place represented?

- Sense of place may be represented through different forms and types of media by individuals and organisations which reflects people's ideas, memories and significance of the location. (e.g. texts, audios, graphs, posts)

How may representations of sense of place enhance or contradict an individual's sense of place?

- Different emotions expressed in media might enhance or contradict our sense of place.
- Our sense of place shapes our identity, hence, we respond well to representations that agree with how we feel about places in our neighbourhood.
- Such representations add new layers of meanings to these places by revealing interesting information about them, thus enhancing our sense of place.

1.3 Relationship between locations in a neighbourhood

What are regions?

- Areas with similar physical and/or human characteristics
 - Regions may vary in size
 - Regions may be classified according to:
 - Environmental characteristics : Nature or built-up areas
 - Human characteristics: e.g. Commercial or residential areas
 - Geographical location: e.g. East or West

What are spatial patterns?

- Spatial patterns reflect **non-random** arrangements that are recognisable as **shapes, clusters, geometry, or repeated occurrence at regular intervals**

What are spatial associations?

- Spatial associations refer to the **tendency** of a pair of services, events and objects to be located near each other.
 - E.g. Lifts and stairways are often located next to each other.
- Understanding spatial associations in our neighbourhood enhances our everyday living.

1.4 Organisation of neighbourhoods in Singapore

What are spatial scales?

- Spatial scales refer to the extent of area which a phenomenon or process takes place.
- Scales can be different hierarchies (层次结构) including global, regional, and local

What are the spatial scales in Singapore?

- In Singapore, there are more than 20 towns that are spread across the island.
- In each town, there is a town centre with a concentration of activities
- Each town centre may serve as the commercial and social hub for residents living in its neighbourhoods

What spatial hierarchies can we observe in Singapore?

- In Singapore, there are nested areas of different sizes, beginning with a single residential unit

Residential unit ⇒ Precinct ⇒ Neighbourhood ⇒ Town

Precinct:

- Between 400 to 200 residential units form a precinct
- Facilities are often within close proximity, serving residents' everyday needs

Neighbourhood and town:

- A neighbourhood serves between 4000 and 6000 residential units
- Each neighbourhood comprises a few precincts
- A few neighbourhoods for a town
- The town's neighbourhoods can be found surrounding the town centre, which enables all residents to travel to and from the town centre conveniently.

How is town planning done in Singapore?

Town planning in Singapore:

1. Serves residents and provides for nature at distinct levels of the precinct, neighbourhood and town.
2. Creates connections and synergies across precincts, neighbourhoods and towns.

Singapore's town planning creates connections and synergies across precincts, neighbourhoods and towns.

- Connections and synergies are created to help achieve sustainability
- Long-term plans at the national level seek to achieve this by optimising land resources to cater to the diverse needs of current and future generations.

Topic 2: Sustainable Development

2.1 Sustainable urban neighbourhoods

What is development?

- Development refers to the economic, social and political process which results in an improvement of **standard of living** for a population.

What is sustainable development?

- Sustainable development refers to development that:
 - Meets the needs of the present population by achieving high standards of living for all.
 - Ensures the ability of future generations to meet their own needs.
- The 3 key aims of sustainable development are **economy, environment and society**.

How can urban neighbourhoods achieve economic and social sustainability?

1. Economic Sustainability

- a. Achieved by ensuring that a neighbourhood has high enough population density, which helps to support local business, and keep transport and infrastructure costs low.

2. Social Sustainability

- a. Achieved by ensuring residents feel included and have a sense of shared identity.
- b. This can be fostered by having shared community spaces to promote regular social interactions

How can neighbourhoods be sustained environmentally?

- There are various ways environmental sustainability can be achieved in an urban neighbourhood, such as:
 1. Ample protection for nature
 2. Facilities that support waste minimisation and recycling
 3. Energy and water-efficient design approaches for buildings and landscapes.

2.2 Ecosystem services in urban neighbourhood

Why are urban neighbourhoods regarded as ecosystems?

- An **ecosystem** is a geographical area where **living communities** and **non-living environments** interact with each other to form a bubble of life
- Ecosystem vary in size
- Every aspect in ecosystems depends on one another, directly or indirectly

What are ecosystem services?

- **Ecosystem services** refer to benefits brought about by nature to people.
- These services are produced by the living communities and non-living environment of ecosystem
- These services are critical to our survival and their benefits are optimised when we have a healthy and thriving natural environment.
- These ecosystem services consist of:
 - Provisioning services
 - Regulation services
 - Cultural services
 - Supporting services

What are provisioning ecosystem services?

- Provisioning ecosystem services refer to the tangible resources that people can get from ecosystem such as food, water and wood
- Food is one of the most important provisioning services provided by nature to people and it can be obtained through means such as agricultural activities and fisheries
- E.g. : Food is grown in Urban community gardens focused on planting edibles on rooftops at Tampines' HDB blocks

What are regulating ecosystem services?

- Regulating ecosystem services refer to the benefits obtained from the regulation of various ecosystem process
 - Includes services such as climate regulation, disease outbreak regulation and flood regulation
 - These ecosystem processes work together to ensure that the ecosystems are functional, clean, sustainable and resilient to changes.
- In an urban neighbourhood, these microclimate regulation, flood mitigation as well as air and water quality control

What are cultural ecosystem services?

- Cultural ecosystem services refer to the intangible benefits people obtain from ecosystem, including aesthetic experiences, educational opportunities and recreational activities.

What are supporting ecosystem services?

- Supporting ecosystem services refer to services that are necessary for the functioning of all other ecosystem services, including soil formation, pollination and photosynthesis.

2.3 Common hazards in urban neighbourhoods

What are hazards?

- **A hazard** refers to a process, phenomenon, or human activities that may cause loss of life, other health impacts, property damage, as well as social and economic consequences
- Can be classified as natural or man-made
- Some examples of man-made hazards include traffic hazards.

What are fire hazards and their impacts?

- In urban neighbourhoods, fire hazards may occur in both residential and non-residential areas.
- Common causes include unattended cooking and faulty electrical appliances and wiring which can ignite nearby flammable materials resulting in a fire.
- Impacts of fire hazards includes:
 - Health impacts
 - High level of carbon monoxide and carbon dioxide may be released during a fire, and may cause carbon monoxide poisoning. This may cause headaches, dizziness, weakness and confusion, and even leading to loss of consciousness and death. They can make it more difficult for people to escape a fire.
 - Other irritants from a fire, such as acid gases, can permanently damage a person's respiratory system.
 - Smoke inhalation can cause breathing difficulties and suffocation which may lead to death.
 - Property damage
 - Fires can destroy commercial or residential properties which leads to economic losses as goods, furnitures and important documents may be destroyed.
 - Further costs may also be incurred after the fire is over as money is required to repair and rebuild the properties that were damaged in the fire.

What are air pollution hazards and their impacts?

- **Air pollution** occurs due to the presence of contaminant or pollutant substances in the air that do not disperse properly and hence interferes with human health, welfare or produce other harmful environmental effects.

Health impacts:

- **Some of the negative health impacts of air pollution include respiratory infections, heart diseases and lung cancer.**

What are traffic hazards and their impacts?

- Common causes include:
 - Speeding
 - Red-light running
 - Drink-driving
- These accidents are often caused by irresponsible motorists who put other road users and themselves at risk.

Health impacts:

- People may suffer serious injuries when involved in a traffic accident, which may lead to disabilities or loss of life.

2.4 Building sustainable urban neighbourhoods

What is environmental stewardship?

- **Environmental stewardship** refers to the actions taken by individuals or groups, to protect, care for or responsibly use the environment to pursue environmental and/or social outcomes
- It can be practised by individuals, organisations and/or governments.

What is disaster risk?

- **Disaster risks** refer to the likelihood of damage to properties, injuries, and loss of lives from a disaster in a given period of time

What is disaster risk management?

- **Disaster risk management** refers to plans and actions that are implemented to prevent new risks from happening, reduce existing risks and manage disaster risks.
- This strengthens **community resilience**.

What are community resilience?

- Community resilience refers to the ability of a community to resist, **adapt** and to recover from impacts of disasters in a timely and efficient manner.

Topic 3: Geographical Methods

3.1 Designing fieldwork

What is a fieldwork?

- Fieldwork is a systematic approach to investigate geographical phenomena and their related issues.
- There are 5 stages in the fieldwork process:
 - Crafting research question or hypothesis
 - Collection of data
 - Analysis of data
 - Presentation of findings
 - Conclusion and evaluation

How may a research question or hypothesis be crafted?

- Fieldwork often begin with crafting a research question or a hypothesis
- This involves:
 - First, identify a topic or **thesis** from credible sources such as textbooks, news articles and websites.
 - Next, crafting a research question or hypothesis.

What types of data may be collected and how may data collection be sequences?

- To answer the research question or test the hypothesis, data must be collected, Before collecting the data, there is a need to decide on the following:
 - Types of data to collect
 - Sequence of data collection

Type of data to collect:

- To answer the research question or test the hypothesis, both primary and secondary data can be collected and used as evidence.
 - **Primary data:**
 - Data that are collected first-hand
 - Photographs and sketches taken by fieldwork researches.
 - Responses from **close-ended questionnaire surveys** administered by fieldwork researches.
 - **Secondary data:**
 - Data that are collected by someone else
 - Books, newspaper articles, journals and maps produced by other authors.
- Data can also be classified into:
 - Quantitative data
 - Data that can be qualified and measured.
 - Responses from close-ended questionnaire surveys.
 - Qualitative data
 - Data that are not easily measurable and are subjective in nature.
 - Responses to **open - ended questions** in **semi-structured interviews**.

Sequencing the data collection

- If both quantitative and qualitative data are required, it is important to decide the sequence of data collected.

What are some limitations that needed to be considered whe designing fieldwork?

- When designing a fieldwork, there is a need to determine the scope of the investigation. The scope can be adjusted based on research aims, **study area**, **sample size** and timeframe.

What are the risks of fieldwork?

- It is important to consider the potential risks in fieldwork to avoid harming oneself, other people and nature.

Risks/Hazards	Mitigation Measures
• Falls, cuts, minor injuries	- Students are to wear proper footwear and clothing - Students are to take note of potential hazards (e.g. uneven surfaces, steep steps, jagged rocks)
• Traffic accidents, collitions with cyclists	- Students are to take note of local traffic hazards amd road crossing procedures. - Students are to avoid collecting data on the road or in the path of cyclists.

3.2 Collecting primary data

What is sampling?

- **Sampling** is the process of selecting a portion of population being studied, usually to make generalisations about the population.
- Sampling is necessary because it is **often not possible or practical** (e.g. too time consuming) **to obtain information from the entire population.**
- Statistically, a sample size of 30 would be required to conduct a reasonable analysis of the data.

Sampling			
Probability sampling		Non-probability sampling	
Simple Random Sampling	Stratified Random Sampling	Convenience Sampling	Quota Sampling

From the textbook ⇒

	Probability sampling	Non-probability sampling
What is it?	• Samples are randomly selected, without the researcher's conscious decision. • This can be done by using a random number generator or die. • This removes bias that may come from the choices made by the researcher. • Has a greater chance of creating a representative sample. Example: ◦ To find out your schoolmates' favourite place in the neighbourhood, you select students from your school using a random number generator, instead of selecting only schoolmates that you know.	• Samples are non-randomly selected, often using the researcher's conscious decision. • This means that the researcher subjectively selects samples, such as family or close friends. • This selection may be biased. • Samples are unlikely to be representative as they are subjectively selected, making it hard to make generalisations about the population. Example: ◦ To find out your schoolmates' favourite place in the neighbourhood, you only select your friends in your class or CCA.
When is it used?	• Used to select a more representative sample.	• Used when: ◦ It is unnecessary or impractical to select a representative sample such as when conducting interviews, testing out the design of the questionnaire or when conducting an exploratory research. ◦ Sampling needs to be conducted quickly due to time limitation.
Examples of methods	• Simple random sampling. • Stratified random sampling.	• Convenience sampling. • Quota sampling.

Simple random sampling

- Every member of the population is given a number
- A random number generator is used to generate random numbers (e.g. 2, 5, 7) to select the samples

Stratified random sampling

- Selects a sample that has a proportionate makeup to the population based on age and sex (or other categories such as ethnicities)
- Probability sampling such as random sampling is used to select the sample
- If random sampling is not used, it becomes quota sampling.

Quota sampling

- Select a sample that has a proportionate makeup to the population based on age and sex (or other categories such as ethnicities).
- Non- probability sampling such as convenience sampling is used to select the sample, instead of random sampling.

Convenience Sampling

- Samples are selected because they are convenient sources of data, such as friends and people walking down a street.

What are questionnaire surveys?

- Questionnaire surveys investigate the opinion of people or organisations using a series of questions.
- They are used to collect qualitative data
- You can collect data with questionnaire surveys using:
 - **Predefined responses** in the questionnaire survey
 - **Rating scales** in the questionnaire survey
 - **Frequency scales**
 - Present a range of responses based on the number of occurrences
 - **Ranking scales**
 - Used to get participants to compare items with one another
 - should have less than 10 items to produce reliable data

What are mental maps?

- Mental maps can be used to collect data on:
 - How people experience and think visually and spatially about their environment.
 - The dynamic relationships people have with their environment.

3.3 Processing and analysing data

How many quantitative data from close-ended questionnaire surveys be processed and analysed?

- Quantitative data from close-ended questionnaire surveys may be processed and analysed frequently using:
 - Measures of frequency
 - To measure, we can use counts and percentages
 - Measures of central tendency
 - Measures of central tendency include:
 - **Mean**
 - **Median**
 - **Mode**
 - Under different conditions, it may be more appropriate to use one of the measures than others.

How may qualitative data from mental maps be processed and analysed?

- Qualitative data from mental maps can be processed and analysed by:
 - Centering and borders
 - Scale of map elements
 - Labelling
 - Colours, legends and symbols
 - Perspective and orientation
 - Other features (e.g. paths, nodes, or intersections)

How may relationships and patterns be examined?

1. Patterns and relationships from **scatter plots** and **best-fit lines**.
2. Recognisable geometric shapes, clusters and repetitions from data sets (e.g. maps).

3.4 Presenting findings

How do we present findings using maps?

- Maps are visual representations of real-world **spatial information** using symbols

How do we present findings using graphs?

- Graphs are useful in interpreting the data analysis, as well as in presenting the data findings.
- You can use:
 - Bar graphs
 - Pie charts
 - Line graphs
- To decide which graphical presentation to use, it is important to consider:
 - The kind of quantitative data
 - How could the graphical presentation meaningfully communicate findings.

How do we present findings using photographs and text?

1. Presenting findings using photographs

- a. Photographs including satellite and aerial images can be used to present fieldwork findings with **spatial information**.

2. Present findings using text

- a. Text based data are qualitative data and often presents researchers with unique challenges of interpretation and representation.
- b. Text-based data could include:
 - i. Letters
 - ii. Oral histories
 - iii. Transcripts of interview
 - iv. Other rich sources of secondary information

Colour-coded quotations

- Quoting parts of sentences in a paragraph or essay to help researches lose sight of what they are reading when analysing large bodies of texts. (e.g. highlighting with different colours)

Word Cloud

- Sometimes it is difficult to recognise the most important points in the text-based data
- Therefore, researches use word clouds to present the more important points
- The bigger and bolder the words appears, the more often it is mentioned within a given text. This signals its greater importance.
- Example of online word cloud websites: <https://mentimeter.com>

Notes on Geography In Everyday Life Cluster made by Nutcracker, based on reference from the GIELC Textbook. Good luck to all of your examinations and I hope that these notes will help.