Humanities
(Social Studies, Geography)

2272 is previously 2267 Social Studies and Geography Elective

Singapore-Cambridge General Certificate of Education Ordinary Level (2018)
(Syllabus 2272)

CONTENTS

Singapore Examinations and Assessment Board

CAMBRIDGE International Examinations

Social Studies

Singapore-Cambridge General Certificate of Education Ordinary Level (2018)

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INTRODUCTION

The Social Studies curriculum aspires toward the growth of our students as informed, concerned and participative citizens.

At the heart of the Singapore Social Studies curriculum is the preparation of our students to be citizens of tomorrow by helping them to better understand the interconnectedness of Singapore and the world they live in, and appreciate the complexities of the human experience. Drawing on aspects of society that are of meaning and interest to the students, Social Studies seeks to ignite students' curiosity to inquire into real-world issues that concern their lives. Through inquiry and authentic learning experiences, Social Studies helps students to attain relevant knowledge and understanding about these issues, develop critical and reflective thinking skills, and appreciate multiple perspectives.

Social Studies seeks to inculcate in students a deeper understanding of the values that define Singapore society, nurture dispositions to inspire them to show concern for the society and the world in which they live and demonstrate empathy in their relationships with others. The curriculum therefore envisions Social Studies students as informed, concerned and participative citizens, competent in decision-making with an impassioned spirit to contribute responsibly to the society and world they live in.

The Singapore Social Studies Curriculum

Syllabus content is organised around three Issues and is anchored in a set of knowledge skills and values outcomes. The three Issues correspond to societal issues that have been shaping Singapore society and the world. The knowledge, skills and values acquired through a study of these Issues will enable students to enrich and deploy their competencies to respond to real world issues and in the process, strengthen their values as citizens. The following table shows the three Issues, each organised around an inquiry focus which provides a frame for students to inquire and respond to the Issue and related issues.

Issue 1: Exploring Citizenship and Governance

Inquiry Focus – Working for the good of society: Whose responsibility is it?

Why this Issue matters

This Issue invites students to begin exploring what it means to be an informed, concerned and participative citizen. Students will deepen their understanding of their roles as citizens and that of government. In a complex society and world, understanding their roles as citizens will influence how they respond to various situations and issues in Singapore and the world. This will serve to develop a stronger sense of civic consciousness, enhancing the roles they play as citizens who are rooted in Singapore with a global outlook.

Key Understandings

- Understanding of citizenship is varied and complex.

- Different groups of people in society have competing interests and managing these interests requires trade-offs to be made.

- Both citizens and government can play complementary roles in working for the good of society.

Issue 2: Living in a Diverse Society

Inquiry Focus – Living in a diverse society: Is harmony achievable?

Why this Issue matters

This Issue helps students appreciate diversity and the importance of harmony. Students will develop an understanding of who they are as individuals and accept, respect and celebrate diversity as well as common practices and values in a diverse society. This will heighten students' awareness of the need to develop personal and collective responsibility in promoting and maintaining harmony in a diverse society.

Key Understandings

- Identities are diverse and complex.

- Living harmoniously in a diverse society means respecting our differences and appreciating what we share in common.

- We can choose how we respond to diversity in our society.

Issue 3: Being Part of a Globalised World

Inquiry Focus – Being part of a globalised world: Is it necessarily good?

Why this Issue matters

This Issue helps students understand and make meaning of their lives in a globalised world where countries, companies and individuals are interconnected and interdependent. Students will explore the impacts of globalisation in three areas: economy, culture and security. They will understand the complex process of globalisation through examining how the uneven impacts of globalisation in these areas result in trade-offs and tensions. These impacts lead to different responses from countries, companies and individuals. Students will therefore appreciate the complex decision-making process behind responses towards the impacts of globalisation. This understanding will lead them in making well-reasoned and responsible decisions as informed, concerned and participative citizens in a globalised world.

Key Understandings

- Globalisation shapes the interconnections and interdependence between countries and people.

- Globalisation creates tension due to uneven impacts.

- The impact of globalisation results in differing responses from countries and people.

AIMS

Social Studies seeks to develop the competencies of our students to be informed, concerned and participative citizens by the end of a ten-year Social Studies education. These competencies encompass the body of knowledge, skills and values expressed in the Philosophy of Social Studies and they are elaborated below.

As *informed* citizens, students would:

- understand their identity as Singaporeans with a global outlook
- understand different perspectives
- view the world with an understanding of the Singapore perspective
- apply reflective thought in making quality decisions
- analyse, negotiate and manage complex situations
- evaluate information, consider different viewpoints and exercise discernment in reaching well-reasoned conclusions and making responsible decisions.

As *concerned* citizens, students would:

- have a sense of belonging to their community and nation
- appreciate the importance of engaging in issues of societal concern
- be committed to building social cohesion by appreciating diversity in society
- have an awareness of the ethical considerations and consequences of decision-making.

As *participative* citizens, students would:

- be motivated to identify issues of concern and take action
- be resilient in addressing concerns of the community or society in spite of challenges faced
- be empowered to take personal and collective responsibility for effecting change for the good of society, and serve to make a positive difference to others.

ASSESSMENT OBJECTIVES

The assessment objectives are:

Objective 1: Knowledge with Understanding

Candidates should be able to:

- demonstrate an understanding of societal issues.

Objective 2 – Interpreting and Evaluating Sources / Given Information

Candidates should be able to:

- comprehend and extract relevant information
- draw inferences from given information
- analyse and evaluate evidence
- compare and contrast different views
- distinguish between fact, opinion and judgement
- recognise values and detect bias
- draw conclusions based on reasoned consideration of evidence and arguments.

Objective 3 – Constructing Explanations

Candidates should be able to:

• analyse societal issues through different perspectives
• construct reasoned arguments and make informed judgement and recommendations.

O-LEVEL ASSESSMENT SPECIFICATION GRID FOR SOCIAL STUDIES

Assessment Objective	Weighting
Objective 1 + Objective 2	35%
Objective 1 + Objective 3	15%
Total	50%

Note: Objective 1 is inevitably part of the testing of Objectives 2 and 3.

SCHEME OF ASSESSMENT

O-LEVEL SOCIAL STUDIES

• One paper of 1 hour 45 minutes.

• Paper comprises 2 sections:

  Section A: (35 marks)
  One source-based case study testing Assessment Objectives 1 and 2.

  Section B: (15 marks)
  One structured-response question testing Assessment Objectives 1 and 3.

• Candidates are required to answer the compulsory source-based case study from Section A and the compulsory structured-response question from Section B.

Source-Based Case Study

The compulsory source-based case study can be set on any of the three Issues:

• Exploring Citizenship and Governance

• Living in a Diverse Society

• Being Part of a Globalised World.

Candidates will be expected to have an understanding of the ways in which sources may be evaluated. The case study will be set on one of the three Issues of the syllabus and will require the skills and concepts taught during the course. The issue of the case study will be related to the syllabus and may or may not be covered in the syllabus content. Candidates are expected to use their knowledge, skills and conceptual understanding developed during the course to help them use the given sources to answer the questions.

The source-based case study comprises five sub-questions:

Sub-Question	Skills Tested	Mark Allocation
a–d	• Source-handling skills on specific sources	25
e	• Source-handling skills requiring use of multiple sources – question will require candidates to consider the issue of the case study from a broader perspective	10

A 'Levels of Response Marking Scheme' **(LORMS)** will be used to assess candidates' responses.

Structured-Response Question

The compulsory structured-response question will be set on any of the three Issues in the syllabus. However, in an examination, the question set will not be on the same Issue as the source-based case study.

The structured-response question comprises two sub-questions:

Sub-Question	Skills Tested	Mark Allocation
a	• Constructing explanation by giving reasoned argument and/or making recommendation on an issue (multiple strategies/multi-causal) – question will require candidates to consider the issue in the context of Singapore	7
b	• Constructing explanation of two factors / perspectives on an issue and making judgement on the relative importance of factors or giving balanced conclusion on the issue	8

A 'Levels of Response Marking Scheme' **(LORMS)** will be used to assess candidates' responses.

O-LEVEL SOCIAL STUDIES SYLLABUS

Issue 1: Exploring Citizenship and Governance	
Descriptor	**Key Understandings**
Inquiry Focus – Working for the good of society: Whose responsibility is it? **Why this Issue matters** This Issue invites students to begin exploring what it means to be an informed, concerned and participative citizen. Students will deepen their understanding of their roles as citizens and that of government. In a complex society and world, understanding their roles as citizens will influence how they respond to various situations and issues in Singapore and the world. This will serve to develop a stronger sense of civic consciousness, enhancing the roles they play as citizens who are rooted in Singapore with a global outlook.	• Understanding of citizenship is varied and complex. • Different groups of people in society have competing interests and managing these interests requires trade-offs to be made. • Both citizens and government can play complementary roles in working for the good of society.

Knowledge Outcomes	Skills Outcomes	Key Concepts
Students will be able to understand: • the different attributes shaping citizenship • the challenges of determining what is good for a society • the functions of government and how governments work for the good of society • how citizens and organised groups can participate in working for the good of society.	Students will be able to: • examine societal issues critically • gather, interpret and evaluate information from different sources to make well-reasoned and substantiated conclusions on societal issues • demonstrate sound reasoning and responsible decision-making that is mindful of the consequences of one's actions on those around them • demonstrate perspective-taking when encountering differing views • demonstrate reflective thinking when reviewing their understanding of societal issues and examining personal assumptions and beliefs about others	• Citizenship • Trade-offs • Governance

Issue 1: Exploring Citizenship and Governance	
Guiding Questions	**Content**
1. What does it mean for me to be a citizen of my country?	• Attributes shaping citizenship – legal status – a sense of identity – participation in public affairs
2. How do we decide on what is good for society?	• Competing needs and interests – managing trade-offs • Functions of government – rule making, rule execution and rule adjudication

3. How can we work for the good of society?	• Role of government in working for the good of society
	– maintaining internal order and external security
	– ensuring justice
	– providing goods and services for the public
	– safeguarding interests of citizens
	
	• Role of citizens in working for the good of society
	– avenues of citizen participation
	  ○ channels of communication between citizens and government
	  ○ individual participation
	  ○ organised groups
	– outcomes of public participation
	  ○ contributing to needs of society
	  ○ influencing government decisions
	  ○ strengthening citizens' sense of belonging

Issue 2: Living in a Diverse Society	
Descriptor	**Key Understandings**
Inquiry Focus – Living in a diverse society: Is harmony achievable? **Why this Issue matters** This Issue helps students appreciate diversity and the importance of harmony. Students will develop an understanding of who they are as individuals and accept, respect and celebrate diversity as well as common practices and values in a diverse society. This will heighten students' awareness of the need to develop personal and collective responsibility in promoting and maintaining harmony in a diverse society.	• Identities are diverse and complex. • Living harmoniously in a diverse society means respecting our differences and appreciating what we share in common. • We can choose how we respond to diversity in our society.

Knowledge Outcomes	Skills Outcomes	Key Concepts
Students will be able to understand: • the factors that shape identities • the reasons for greater diversity in Singapore • the experiences and effects of living in a diverse society • the various ways in which governments and individuals can respond to the effects of living in a diverse society	Students will be able to: • examine societal issues critically • gather, interpret and evaluate information from different sources to make well-reasoned and substantiated conclusions on societal issues • demonstrate sound reasoning and responsible decision-making that is mindful of the consequences of one's actions on those around them • demonstrate perspective-taking when encountering differing views • demonstrate reflective thinking when reviewing their understanding of societal issues and examining personal assumptions and beliefs about others	• Identity • Diversity • Harmony • Assimilation • Integration

Issue 2: Living in a Diverse Society	
Guiding Questions	**Content**
1. What is diversity?	• Different factors that shape identity and contribute to a diverse society – nationality – race and ethnicity – religion – socio-economic status
2. Why is there greater diversity in Singapore now?	• Reasons for movement of people to Singapore – immigration policy – economic opportunities – socio-cultural environment

3. What are the experiences and effects of living in a diverse society?	• Experiences and effects of living in a diverse society
	 – socio-cultural diversity
	  ○ cultural exchange and appreciation
	  ○ prejudice and misconceptions
	 – socio-economic diversity
	  ○ exchange and appreciation of ideas, skills and experiences
	  ○ competition for resources

4. How can we respond in a diverse society?	• Responses in a diverse society
	 – management and impact of socio-cultural diversity
	  ○ assimilation
	  ○ integration
	 – management and impact of socio-economic diversity
	  ○ market-based approach
	  ○ shared responsibility approach
	  ○ government-financed approach

Issue 3: Being Part of a Globalised World	
Descriptor	**Key Understandings**
Inquiry Focus – Being part of a globalised world: Is it necessarily good? **Why this Issue matters** This Issue helps students understand and make meaning of their lives in a globalised world where countries, companies and individuals are interconnected and interdependent. Students will explore the impacts of globalisation in three areas: economy, culture and security. They will understand the complex process of globalisation through examining how the uneven impacts of globalisation in these areas result in trade-offs and tensions. These impacts lead to different responses from countries, companies and individuals. Students will therefore appreciate the complex decision-making process behind responses towards the impacts of globalisation. This understanding will lead them in making well-reasoned and responsible decisions as informed, concerned and participative citizens in a globalised world.	• Globalisation shapes the interconnections and interdependence among countries and people. • Globalisation creates tensions due to the uneven impacts. • The impacts of globalisation result in differing responses from countries and people.

Knowledge Outcomes	Skills Outcomes	Key Concepts
Students will be able to understand: • how technology has made the world more connected • different responses to tensions arising from some economic impacts of globalisation • different responses to tensions arising from some cultural impacts of globalisation • different responses to tensions arising from some security impacts of globalisation	Students will be able to: • examine societal issues critically • gather, interpret and evaluate information from different sources to make well-reasoned and substantiated conclusions on societal issues • demonstrate sound reasoning and responsible decision-making that is mindful of the consequences of one's actions on those around them • demonstrate perspective-taking when encountering differing views • demonstrate reflective thinking when reviewing their understanding of societal issues and examining personal assumptions and beliefs about others	• Globalisation • Interconnections • Interdependence • Homogenisation • Hybridisation • Trade-offs • Security

Issue 3: Being Part of a Globalised World	
Guiding Questions	**Content**

1. What does it mean to live in a globalised world?	• Driving forces of globalisation
	  – developments in transportation
	  – growth of Multinational Corporations (MNCs)
	  – technological advancements

2. How do we respond to tensions arising from some economic impacts of globalisation?	• Economic impact on countries, companies and individuals
	  – economic growth and downturn for countries
	  – higher profits/ market share and lower profits / market share for companies
	  – higher income/ greater employment opportunities and loss of income and employment for individuals
	  – responses to economic impacts
	    ○ cooperation and competition among countries
	    ○ innovation and adaptation by companies
	    ○ acquisition of knowledge and skills by individuals

3. How do we respond to tensions arising from some cultural impacts of globalisation?	• Cultural impact on countries and individuals
	  – homogenisation and hybridisation
	  – different degrees of acceptance and rejection
	    ○ entertainment
	    ○ food

4. How do we respond to tensions arising from some security impacts of globalisation?	• Security impact on countries and individuals
	  – security and vulnerability
	  – management of trade-offs
	    ○ cyber security challenges
	    ○ transnational terrorism

Geography

Singapore-Cambridge General Certificate of Education Ordinary Level (2018)

(Syllabus 2272)

INTRODUCTION

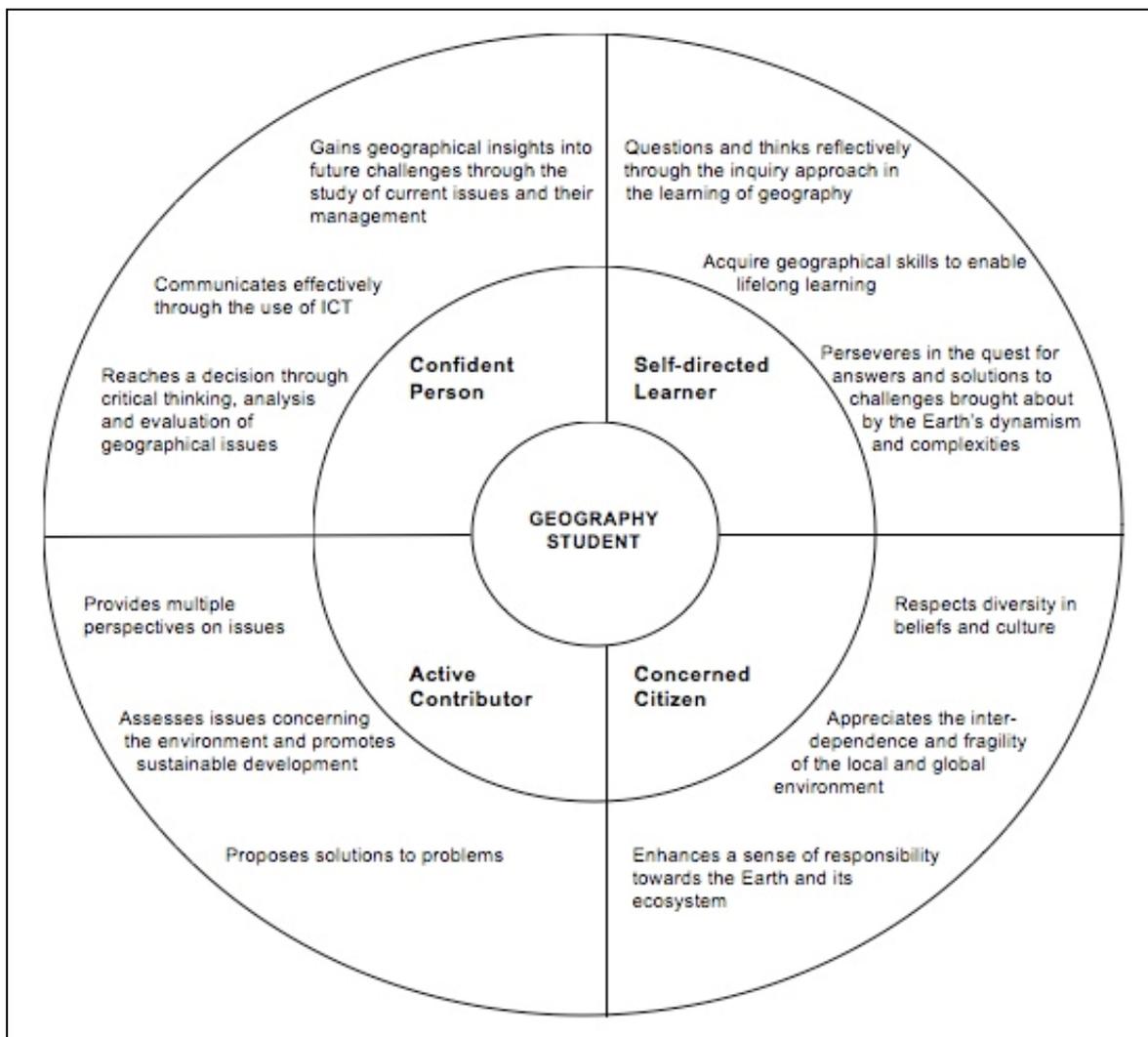**Desired Outcomes of Education and the Study of Geography**

The Desired Outcomes of Education (DOE) are attributes that educators aspire to for our learners. These outcomes establish a common purpose for Geography teachers, and serve as a compass to steer the teaching and learning process.

The DOE for our learners are:

- a *confident person* who has a strong sense of right and wrong, is adaptable and resilient, knows himself, is discerning in judgement, thinks independently and critically, and communicates effectively

- a *self-directed learner* who takes responsibility for his own learning, who questions, reflects, perseveres in the pursuit of learning

- an *active contributor* who is able to work effectively in teams, exercises initiative, takes calculated risks, is innovative and strives for excellence

- a *concerned citizen* who is rooted to Singapore, has a strong civic consciousness, is informed, and takes an active role in bettering the lives of others around him.

As a subject, Geography builds on students' experiences and prior knowledge to examine the physical and human phenomena found on Earth as well as their complex interactions and patterns across space.

Geography emphasises the integrative study of physical and human environments to enable students to gain a better understanding of their own space and other parts of the world. It also focuses on the interconnectedness among groups of people, and between people and their environment. The Geography student can expect to acquire a wide range of knowledge and skills to understand and explain physical and human phenomena, and other contemporary environmental and social issues that occur in different places and cultures. Equipped with the skills of gathering and analysing information, and an enquiring mind to seek answers to issues affecting our lives and the world we live in, Geography students are prepared for their roles as informed citizens in the 21st century. Geography also imbibes in students an awareness of appropriate attitudes and values that promotes a positive geographical future; one that ensures the sustainability of our resources, people, country, and planet. These attributes would place them in good stead to attain the DOE. Details of how the study of Geography contributes towards the DOE of the Singapore education system are shown in Fig 1.

Fig. 1: Desired Outcomes of Singapore's Education through Geography

KEY GEOGRAPHICAL CONCEPTS

There are six key concepts that underpin the study of Geography. Students need to understand these concepts in order to deepen and broaden their knowledge, understanding and skills of the subject. The key concepts and elaborations are as listed in the table below.

1	Space
	• Know the location and distribution of physical features and human activities. • Appreciate how and why the physical features and human activities are changing and their implications. • Understand the interactions between places and the patterns of networks created by movements within these places.
2	Place
	• Understand that every place has a unique set of physical and human characteristics. • Understand the dynamic nature of places, and the opportunities and challenges associated with them.

3	**Scale**	
	• Appreciate different scales, from local to national and international.	
	• Make links between scales to develop geographical understanding of issues confronting different societies.	
4	**Physical and human processes**	
	• Understand the complexity of physical processes and recognise the opportunities and challenges associated with these processes.	
	• Understand how sequences of events and activities in the physical and human worlds are part of our dynamic planet and changing world.	
5	**Environmental and cultural diversity**	
	• Appreciate the differences and similarities between people, places, environments and cultures.	
	• Appreciate the variety of people, places, environments and cultures in our varied and changing world.	
6	**Interdependence**	
	• Explore the socio-cultural, economic and environmental connections between places and earth's four spheres.	
	• Understand the inter-relationships and interconnections when studying change in physical features and human activities at all scales.	

AIMS AND LEARNING OUTCOMES

AIMS

The syllabus aims to enable candidates to:

- acquire knowledge of the characteristics, distribution and processes of physical and human phenomena

- develop a holistic understanding of physical-human relationships at local, regional and global scales

- gain geographical insights and global awareness into future challenges through the study of current issues and their management

- become inquiring and self-directed learners who ask geographical questions and seek understanding through the collection and analysis of geographical information

- develop skills in communicating and applying geographical knowledge

- make informed judgements and sound decisions through the analysis, synthesis and evaluation of geographical information.

LEARNING OUTCOMES

Knowledge

The syllabus intends that candidates develop knowledge with regard to:

- components of physical and human environments at local, regional and global scales

- diverse spatial patterns of physical and human phenomena

- relationships and interactions between and within physical and human phenomena at local, regional and global scales

- varying spatial and temporal changes in physical and human environments

- different approaches through which challenges faced can be managed by local, regional and global communities.

Skills

The syllabus intends for candidates to develop the skills to:

- ask relevant geographical questions and work effectively in teams to collect geographical information from both primary and secondary sources

- extract relevant information from geographical data

- interpret and recognise patterns in geographical data and deduce relationships

- organise and present geographic information in a coherent way

- analyse, evaluate and synthesise geographical data to make informed and sound decisions.

Values

Through their geographical training, candidates should develop:

- judgements on values and attitudes in the use and management of resources

- a sense of appreciation, care and responsibility for the quality of the environment

- respect and sensitivity towards the attitudes, values and beliefs of people in different human environments.

ASSESSMENT OBJECTIVES

Candidates should be able to:

AO1: Knowledge

- demonstrate relevant factual knowledge – geographical facts, concepts, processes, interactions and trends

- demonstrate knowledge of relevant fieldwork techniques – identification of geographical questions, sequence of fieldwork inquiry, primary and secondary data collection methods

AO2: Critical Understanding and Constructing Explanation

- select, organise and apply concepts, terms and facts learnt

- make judgements, recommendations and decisions

- evaluate data collection methods and suggest improvements

AO3: Interpreting and Evaluating Geographical Data

- comprehend and extract relevant information from geographical data (numerical, diagrammatic, pictorial and graphical forms)

- use and apply geographical knowledge and understanding to interpret geographical data

    – recognise patterns in geographical data and deduce relationships

    – compare and contrast different views

    – present geographical data in an appropriate form and an effective manner

    – draw conclusions based on a reasoned consideration of evidence

- evaluate the validity and limitations of fieldwork evidence and of the conclusions reached

Assessment Specification Grid

 The table below shows the approximate weighting of the Assessment Objectives in the syllabus.

Assessment Objectives	Weighting
AO1+2	25%
AO1+3	25%
Total	**50%**

Note: AO1 forms part of the testing of AO2 and AO3.

SCHEME OF ASSESSMENT

The examination consists of **one** paper. The paper comprises three sections – Sections A and B (*Global Tourism* and *Variable Weather and Climate*) and Section C (*Living with Tectonic Hazards* and *Food Resources*). The duration of the paper is **1 hour 40 minutes**. For Section A, the question consists of **no more than five parts**, including the sub-division of parts. For Section B, the question consists of **no more than three parts**, including sub-division of parts. For Section C, the question consists of **no more than five parts**, including sub-division of parts. The last part-question in both Sections B and C includes an open-ended question which will be marked according to level descriptors and capped at a maximum of 8 marks. Each open-ended question will be marked based on 3 levels. The question in Section A and the remaining part-questions in Sections B and C will be marked using point marking.

<table>
<tr>
<td rowspan="5">1h 40min

50%

50 marks</td>
<td>Section A

(13%)</td>
<td>Two structured questions on Geographical Investigations will be set based on the following topics:
Global Tourism
Variable Weather and Climate
One question will be set on each topic. Candidates must answer one question in this section. The question carries 13 marks.</td>
</tr>
<tr>
<td>Section B

(12%)</td>
<td>Two structured questions will be set based on the following topics:
Global Tourism
Variable Weather and Climate
One question will be set based on a specific topic. One other question will be set on a combination of topics. Candidates must answer one question from this section. The question carries 12 marks.</td>
</tr>
<tr>
<td colspan="2">Candidates are advised to spend a total of 55 minutes on Sections A and B.</td>
</tr>
<tr>
<td>Section C

(25%)</td>
<td>Two structured questions will be set based on the following topics:
Living with Tectonic Hazards
Food Resources
One question will be set based on a specific topic. One other question will be set on a combination of topics. Candidates must answer one question from this section. They are advised to spend 45 minutes on the question. Each question carries 25 marks.</td>
</tr>
</table>

Note: Stimulus materials will be used where they facilitate the application of content to new contexts and issues. A non-exhaustive list of stimulus materials includes topographic and other maps, photographs, diagrams, sketches and texts. Map reading and skills of photograph interpretation, graphic construction, interpretation of data (primary and secondary), and simple descriptive analysis of statistical data may be examined in all sections. For map reading, this may only be tested as a sub-part of a question. It will not be set as a full 25 mark question. Candidates may be assessed in the application of geographical knowledge in decision-making processes. **Geographical investigations in the form of a fieldwork case study will only be examined in Section A**.

USE OF CALCULATORS

An approved calculator may be used in this paper.

SYLLABUS FRAMEWORK AND OUTLINE

The O-Level Geography syllabus is structured around three major themes, namely 'Our Dynamic Planet', 'Our Changing World' and 'Geographical Skills and Investigations'. Each theme in physical and human geography comprises two topics as shown below.

<u>Theme 1: Our Dynamic Planet (Physical Geography)</u>
(1) Living with Tectonic Hazards – Risk or opportunity?
(2) Variable Weather and Changing Climate – A continuing challenge?

<u>Theme 2: Our Changing World (Human Geography)</u>
(3) Global Tourism – Is tourism the way to go?
(4) Food Resources – Is technology a panacea for food shortage?

<u>Theme 3: Geographical Skills and Investigations</u>
(5) Topographical Map Reading Skills
(6) Geographical Data and Techniques
(7) Geographical Investigations

This syllabus adopts an inquiry-based approach to the learning of Geography. It provides coverage of physical and human aspects of the subject and the linkages that exist between them by presenting them in the form of geographical questions. It gives students a deeper and critical understanding of the changing world and helps prepare them for the complexities in the 21st century.

There are four topics in themes 1 and 2 of the O-Level Geography syllabus. The heading for each of these topics is presented in the form of an overarching geographical question. Each topic is organised around either two or three key questions and these key questions serve as the organisational framework of the syllabus. For each key question, there are learning outcomes, content and main terms. The syllabus is designed such that the first two key questions guide students to gain an understanding and appreciation of the topic as stated in the overview. Students then apply their geographical skills and understanding to the third key question to reach a reasoned conclusion to the overarching issue. However, in two topics, namely *Weather and Climate* and *Food Resources* where there are no third key questions, attempts have been made to ensure that the content covered in key questions 1 and 2 would provide some scope for students to answer the overarching issues (see Table 1 for the syllabus content outline and key questions).

In the syllabus, examples stated in brackets (xx) are meant to be exhaustive and compulsory and only these would be assessed in the examinations. In contrast, examples listed as (e.g. yy) are not exhaustive and may be replaced with more recent and relevant ones given the indication of scale. Case studies where applicable, are to be studied in greater detail.

Table 1: Syllabus Content Outline and Key Questions

Theme 1: Our Dynamic Planet (Physical Geography)
Topic 1: Living with Tectonic Hazards – Risk or opportunity?
• Why are some areas more prone to tectonic hazards?
• What landforms and associated tectonic phenomena are found at plate boundaries?
• How do people prepare for and respond to earthquakes?
Topic 2: Variable Weather and Changing Climate – A continuing challenge?
• Why do different places experience different weather and climate?
• What is happening to the Earth's climate?
Theme 2: Our Changing World (Human Geography)
Topic 3: Global Tourism – Is tourism the way to go?
• How does the nature of tourism vary from place to place?
• Why has tourism become a global phenomenon?
• Developing tourism at what cost?
Topic 4: Food Resources – Is technology a panacea for food shortage?
• How and why has food consumption patterns changed since the 1960s?
• What are the trends and challenges in production of food crops?
Theme 3: Geographical Skills and Investigations
Topic 5: Topographical Map Reading Skills
Topic 6: Geographical Data and Techniques
Topic 7: Geographical Investigations

SYLLABUS CONTENT

Topic 1: Living With Tectonic Hazards – Risk or opportunity?

Certain places in the world like those near plate boundaries are prone to earthquakes, volcanic eruptions and tsunamis. Such natural hazards pose dangers to people who live there and have significant impact on their quality of life. In examining the spatial patterns of these natural hazards and why such patterns exist, students have to explore the concept of plate tectonics and understand how plate movements resulting from internal earth processes create mountain systems, some large-scale landform features and tectonic hazards around the world. They will examine how and why the impact of these tectonic hazards vary greatly from place to place and consider the decision-making process that leads people to adopt certain responses when deciding to live in hazard-prone areas. Although Singapore is not at the plate boundaries, we do experience tremors and effects associated with earthquakes and volcanic eruptions occurring in neighbouring countries. Through studying this topic, students will gain an appreciation of the constraints people face and the reasons behind the different choices people make in similar situations.

Learning Outcomes	Content	Main Terms
Key Question 1: Why are some areas more prone to tectonic hazards?		

Students will be able to:
• Outline the main types of natural hazards
	A) <u>Knowledge</u>
	• Definition of natural hazards and the main ways they may be classified
	  – climate-related hazards
	    ○ floods
	    ○ storms
	  – tectonic hazards
	    ○ earthquakes
	    ○ volcanic eruptions
		• Natural hazard

• Describe the internal structure of the Earth
• Explain the movement of tectonic plates
	• Internal structure of the Earth
	  – Layered structure
	    ○ Core
	    ○ Mantle
	    ○ Continental crust and oceanic crust
	  – Characteristics of each layer
	    ○ Thickness
	    ○ Solid or liquid state
	• Movement of tectonic plates driven by the pull of subducting plates and convection currents circulating within the mantle
		• Core
		• Mantle
		• Continental crust
		• Oceanic crust
		• Tectonic plate
		• Slab-pull force
		• Convection current

Learning Outcomes	Content	Main Terms

• Describe the global distribution of tectonic plates and types of plate boundaries	• Names, types and locations of major plates and plate boundaries in the world
	  – North American Plate
	  – South American Plate
	  – Eurasian Plate
	  – Indian Plate
	  – African Plate
	  – Nazca Plate
	  – Pacific Plate
	  – Philippine Plate
	  – Australian Plate
	• Types of plate boundaries and examples:
	  – Divergent: oceanic-oceanic (e.g. Mid-Atlantic Ridge), continental-continental (e.g. Great Rift Valley of East Africa)
	  – Convergent: oceanic-oceanic (e.g. Mariana Trench), continental-continental (e.g. Himalayas), oceanic-continental (e.g. Andes)
	  – Transform (e.g. San Andreas Fault)
		• Subduction zone
		• Divergent boundary
		• Convergent boundary
		• Transform boundary

	B) Skills • Draw and annotate a diagram showing the internal structure of the Earth • Identify and label major plates and the boundary types on maps • Draw labelled diagrams showing the different types of movements taking place at plate boundaries	

Learning Outcomes	Content	Main Terms
Key Question 2: What landforms and associated tectonic phenomena are found at plate boundaries?		

Students will be able to:
• Discuss how plate movements influence the general distribution of landforms and associated phenomena
• Describe the landforms and phenomena associated with plate movements
• Explain the causes of landforms and phenomena associated with plate movements
• Describe the structure of volcanoes
• Explain the characteristics of volcanoes
• Explain the formation of volcanoes
• Discuss the benefits and risks of living in volcanic areas
• Discuss the impact of earthquakes on people living in areas prone to this natural hazard
	A) <u>Knowledge</u>
	• Plate movements and associated landforms
	  – Divergent: Rift valleys and block mountains
	  – Convergent: Fold mountains
	  – Divergent and Convergent: Volcanoes
	• Phenomena and their causes
	  – Earthquakes
	  – Tsunamis
	  – Volcanic eruptions
	• Structure of volcanoes
	  – Crater
	  – Caldera
	  – Vent
	  – Magma chamber
	• Characteristics and formation of volcanoes
	  – Shield volcano (e.g. Erta Ale in Ethiopia)
	  – Stratovolcano (e.g. Puy de Domes in France and Mt Pinatubo in Philippines)
	  – Viscosity of lava
	    ○ high-silica vs low-silica
	• Benefits of living in volcanic areas
	  – Fertile soil
	  – Precious stones and minerals
	  – Tourism
	  – Geothermal energy
	• Risks of living in volcanic areas
	  – Massive destruction by volcanic materials
	  – Pollution
	• Risks associated with living in earthquake zones
	  – Disruption of services
	  – Landslides
	  – Destruction of properties and infrastructure
	  – Loss of lives
	  – Tsunamis
		• Tensional force
		• Compressional force
		• Folding
		• Fold mountains
		• Rift valley
		• Block mountain
		• Volcano
		• Pacific Ring of Fire
		• Shield volcano
		• Stratovolcano
		• Crater
		• Caldera
		• Vent
		• Magma chamber
		• Magma
		• Lava
		• Viscosity
		• Geothermal energy
		• Earthquake
		• Focus
		• Epicentre
		• Richter scale
		• Aftershocks
		• Tsunami
		• Vulcanicity

	B) <u>Skills</u> • Analyse maps and photographs of major tectonic landforms and phenomena to derive the relationship between their distribution patterns and plate boundaries (e.g. Pacific 'Ring of Fire') • Draw an annotated cross-section of a volcano • Draw labelled diagrams to show the formation of a fold mountain, a rift valley, a block mountain and a volcano	

Learning Outcomes	Content	Main Terms
Key Question 3: How do people prepare for and respond to earthquakes?		

Students will be able to:
• Discuss the responses of people to earthquakes and tsunamis
• Assess the effectiveness of strategies in mitigating and responding to the effects of earthquakes and tsunamis
	A) <u>Knowledge</u>
	• People may respond to natural hazards in several ways:
	  – Preparedness measures
	    ○ Land use regulation
	    ○ Infrastructure
	    ○ Emergency drills
	    ○ Earthquake and tsunami monitoring and warning systems
	  – Short-term responses
	    ○ Search and rescue
	    ○ Emergency food and medical supplies
	  – Long-term responses
	    ○ Rebuilding of infrastructure
	    ○ Provision of health care	

	B) <u>Skills</u> • Examine before and after satellite images and aerial photographs of a place affected by an earthquake or tsunami to identify and analyse the changes that have occurred	

Topic 2: Variable Weather and Changing Climate – A continuing challenge?

Variations in day-to-day weather are occurring all the time, they are an integral part of our lives. The average weather conditions of about 30 years is known as climate. Climate has changed in the past through natural causes on timescales ranging from hundreds to millions of years. However, in this topic, the study of climate change is confined to the changes taking place in the last 150 years. Changes in climate are often discussed as they impact human lives, livelihoods and nature's life support systems. In recent years, severe weather events such as tropical cyclones appear to have become more intense. In studying this topic, students will examine the fundamental concepts and essential principles involved in the Earth's weather and climate system. They will gain an understanding of the scientific basis of changing weather and climate and the complex inter-connections among the physical and biological components of the Earth system. Through the study, students will also appreciate that climate change poses challenges as well as opportunities.

Learning Outcomes	Content	Main Terms
Key Question 1: Why do different places experience different weather and climate?		

Students will be able to:
• Differentiate between weather and climate
• Explain the daily and seasonal variations in temperature at a particular location
• Compare and explain the variations in temperature between different locations
	A) <u>Knowledge</u>
	• Definition of weather
	• Definition of climate
	• Elements of weather
	  – Temperature
	  – Relative humidity, clouds and rainfall
	  – Pressure and winds
	• Temperature
	  – Factors influencing the temperature of locations
	    ○ Latitude
	    ○ Altitude
	    ○ Distance from the sea
	    ○ Cloud cover
		• Weather
		• Climate
		• Weather elements
		• Temperature
		• Latitude
		• Altitude
		• Continental effect
		• Maritime effect
		• Cloud cover

• Explain the differences in relative humidity in different locations
• Explain the formation of convectional rain and relief rain
	• Relative humidity, clouds and rainfall
	  – Relative humidity
	  – Formation of rain
	    ○ Convectional rain
	    ○ Relief rain
		• Relative humidity
		• Evaporation
		• Condensation
		• Saturation
		• Clouds
		• Precipitation
		• Convectional rain
		• Relief rain

• Explain how coastal temperatures are moderated by land and sea breezes
• Explain the formation of monsoon winds
	• Pressure and winds
	  – Pressure and movement of air
	  – Wind systems
	    ○ Land and sea breezes
	    ○ Monsoon winds
		• Air pressure
		• Wind
		• Land breeze
		• Sea breeze
		• Coriolis effect
		• Deflection
		• Monsoon winds

Learning Outcomes	Content	Main Terms
• Describe and explain the distribution and characteristics of equatorial, monsoon and cool temperate climates • Describe and explain the weather and climate of Singapore with reference to rainfall, relative humidity and temperature	• Equatorial climate • Monsoon climate • Cool temperate climate: Marine west coast climate	• Equatorial climate • Monsoon climate • Cool temperate climate • Marine west coast climate • Annual range • Diurnal range • Prevailing wind • Wind speed • Wind direction

	B) Skills
	• Use of appropriate instruments to gather weather data
	  – Temperature
	  – Rainfall
	  – Air pressure
	  – Wind
	  – Relative humidity
	• Make calculations of the following weather data:
	  – Annual range
	  – Diurnal range
	  – Mean monthly
	  – Relative humidity
	• Use appropriate graphs and diagrams to present weather data	

Learning Outcomes	Content	Main Terms
Key Question 2: What is happening to the Earth's climate?		

Students will be able to:
• Describe and explain climate change since 1880
• Explain the greenhouse effect
• Discuss the natural causes of recent climate change
• Explain how human activities lead to enhanced greenhouse effect
	A) <u>Knowledge</u>
	• Changes in climate
	  – Global records since 1880 show a significant, but irregular upward trend in temperature with fluctuations of 0.3°C to 0.6°C
	  – Global warming over the last century: world is warming on average by 0.74°C, with most of the increase since the 1970s
	  – Global temperatures in the last decade reached the highest levels on record
	• Greenhouse effect is a natural process by which greenhouse gases trap heat in the atmosphere
	• Human activities have contributed substantially to climate change by adding greenhouse gases to the atmosphere, hence enhancing the greenhouse effect
	• Natural causes of recent climatic change
	  – Variations in solar output
	  – Volcanic eruptions – cooling influence
	• Anthropogenic factors leading to enhanced greenhouse effect
	  – Deforestation and associated increase in atmospheric carbon dioxide
	  – Changing land use and associated increase in greenhouse gases
	    ○ Agriculture (e.g. burning of fossil fuels to provide energy to operate machines in rice farming, methane produced by cattle farming)
	    ○ Industries (e.g. burning of fossil fuels to provide energy for manufacturing, greenhouse gases as by-products of manufacturing)
	    ○ Urbanisation (e.g. burning of fossil fuels to provide energy for household activities and transport)
		• Global climate change
		• Global warming
		• Greenhouse gases
		• Greenhouse effect
		• Enhanced greenhouse effect
		• Anthropogenic factors
		• Deforestation
		• Agriculture
		• Industries
		• Urbanisation

Learning Outcomes	Content	Main Terms

• Discuss the impact of climate change
• Describe the responses to climate change
	• Impacts of climate change
	  – Sea level rise
	    ○ Threatens low lying areas and islands
	  – More frequent extreme weather events
	    ○ Heat waves
	  – Spread of some infectious insect-borne diseases
	    ○ Dengue fever
	    ○ Malaria
	  – Lengthen the growing season in certain regions
	    ○ Fruit production (e.g. in Eastern Canada)
	    ○ Vineyards (e.g. Italy in Europe)
	• Responses and challenges to climate change
	  – International agreements
	    ○ Kyoto Protocol
	      ➢ Clear targets for each country to reduce greenhouse gas emissions
	      ➢ Countries accountable for meeting their targets
	  – National responses
	    ○ Singapore
	      ➢ Strategies to reduce greenhouse gas emissions focusing on energy efficiency and energy conservation, new building requirements and technologies
		• Sea level rise
		• Insect-borne diseases
		• International agreement
		• Energy efficiency
		• Energy conservation

	B) <u>Skills</u> • Extract information, describe trends and draw conclusions from graphs on temperature and greenhouse gases	

Theme 2: Our Changing World (Human Geography

Topic 3: Global Tourism – Is tourism the way to go?

Tourism is an important industry in many countries of the world. However, it has both advantages and disadvantages. The growth in tourism has an impact on people and places and requires careful management in order to ensure that it is sustainable. In Singapore, tourism is an important sector of the economy and many students also aspire to work in the industry. Through examining this topic, students will gain a better understanding of the challenges faced in the global competition for the tourist dollar and the management of tourist sites.

Learning Outcomes	Content	Main Terms
— Key Question 1: How does the nature of tourism vary from place to place?		

Students will be able to:
• Describe and give examples of different types of tourism
• Explain why tourist activities are different at different places
• Discuss the roles of different groups in promoting tourism
	A) Knowledge
	• Tourists are people who travel and stay away from their normal place of residence for more than 24 hours
	• Tourism may be categorised according to types of attractions offered to tourists. Different places and environments provide different opportunities for tourist activities:
	  – Places of scenic beauty
	    ○ Mountain regions, coastal resorts, national parks offer opportunities for honeypot tourism (e.g. Grand Canyon National Park in USA)
	  – Places with good facilities
	    ○ MICE facilities offer opportunities to host large-scale events to attract tourists (e.g. Singapore hosted the Youth Olympic Games in 2010)
	    ○ Medical facilities offer opportunities for medical tourism (e.g. Singapore is a reputable medical hub in Southeast Asia)
	    ○ Theme parks (e.g. Disneyland in Japan)
	  – Places with rich culture offer opportunities for
	    ○ Heritage tourism (e.g. Machu Picchu in Peru)
	    ○ Film-induced tourism (e.g. Lotte World in South Korea is the filming site for Stairway to Heaven)
	    ○ Pilgrimage tourism (e.g. Mecca in Saudi Arabia)
	  – Places of conflicts offer opportunities for dark tourism (e.g. Tuol Sleng Genocide Museum in Cambodia)
	• Role of different groups in tourism
	  – Government
	  – Media (e.g. Travel writers)
	  – International organisations
		• Tourist
		• MICE
		• Honeypot tourism
		• Medical tourism
		• Film-induced tourism
		• Heritage tourism
		• Pilgrimage tourism
		• Dark tourism

	B) Skills • Classify key global tourist attractions by type • With reference to a map, describe distribution of key global tourist attractions by type • Identify key features of specific tourist sites and associated tourist activities	

Learning Outcomes	Content	Main Terms
Key Question 2: Why has tourism become a global phenomenon?		

Students will be able to:
• Describe the trends of both domestic tourism and international tourism
• Describe the changing nature of global tourism
• Explain the growth of global tourism
	A) Knowledge
	• Trends in the global tourism industry in terms of destinations, country of origin and tourist dollars for:
	  – Domestic tourism
	  – International tourism
	• Evolution of mass tourism in the form of the package holiday to niche tourism such as eco-tourism
	• Development of short haul destinations and the growth of long haul destinations
	• Reasons for the growth of global tourism
	  – Developments in technology
	    ○ Better and affordable transport
	    ○ E-services: online booking of tours and tickets
	    ○ Ease of access of information
	  – Demand factors arising from changing profile of tourists
	    ○ Disposable income
	    ○ Leisure time
	    ○ Changing lifestyle
	  – Destination factors
	    ○ Attractions
	    ○ Investment in infrastructure and services
	    ○ Access to information
		• Domestic tourism
		• International tourism
		• Mass tourism
		• Niche tourism
		• Package holiday
		• Short haul destinations
		• Long haul destinations
		• Eco-tourism
		• Technology
		• Budget airlines
		• Tourist profile
		• Demand factors
		• Disposable income
		• Changing lifestyle
		• Destination factors

• Explain why tourism is subject to fluctuations	• Impact of events that hinder the growth of tourism
	  – Disasters (e.g. Japan tsunami in 2011)
	  – Recessions (e.g. Global recession of 2008 – 2011)
	  – Political situations (e.g. Thailand political unrest in 2010)
	  – Diseases (e.g. Germany E. Coli outbreak in 2010)
		• Fluctuation

	B) Skills • Extract information on trends in global tourist industry from graphs or tables • Extract information on factors affecting growth of the global tourist industry from maps, graphs or tables • Analyse tourist revenues using diagrams such as bar graph and pie chart • Analyse top tourist destinations and tourist origins for a selected country using flow maps and pie charts	

Learning Outcomes	Content	Main Terms
Key Question 3: Developing tourism at what cost?		

Students will be able to:
• Assess the impact of tourism on a country
• Explain how tourism can be made sustainable
• Discuss the roles of various groups in taking care of the tourist areas
	A) <u>Knowledge</u>
	• Impact of the growth of tourism on a country
	  – Economic
	    ○ Advantages
	      ➢ Employment opportunities
	      ➢ Growth in income
	      ➢ Development of infrastructure and facilities
	    ○ Disadvantages
	      ➢ Seasonal unemployment
	      ➢ Under-use of facilities at certain times of the year
	      ➢ Shortage of services
	  – Socio-cultural
	    ○ Advantages
	      ➢ Preservation of local customs and heritage
	    ○ Disadvantages
	      ➢ Dilution of local customs and heritage
	      ➢ Increased crime
	  – Environmental
	    ○ Advantages
	      ➢ Conservation of natural environments
	    ○ Disadvantages
	      ➢ Vandalism
	      ➢ Littering and pollution
	      ➢ Destruction of habitats
	      ➢ Carbon footprint
	      ➢ Increased congestion
	• Managing the impact of tourism
	  – Conserve fragile environments
	  – Promote sustainable tourism through laws and regulation and support from local population
	  – Responsibilities of various groups in conserving and protecting tourist areas
	    ○ Local communities through community-based tourism
	    ○ Visitors
	    ○ Tour operators
	    ○ Planning authorities
	    ○ Non-governmental organisations (e.g. The International Ecotourism Society)
		• Employment
		• Infrastructure development
		• Preservation
		• Custom
		• Heritage
		• Carbon footprint
		• Conservation
		• Fragile environment
		• Sustainable tourism
		• Eco-tourism
		• Community-based tourism

	B) <u>Skills</u> • Extract information from sources regarding tourism in a selected country • Design questionnaires – layout, format, wording and number of questions	

Topic 4: Food Resources – Is technology a panacea for food shortage?

Food is an important resource issue in contemporary society. This topic focuses on food consumption, production and distribution patterns in societies. It looks at the perplexing problem of why there is hunger in some societies while others enjoy excess food provision that results in obesity and food wastage. Students will examine the role and impact of technology in raising yields to combat the food shortage problem. In the light of growing world population and the challenges of environment sustainability, solutions to the issue of hunger may be in continuing the intensification of farming practices in the midst of global climate change, changing the food supply and distribution chains or population control.

Learning Outcomes	Content	Main Terms
Key Question 1: How and why has food consumption patterns changed since 1960s?		

Students will be able to:
• Describe variations in global food consumption patterns between DCs and LDCs over time
• Describe the changing food preferences in DCs and LDCs
• Explain why variations exist and persist in food consumption between DCs and LDCs
	A) <u>Knowledge</u>
	• Variations in global food consumption patterns between DCs and LDCs over time, in terms of
	  – Indicators of food consumption
	    ○ Consumption/kg/yr
	    ○ Starchy staples as percentage of all calories
	    ○ Total daily calorie intake
	  – Changing food preferences
	• Reasons for the growth and variations in food consumption
	  – Economic
	    ○ Disposable income
	    ○ Pricing
	  – Socio-cultural
	    ○ Food preferences: organic food and fast food
	    ○ Population growth
	  – Political
	    ○ Stability of food supply
	    ○ Food safety
		• Food
		• Staple food
		• Food consumption per capita
		• Daily calorie intake
		• Food preference
		• Disposable income
		• Organic food

Learning Outcomes	Content	Main Terms

• Discuss the impact of variations in food consumption on individuals within DCs and LDCs	• Impact of inadequate food consumption on individuals and countries
	  – Health
	    ○ Malnutrition
	    ○ Starvation
	  – Economic
	    ○ Lower productivity
	    ○ Food aid and economic aid can cause long term debts
	    ○ Diversion of financial resources to health care
	  – Political
	    ○ Social unrest
	  – Social
	    ○ Scavenging
	• Impact of excess food consumption on individuals and countries
	  – Health
	    ○ Obesity and related illnesses
	  – Economic
	    ○ Lower productivity
	    ○ Diversion of financial resources to health care
	  – Social issues
	    ○ Food wastage
	    ○ Dieting
		• Malnutrition
		• Starvation
		• Social unrest
		• Scavenging
		• Obesity

	B) Skills • Compare food consumption levels between DCs and LDCs shown in maps or graphs • Compare how food consumption patterns are influenced by changes in income	

Learning Outcomes	Content	Main Terms
Key Question 2: What are the trends and challenges in production of food crops?		

Students will be able to:
• Describe and explain the trends in production of food crops since 1960s
• Discuss the factors affecting the intensity of food production
	A) <u>Knowledge</u>
	• Trends in production of food crops like rice and wheat from 1960s
	  – Increased intensity of production of food crops
	• Factors affecting the intensity of food production
	  – Physical
	    ○ Relief
	    ○ Soils and drainage
	    ○ Climate
	  – Economic
	    ○ Purpose of farming: commercial and subsistence
	    ○ Demand and capital
	    ○ Agri-business
	  – Political
	    ○ Government policy
	    ○ ASEAN
	  – Technological advances
	    ○ Green Revolution through use of high yielding varieties, irrigation, mechanisation, fertilisers and pesticides
		• Crop yield (ton/hectare)
		• Subsistence farming
		• Commercial farming
		• Intensification
		• Productivity (output per unit area/labour per unit area)
		• Agri-business
		• High yielding varieties
		• Irrigation
		• Fertilisers
		• Pesticides
		• Green Revolution

• Discuss the effects of intensification of food production activities on water and soil quality
• Discuss the causes of food shortage
	• Challenges associated with intensification of production of crops from 1960s
	  – Effects of use of irrigation and chemicals on water and soil quality
	• Causes of food shortage
	  – Physical
	    ○ Extreme weather
	    ○ Climate change
	    ○ Pests
	  – Political
	    ○ Civil strife
	    ○ Poor governance
	  – Economic
	    ○ Rising demand for meat and dairy products from emerging economies like China and India
	    ○ Soaring cost of fertilisers and transport
	    ○ Conversion of farmland to industrial crop production to produce biofuel crops
	  – Social
	    ○ Lack of accessibility
	    ○ Inadequate logistics of food distribution and storage
	    ○ Rapid population growth
		• Salinisation
		• Eutrophication
		• Extreme weather
		• Governance
		• Cash crops
		• Biofuel
		• Food security
		• Stock piling
		• Food distribution

Learning Outcomes	Content	Main Terms
	B) <u>Skills</u> • Identify areas on maps where major crops (rice and wheat) are grown • Describe how interaction between physical and human environments affects food production from maps and photographs • With reference to a given resource, describe the range of products produced by an agri-business and its spatial network	

Theme 3: Geographical Skills and Investigations

Topic 5: Topographical Map Reading Skills

Candidates will be expected to be familiar with topographical maps. Any map provided will contain a key. Questions will be set based at least in part on the topics in the syllabus. However, there will be instances where candidates will be expected to identify and describe other features as itemised in the following table.

Candidates should be able to:

Read	• grid references (4- and 6-figure grid references) • direction (both compass and bearings from grid north)
Interpret	• scales (representative fraction, line/linear and statement) • symbols • human activity from map evidence
Calculate	• distances (straight-line and winding distances)
Identify	• broad areas of relief (low river valley region, steep sided uplands) • landforms such as mountain, valley and flood plain
Describe	• relief using contour intervals • nature of relief using geographical terms (broad, flat, steep-sided, deeply cut, gently sloping, convex, concave) • patterns and location of vegetation, land-use and communication • cross-sections (including annotation) for interpretations. (Candidates will not be asked to construct them)
Explain	• relationship between land use or communications and relief

Topic 6: Geographical Data and Techniques

Candidates should develop skills and techniques to interpret and evaluate geographical data. They will also be asked to construct or complete the presentation of geographical data so as to present them in an appropriate way in the examinations. Individual questions on data presentation will be capped at a maximum of 3 marks. Sources of data will include books, journals, news reports, maps at a range of scales, statistics, censuses, graphs, questionnaires, photographs, remotely sensed images, interviews, information held in Geographic Information Systems and other information technology databases.

Candidates should be familiar with the following types of data presentation methods:

Maps and Symbols	Base maps, Sketch maps, Topographic maps, Road maps, Atlases, Choropleth maps, Isoline maps, Dot maps, Maps with proportional symbols (including flow line maps)
Photographs	Aerial photographs (vertical and oblique), Landscape photographs, Satellite images
Graphs	Line Graphs: Simple line graphs, Comparative line graphs Bar graphs: Simple bar graphs, Comparative bar graphs Others: Pie charts, Scatter graphs with lines of best fit*
Others	Texts, Diagrams, Wind Rose, Tables, Cartoons, Field sketches, Cross sections and Transects

Candidates should be able to construct or complete the presentation of data using the following data presentation methods:

Graphs	Line Graphs: Simple line graphs, Comparative line graphs Bar graphs: Simple bar graphs, Comparative bar graphs Others: Pie charts, Scatter graphs with lines of best fit*
Others	Texts, Diagrams, Wind Rose, Tables and Field sketches

*No calculation is required; best fit lines would be visual and indicate trends.

Candidates should be able to calculate the following:

Statistical calculations to show patterns and changes	Percentages Ratios Mean

Candidates should be able to:

- Describe landscape (physical and human) or geographical phenomena from photographs. The ability to describe and explain physical and human landscapes and the physical-human interrelationships shown on photographs is essential. Attention should be given to drawing simple sketches of photographs and annotating them to illustrate the features. They should also be able to recognise patterns and deduce relationships from photographs

- Identify and briefly describe physical and/or human features. They should be able to explain physical-human inter-relationships, for example, the processes or factors affecting the physical and human environments.

- Extract and interpret information from graphs and other data presentations as indicated in the above table. Using data provided, they should be able to construct/complete a variety of geographical data presentations as indicated in the above table. They should also be able to undertake simple statistical calculations, describe trends and deduce relationships from graphs and other data presentations.

- Produce sketch maps as an integral part of the presentation of information. The drawing of sketch maps and sketch sections, especially with annotations should be seen as a valuable aid in supporting information given in written accounts. This form of presentation is encouraged in the examination.

Topic 7: Geographical Investigations (Only for Section A)

Candidates should be familiar with the inquiry approach to fieldwork, namely (a) formulate aims and hypotheses/guiding questions, (b) inquiry skills and techniques to collect data, (c) make analyses of data, (d) presentation techniques to display data, and (e) form conclusions.

Formulating aims and hypotheses/guiding questions: Candidates should be familiar with hypotheses/guiding questions as statements that form the basis of fieldwork. The hypotheses may investigate a geographical concept, e.g. 'The impact of tourism on an attraction is more positive than negative'. Guiding questions like 'Why are the tourist activities more sustainable at X than Y?' may focus candidates to answer a question or solve a problem. Steps to testing hypotheses or answering guiding questions include data collection, data analysis, data presentation and drawing conclusions from data.

Data collection: Candidates should be familiar with the following types of skills in fieldwork and the associated considerations:

(i)   Observation – This is an inquiry skill to collect and record data through observation of physical features and human activities. Field sketches, annotated photographs, recording sheets and maps may all be used to record observations.

(ii)   Measurement – When recording measurements, due consideration should be given to planning the layout of the recording sheet, the location of instruments and the sampling methods adopted to provide reliable data. For example, in physical geography topics, candidates need to know the equipment (e.g. sling psychrometer) and techniques used.

(iii)   Questionnaires – In human geography, consideration should be given to factors influencing the successful design of questionnaires (e.g. layout, format and wording of questions and the number of questions) and the conduct of the questionnaires (e.g. the sampling methods – random, systematic, stratified, pilot survey, and location of survey).

(iv)   Interviews – This method should be used to collect in-depth information from a specific person or group of people. The interviewer should be reflective and take into consideration issues such as gender, experience and socio-economic status and also observe interview etiquette.

Data analysis: Candidates should be able to describe and analyse the patterns and trends in data collected and suggest relationships. They should be able to apply relevant geographical knowledge and understanding when interpreting and analysing the data.

Data presentation techniques: Candidates should have the knowledge and skill to present data using illustrations appropriate to the type of geographical investigation undertaken.

Forming conclusions: Using evidence from the data, candidates should be able to make judgements on the validity of the original hypothesis or reach a conclusion to answer the guiding question. They should also comment on the reliability of the data collected and evaluate the data collection methods used.

GLOSSARY OF TERMS

The glossary of terms in this syllabus is explained below. The list is to be used as a guide. It is neither definitive nor exhaustive. The glossary has been deliberately kept brief with respect to the descriptions of meanings. Candidates should appreciate that the meaning of a term must depend in part on its context.

Term	Explanation
Account for	• Write about why something occurs or happens • May also be written as 'give reasons for', 'suggest reasons for'
Analyse	• Break the content of a topic / information into its constituent parts and give an in-depth account
Annotate	• Add labels of notes or short comments, usually to a diagram, map or photograph to describe or explain
Assess	• Provide arguments based on knowledge and understanding on both sides / for and against and reach a conclusion based on the evidence • May also be written as 'how far do you agree', 'how true is this statement', 'to what extent do you agree with this statement'
Calculate	• Provide a numerical answer • In general, working should be shown, especially where two or more steps are involved

Term	Explanation
Comment on	• Provide your views about something, possibly to offer some explanation on it or to infer something which could be responsible for, or develop from it
Compare	• Provide an account of the similarities and differences between two sets of information or two areas • Two separate descriptions do not make a comparison
Complete	• To add the remaining detail or details required
Contrast	• Write about the point(s) of difference between two things
Define	• Give the definition or meaning of a word or phrase • May also be written as 'explain the meaning of', 'what is meant by'
Describe	• Write about what something is like or where it is
Discuss	• Analyse and evaluate different points of view
Draw	• Make a sketch of a geographical form • May also be written as 'using a diagram', 'illustrate with a sketch'
Explain	• See 'Account for'
Evaluate	• See 'Assess'
Give an explanatory account	• Provide a description of something together with an explanation for it • May also be written as 'give a reasoned account'
How	• Prove/demonstrate/show (depending on question) in what way / to what extent / by what means or method
Identify	• Pick up something from information you have been given
Illustrating your answers	• Support your answers by using specific examples or diagrams
Insert	• Place specific names or details to an illustrative technique • May also be written as 'label'
Justify	• Give an explanation why something is chosen or why it is done in a particular manner or why a particular position/stand is taken
List	• Identify or name a number of specific features to meet a particular purpose
Locate	• Find where something is placed or state where something is found or mark it on a map or diagram
Name	• State/specify/identify using a word or words by which a specific feature is known or give examples which illustrate a particular feature
Outline	• Provide a brief description or explanation
Predict	• Use your own knowledge and understanding along with information provided to state what might happen next

Term	Explanation
Refer to	• Write an answer which uses some of the ideas provided in an illustrative technique or other additional material such as a case study • May also be written as 'with reference to'
State	• Write in brief detail using a short statement, words or a single word
Study	• Examine closely, pay special attention to, look carefully at
Suggest	• Write down ideas on or knowledge of something
Use	• Base answer on information provided • May also be written as 'using the information provided'
What	• Used to form a question concerned with selective ideas/details/factors
Where	• At what place? To what place? From what place?
Why	• Provide the cause or reason
With the help of information in	• Use some of the information provided as well as additional material