Geography (Secondary 1-3) Curriculum Framework

Curriculum Aims and Objectives

1.1 Curriculum Aims

This curriculum aims to enable students to:

(a) develop knowledge and understanding of space, place and environment, with particular emphasis on spatial distribution, human-environment interactions across different places, and changes in the natural and human environment;

(b) cultivate the ability to think and enquire from a geographical perspective, and develop geospatial thinking skills to analyse geographical phenomena and address geographical issues of daily life;

(c) understand national geography, appreciate the magnificent landscapes of our motherland, and recognise our country's achievements in economic and social development, as well as its contributions to the sustainable development of human societies, thereby fostering a sense of belonging to our country and strengthening national identity; and

(d) develop a global perspective, understand the importance of international cooperation, and contribute to the well-being and sustainable development of our country and the world.

1.2 Objectives

In relation to the above aims, students should be able to:

1.2.1 Knowledge and Understanding

(a) develop a thorough understanding of key geographical concepts, including space, place, region, human-environment interaction, global interdependence and sustainable development, and apply them in different contexts;

(b) understand how the natural and human processes shape the characteristics of places and their interconnectedness at the local, national and global scales;

(c) understand the spatial distribution of major natural and human features, as well as the underlying factors that account for the distribution pattern in our country and the world;

(d) understand how places and the natural environment influence human life, how human activities alter them at the regional or global scale, and how different regions/countries respond to such impacts;

(e) describe and explain the interactions between humans and the natural environment across space and time, including the physical and human processes involved, and the patterns and impacts created by such interactions; and

(f) develop knowledge and understanding of the major global issues and how they can be addressed and/or resolved through sustainable development.

1.2.2 Skills

(a) think geographically, guided by the following questions:
- (i) "What is it?"
- (ii) "Where is it?" and "What is it like?"
- (iii) "Why is it there?" and "How did it happen?"
- (iv) "How and why is it changing?"
- (v) "What impacts does it have?"
- (vi) "How should it be managed?"

(b) master basic geographical enquiry skills, including the ability to :
- (i) ask geographical questions;
- (ii) locate and collect information and data relevant to the enquiry from a variety of sources;
- (iii) organise and present information and data in appropriate formats; and
- (iv) analyse and interpret information and data in order to draw conclusions.

(c) master basic geographical skills, including:
- (i) fieldwork skills: including the selection and use of different fieldwork techniques and instruments to collect and record data, processing and analysing data, and drawing conclusions;
- (ii) map reading and interpretation skills: including the ability to read and interpret maps of different types and scales, calculate distance using map scales, determine direction using direction signs, and locate places using grid references; and
- (iii) geospatial thinking skills: including the reading and interpretation of different types of maps, photographs and satellite images, and the use of Geographic Information Systems (GIS) to analyse spatial data for understanding, analysing and solving geographical problems.

(d) master basic generic skills, particularly holistic thinking skills (including critical thinking skills, problem-solving skills and creativity), through geographical enquiry, including:
- (i) evaluate information collected and determine its reliability;
- (ii) analyse geographical phenomena from multiple perspectives; and
- (iii) identify the causes of problems and propose solutions based on such causes.

(e) develop the ability to use digital technology, including
- (i) share information by using applications (apps),
- (ii) use digital educational tools to create content, such as employing data visualisation tools to produce charts, or using tools such as apps or Geographic

Information Systems to present fieldwork reports; and

(iii) use artificial intelligence (AI) to organise and analyse data, and to construct knowledge.

1.2.3 Values and Attitudes

(a) develop humanistic qualities and the attitude of respect for and protection of the natural environment, and encourage them to take the initiative in assuming responsibility for environmental conservation and the wise use of the Earth's resources, and to take actions to create a better environment and promote the sustainable development of the world;

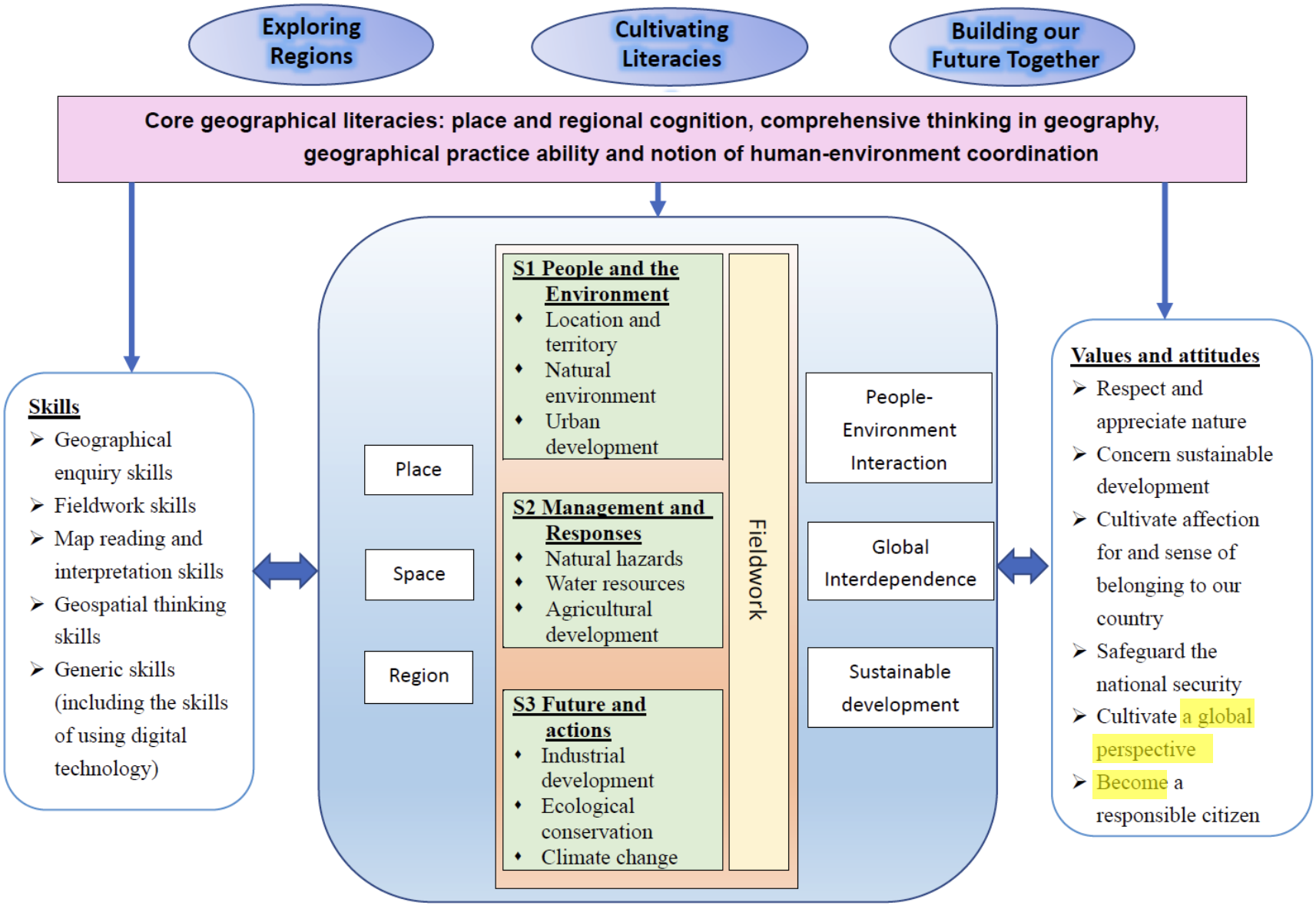
(b) appreciate the magnificent landscapes of our motherland, and recognise our country's achievements in economic and social development and its contributions to global sustainable development, thereby developing their sense of national identity as Chinese nationals and sense of belonging to our country, national identity and national pride, enhancing their awareness of national sovereignty and strengthening their affection for our country; and be willing to safeguard national security and contribute to social well-being and national prosperity;

(c) recognise the interdependence between China and other regions, develop a global perspective, and understand the importance of international cooperation in addressing global issues;

(d) respect different ethnic groups, their values, cultures, and ways of life; and

(e) cultivate attitudes towards the ethical use of information and digital technology.

Curriculum structure



Geography Curriculum (Secondary 1-3)

Curriculum Framework

Secondary 1 People and the Environment

Module 1.1 Location and Territory

Location is one of the key factors influencing cultural characteristics and socio-economic development. This module aims to introduce how to determine locations using the world's continents and oceans, and the latitude-longitude coordinate system. It enables students to gain a deeper understanding of our country's location in the world, its territorial characteristics, and its provincial-level administrative regions. Through this, students are expected to understand our country's geographical background and locational advantages, and fully recognise that Hong Kong is a Special Administrative Region (SAR) of our country, thereby understanding the vastness of its territory and the importance of safeguarding national territory, and enhancing their awareness of upholding national unity and territorial integrity.

Suggested time allocation: 5 – 6 hours

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
1. Determining locations using the world's continents and oceans	♦ Definition of location ♦ Distribution of land and sea in the world ♦ Describing the location of places using continents and oceans	♦ Understand the definition of location ♦ Learn about the distribution of the seven continents and the four oceans of the world	<u>Geographical Concepts</u> ♦ Location ♦ Direction <u>Geographical Skills</u> ♦ Locate continents and oceans on a world map	♦ Locate the continents and oceans on globes, world maps or satellite images ♦ Label the continents and oceans on a world map using the drag-and-drop functions provided on online learning platforms ♦ Describe the locations of major countries (including China) using

		• Learn about how to describe the locations of places using continents and oceans	• Describe the locations of major countries (including China) on a map • Use an eight-point compass to indicate direction	continents and oceans on the world map
2. Determining locations using the latitude-longitude coordinate system	• Latitude and longitude • Major lines of latitude and longitude • Determine locations using the latitude-longitude coordinate system	• Learn about latitude and longitude • Learn about the major lines of latitude and longitude • Learn about how to determine locations using the latitude-longitude coordinate system	<u>Geographical Concepts</u> • Location • Lines of latitude and longitude • Latitude and longitude grids <u>Geographical Skills</u> • Distinguish between the Eastern, Western, Northern and Southern Hemispheres • Find places using latitude and longitude • Find the locations of places using the latitude-longitude coordinate system	• Find major lines of latitude and longitude on a globe, and point out the basis for dividing the world into the Eastern, Western, Northern and Southern Hemispheres • Find places based on the latitudes and longitudes given through online games • Use electronic maps to find the latitudes and longitudes of major cities in the world • Describe the locations of historic sites and scenic spots in the world using latitude and longitude on a world map

3. Location of China	♦ Location of China in the world ♦ China's locational advantages	♦ Learn about the location of China in the world ♦ Learn about the locational advantages of China (having both land and sea access, and numerous neighbouring countries)	<u>Geographical Concepts</u> ♦ Location ♦ Lines of latitude and longitude ♦ Direction <u>Geographical Skills</u> ♦ Read a map and describe the location of China in the world	♦ By reading a map, describe the location of China in the world in terms of hemispheres, the major lines of latitude it crosses, and its land-sea position, and list the countries that border China, starting from northeast China and moving anti-clockwise to southern China, as well as the adjacent seas from north to south, thereby helping in understanding China's locational advantages of having both land and sea access and numerous neighbouring countries
4. The territory of China	♦ Definition of territory ♦ China's land area ♦ The four extremities of China's territory and their locations ♦ Characteristics of the territory of China	♦ Understand the definition of territory ♦ Learn about China's land area (including the Mainland, coastal islands, Nanhai Zhudao, Diaoyu Dao and its affiliated islands) ♦ Learn about the four extremities of	<u>Geographical Concepts</u> ♦ Territory ♦ Location ♦ Latitude and longitude grids ♦ Scale and distance ♦ Direction <u>Geographical Skills</u> ♦ Read a map of China ♦ Determine locations using the latitude-longitude coordinate system	♦ Use electronic maps to compare the area of China with that of other countries, highlighting China's vast territory ♦ Read a map of China to learn about the composition of the national territory and enhance the awareness of the national territory ♦ Find the latitudes and longitudes of the four extremities of China's territory on both paper and electronic maps of China ♦ Find the longitudinal extent between China's easternmost and

		China's territory and their locations ♦ Learn about the vastness of China's territory	♦ Calculate actual straight-line distances using a map scale	westernmost points, and the latitudinal extent between its southernmost and northernmost points on paper and electronic maps of China ♦ Calculate the actual straight-line distances between China's easternmost and westernmost points, as well as between its southernmost and northernmost points, using a statement scale on a paper map of China, or measure them on an electronic map of China, thereby understanding the vastness of China's territory
5. China's provincial-level administrative regions	♦ Names, abbreviations, and administrative centres of the 34 provincial-level administrative regions ♦ Relative locations of the 34 provincial-level administrative regions	♦ Learn about the names, abbreviations, and administrative centres of the 34 provincial-level administrative regions ♦ Learn about the relative location of the 34 provincial-	<u>Geographical Concepts</u> ♦ Location ♦ Provincial-level administrative regions ♦ Place ♦ Latitude and longitude grids ♦ Scale and distance ♦ Direction	♦ Watch the audiobook titled "Learning and Teaching Series on 'Geography of China': Introduction to the Geography of China", produced by the Education Bureau, to learn about the geographical location, territorial land and sea, and provincial-level administrative regions ♦ In small groups, play a jigsaw puzzle game depicting China's administrative regions

		level administrative regions	<u>Geographical Skills</u> ♦ Read a political map of China and describe the relative locations of provincial-level administrative regions within China ♦ Determine locations using the latitude-longitude coordinate system ♦ Find the compass points and whole-circle bearings ♦ Calculate actual straight-line distances using a map scale	♦ Label administrative centres on a map of China and describe the locations of some key administrative centres using latitude and longitude ♦ Through map reading, initially explore the relative location of the Hong Kong Special Administrative Region in China and the world, and analyse its locational advantages as an international shipping centre ♦ Find out the relative location of Hong Kong SAR in relation to other key administrative centres using distance and direction on a map of China ♦ In small groups, select a provincial-level administrative region and create a 'Provincial-level Administrative Region Name Card' that shows its location, administrative region, cultural characteristics, and economic development

Values and Attitudes	♦ Appreciate the vastness of our country's territory ♦ Enhance the awareness of the national territory and homeland security ♦ Cultivate a sense of belonging to our country and a deep affection for it

Module 1.2 Natural Environment

The Earth's land surface is characterised by diverse topography, featuring varying elevations and landforms. Our country, with its vast territory, boasts five primary types of landforms: plateaus, mountains, hills, basins, and plains. This varied topography, marked by high relief in the west and low relief in the east, along with significant latitudinal differences, further enhances the complexity and diversity of its climate. This module aims to introduce our country's topography, climate, and rivers, enabling students to understand the rich and varied natural environment and landscapes of our country, as well as their impact on people's lives. In Part One, students have to learn the basic types of landforms, identify different parts of mountains on contour maps, and use maps and relevant data to briefly summarise the types of landforms and relief characteristics of our country. In Part Two, students have to use maps and climatic graphs to understand our country's climatic characteristics and the distribution of climate types. In Part Three, students have to learn the concept and classification of rivers, gain an overview of our country's major rivers, compare the characteristics of the Changjiang and Huanghe by reading data tables, and use maps and relevant information to summarise the relationship between topography, climate, and rivers. In Part Four, through project-based learning, students can explore the impact of the natural environment on people's lives within the four major geographical regions of our country.

Suggested time allocation: 10 – 11 hours

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
1. Topography	♦ Basic types of landforms ♦ Different parts of mountains ♦ Contour patterns of different parts of mountains	♦ Learn about the five types of landforms (plateaus, mountains, hills, basins and plains) ♦ Learn about the different parts of mountains (peak, slope, ridge, saddle, valley, spur)	<u>Geographical Concepts</u> ♦ Topography ♦ Altitude ♦ Contour line ♦ Vertical interval <u>Geographical Skills</u> ♦ Interpret a contour map to identify different parts of mountains	♦ Through studying photographs, aerial photographs or satellite images, observing topographic models or watching audio-visual materials, identify the morphological characteristics (height and steepness of slope) of the five basic types of landforms, as well as the shape and features of different parts of mountains

		♦ Learn about the contour patterns of different parts of mountains	♦ Identify conventional signs used for showing the height of land with the aid of a legend	♦ Find examples of major world mountain ranges, plateaus, basins, and plains on a three-dimensional world relief map ♦ Observe how a three-dimensional terrain is transformed into a two-dimensional contour map using apps or contour boxes ♦ Identify the relationship between the spacing of contour lines and steepness of slope ♦ Identify the vertical interval and distinguish different parts of mountains on maps of Hong Kong or areas near the school (1:5 000 or 1:20 000) ♦ Observe and take photographs of different landforms and different parts of hills from high vantage points in Hong Kong, and describe their shape and features ♦ Create models of landforms and mountains using apps, 3D printing technology, AI tools, or smart sandboxes

	♦ Topography of China	Landforms ♦ Learn about the distribution of the five basic types of landforms in China ♦ Learn about the vast extent of mountainous areas in China Relief characteristics ♦ Learn that China's relief is high in the west and low in the east, forming a three-step ladder-like pattern of China's relief, with unique landforms at each step	Geographical Concepts ♦ Topography ♦ Relief ♦ Spatial distribution ♦ Direction Geographical Skills ♦ Identify the basic types of landforms on a topographic map of China ♦ Interpret a pie chart, and calculate the percentage of mountainous areas within the total land area	♦ On a topographic map of China, delineate the boundaries of the three-step ladder-like topography, and mark the major mountain ranges along these boundaries and the main landforms on either side, enabling students to recognise the diverse topography of China ♦ Read and interpret a pie chart showing the share of different types of landforms among the total land area of China, identify the type of landform that accounts for the largest proportion, and calculate the share of mountainous areas (including plateaus, mountains, hills) within the total land area, thereby understanding the vast extent of mountainous areas in China ♦ On a topographic map of China, point out that Hong Kong belongs to the coastal hilly region at the third step, and read the relief map of Hong Kong, provide a general description of the relief of Hong Kong ♦ Watch the audiobook titled "Learning and Teaching Series on 'Geography of China': The Topography of China", produced by

				the Education Bureau, to understand the three-step ladder-like topography of China and appreciate its magnificent landscapes
2. Climate	♦ Climate	♦ Understand the definition of climate ♦ Learn about climatic elements (air temperature, precipitation, air pressure, wind direction, wind speed, relative humidity) ♦ Learn how to describe climatic characteristics	<u>Geographical Concepts</u> ♦ Climate ♦ Climatic elements ♦ Climatic characteristics <u>Geographical Skills</u> ♦ Construct, read and interpret climatic graphs	♦ Construct a climatic graph, tell the characteristics of the changes in climate over time, and describe the seasonal distribution patterns of temperature and precipitation shown on the graph ♦ Interpret a climatic graph and understand the climatic characteristics of Hong Kong
	♦ Climatic characteristics of China	♦ Learn about the distribution patterns of temperature and annual precipitation in China ♦ Learn about the seasonal variations of temperature and precipitation in China	<u>Geographical Concepts</u> ♦ Temperature ♦ Precipitation ♦ Monsoon ♦ Spatial distribution pattern ♦ Seasonal change ♦ Climatic characteristics	♦ Read and interpret the maps showing the distribution of mean temperatures in China during January and July, as well as the map illustrating the distribution of annual precipitation across China, and summarise the distribution patterns of temperature and annual precipitation in China

		♦ Learn about China's significant monsoon climate	<u>Geographical Skills</u> ♦ Read and interpret the maps showing the distribution patterns of temperature and annual precipitation ♦ Interpret a climatic graph to describe the seasonal distribution patterns of temperature and precipitation	♦ Watch the audiobook titled "Learning and Teaching Series on 'Geography of China': Climate of China", produced by the Education Bureau, to learn about the spatial variations in climate across China ♦ Based on climatic graphs, describe the seasonal distribution patterns of temperature and precipitation of two cities in southern China, and summarise the characteristics of monsoon climate
	♦ Distribution of climate types in China	♦ Learn about the climate types in China ♦ Learn about the distribution of climate zones in China <u>*Extended Learning Part**</u> *Understand the factors controlling the climate of China (latitude, altitude, distance from the sea, and monsoon)*	<u>Geographical Concepts</u> ♦ Climate zone ♦ Spatial distribution pattern <u>Geographical Skills</u> ♦ Read and interpret climatic graphs ♦ Read the map showing the distribution of major climate types in China and describe the distribution of climate zones in China	♦ Read and interpret five climatic graphs belonging to different climate zones, describe their climate characteristics, and identify their respective climate types, thereby summarizing the diversity of climate types in China ♦ *Extended learning part:* *Read maps showing monsoon activity and the distribution of monsoon regions in China, identify the wind directions and characteristics of the summer and winter monsoons, thereby illustrating how monsoons influence climate*

3. Rivers	♦ The concept and classification of rivers ♦ Major rivers in China ♦ Relationship between topography, climate and rivers	♦ Understand the concept and classification of rivers ♦ Learn about the distribution and major characteristics of the major rivers in China (the Changjiang, Huanghe and Zhujiang) ♦ Learn about the variations in the characteristics of rivers in the northern and southern regions, and along different river courses ♦ Learn about the relationship between topography, climate and rivers *Extended learning part** *Using the Changjiang and Huanghe as examples to learn about the human factors leading to the hydrological differences*	Geographical Concepts ♦ River ♦ Exterior river / Exorheic river ♦ Interior river / Endorheic river ♦ Direction ♦ Spatial distribution ♦ Regional variations ♦ Spatial association Geographical Skills ♦ Read and interpret the topographic map of China, and identify the flow directions of China's three major rivers ♦ Read a map showing the distribution of rivers in China, and identify the regions through which the three major rivers flow ♦ Read a table showing the length and mean annual discharge of the rivers, construct and interpret a bar chart, and compare the	♦ Watch the audiobook titled "Learning and Teaching Series on 'Geography of China': Rivers in China", produced by the Education Bureau to understand China's three major rivers, their distribution and characteristics ♦ Based on hydrological data of the Changjiang and Huanghe, work in groups to construct bar charts displaying their mean annual discharge, and then discuss the natural and human factors leading to hydrological differences ♦ Prepare overlays of different types of geographical information of China (e.g. rivers, topography and annual precipitation) to create an integrated GIS map for understanding hydrological differences of rivers ♦ Watch documentary footage of the Changjiang and Huanghe to visualise hydrological phenomena ♦ Use AI to assist in analysing river data

			characteristics of rivers in different regions ♦ Read and interpret a map showing the wet regions and dry regions in China, and identify the relationship between climate and rivers ♦ Read and interpret the topographic map and photographs of China, and using the Changjiang and Huanghe as examples, compare the characteristics of different river courses and identify the relationship between topography and rivers	
4. Impact of the natural environment on people's lives	♦ Overview of the natural environment of China's four major geographical regions ♦ Impact of the natural environment on people's lives	♦ Learn about China's four major geographical regions ♦ Understand how the natural environment affects the way of life of the people	<u>Geographical Concepts</u> ♦ Location ♦ Region ♦ Spatial distribution ♦ Use of natural resource ♦ Interrelationship between people and the environment	♦ Using one of the geographical regions as a case study, collect relevant data on its location, climate, topography, local produce, and people's lives, analyse the impact of the natural environment on local produce and people's lives, explain how people adapt to nature and develop the area according to the local conditions, and finally, prepare

			<u>Geographical Skills</u> ♦ Study a topographic map to identify the basic types of landforms in a given region ♦ Interpret climatic graphs to describe climatic characteristics ♦ Geographical enquiry skills	study reports and make a presentation to share the research findings with classmates ♦ In line with the curriculum, the Mainland exchange programmes under the theme of "National Landscape of China" can be organised, allowing students to personally experience the magnificent landscapes of China, and through project learning, understand how the natural environment influences the lifestyles, customs, and culture of local people

Values and Attitudes	♦ Appreciate China's magnificent landscapes and its beauty of nature ♦ Strengthen students' affection for and sense of belonging to our country ♦ Understand the importance of safeguarding homeland security and resource security ♦ Foster the concept of harmonious coexistence between people and nature ♦ Respect and protect the natural environment, and be willing to take proactive actions for environmental conservation ♦ Respect different ethnic groups, their values, cultures, and ways of life

**Extended learning part: Teachers may choose whether to cover this part for enrichment, depending on the teaching progress, students' abilities, and interests. The part may also be used for students' independent learning.*

Module 1.3 Urban Development

The evolution process of cities from individual entities into city clusters represents not only spatial expansion but also profound changes in economic, cultural and social interactions. The development of sustainable smart cities reflects the emphasis of modern society on innovative technology and sustainable development. With the continuous development of the economy of our country, cities have been expanding since the Reform and Opening-up. The development of city clusters along the eastern coast precisely demonstrates that urban development in this region has entered a mature stage. This module aims to enable students to understand the characteristics of cities, urban development and the distribution of city clusters. Through studying the city cluster of Guangdong-Hong Kong-Macao Greater Bay Area, students can learn about the locational advantages of China's city clusters and understand how smart cities achieve sustainable development through technology.

Suggested time allocation: 8 – 9 hours

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
1. Characteristics and development of cities	♦ Characteristics of cities ♦ Urban growth and development	♦ Learn about the characteristics of cities ♦ Learn about urban growth and development (increase in urban population, and the growth in number and scale of cities)	<u>Geographical Concepts</u> ♦ Urban area ♦ Place ♦ Population density ♦ Urban land use ♦ Changes over time ♦ Population movement ♦ Urban growth ♦ Grid reference <u>Geographical Skills</u> ♦ Calculate population density ♦ Identify different types of land use on	♦ Identify the characteristics of cities (such as building density, transport network and facilities) on a map ♦ Understand the characteristics of urban land use through photographs ♦ Use AI tools to analyse the types of land use and their characteristics on maps ♦ Along a planned route in the school vicinity, identify land use types and describe their characteristics ♦ Map urban land use in the field and construct a land use map using GIS ♦ Based on Hong Kong's population statistics, calculate the increase in

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
			photographs and a simplified land use map ♦ Identify and use conventional signs with the aid of a legend on a map of Hong Kong (1:5 000 or 1:20 000) ♦ Show the locations of places using grid references ♦ Calculate the increase in the size of urban population ♦ Read and interpret the maps in different periods to compare the number and scale of cities	the size of the urban population of Hong Kong in different periods over the past few decades ♦ Read and interpret the maps of a certain region in different periods of time and identify the changes in the number and scale of cities
2. City clusters	♦ Characteristics of city clusters ♦ Global distribution of city clusters ♦ Locational advantages of China's city clusters	♦ Learn about the characteristics of city clusters ♦ Learn about the global distribution of city clusters ♦ Learn about the locational advantages	<u>Geographical Concepts</u> ♦ City cluster ♦ Location ♦ Hinterland ♦ Spatial distribution	♦ Watch the audiobook titled "Learning and Teaching Series on 'Geography of China': Cities", produced by the Education Bureau, to understand China's three major city clusters and list their common characteristics

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
		of China's city clusters Case Study: Guangdong-Hong Kong-Macao Greater Bay Area <u>*Extended learning part*</u>* *Understand the relationship between the development of the Northern Metropolis and the Guangdong-Hong Kong-Macao Greater Bay Area*	♦ Relationship between people and the environment <u>Geographical Skills</u> ♦ Read a map showing the global distribution of city clusters ♦ Read and interpret a map of the Guangdong-Hong Kong-Macao Greater Bay Area and related socio-economic data	♦ Read maps, aerial photographs, or satellite images, and describe the spatial distribution of city clusters worldwide or within China ♦ Prepare overlays of different types of geographical information of China (e.g. rivers, topography, transport network and city clusters) to create an integrated GIS map for understanding the locational advantages of city clusters in China ♦ *Extended learning part: Use the learning content of this topic and previous topics to understand and conduct a preliminary enquiry into the relationship between the development of the Northern Metropolis and the Guangdong-Hong Kong-Macao Greater Bay Area*

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
3. Trend of urban development - Building sustainable smart cities	♦ Build sustainable smart cities	♦ Understand the concept of sustainable development ♦ Understand the concept of smart cities ♦ Understand how technology is used to optimise urban planning to achieve sustainable development Examples: Shenzhen, China; Oslo, Norway	<u>Geographical Concepts</u> ♦ Sustainable development ♦ Smart city ♦ Urban planning ♦ Application of technology ♦ Relationship between people and environment <u>Geographical Skills</u> ♦ Geographical enquiry skills	♦ Conduct fieldwork in Kowloon East, or search for information about the area online, to explore the potential of Kowloon East to be developed into a smart city area ♦ Search for information online to understand the application of Global Navigation Satellite Systems (GNSS), such as the Global Positioning System (GPS) and the BeiDou Navigation Satellite System (BDS), in traffic flow management, safety monitoring and urban management in smart cities ♦ Conduct a case study on one of the sustainable smart cities by collecting information on its location and examples of technologies applied to promote smart city development, analysing how such elements optimise urban planning to achieve sustainable development, and finally delivering a presentation to share the research findings with classmates

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
				♦ Cross-curricular collaboration: Use AI to generate images to showcase or design a sustainable smart city

Values and Attitudes	♦ Understand the importance of sustainable development ♦ Show concern for the importance of technology in building sustainable smart cities ♦ Understand the importance of safeguarding science and technology security, data security and societal security ♦ Cultivate a sense of responsibility and willingness to take proactive actions for sustainable development

**Extended learning part: Teachers may choose whether to cover this part for enrichment, depending on the teaching progress, students' abilities, and interests. The part may also be used for students' independent learning.*

Secondary 2 Management and Responses

Module 2.1 Natural Hazards

Natural hazards are natural phenomena that lead to loss of life and property. In this module, students will learn about the causes and effects of two types of natural hazards - typhoons and earthquakes, as well as the preventive and remedial measures that can reduce their negative effects. By studying examples from different countries, students will understand regional variations in disaster prevention, disaster relief, and post-disaster reconstruction, as well as the factors affecting the ability to cope with natural hazards, thereby gaining an insight into why some regions are more vulnerable to natural hazards than others.

Suggested time allocation: 8 – 9 hours

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
1. Major natural hazards in the world	♦ Meaning of natural hazards ♦ Major natural hazards	♦ Understand the concept of natural hazards ♦ Learn about the major natural hazards in the world (earthquakes, volcanic eruptions, floods, droughts, landslides, tropical cyclones, and wildfires)	<u>Geographical Concept</u> ♦ Natural hazards <u>Geographical Skills</u> ♦ Read the photographs to identify different natural hazards in the photographs	♦ Read the news about natural hazards, and identify the natural hazards, their locations of occurrence and the damage caused

2. Tropical cyclones — Typhoons	• Distribution pattern of areas affected by tropical cyclones and the reasons behind • Conditions for the formation of tropical cyclones • Weather conditions brought by typhoons • Negative effects of typhoons • Preventive and remedial measures	• Learn about the distribution pattern of areas affected by tropical cyclones and the reasons behind • Understand the conditions for the formation of tropical cyclones • Learn about the weather conditions brought by typhoons • Learn about the secondary disasters brought by typhoons and the socio-economic impact of typhoons • Understand the preventive and remedial measures to reduce losses	<u>Geographical Concepts</u> • Spatial distribution • Location • Weather elements • Secondary disasters • Human response to natural hazards • Prediction of typhoon • Scale and distance • Direction <u>Geographical Skills</u> • Calculate the actual straight-line distance using a map scale • Identify direction • Read and interpret the weather chart, and identify weather symbols • Read a map to describe the track of the typhoon • Identify the warning signals associated with typhoons in Hong Kong	• Use the information provided by the Hong Kong Observatory to describe the place of origin, the moving direction, and the track of tropical cyclones • On the weather chart, calculate the actual straight-line distance from the eye of the typhoon to Hong Kong using a map scale, and find out the direction from the eye of the typhoon to Hong Kong • Read a series of weather charts of Hong Kong to describe the weather conditions of Hong Kong on the days affected by a typhoon, and state the changes in weather conditions brought by typhoons • Use the instruments provided by the school, measure and record the local weather data before and after the occurrence of a typhoon, and use IT to present the data systematically • Watch the audiobook titled "Learning and Teaching Series on 'Geography of China': Natural Hazards and Mitigation Measures I", produced by the Education Bureau, to understand

				the causes, effects, and mitigation measures of typhoons ♦ Use China or the Philippines as a case study, collect information on the disasters caused by typhoons and the remedial measures carried out by the government, and then produce a short report ♦ Use AI tools to design a poster educating the public on the ways to avoid risks of and respond to typhoons
3. Earthquake	♦ Internal structure of the earth ♦ Major plates in the world ♦ Relationship between global distribution of earthquakes and plate boundaries ♦ Causes of earthquakes ♦ Destruction brought by earthquakes	♦ Learn about the internal structure of the earth ♦ Learn about the major plates in the world ♦ Learn about the relationship between the global distribution of earthquakes and plate boundaries ♦ Understand how plate movement results in earthquakes ♦ Learn about the primary and secondary	<u>Geographical Concepts</u> ♦ Plate tectonics ♦ Earthquake belts ♦ Spatial association ♦ Human response to natural hazards ♦ Prediction of earthquakes ♦ Interdependence ♦ International cooperation ♦ Scale and distance ♦ Direction	♦ On the map, calculate the actual straight-line distance from the epicentre of an earthquake to a place using a map scale and find out the direction of that place from the epicentre ♦ Use GIS to create a map showing the relationship between the distribution of recent earthquakes around the world and plate boundaries ♦ Watch a video about plate tectonics and plate movement, and understand how plate movement leads to earthquakes

	• Preventive and remedial measures • International disaster relief efforts	disasters brought by earthquakes • Understand the preventive and remedial measures to reduce losses • Understand international disaster relief work (including how China helps other countries to carry out disaster relief work)	<u>Geographical Skills</u> • Calculate the actual straight-line distance using a map scale • Identify directions • Read the map showing the distribution of earthquakes, find out the relationship between plate boundaries and the global distribution of earthquakes • Read and interpret the aerial photos to describe the destruction caused by an earthquake	• Compare aerial photographs of relevant cities before and after the earthquake to understand the damage caused by the earthquake • Search for and gather information online to understand how Global Navigation Satellite Systems (GNSS), such as Global Positioning System (GPS) and Beidou Navigation System (BDS), assist in disaster relief efforts • Search for and gather information online to understand China's contribution to the United Nations International Search and Rescue Advisory Group, and take pride in its contribution • Watch the audiobook titled "Learning and Teaching Series on 'Geography of China': Natural Hazards and Mitigation Measures II", produced by the Education Bureau, to understand the causes, effects and mitigation measures of the earthquakes • Through a case study, collect information on the causes of a recent earthquake in a country, the disasters caused by the earthquake, and the remedial measures implemented by

				the government, and then produce a short report
4. Reasons for some regions being more vulnerable to natural hazards	• Variations in disaster prevention, disaster relief and post-disaster reconstruction works across different regions • Factors affecting the abilities to cope with natural hazards	• Learn about the differences in disaster prevention, disaster relief and post-disaster reconstruction work across different regions • Learn about the major factors affecting the abilities to cope with natural hazards before, during and after the natural disasters Examples: China, Indonesia, New Zealand	<u>Geographical Concepts</u> • Management of natural hazards • Human response to natural hazards • Level of economic development • Technology • Government policies <u>Geographical Skills</u> • Read and interpret the population and socio-economic data of more developed and less developed regions, and make comparisons	• Search for and gather information online and watch the videos, and then compare the impact of natural hazards on different countries • Analyse specific cases to compare the achievements and shortcomings of different regions in disaster prevention, disaster relief, and post-disaster reconstruction works, and explore the main factors affecting disaster response capabilities

Values and Attitudes	• Willing to take preventive measures to reduce the negative effects brought by natural hazards • Understand the importance of safeguarding societal security • Show concern for people affected by natural hazards and build empathy • Take pride in our country's contribution to disaster prevention and international relief efforts, and foster a sense of belonging to our country and affection for our country

Module 2.2 Water Resources

Freshwater resources available for drinking account for less than one percent of total water resources on Earth, making water scarcity a global issue. This module aims to enable students to learn about the operation of the water cycle and the distribution pattern of water resources, and understand the current status of water security and water resource management strategies in North China. Students will explore how the interplay of natural and human factors has led to the water shortage problem in the Sahel region of Africa, and finally, understand the measures China has taken to assist the Sahel region in managing water resources, enhancing its capacity for water resource management, and addressing water scarcity, thereby building a global community with a shared future for mankind.

Suggested time allocation: 8 – 9 hours

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
1. Water resources in the globe	♦ Water cycle ♦ Water resources ♦ Distribution pattern of water supply in the world	♦ Learn about the operation of the water cycle ♦ Understand the concept of water resources ♦ Learn about the global distribution pattern of water resources and major areas experiencing water scarcity	<u>Geographical Concepts</u> ♦ Water cycle ♦ Water resources ♦ Spatial distribution <u>Geographical Skills</u> ♦ Calculate the amount of water resources per capita ♦ Draw a pie chart to show the distribution of planetary water by percentage ♦ Read and interpret a map showing the distribution of	♦ Draw a simple flow chart to show the operation of the water cycle ♦ Organise a visit to the H2O Public Education (H2OPE) Centre and, through a guided tour, students understand the limitations of Hong Kong's water resources and the importance of Dongjiang water, thereby cultivating their attitude of "being grateful for the source of one's blessings" and encouraging them to take proactive actions to conserve the precious water resources

			freshwater resources in the world, and describe the major areas affected by water scarcity	
2. Current status of water security and water resources management in North China	♦ Distribution pattern of water resources in China ♦ Location, climatic characteristics and types of water resources in North China ♦ Challenges to water security in North China ♦ Strategies for water resources management in North China	♦ Learn about the distribution pattern of water resources in China ♦ Learn about the location, climatic characteristics and types of water resources in North China ♦ Understand the challenges of water security in North China ♦ Learn about the water resource management strategies in North China – Water diversion scheme: the South-to-North Water Diversion Project – Pollution control	<u>Geographical Concepts</u> ♦ Location ♦ Spatial and temporal distribution ♦ Climatic characteristics ♦ Resource management ♦ Human-environment interaction ♦ Sustainable development <u>Geographical Skills</u> ♦ Calculate the amount of water resources per capita ♦ Read and interpret a map showing the distribution pattern of water resources in China ♦ Read and interpret a climatic graph ♦ Read and interpret data	♦ Read and interpret a map showing the distribution of water resources in China, and identify the regions experiencing water scarcity ♦ Describe the seasonal distribution of precipitation in the urban areas of North China according to the climatic graph ♦ Compare the share of water resources, area of arable land, population size and the regional GDP with the national total, and analyse the challenges to water security in North China in terms of supply and demand ♦ Interpret a map and watch a video to understand the construction of the South-to-North Water Diversion Project ♦ Let students discuss various ways of proper water resource management and utilisation to enable them to understand that protection, proper

		– Control of water usage – Restoration of ecological environment		management and use of water resources are crucial components related to national security (such as resource security)
3. Causes of water shortage in the Sahel, Africa	♦ Distribution of water resources in Africa ♦ Location and climatic characteristics of the Sahel region ♦ Causes of water shortage in the Sahel region	♦ Learn about the distribution pattern of water resources in Africa ♦ Learn about the location and climatic characteristics of the Sahel region ♦ Understand the physical and human factors leading to water shortage in the Sahel region <u>*Extended learning part**</u> *Understand the impact of water shortage in the Sahel*	<u>Geographical Concepts</u> ♦ Spatial distribution ♦ Location ♦ Climatic characteristics ♦ Interaction between physical and human factors ♦ Infrastructure ♦ Climate change ♦ Desertification <u>Geographical Skills</u> ♦ Read and interpret a map showing the distribution of water resources ♦ Read and interpret a climatic graph	♦ Read and interpret a map showing the distribution of water resources in Africa, and identify the regions experiencing water scarcity in Africa ♦ Search for and gather information online and from news to understand the causes of water shortage in the Sahel region ♦ Search for and gather information online and conduct a preliminary exploration of the causes of water shortages in other regions
4. Measures carried out by China to assist the	♦ Measures that China has taken to assist the Sahel region in	♦ Learn about the measures that China has taken to assist the Sahel region in	<u>Geographical Concepts</u> ♦ Interaction between humans and the environment	♦ Search for and gather information online to understand how China assists the Sahel region in addressing water shortages

Sahel region in Africa in combating water shortages	Africa in addressing water shortages	combating water shortages – Water infrastructure – Sharing of technology – Scientific research and training <u>*Extended learning part**</u> *Understand the effectiveness of the China-aided Zinder Water Supply Project in Niger in solving the problem of water shortage*	♦ Resource management ♦ Interdependence ♦ International cooperation	♦ Use AI or IT tools to create a video that introduces the conservation of water resources and promotes water conservation ♦ *Extended learning part: Read an online map and information to understand the location and natural environment of the Zinder Water Supply Project, Niger, as well as its effectiveness*

Values and Attitudes	♦ Understand the importance of water resource management ♦ Cultivate a sense of responsibility for water conservation ♦ Show concern for the well-being of our country, understand the importance of resource security, and take proactive action to conserve water resources ♦ Show concern for and lend a helping hand to people affected by water shortages, cultivating empathy, and jointly building a global community with a shared future for mankind

**Extended learning part: Teachers may choose whether to cover this part for enrichment, depending on the teaching progress, students' abilities, and interests. The part may also be used for students' independent learning.*

Module 2.3 Agricultural Development

Food security has always been an important issue. As economies develop, countries need to not only produce enough food to feed their populations but also improve the quality of agricultural produce while reducing the environmental impact of agricultural production. This module aims to help students understand agricultural systems and locational factors, as well as agricultural technologies that contribute to sustainable agricultural development. Through a case study of China, students will learn about our country's major agricultural regions and the factors that influence their distribution. Additionally, students will explore how China and Australia, each with unique natural conditions, adopt climate-smart agriculture to address climate change and improve food quality, thereby achieving sustainable agricultural development.

Suggested time allocation: 7 – 8 hours

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
1. Agricultural system	♦ Agricultural system	♦ Learn about the inputs, processes and outputs of the agricultural system	<u>Geographical Concepts</u> ♦ Agricultural system ♦ Input and output ♦ Interrelationship between humans and the environment	♦ Read a flow diagram and describe how an agricultural system operates
2. Agricultural location factors	♦ Agricultural location factors ♦ Major agricultural regions of China and factors affecting their distribution	♦ Learn about the agricultural location factors (physical factors) Case Study: China ♦ Learn about the four major agricultural regions in China (Types of farming and	<u>Geographical Concepts</u> ♦ Locational factors ♦ Region ♦ Types of agriculture ♦ Spatial association ♦ Interrelationship between people and the environment ♦ Climatic characteristics	♦ Read and interpret a map showing the distribution of climate zones and a relief map of China to analyse the impact of climate and relief on types of agricultural produce, farming patterns, and farm productivity ♦ Use AI tools to read a contour map of an agricultural region and

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
		their major characteristics) ♦ Learn about the physical factors affecting the distribution of agricultural regions	♦ Gradient Geographical Skills ♦ Calculate area of fields or farms on a map using a map scale ♦ Find the height of the land and calculate the slope gradient from a contour map ♦ Draw an annotated cross-section ♦ Read and interpret a map showing the distribution of climate zones and a relief map of China to learn about its natural environment ♦ Read and interpret a map showing the distribution of the four major agricultural regions of China	analyse how relief affects the distribution of different types of farming ♦ Conduct a field trip to a farm in Hong Kong or the Zhujiang Delta to identify the type of farming and its characteristics through observing and interviewing farmers ♦ Watch the audiobook titled "Learning and Teaching Series on 'Geography of China': Agriculture", produced by the Education Bureau, to understand the types and locations of farming in China, the challenges faced in agriculture and the solutions implemented, thereby enabling students to understand the measures China has taken to improve agricultural production and stabilise food supply in order to safeguard food security

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
3. Sustainable agricultural development	♦ Farming technology for sustainable agricultural development ♦ Climate-smart agriculture	♦ Learn about the farming technology that helps achieve sustainable agricultural development (precision farming, controlled environment greenhouse, biotechnology and breed improvement) ♦ Understand the reasons for the development, technological applications, and characteristics of climate-smart agriculture Case studies: China and Australia *Extended learning part** *Understand the challenges faced in*	Geographical Concepts ♦ Impact of technology ♦ Sustainable agricultural development ♦ Climate-smart agriculture ♦ Climate change Geographical Skills ♦ Calculate the changes in production before and after adopting climate-smart agriculture	♦ Search for and gather information online to explore the agricultural technology adopted by China, helping students learn more about important strategies and achievements in safeguarding food security ♦ Read and interpret photographs to understand the operation of climate-smart agriculture ♦ Cross-curricular collaboration: Collaborate with Computer Literacy teachers to help students learn how to use advanced technologies (such as sensors, Internet of Things, and AI) to design precision farming or optimising farming production processes ♦ Use AI tools to create a short video displaying the operation of climate-smart agriculture ♦ Read and interpret a graph to understand the changes in production before and after adopting climate-smart agriculture

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
		climate-smart agriculture		♦ Search for and gather information online, compare the characteristics of climate-smart agriculture in China and Australia, and analyse the challenges encountered during its implementation

Values and Attitudes	♦ Understand that technologies adapted to the local environment can be used to raise the quantity and quality of agricultural produce ♦ Understand the importance of food security ♦ Cultivate the habit of cherishing food

**Extended learning part: Teachers may choose whether to cover this part for enrichment, depending on the teaching progress, students' abilities, and interests. The part may also be used for students' independent learning.*

Secondary 3 Future and Actions

Module 3.1 Industrial Development

Global industrial development is advancing towards intelligence, green transformation and sustainability. In recent years, our country has been vigorously promoting new quality productive forces, driving a new type of industrialisation with technological innovation, and, to balance environmental conservation and industrial development, actively encouraging high-quality industrial development, technological innovation, energy conservation, and emission reduction. The rapid development of the new energy vehicle (NEV) industry in our country aims to achieve green and low-carbon development. Concurrently, leveraging the policy provided by the joint pursuit of the Belt and Road Initiative, our country's enterprises are strengthening investment in relevant countries, promoting the development of the NEV industry, and providing new pathways for other countries to achieve sustainable development. This module enables students to understand the concept of 'industry' and the operation of the manufacturing systems, and grasp the characteristics and global distribution of the NEV industry. Using the successful case of China's NEV industry as a case study, students are required to analyse the reasons for its rapid growth, its geographic distribution, and the factors that determine the plant locations. Through the case study, students will also gain an understanding of the transnational production model of China's NEV industry — as well as the development momentum generated for China and the host countries as Chinese firms invest and establish factories in these other countries (for example, those along the Belt and Road).

Suggested time allocation: 7 – 8 hours

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
1. Industry	♦ Four sectors of industry ♦ Concept of 'industry'	♦ Learn about the primary industry, secondary industry, tertiary industry and quaternary industry ♦ Understand the concept of 'industry'	<u>Geographical Concepts</u> ♦ Sectors of industry ♦ Industry ♦ Manufacturing industry	♦ Search for and gather information online about various industries in the Chinese Mainland and categorise different economic activities by the types of sectors

				♦ Search for and gather information online about "Made in China" to gain a preliminary understanding of China as an 'industrial superpower'
2. Manufacturing System	♦ Manufacturing system	♦ Learn about the inputs, processes and outputs of the manufacturing system	<u>Geographical Concepts</u> ♦ Manufacturing system ♦ Input and output	♦ Read a flow diagram of the manufacturing system to illustrate the flow of industrial production
3. New Energy Vehicle (NEV) Industry	♦ Manufacturing system of a new energy vehicle enterprise ♦ Characteristics of the new energy vehicle industry ♦ Global distribution of the new energy vehicle industry	♦ Learn about the manufacturing system of NEV enterprises - inputs (such as rare earths, components, energy, etc.), processes (such as design, research and development, assembly, etc.) and outputs ♦ Learn about the characteristics of the NEV industry ♦ Learn about the global distribution of the NEV industry	<u>Geographical Concepts</u> ♦ Manufacturing system ♦ Natural resources ♦ Heavy industry ♦ Capital-intensive industry ♦ High-tech industry ♦ Spatial distribution <u>Geographical Skills</u> ♦ Read and interpret a map to describe the global distribution pattern of NEV industry	♦ Search for and gather information online and draw a diagram of the manufacturing system of a NEV enterprise to show its inputs, processes and outputs ♦ Search for and gather information online to explore the importance of rare earths in industrial production and their application in the NEV industry, enabling students to recognise the importance of rare earth resource security for China's technological development and national security ♦ Read and interpret a map showing the world distribution of

				the NEV industry to describe its global distribution pattern
4. China's new energy vehicle (NEV) industry	♦ Reasons for the rapid development of China's NEV industry ♦ Locations of China's NEV industry ♦ Factors affecting the locations of NEV industry in China ♦ Transnational production model in China's NEV industry ♦ Development momentum generated for China and the host countries by establishing factories in other countries	♦ Learn about the reasons for the rapid development of China's NEV industry ♦ Learn about the locations of the NEV industry in China ♦ Learn about the factors affecting the locations of the NEV industry in China ♦ Learn about the transnational production model in China's NEV industry ♦ Understand the development momentum generated for China and the host countries by the establishment of factories of China's NEV industry in other countries (such as those along the Belt and Road) *Extended learning part** *Understand the reasons for*	Geographical Concepts ♦ Government policy ♦ Sustainable development ♦ Location ♦ Locational factors ♦ Transnational production ♦ Multi-point production Geographical Skills ♦ Read and interpret the photos and maps to identify the factors affecting the location of NEV industry ♦ Read and interpret maps to describe the distribution and transnational production situation of China's NEV industry	♦ Read the recent policy documents of China to understand the direction of China's industrial development ♦ Prepare overlays of different types of geographical information about China (e.g. relief, transport network and cities) to create an integrated GIS map for understanding the major factors that affect the site selection of NEV factories ♦ Based on the content in this module and information gathered online, discuss whether Hong Kong is suitable for developing the NEV industry ♦ Search for and gather information online to identify the Belt and Road countries in which China's NEV enterprises have established factories ♦ Through role-play, express the views of different stakeholders (such as the Chinese

		the emergence of transnational production in China's NEV industry		manufacturers, the government officials and the workers of the host country) on transnational production

Values and Attitudes	♦ Understand the interconnectedness and interdependence among countries ♦ Show concern for the importance of industrial development for national economic security ♦ Show concern for the importance of rare earth resource security for China's technological development and national security ♦ Understand the importance of cherishing resources and reducing pollution

**Extended learning part: Teachers may choose whether to cover this part for enrichment, depending on the teaching progress, students' abilities, and interests. The part may also be used for students' independent learning.*

Module 3.2 Ecological Conservation

Forests are the largest terrestrial ecosystems on Earth. With economic development and land exploitation, massive deforestation has led to the rapid disappearance of forests. Deforestation not only affects humans and species that directly depend on forests for their livelihoods, but also disrupts the ecosystems in other regions. Therefore, the conservation of forests has become particularly important. China has been taking effective measures to protect, restore, and make proper use of forest resources to accelerate the rate of national vegetation coverage, safeguard forest ecological security, and speed up the realisation of the "dual carbon" goals. This module enables students to learn about forest ecosystems and the global distribution of different types of forest ecosystems, and to understand the relationship between vegetation growth and climate within these ecosystems, as well as the importance of conserving forest ecosystems for the global environment. Finally, students will have to learn about the conservation initiatives taken by our country, such as the Three-North Shelterbelt Forest Programme, and appreciate its achievements in greening, thereby fostering an awareness of ecological conservation and understanding the importance of sustainable development.

Suggested time allocation: 7 – 8 hours

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
1. Components and distribution of forest ecosystems	♦ Ecosystem ♦ Biotic and abiotic components of forest ecosystems ♦ Global distribution of different types of forest ecosystems ♦ Relationship between vegetation growth	♦ Understand the definition of an ecosystem ♦ Learn about the biotic and abiotic components of forest ecosystems ♦ Learn about the main characteristics of forest ecosystems ♦ Learn about the global distribution of	<u>Geographical Concepts</u> ♦ Ecosystem ♦ Biotic and abiotic components ♦ Biodiversity ♦ Structure of vegetation ♦ Spatial distribution ♦ Climatic characteristics	♦ Understand the characteristics of forests through photographs, short videos or virtual reality ♦ Read a map showing the global distribution of forest vegetation to describe the global distribution of different types of forest (coniferous forest, temperate deciduous forest, and tropical rainforest) ecosystems in terms of latitude, and to identify the countries where each type of forest is found

	and climate in forest ecosystems	different types of forest ecosystems ♦ Understand the relationship between vegetation growth and climate in forest ecosystems	♦ Relationship between climate and vegetation <u>Geographical Skills</u> ♦ Read photographs to identify forest characteristics ♦ Read a map showing the global distribution of forest vegetation ♦ Draw, read and interpret climatic graphs ♦ Calculate mean annual temperature, annual range of temperature range and annual precipitation	♦ Read photographs to compare the vegetation characteristics (such as tree density and tree height) in three types of forest ♦ Read and interpret climatic graphs for three forest regions to compare their mean annual temperatures, annual ranges of temperature, annual precipitation, and seasonal variations, and explain the relationship between vegetation growth and climate ♦ Conduct fieldwork at Hong Kong Park to observe and record the characteristics of various biotic and abiotic components, and investigate the relationship between vegetation growth and climate ♦ Cross-curricular collaboration: Learn about the biotic and abiotic components of ecosystems through constructing mini rainforest terrariums or forest ecological models

2. Importance of conserving forest ecosystems	♦ Importance of conserving forest ecosystems for the global environment	♦ Understand the importance of conserving forest ecosystems for the global environment (climate regulation, maintaining biodiversity, preventing soil erosion and protecting water resources)	<u>Geographical Concepts</u> ♦ Carbon sink ♦ Biodiversity ♦ Water cycle ♦ Relationship between human and environment <u>Geographical Skills</u> ♦ Read and interpret graphic and textual materials	♦ Search for and gather information online regarding the importance of forests to the environment, and then create a concept map to illustrate the environmental benefits of conserving forest ecosystems
3. Implementation of forest conservation measures	♦ Implementation of measures for forest conservation and restoration in China	♦ Understand the measures implemented for forest conservation and restoration in China – Forest protection • Establishment of nature reserves and national parks • Natural Forest Protection Program – Forest Restoration Projects • 'Grain for Green' Programme – Afforestation • Three-North	<u>Geographical Concepts</u> ♦ Biodiversity ♦ Environmental conservation and management ♦ Sustainable development ♦ Desertification ♦ Technology <u>Geographical Skills</u> ♦ Calculate the greening area on a map using a map scale	♦ View "China Current": 'China is Planting 70 Billion Trees' to learn about the benefits of afforestation ♦ View "China Current": 'Wuyi Mountain - China's First Batch of National Parks' (Broadcast in Cantonese), and search for relevant information to illustrate, with examples, the ecological value of national parks and their contribution to sustainable development ♦ Use AI tools to create posters, animations or short videos that promote the use of forest-certified products

		Shelterbelt Forest Programme – Forest management • Sustainable forest management and ecological compensation • Monitoring of forest resources by means of technology – Education and legislation *<u>Extended learning part*</u> Understand how China and Brazil cooperate in forest conservation*		

Values and Attitudes	♦ Appreciate biodiversity ♦ Foster the value of harmony between humanity and nature ♦ Respect and cherish nature ♦ Show concern for the importance of ecological security ♦ Cultivate a sense of responsibility and act for forest conservation

**Extended learning part: Teachers may choose whether to cover this part for enrichment, depending on the teaching progress, students' abilities, and interests. The part may also be used for students' independent learning.*

Module 3.3 Climate Change

Human activities have caused extensive, rapid changes to the atmosphere, hydrosphere, cryosphere and biosphere. Climate change has triggered many extreme weather events and even affected human life and safety. As climate change accelerates, international cooperation is vital to promote environmental sustainability. This module aims to enable students to explore the trends, causes, and effects of global climate change. It also introduces measures taken by different countries to combat climate change, and highlights the interdependence of countries in their efforts to address it. Through the learning of this module, students will develop climate literacy, understand the interactions between humans and the natural environment, and recognise the importance of environmental conservation.

Suggested time allocation: 9 – 10 hours

Topics	Essential Learning Content	Learning Content Description	Geographical Concepts and Skills	Examples of Suggested Learning and Teaching Activities
1. Trends in global climate change	♦ Trends in global climate (temperature and precipitation) change	♦ Learn about the trend in global temperature change ♦ Learn about the trend in global precipitation change	<u>Geographical Concepts</u> ♦ Climate ♦ Climate change <u>Geographical Skills</u> ♦ Read articles from different sources to identify issues and problems related to climate change ♦ Interpret simple statistical diagrams (e.g. line graphs) showing long-term climate trends (e.g. global annual mean	♦ Watch the short video "Cool Met Stuff": 'The ABC's of Climate' (broadcast in Cantonese) on the Hong Kong Observatory's website to understand the difference between 'climate' and 'weather' and to learn how to determine whether climate has changed ♦ Use different international reports, such as the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) and the China Climate Change Blue Book (2024), to understand the trends in global climate change

			temperature over an extended period)	
2. Causes of climate change	♦ Causes of climate change	♦ Understand the concepts of greenhouse effect, global warming and climate change ♦ Understand how human activities lead to climate change	<u>Geographical Concepts</u> ♦ Greenhouse gases ♦ Greenhouse effect ♦ Global warming ♦ Relationship between people and environment	♦ Watch the short video "Cool Met Stuff": 'Greenhouse Effect' (broadcast in Cantonese) on the Hong Kong Observatory's website to understand the concept of the greenhouse effect and its relationship with global warming ♦ Refer to the World Meteorological Organisation's online resources to learn about the causes and effects of climate change
3. Effects of climate change on different parts of the world	♦ Effects of climate change on different parts of the world	♦ Learn about the effects of climate change on different parts of the world (e.g. changes in the frequency and/or severity of extreme weather events, droughts and floods, sea-level rise, changes to ecosystems, disruption of crop yields and food supplies, and the spread of diseases)	<u>Geographical Concepts</u> ♦ Extreme weather ♦ Ecosystem ♦ Relationship between people and the environment <u>Geographical Skills</u> ♦ Interpret charts, maps, photographs and satellite images to understand	♦ Watch the short video "Cool Met Stuff": 'World's Weather in 2023' (broadcast in Cantonese) on the Hong Kong Observatory's website to gain a preliminary understanding of the effects of climate change on different parts of the world ♦ Use GIS to construct a map showing the areas in the world most severely affected by the major negative effects of climate change

		<u>Extended learning part</u>* *Understand how the melting of sea ice and permafrost in the polar regions further enhances global warming*	changes brought by climate change ♦ Calculate the area of sea ice on a map using a map scale	♦ Use an online electronic map to visualise the impact of sea-level rise on coastal regions ♦ Use satellite imagery to understand the impact of climate change on polar sea ice and ecological environment, enabling students to understand how human activities pose a threat to polar security and ecological security ♦ *Extended learning part: Watch the short video "Cool Met Stuff": 'The Arctic Region' (broadcast in Cantonese) on the Hong Kong Observatory's website to understand how global warming is causing the melting of sea ice and permafrost in the Arctic region, and how this further accelerates global warming*
4. Measures taken to combat climate change	♦ Measures taken to combat climate change – National level – International cooperation	♦ Learn about the mitigation and adaptation strategies adopted to combat climate change Case Studies: Carbon emission reduction strategies adopted in China and Sweden	<u>Geographical Concepts</u> ♦ Green energy ♦ Industrial restructuring ♦ Energy conservation and emission reduction ♦ Carbon sink	♦ Search for and gather online information about carbon emission reduction strategies in China and Sweden ♦ Refer to the latest actions for addressing climate change in China, such as the 'China's Policies and Actions Addressing

	– Individual actions	♦ Learn about the main actions taken by different organisations to address climate change through international agreements ♦ Understand the difficulties involved in the international cooperation for addressing climate change ♦ Learn about the individual actions that can help mitigate climate change <u>*Extended learning part**</u> *Learn about the strategies Hong Kong has adopted to combat climate change*	♦ International cooperation ♦ Sustainable development ♦ Individual interests and common well-being	Climate Change 2024 Annual Report' and 'National Climate Change Adaptation Strategy 2035', to understand China's contributions in addressing climate change ♦ Watch the short video "Cool Met Stuff": 'Climate Summit COP21' (broadcast in Cantonese) on the Hong Kong Observatory's website to learn about the historical background of the climate summit and highlight its important achievements ♦ Watch the short video "Cool Met Stuff": 'Low Carbon Living You can Help' (broadcast in Cantonese) on the Hong Kong Observatory's website to understand the actions individuals should take to reduce carbon emissions ♦ Visit the Jockey Club Museum of Climate Change at the Chinese University of Hong Kong to help students understand the relationship between human activities and climate change, and learn about the important concepts

				such as clean energy, low-carbon living and sustainable development ♦ Use AI tools to create leaflets, animations or short videos that encourage students and Hong Kong citizens to actively reduce emissions and conserve energy ♦ Use the "Low Carbon Living Calculator" to assess students' carbon emissions from clothing, food, housing and travel over the past year, identify the high-energy-consumption habits, and make targeted improvements to address climate change

Values and Attitudes	♦ Understand the interrelationship between humans and the natural environment ♦ Understand the impact of climate change on polar security and ecological security ♦ Understand personal responsibility towards climate change and adopt a sustainable lifestyle

**Extended learning part: Teachers may choose whether to cover this part for enrichment, depending on the teaching progress, students' abilities, and interests. The part may also be used for students' independent learning.*

Enquiry-based Fieldwork

Enquiry-based fieldwork is a vital component of geography education. It can be regarded as any enquiry learning activity conducted outside the classroom. Fieldwork offers students the opportunity to apply or validate knowledge/concepts learned in the classroom within real-world environments, deepen their understanding of the learning content, and learn about the local geographical environment through first-hand experience. Additionally, fieldwork helps students develop their geographical skills and generic skills, such as problem-solving and critical thinking skills, as well as cultivate their geospatial thinking skills. Furthermore, engaging in enquiry through fieldwork, students to seek answers, and discover knowledge helps enhance students' learning motivation and cultivate the spirit of geographical enquiry, thereby promoting self-directed learning. At the same time, conducting enquiry-based fieldwork in real-life contexts, together with a "learning by doing" approach, effectively increases students' interest in learning. Therefore, the revised curriculum allocates 2-4 hours of lesson time each school year for schools, and **schools should arrange for all Secondary 1 to Secondary 3 students to participate in at least one enquiry-based fieldwork activity per year.**

Arrangement of Enquiry-based Fieldwork

1. Fieldwork is not limited to full-day, large-scale field studies in remote locations. Teachers may consider conducting small-scale fieldwork on the school campus or within the nearby community (e.g., a study of urban land use near the school). This type of fieldwork is also easier to manage and can be completed in a relatively short time. Teachers should recognise that the value of fieldwork lies in its ability to help students develop skills such as distinguishing, observing, collecting, applying, and analysing, rather than in the duration of the fieldwork or the number of tasks/assignments completed. Based on this, schools may, depending on their circumstances, arrange for students to conduct enquiry-based fieldwork in the Mainland or overseas study and exchange programmes, or integrate relevant fieldwork elements into existing itineraries.

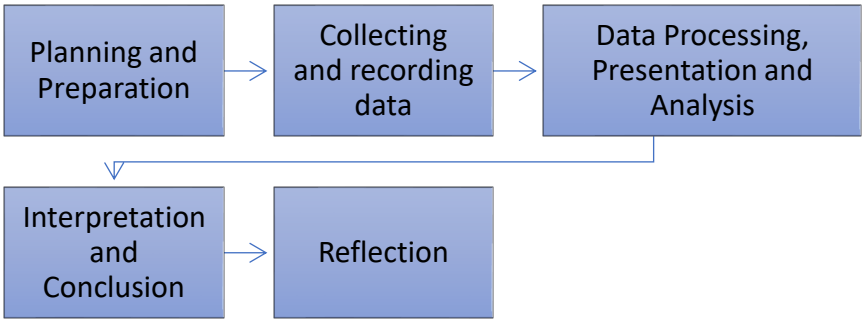
2. Fieldwork may also be conducted in an interdisciplinary format; however, it is necessary to ensure that students remain focused on exploring geographical questions. At the same time, collaboration with other subjects is possible — for example, cooperating with the Science department to teach students how to use instruments for precise measurements, followed by having the Information Technology department instruct students how to use data visualisation tools to create charts. This approach encourages students to integrate knowledge from different subjects to propose solutions and/or make decisions.

3. Flexible arrangements may be made within one school year. If a school is unable to organise fieldwork in distant locations for a particular level, teachers may use virtual reality (VR), electronic maps, or pre-recorded footage of the study environment, to allow students to conduct "non-real-world" enquiries, experience different study environments, observe and identify geographical phenomena and patterns, and collect and interpret data.

Process of enquiry

In enquiry-based fieldwork, students need to use the method of geographical enquiry to conduct fieldwork activities. They can adopt various methods to collect data based on specific geographical questions, organise and present the data in appropriate formats, analyse and interpret it, draw conclusions, and finally evaluate the entire fieldwork process to make appropriate recommendations for improving future fieldwork procedures and outcomes.

The following flowchart illustrates the five stages of enquiry-based fieldwork that students may have to experience:



Enquiry-based fieldwork involves five key steps. However, teachers are not required to have students complete all steps in every enquiry-based fieldwork activity. **Teachers may flexibly arrange for students to engage in and experience different stages of enquiry-based fieldwork,** depending on the enquiry questions, fieldwork environment and lesson design, taking into consideration students' levels and abilities, and **progressively guide them through the complete enquiry process**. For examples of fieldwork topics suitable for different levels and the learning expectations for junior secondary geography enquiry-based fieldwork skills, please refer to Tables 1 and 2 below.

Table 1 Examples of Fieldwork Topics for Different Grade Levels

Level	Topic	Examples of Enquiry-based Fieldwork	Methods Adopted in Suggested Enquiry-based Fieldwork Activities
Secondary 1	Urban Development	Investigate the major types of land use in the community where the school is located	Observation, classification, and land use mapping
		Investigate the differences in land use between the school community and another area	Observation, classification, and land use mapping
Secondary 2	Natural Hazards	Compare the differences in pre-disaster prevention and disaster relief work between Hong Kong and another region	Interviewing Hong Kong citizens and ethnic minorities
	Agricultural Development	Conduct a farm visit to identify the types of agriculture and their characteristics, and explore the operation of the agricultural system	Observing and interviewing farmers
Secondary 3	Ecological Conservation	Investigate the relationship between vegetation growth and climate in different environments at Hong Kong Park	Measurement, counting, observation, and sampling
	Climate Change	Investigate whether indoor temperatures in shopping malls are reasonable, analyse the environmental problems caused, and propose solutions	Measurement, and sampling

Table 2 Learning Expectations for Enquiry-based Fieldwork in Junior Secondary Geography

Stage of Fieldwork	Foundation	Extended	Advanced
<1> Planning and Preparation	Observe the surrounding environment, and under the guidance of teachers, initially formulate simple, exploratory geographical questions, and select the required data and collection method(s) from the options provided	Under the guidance of teachers, formulate exploratory geographical questions, develop a simple enquiry and study plan (including data to be collected and methods), and initially design simple tools (such as record forms and questionnaires) to collect primary data	Identify a clear geographical question, devise a feasible enquiry and study plan (including fieldwork location, timeframe, data to be collected, and methods), and under the guidance of teachers, design appropriate tools to collect primary data
<2> Collecting and Recording Data	Under the guidance of teachers, attempt to use basic methods and tools to collect primary data, and record findings using photographs, tables, maps or written descriptions	Select appropriate methods and tools to collect relevant primary and secondary data, and record findings using photographs, videos, tables, maps or written descriptions	Use simple sampling methods and a variety of appropriate tools to collect sufficient, accurate and relevant primary and secondary data, and systematically record findings using photographs, videos, tables, maps or written descriptions
<3> Data Processing, Presentation and Analysis	Under the guidance of teachers, conduct simple data classification, comparison and integration, present data using photographs, simple	Conduct preliminary classification, comparison, and integration of data, select appropriate methods (such as photographs, charts, and maps) to present	Appropriately apply methods such as classification, comparison, integration, and summarisation, skillfully use appropriate methods to clearly present

Stage of Fieldwork	Foundation	Extended	Advanced
	charts, and maps, and perform preliminary analysis of data to identify relationships	data, and analyse data to identify patterns and relationships	data, and scrutinise and analyse data to identify their meaning, patterns and relationships
<4> Interpretation and Conclusion	Under the guidance of teachers, apply geographical concepts to explain fieldwork findings and draw conclusions based on evidence	Apply relevant geographical concepts to explain fieldwork findings and draw specific conclusions based on evidence	Apply relevant geographical concepts and knowledge to explain fieldwork findings from a geographical perspective, draw precise conclusions based on evidence, and propose solutions and/or make decisions
<5> Reflection	Review the fieldwork process for any shortcomings and propose areas for improvement	Evaluate the enquiry process and identify shortcomings, and propose methods for improvement	Reflect on shortcomings in the enquiry process and propose specific methods for improvement

Note: Teachers are not required to have students complete all five stages in every enquiry-based fieldwork activity.