Topographic Map

1. Map Symbols

- Map Symbols are either natural (physical features) and man-made (human Features)

2. Directions

- 4 Main directions- North, South, East, West
- 4 intermediate directions- Northeast, Northwest, Southeast, Southwest
- In the Northeast quadrant- There is the North North East, East North East, North East should be the last 2 words and to specify where in the quadrant we need to write East or North. Applicable to the other quadrants.

3. Grid References

- 4 and 6 figure grid reference.
- For the 4 figure grid, use the Northlings value as the one before where the point is. Same applies for the Eastlings value.
- For the 6 figure grid reference, the same applies as the 4 figure grid reference. However, the third digit for each of the 2 sets of grid references will be an estimate of where each point is in between the grid references.

4. Measuring Distances

- For straight lines, use a ruler
- For curved lines, use a piece of string
- The measurements will be in cm but it will be necessary to transfer it to km

Sense of Place

- Can originate from metal map or a text given
- Point will be whether there sense of place is weak or strong
- Give elaboration and evidence-

- For texts/ personal experiences, quote from the passage
- For drawings give details of the drawings. Notice for differently shaped buildings which are unusual (etc. a gap in the middle of a square building, composite figure) and labelling of places

- Link: explain what factors influence sense of place

1. Intensity of experience
2. Duration of visits
3. Frequency of visits
4. Age of person when visiting

- Value of place does not mean physical value, it's the amount it means to someone

How has society developed and what do they need to live?

- Society has developed to try and form sustainable cities
- Developed economically and human
- Economically- GDP per capita and economic structure. Economic structure refers to primary, secondary and tertiary employment
- Human - standard of living through

1. Recreation
2. Access to clean water
3. Sanitation
4. Housing
5. Transport
6. education—-> literacy rate
7. healthcare—> life expectancy

- People need natural resources to live
- The supply should be higher/ equal to demand

Housing

- A city is defined as an urban area within a country, The majority of the population of the earth lives in cities. They have:

1. Large population sizes- population sizes of being a city varies from country to country.
2. High population density- Can be calculated using number of ppl living in an area of land divided by the land area
3. Built up areas- consists of infrastructure consisting of water, electricity, sanitation, telecommunications and transport
4. Range of functions- such as administrative functions and commercial and educational activities

- Relationship between cities and rural Areas

1. Rural- Urban Migration

- Based on push and pull factors.
- Push factors are why people leave their place of origin. Eg, Undesirable qualities of a place like war, drought or poverty
- Pull factors refer to the reasons why people go to cities. Eg. Job opportunities, higher pay, education

2. Provision of Goods and Services

- Cities have a lack of space so they rely on rural areas for agriculture. Rural farmers can rear animals and grow crops in exchange for money, which is their income.
- Rural people can benefit from the city from healthcare and buy certain goods only available in cities.

- Opportunities for people in cities

1. Education and employment

- Cities are centres for learning., home to a variety of educational centres for anyone to learn.
- Work-study agreements

2. Technological advancements

- Funding from the government so researchers can experiment with new ideas to make people's lives easier and more comfortable.
- Some examples are through shading, transport, vegetation, Building Facades and water bodies such as lakes.

- Challenges that people face

1. Environmental pollution

- A Lot of fossil fuels are being consumed due to cities

2. Water pollution

- Due to improper management of household and industrial waste

3. Air pollution

- Due to burning of fossil fuels, there is a lot of air pollution which can cause lung cancer and respiratory infection.

4. Competition for resources of land and water

- Due to a high demand by cities for resources, there is a competition between cities for the resources
- Land resource - Cities may replace rural areas or forests and farmlands for cities to build more houses or amenities.
- Water resource- due to more people and the affluence of people, the demand for water increased. Due to the lack of space to build reservoirs, the supply for water is not increasing resulting in water being scarce.

- How can cities be sustainable

1. Environmental management

- Reduce people’s use of things which indirectly harm the environment

2. Reducing air pollution through laws
3. Managing hazards
4. Use better quality building material
5. Land use planning

- Controls where housing is built in order for it to be sustainable

- Improve quality of life

1. Provides safe housing

- Built HDBs, without them there would be informal housing.

2. Provides a variety of transportation modes
3. Considering the needs of different groups- for ppl with disabilities, ramps etc.

Types of housing

1. Formal housing-

- Built by governments and private developers
- Legal right to occupy land

- Access to basic services
- High-quality building materials
- Built on desirable land

2. Informal housing-

- Self-built squatter settlements
- No legal right to occupy land
- Lack of access to basic services
- On undesirable land

Factors affecting housing

1. Land use planning
2. Developers
3. Land prices
4. Housing Financial support

How does the Singapore government build sustainable housing?

1. Setting up HDB in 1960

- Holistic approach to solving the issue and provides 80% of housing to the public.

2. Amendment of the Central provident Fund(CPF)

- The CPF was started by the British to be used as a savings account. However, as time grew, the SIngapore government realised that with increasing house prices, the CPF will be necessary for people to be able to afford housing. For example, The CPF can be used to pay the monthly payment for the house or can be used to pay for down payment. This results in more affordable housing as money from people's savings can be used to buy houses.

3. Land acquisition

- In 1967, the government bought back all the land in Singapore, leasing it back to the public for 99 years. It uses the land for national development which is for housing, commerce, transport and industries. This results in the government having enough resources to build houses where there is a shortage.

4. Provide housing grants and priority schemes

- Housing grant- money to subsidise price of housing where low-income housing people get a higher subsidy than middle-income household gets a lower subsidy
- Priority schemes- When getting a new house, a balloting system is used. Married couples, families with children and families with children and seniors have more ballots to allow them to get the house.

5. Keeping development costs low

- By keeping the development costs low, the price for houses will be lower so more people would be able to afford it.
- One way is through BTO flats.

- BTO flats (build to order) is when before construction, private developers are hired by the government to plan the sites and infrastructure. After that an application form is sent out to see whether people are interested in buying the house. If more than 60% of housing spaces are filled up, then the house will be built. If not, the project would be aborted.

6. Different types of housing for people with different needs

- Based on income ability and family needs i.e., the size of the family.

7. prefabrication

- Walls and structures are built offsite and are moved onsite for assembly which is faster and cheaper to do, making housing available and affordable.
- There are standard designs by hired architects to reduce professional cost
- By reducing the cost of building, the house will be listed for cheaper resulting in more affordable housing.

8. Inclusive housing

- For people with different needs
- Children- 2 types of playgrounds, one for young children and 1 for children between the ages of 7 and 12. There is also a childcare centre.
- Seniors- Fitness for the elderly and senior care facilities.
- Disabilities- ramps, rails and braille on lift and ground.

Water

- Hydrological Cycle

1. Precipitation- rain
2. Groundwater
3. Surface Runoff
4. Evaporation
5. Transpiration
6. Condensation

Supply should be equal to demand or higher.

If supply (input) is higher than demand (output) a flood can occur
If demand (output) is lower than supply (input) a drought can occur.

People use water:

1. Domestic
2. Recreation
3. Agriculture
4. Industry

Sustainable Management:

1. Improving water quality
2. Reducing water consumption
3. Improving water technologies
4. Importing water

Israel

- Issues in Israel

- The climate is Dry and Hot, due to 60% of land and low precipitation.
- Insufficient Water- Demand> Supply
- Demand is high as there is a growing population, the people are affluent(will not save water as they can afford it) and there is economic growth from agriculture (primary) and Industries (secondary)
- Supply is low as the climate is arid where there is low precipitation and frequent droughts
- Sea of Galilee water level has dropped significantly and the aquifers are depleted.

- Reducing Demand

1. Pricing policy

- You pay for what you use
- It is revenue neutral but in Israel, people have to pay the entire price of water but in Singapore, the government loses money.
- There is the overhead cost, running cost and maintenance cost and to reduce the prices, Israel put the cost of this on the people.

2. Innovations in agriculture

- Drought resistant crops- genetically modified seeds of plants to require less water to grow and cultivate.
- Drip irrigation- instead of using canals or mass watering plants where majority of the water evaporates, drip irrigation is a pipe with holes where less water is used to grow the same number of plants. There is also automatic irrigation which uses sensors to tell when the plants need water ensuring the plants are always watered.

3. Public education

- News
- Campaigns
- Advertisements
- School curriculum

- Increasing supply of water

1. Desalination plants- uses reverse osmosis
2. Wastewater reclamation- used in agriculture for Israel
3. Network of 250 storage tanks of water

Singapore is similar to Israel.

Transport

- Node- a location that provides entry into the transport network
- Route- path for travel between nodes
- Variety of transport modes such as air(plane), land (cars, bus, bikes etc) and water(subs and boats)
- Where are transport nodes in a city
- Where there is a concentration of activities
- Level of accessibility, common mrt interchanges
- Traffic congestion-
- More vehicles than the road can handle.
- Reduced mobility
- Long vehicle queues
- Slow travelling speeds
- Consequences-
- Stress on mental health can become frustrated due to slow vehicles resulting in back ache or high blood pressure.
- Physical health- extended time sitting down and the extra release of C02 can give drivers respiratory problems
- Slow vehicular movement can affect productivity as they are late for work.
- Noise population- streets near where people live can cause people to not be able to sleep well due to cars honking exceeding the noise limit of 53db causing them to not be able to sleep well.

- Safety

1. Silver zones

- Marked with bright bright fluorescent signs
- Reduction of speed limit to 40 km/h
- Reduction of lanes
- 2 stage crossing
- Mountable centre dividers that enable emergency services to pass over them.

2. Speed cameras
3. Train carts for people for specific genders

- Laws and policies
- Increase a supply of public transport, promote use of environmentally friendly vehicles
- Road price
- Land use planning which resulted in better rail connectivity, provision of range of mobility and research and development in technology such as electric cars and self-driving cars.

- Inclusion features on trains
- Barrier free- allowing different people with mobility needs to be able to move around
- Larger and clearer fonts, improved icons and sharper colour contrast
- Braille and embossed text on handrails of staircases and ramps
- Platforms come with arm support and backrest
- Inclusive features of buses
- Barrier free
- More ergonomic features
- More bus interchanges have baby rooms
- Pedestrian facilities
- Roads and barriers are barrier free
- Overhead bridges have lifts
- 1000 pedestrians have been fitted with green man plus
- Audio tactile signs on pedestrian crossings to help the visually impaired.
- Taxi stands built after 2008 are barrier free.

To deal with traffic congestion:

There is a need to reduce demand and increase the supply of public transport.

Demand:

- Cars pay a toll crossing certain roads at peak times of the day
- People need a certificate of entitlement which has a limited amount which you get through balloting so people have more demand on public transport

Supply

- Imposing Infrastructure through mrt lines, 6-lane expressways.