



International Baccalaureate®
Baccalauréat International
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Diploma Programme

Geography guide

First examinations 2011



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Diploma Programme Geography guide

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IB mission statement

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.

These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

IB learner profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

IB learners strive to be:

Inquirers	They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.
Knowledgeable	They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.
Thinkers	They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned, ethical decisions.
Communicators	They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.
Principled	They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.
Open-minded	They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.
Caring	They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.
Risk-takers	They approach unfamiliar situations and uncertainty with courage and forethought, and have the independence of spirit to explore new roles, ideas and strategies. They are brave and articulate in defending their beliefs.
Balanced	They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.
Reflective	They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

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Purpose of this document

This publication is intended to guide the planning, teaching and assessment of the subject in schools. Subject teachers are the primary audience, although it is expected that teachers will use the guide to inform students and parents about the subject.

This guide can be found on the subject page of the online curriculum centre (OCC) at <http://occ.ibo.org>, a password-protected IB website designed to support IB teachers. It can also be purchased from the IB store at <http://store.ibo.org>.

Additional resources

Additional publications such as teacher support materials, subject reports, internal assessment guidance and grade descriptors can also be found on the OCC. Specimen and past examination papers as well as markschemes can be purchased from the IB store.

Teachers are encouraged to check the OCC for additional resources created or used by other teachers. Teachers can provide details of useful resources, for example: websites, books, videos, journals or teaching ideas.

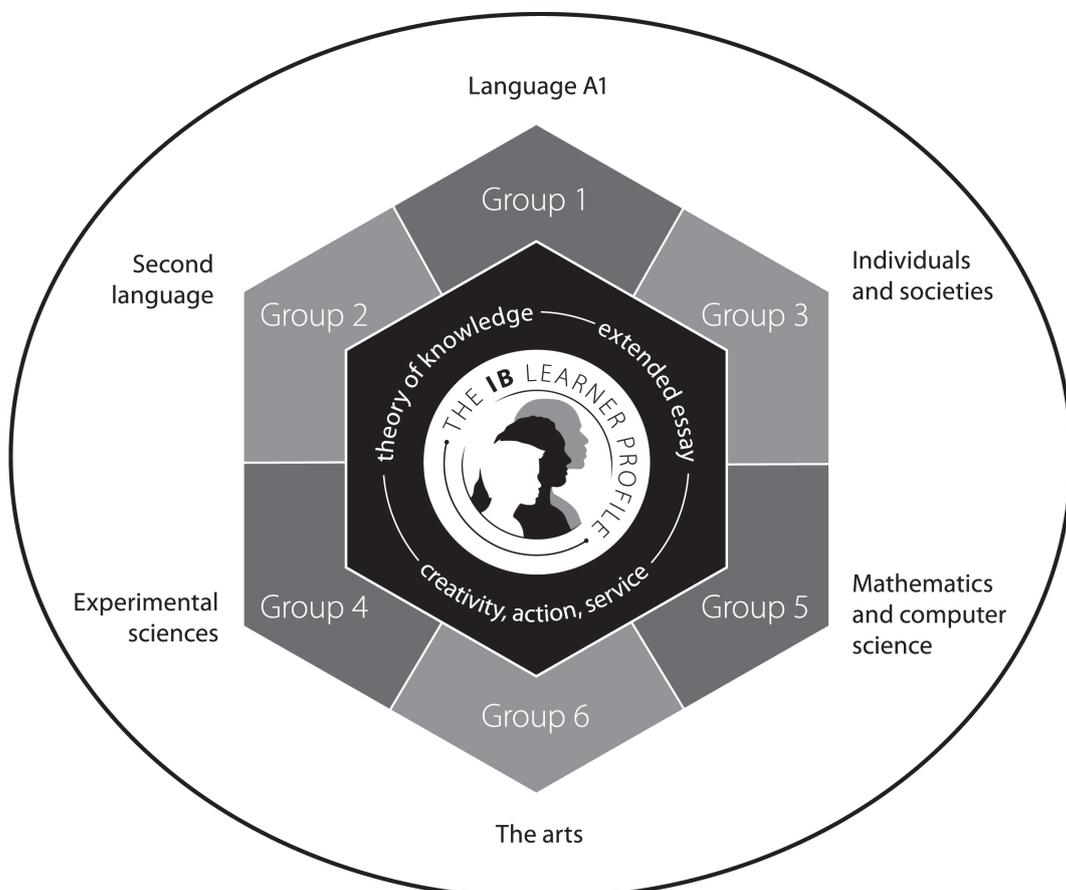
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The Diploma Programme

The Diploma Programme is a rigorous pre-university course of study designed for students in the 16 to 19 age range. It is a broad-based two-year course that aims to encourage students to be knowledgeable and inquiring, but also caring and compassionate. There is a strong emphasis on encouraging students to develop intercultural understanding, open-mindedness, and the attitudes necessary for them to respect and evaluate a range of points of view.

The Diploma Programme hexagon

The course is presented as six academic areas enclosing a central core. It encourages the concurrent study of a broad range of academic areas. Students study: two modern languages (or a modern language and a classical language); a humanities or social science subject; an experimental science; mathematics; one of the creative arts. It is this comprehensive range of subjects that makes the Diploma Programme a demanding course of study designed to prepare students effectively for university entrance. In each of the academic areas students have flexibility in making their choices, which means they can choose subjects that particularly interest them and that they may wish to study further at university.



Choosing the right combination

Students are required to choose one subject from each of the six academic areas, although they can choose a second subject from groups 1 to 5 instead of a group 6 subject. Normally, three subjects (and not more than four) are taken at higher level (HL), and the others are taken at standard level (SL). The IB recommends 240 teaching hours for HL subjects and 150 hours for SL. Subjects at HL are studied in greater depth and breadth than at SL.

At both levels, many skills are developed, especially those of critical thinking and analysis. At the end of the course, students' abilities are measured by means of external assessment. Many subjects contain some element of coursework assessed by teachers. The course is available for examinations in English, French and Spanish.

The core of the hexagon

All Diploma Programme students participate in the three course requirements that make up the core of the hexagon. Reflection on all these activities is a principle that lies at the heart of the thinking behind the Diploma Programme.

The theory of knowledge course encourages students to think about the nature of knowledge, to reflect on the process of learning in all the subjects they study as part of their Diploma Programme course, and to make connections across the academic areas. The extended essay, a substantial piece of writing of up to 4,000 words, enables students to investigate a topic of special interest that they have chosen themselves. It also encourages them to develop the skills of independent research that will be expected at university. Creativity, action, service involves students in experiential learning through a range of artistic, sporting, physical and service activities.

The IB mission statement and the IB learner profile

The Diploma Programme aims to develop in students the knowledge, skills and attitudes they will need to fulfill the aims of the IB, as expressed in the organization's mission statement and the learner profile. Teaching and learning in the Diploma Programme represent the reality in daily practice of the organization's educational philosophy.

Nature of the subject

Geography is a dynamic subject that is firmly grounded in the real world and focuses on the interactions between individuals, societies and the physical environment in both time and space. It seeks to identify trends and patterns in these interactions and examines the processes behind them. It also investigates the way that people adapt and respond to change and evaluates management strategies associated with such change. Geography describes and helps to explain the similarities and differences between spaces and places. These may be defined on a variety of scales and from a range of perspectives.

Within group 3 subjects, geography is distinctive in that it occupies the middle ground between social sciences and natural sciences. The Diploma Programme geography course integrates both physical and human geography, and ensures that students acquire elements of both scientific and socio-economic methodologies. Geography takes advantage of its position between both these groups of subjects to examine relevant concepts and ideas from a wide variety of disciplines. This helps students develop an appreciation of, and a respect for, alternative approaches, viewpoints and ideas.

Geography and the international dimension

The geography course embodies global and international awareness in several distinct ways. It examines key global issues, such as poverty, sustainability and climate change. It considers examples and detailed case studies at a variety of scales, from local to regional, national and international. Throughout the course, teachers have considerable flexibility in their choice of examples and case studies to ensure that Diploma Programme geography is a highly appropriate way to meet the needs of all students, regardless of their precise geographical location. Inherent in the syllabus is a consideration of different perspectives, economic circumstances and social and cultural diversity.

Geography seeks to develop international understanding and foster a concern for global issues as well as to raise students' awareness of their own responsibility at a local level. Geography also aims to develop values and attitudes that will help students reach a degree of personal commitment in trying to resolve these issues, appreciating our shared responsibility as citizens of an increasingly interconnected world.

Distinction between SL and HL

Students at standard level (SL) and higher level (HL) in geography are presented with a syllabus that has a common core and optional themes. HL students also study the higher level extension. The syllabus requires the development of certain skills, attributes and knowledge as described in the assessment objectives of the course.

Although the skills and activity of studying geography are common to both SL and HL students, the HL student is required to acquire a further body of knowledge, to demonstrate critical evaluation, and to synthesize the concepts in the higher level extension.

In summary:

- SL students study two optional themes; HL students study three optional themes, providing further breadth
- HL students study the HL extension—global interactions, and examine, evaluate and synthesize the prescribed concepts, which by their nature are complex, contestable, interlinked and require holistic treatment. This provides further depth at HL.

Geography and prior learning

The geography course requires no specific prior learning. No particular background in terms of specific subjects studied for national or international qualifications is expected or required. The skills needed for the geography course are developed within the context of the course itself.

Links to the Middle Years Programme

Geography is often offered as one of the subjects in the humanities subject group within the IB Middle Years Programme (MYP). Geography is a natural way to build on the areas of interaction, concepts and humanities skills outlined in the MYP. Basic issues that are raised within the conceptual areas of change, systems, global awareness, and place and space are all solid foundations for IB Diploma Programme geography and can be developed to meet the specific demands of the syllabus. The Diploma Programme geography course extends the key skills learned in MYP humanities: technical, analytical, decision-making and investigative. Equally, the organization and presentation strategies introduced in the MYP humanities subject area will become more sophisticated while presenting and undertaking work within the Diploma Programme geography course.

Geography and theory of knowledge

Students of group 3 subjects study individuals and societies. This means that they explore the interactions between humans and their environment in time and place. As a result, these subjects are often known collectively as the “human sciences” or “social sciences”.

As with other subject areas, there is a variety of ways of gaining knowledge in group 3 subjects. For example, archival evidence, data collection, experimentation, observation, and inductive and deductive reasoning can all be used to help explain patterns of behaviour and lead to knowledge claims. Students in group 3 subjects are required to evaluate these knowledge claims by exploring knowledge issues such as validity, reliability, credibility, certainty and individual as well as cultural perspectives.

The relationship between each subject and theory of knowledge is important and fundamental to the Diploma Programme. Having followed a course of study in group 3, students should be able to reflect critically on the various ways of knowing and methods used in human sciences. In doing so, they will become “inquiring, knowledgeable and caring young people” (IB mission statement).

During the Diploma Programme geography course, a number of issues will arise that highlight the relationship between theory of knowledge and geography. Some of the questions that might be considered during the course are identified below.

- Are the findings of the natural sciences as reliable as those of the human sciences? What is the meaning of "a scientific law" in each area?
- To what extent do maps reflect reality?
- Do regions have boundaries?
- To what extent might it be true that geography combines the methods of human and natural sciences?
- Some geographical topics, such as climate change, are controversial. How does the scientific method attempt to address them? Are such topics always within the scope of the scientific method?
- What scientific or social factors might influence the study of a complex phenomenon such as global warming?
- Often in geography a model of reality is created. What does this mean? What are the advantages and disadvantages of creating a geographic model? In what areas of geography are models most common?
- Arguably, while some aspects of geography can be measured, others cannot. Is this the case? What is it about a quality that means it cannot be quantified?
- If humans are individual and unique, does this mean that there can be no reliable laws in human geography?
- Many geographers and others value diversity in human affairs. Is globalization therefore a bad thing?

Aims

Group 3 aims

The aims of all subjects in **group 3, individuals and societies** are to:

1. encourage the systematic and critical study of: human experience and behaviour; physical, economic and social environments; and the history and development of social and cultural institutions
2. develop in the student the capacity to identify, to analyse critically and to evaluate theories, concepts and arguments about the nature and activities of the individual and society
3. enable the student to collect, describe and analyse data used in studies of society, to test hypotheses, and to interpret complex data and source material
4. promote the appreciation of the way in which learning is relevant both to the culture in which the student lives, and the culture of other societies
5. develop an awareness in the student that human attitudes and beliefs are widely diverse and that the study of society requires an appreciation of such diversity
6. enable the student to recognize that the content and methodologies of the subjects in group 3 are contestable and that their study requires the toleration of uncertainty.

Geography aims

In addition, the aims of the **geography** syllabus at SL and HL are to enable students to:

7. develop an understanding of the interrelationships between people, places, spaces and the environment
8. develop a concern for human welfare and the quality of the environment, and an understanding of the need for planning and sustainable management
9. appreciate the relevance of geography in analysing contemporary issues and challenges, and develop a global perspective of diversity and change.

Assessment objectives

There are four assessment objectives (AOs) for the SL and HL Diploma Programme geography course. Having followed the course at SL or HL, students will be expected to do the following.

1. Demonstrate knowledge and understanding of specified content
 - Demonstrate knowledge and understanding of the core theme—patterns and change
 - Demonstrate knowledge and understanding of two optional themes at SL and three optional themes at HL
 - At HL only, demonstrate knowledge and understanding of the HL extension—global interactions
 - In internal assessment, demonstrate knowledge and understanding of a specific geographic research topic
2. Demonstrate application and analysis of knowledge and understanding
 - Apply and analyse geographic concepts and theories
 - Identify and interpret geographic patterns and processes in unfamiliar information, data and cartographic material
 - Demonstrate the extent to which theories and concepts are recognized and understood in particular contexts
3. Demonstrate synthesis and evaluation
 - Examine and evaluate geographic concepts, theories and perceptions
 - Use geographic concepts and examples to formulate and present an argument
 - Evaluate materials using methodology appropriate for geographic fieldwork
 - At HL only, demonstrate synthesis and evaluation of the HL extension—global interactions
4. Select, use and apply a variety of appropriate skills and techniques
 - Select, use and apply the prescribed geographic skills in appropriate contexts
 - Produce well-structured written material, using appropriate terminology
 - Select, use and apply techniques and skills appropriate to a geographic research question

Assessment objectives in practice

Objectives	Paper 1	Paper 2	Paper 3	Internal assessment	Overall
1. Knowledge and understanding of specified content	45%	35%	35% (HL)	20%	35% (SL) 30% (HL)
2. Application and analysis of knowledge and understanding	30%	30%	35% (HL)	20%	30%
3. Synthesis and evaluation	5%	10%	20% (HL)	20%	10% (SL) 15% (HL)
4. Selection, use and application of a variety of appropriate skills and techniques	20%	25%	10% (HL)	40%	25%

Command terms

Classification of command terms

Key command terms are used in the syllabus content under the development column, as described in the “Structure of the syllabus” section, to indicate the depth of understanding that is required of students. These are classified below according to the assessment objectives of:

- AO1 Knowledge and understanding of specified content
- AO2 Application and analysis of knowledge and understanding
- AO3 Synthesis and evaluation
- AO4 Selection, use and application of a variety of appropriate skills and techniques.

There is a progression in demand from AO1–AO3, while AO4 terms are specific to particular skills and examination questions. The command terms within each classification are listed in alphabetical order in the following table.

Students must also be familiar with these terms to understand the depth of treatment required in examination questions. A command term used in an examination question will either be from the same classification as specified in the development column or a less demanding command term. For example, if the command term in the development column is “explain”, and is classified as AO2, an examination question could contain the command term “explain”. Alternatively, another command term, such as “suggest”, which is also classified as AO2 could be used, or one associated with AO1, such as “describe”. The allocation of marks in examination questions also reflects this classification of the assessment objectives.

Definitions of these command terms are listed in the appendix.

Objective	Key command term	Depth
AO1 Knowledge and understanding of specified content	Define Describe Determine Estimate Identify Outline State	These terms require students to demonstrate knowledge and understanding.
AO2 Application and analysis of knowledge and understanding	Analyse Classify Distinguish Explain Suggest	These terms require students to use and analyse knowledge and understanding.
AO3 Synthesis and evaluation	Compare Compare and contrast Contrast Discuss Evaluate Examine Justify To what extent	These terms require students to make a judgment based on evidence and when relevant construct an argument.
AO4 Selection, use and application of a variety of appropriate skills and techniques	Annotate Construct Draw Label	These terms require students to demonstrate the selection and application of skills.

Syllabus outline

Syllabus component	Teaching hours	
	SL	HL
Geographic skills—integrated throughout the course		
<p>Part 1: Core theme—patterns and change (SL/HL) There are four compulsory topics in this core theme.</p> <ol style="list-style-type: none"> 1. Populations in transition 2. Disparities in wealth and development 3. Patterns in environmental quality and sustainability 4. Patterns in resource consumption 	70	70
<p>Part 2: Optional themes (SL/HL) There are seven optional themes; each requires 30 teaching hours.</p> <p>Two optional themes are required at SL.</p> <p>Three optional themes are required at HL.</p> <ol style="list-style-type: none"> A. Freshwater—issues and conflicts B. Oceans and their coastal margins C. Extreme environments D. Hazards and disasters—risk assessment and response E. Leisure, sport and tourism F. The geography of food and health G. Urban environments 	60	90
<p>Part 3: HL extension—global interactions (HL only) There are seven compulsory topics in the HL extension.</p> <ol style="list-style-type: none"> 1. Measuring global interactions 2. Changing space—the shrinking world 3. Economic interactions and flows 4. Environmental change 5. Sociocultural exchanges 6. Political outcomes 7. Global interactions at the local level 		60
<p>Fieldwork (SL/HL) Fieldwork, leading to one written report based on a fieldwork question, information collection and analysis with evaluation.</p>	20	20
Total teaching hours	150	240

Approaches to the teaching of geography

The teaching time expected is 150 hours at SL and 240 hours at HL. The syllabus is designed to allow sufficient time for in-depth analysis, evaluation and consolidation of learning.

Teachers are encouraged to find ways of delivering the course that are most relevant to their students' interests and to the school's resources. The overall aim of the course is to give students a deeper understanding of the nature and scope of geography. The different parts of the course should complement each other and the geographic skills must be integrated throughout the course.

Structure of the syllabus

The three parts, the core theme, optional themes and the HL extension, are presented in three columns: the **topic** (broken down into sub-topics), its **development** and **teaching hours** (as described below).

Sub-topic	Development	Teaching hours
1. Topic title		
<ul style="list-style-type: none"> Specific sub-topic 	This column clarifies the content by defining the limits of the topics, describing the level of knowledge and the type of performance required. The command terms used within each sub-topic define the depth required; that is, the learning outcome.	The number of hours indicates the estimated time for teaching.

The order of the content is not an indication of how the core theme, the optional themes and the HL extension are to be delivered. Since many topics and sub-topics are interrelated, teachers are encouraged to adopt a holistic approach to teaching. For example, a single case study may serve to cover several sub-topics.

Only topics listed in these columns will be selected for assessment in the examination papers, although references from the introductory sections of the core theme, the optional themes and the HL extension may occasionally be used to set the context for examination questions. Examination questions will not exceed the demands of the command terms used in this syllabus and specified in the development column, although the command terms used in the development column do not prescribe the exact wording of examination questions. Definitions and a classification of the command terms are published in this guide.

The "Geographic skills" section lists the skills required in the course that enable students to apply the techniques of geography and use appropriate terminology. It is essential that the skills are covered throughout the whole syllabus (at both SL and HL), that they are delivered through the content of the core theme, the optional themes and HL extension as appropriate, and that they are fully integrated into teaching as opposed to being treated in isolation. Students are expected to demonstrate competence in the use of these skills in both external assessment examination papers and internal assessment as and when appropriate.

Reference may be made to topographic maps in any examination question and all students must be familiar with them. They are especially relevant to such themes as, for example, “Freshwater—issues and conflicts”, “Oceans and their coastal margins” and “Urban environments”.

The core theme, the optional themes and the HL extension cover areas of knowledge that are often affected by personal bias and value judgments. It is important that teachers are aware of this and ensure that students are not only presented with the facts but are taught the analytical skills to allow accurate interpretation and evaluation of these facts.

Further guidance

Use of case studies and examples

Case studies and examples must be used where appropriate to illustrate content.

A case study is a detailed, located example for discussion or a discursive approach. Ideally, case studies selected should be recent; that is, they should have occurred within the student’s lifetime and should not be historical. The use of historical case studies could lead to students losing marks. For example, using the destruction of Pompeii as an example of volcanic destruction is not recommended. If the case studies used are very old it is likely that they will not offer as much scope for answers as more recent ones. This is because current research and reporting generally produce far more data than previous records.

If case studies are required in a response, this will be stated in the question and students are advised, above all, to match the case study to the demands of the question. However, wherever possible, students are encouraged to develop their extended responses using case studies.

When examples are used, students should not just provide one word responses but should offer some development.

The recommended teaching approach throughout the course is to focus on the concepts and to use case studies and examples to demonstrate these concepts.

Advice on the number of case studies to be used is given, where appropriate, in the sections of the guide devoted to the core theme, the optional themes and the HL extension.

Concepts used within the syllabus

There are a number of concepts used throughout the syllabus, the definitions of which may vary from one source to another. To avoid confusion, the generic definitions of the concepts related to this syllabus are given as follows. Other concepts that are specific to a particular theme are given where necessary within the section of the guide devoted to that theme, for example, in optional theme D “Hazards and disasters—risk assessment and response”.

Concept	Definition
Contemporary	Refers to an event that has taken place within the student’s lifetime.
Geographic	All the demographic, environmental, social, cultural, economic and political and geopolitical factors that could influence or be influenced by the geography of an area.
Geopolitical	The combination of locational and political factors relating to or influencing a region or nation.

Concept	Definition
Less economically developed/ more economically developed countries, rich/poor countries, North/South	These terms are not used in this syllabus but teachers may use them as they feel appropriate.
Pattern	This term covers the arrangement or changes of spatial elements (compare with “trend”).
Recent	Reference to an event that has taken place since the year 2000.
Trend	This term covers the changes over time (compare with “pattern”).
Scale	Topics within the syllabus should be studied at various scales. <ul style="list-style-type: none"> • Local scale refers to areas of limited extent. • National scale refers to a country. • Regional scale refers to an area that encompasses several countries sharing some common element (economic, political, locational). • Global scale refers to the world as a whole.
Socio-economic	The combination of social factors (including demographic, cultural and political) and economic factors.
Strategies	Reference to any management policies, initiatives and/or plans.

Geographic models

Students can study models to illustrate concepts relevant to particular topics but examination questions will not require students to have prior knowledge of any specific model.

Primary and secondary information

Primary information is material and data collected in the field through measurement and observation. It can include both qualitative and quantitative information. Secondary information is information that has already been compiled in written, statistical or mapped forms. It can include, for example, material from sources such as United Nations (UN) agencies, non-governmental organizations (NGOs), government publications, statistical yearbooks, telephone directories, censuses, the internet or CD-Roms.

Topics for extended essays in geography

Almost all areas of the syllabus lend themselves to deeper analysis and investigation in an extended essay. Many topics offer a wide range of opportunities for extended essays, although care may be needed to ensure that the research question is not too broad to be satisfactorily answered within the word limit. Also, it is important to note that there is a requirement to focus on a narrow area of research in depth, and that an extended essay must have a spatial component.

The global nature of the topics in the core theme means that they are not always suitable for extended essays. However, it should be possible to investigate the underlying concepts in extended essays, provided the area of research is **at a local scale**. As data collection in the field is not required for extended essays, the research questions can be more broadly based than those used for fieldwork and can rely on information derived from sources other than direct fieldwork.

The IB learner profile

The geography syllabus is closely linked to the IB learner profile, which strives to develop internationally minded people who recognize their common humanity and shared guardianship of the planet, and who help create a better and more peaceful world. By following the geography syllabus, students will have fulfilled the attributes of the IB learner profile. For example, the requirements of the internal assessment provide opportunities for students to develop every aspect of the profile.

For each attribute of the learner profile, a number of examples selected from the skills and content of the geography syllabus are given below.

Learner profile attribute	Geography syllabus
Inquirers	Geographic skills: Collect and select relevant geographic information
Knowledgeable	Content: Core theme, optional themes, HL extension
Thinkers	Geographic skills: Research, process and interpret data and information; processing and interpreting
Communicators	Geographic skills: Produce written material (including essays, reports and investigations) Content: Make links to theory of knowledge
Principled	Geographic skills: Research, process and interpret data and information; identify opinions, values and perceptions; make and justify decisions
Open-minded	Geographic skills: Evaluate sources of geographic information in terms of reliability, bias, relevance and accuracy
Caring	Content: Core theme
Risk-takers	Geographic skills: Make and justify decisions
Balanced	Fieldwork: Collection of primary data and the subsequent treatment, display and analysis of the information
Reflective	Geographic skills: Evaluate methodology; develop clear and logical arguments and draw conclusions where appropriate

The online curriculum centre

All teachers of the geography course are strongly encouraged to access the online curriculum centre (OCC) at regular intervals. The OCC is a website on which all teachers can post inquiries, present examples of good practice, ask for advice and access exemplar materials. The content of the geography forum on the OCC is provided by geography teachers for geography teachers. The website also includes updates on resources and frequently asked questions.

Geographic skills (SL/HL)

These skills are essential to the study of geography and reflect the subject's distinctive methodology and approach. Teaching these skills enriches the students' understanding of geography and enables them to apply the techniques of geography and use appropriate terminology. It is essential that the skills are

covered throughout the **whole** syllabus and that they are introduced and integrated where appropriate, depending on the context, in the different themes and the HL extension. It is essential that the skills are all taught at some stage of the course and are not treated in isolation.

Students are expected to demonstrate competence in the use of geographic skills in examination papers and internal assessment as appropriate. Those skills indicated below in italics are **not** assessed in the externally assessed examination papers.

It is recognized that the ability to use Geographic Information Systems (GIS) is a valuable geographic tool that goes beyond many of the skills listed below. Where GIS is accessible and practical, its use is encouraged. However, the syllabus does not require GIS and it will not be used in the assessment.

Skill	Examples
Locate and differentiate elements of the Earth's surface	Using: <ul style="list-style-type: none"> • direction • latitude • longitude • grid references and area references • scale • political units.
Interpret, analyse and, when appropriate, construct tables, graphs, diagrams, cartographic material and images	All kinds of maps, including: <ul style="list-style-type: none"> • isoline and isopleth maps • choropleth maps • topological maps • dot maps • flow maps • thematic maps (including mental maps) • topographic maps • proportional symbols • aerial photographs • ground-level photographs • satellite images • graphs, including scatter, line, bar, compound, triangular, logarithmic, bipolar graphs • pie charts • flow diagrams/charts • population pyramids • Lorenz curves • cross-profiles (sections) • rose diagrams • development diamonds.

Skill	Examples
Undertake statistical calculations to show patterns and summarize information	<p>Such as:</p> <ul style="list-style-type: none"> • totals • averages (means, medians, modes) • frequencies • ranges of data (differences between maximum and minimum) • densities • percentages • ratios.
Research, process and interpret data and information	<p>Types of data and information:</p> <ul style="list-style-type: none"> • <i>measures of correlation (including Spearman rank and Chi-squared)</i> • <i>measures of concentration and dispersion (including nearest neighbour and location quotients)</i> • <i>measures of spatial interactions</i> • <i>measures of diversity</i> • indices and ratios (including Gini coefficient, ecological footprint, Human Development Index (HDI), dependency ratio) • textual information • observations • opinions, values and perceptions. <p>Processing and interpreting:</p> <ul style="list-style-type: none"> • classify data and information • analyse data and information • describe patterns, trends and relationships • make generalizations and identify anomalies • make inferences and predictions • make and justify decisions • draw conclusions • evaluate methodology.
<i>Collect and select relevant geographic information</i>	<p><i>Making:</i></p> <ul style="list-style-type: none"> • <i>observations</i> • <i>images.</i> <p><i>Conducting:</i></p> <ul style="list-style-type: none"> • <i>interviews.</i> <p><i>Taking:</i></p> <ul style="list-style-type: none"> • <i>measurements.</i>

Skill	Examples
Evaluate sources of geographic information	In terms of: <ul style="list-style-type: none">• accuracy• relevance• bias.
Produce written material (including essays, reports and investigations)	Presenting: <ul style="list-style-type: none">• material in a clear and well-structured way. Responding: <ul style="list-style-type: none">• appropriately to command terms.

Part 1: Core

Patterns and change

The core theme provides an overview of the geographic foundation for the key global issues of our times. The purpose is to provide a broad factual and conceptual introduction to each topic and to the United Nations' Millennium Development Goals (MDGs), in particular those concerning poverty reduction, gender equality, improvements in health and education and environmental sustainability. An evaluation of the progress made towards meeting these goals is also provided.

The core theme also develops knowledge of the likely causes and impacts of global climate change, a major contemporary issue of immense international significance. An understanding of this issue is the fundamental basis for the section on patterns in environmental quality and sustainability.

The emphasis in teaching the core theme should be on the concepts underlying much of the content and the consequent regional and global patterns. Attention should be given to the positive aspects of change (not only the negative ones), to the need to accept responsibility for seeking solutions to the demographic, economic and environmental issues covered, and, where appropriate, to the management strategies adopted to successfully meet the challenges posed.

It is recommended that as much of the content as possible is taught through appropriate examples and case studies, preferably chosen from a limited number of countries (between three and five) of contrasting levels of development. Although many of the ideas are reflected in differences at the local or sub-national scale, the emphasis in the core theme is on national, regional and global trends and patterns.

It is not intended for the topics to be taught sequentially because some issues cover several of the topics. The approach to teaching is not prescribed and the content can be taught with flexibility according to the interests of the teacher and needs of the students.

Definitions

The definitions of the terms used in studying the core theme vary from one source to another. To avoid confusion, the following definitions are given and expected of students.

Term	Definition
Core and periphery	The concept of a developed core surrounded by an undeveloped periphery. The concept can be applied at various scales.
Ecological footprint	The theoretical measurement of the amount of land and water a population requires to produce the resources it consumes and to absorb its waste under prevailing technology.
Global climate change	The changes in global patterns of rainfall and temperature, sea level, habitats and the incidences of droughts, floods and storms, resulting from changes in the Earth's atmosphere, believed to be mainly caused by the enhanced greenhouse effect.

Term	Definition
GNI	Gross national income (now used in preference to gross national product—GNP). The total value of goods and services produced within a country together with the balance of income and payments from or to other countries.
Migration	The movement of people, involving a change of residence. It can be internal or external (international) and voluntary or forced. It does not include temporary circulations such as commuting or tourism.
Remittances	Transfers of money/goods by foreign workers to their home countries.
Soil degradation	A severe reduction in the quality of soils. The term includes soil erosion, salinization and soil exhaustion (loss of fertility).
Water scarcity	Can be defined as: <ul style="list-style-type: none"> physical water scarcity, where water resource development is approaching or has exceeded unsustainable levels; it relates water availability to water demand and implies that arid areas are not necessarily water scarce economic water scarcity, where water is available locally but not accessible for human, institutional or financial capital reasons.

Details

Sub-topic	Development	Teaching hours
1. Populations in transition		
• Population change	Explain population trends and patterns in births (Crude Birth Rate), natural increase and mortality (Crude Death Rate, infant and child mortality rates), fertility and life expectancy in contrasting regions of the world. Analyse population pyramids. Explain population momentum and its impact on population projections.	5 hours
• Responses to high and low fertility	Explain dependency and ageing ratios. Examine the impacts of youthful and ageing populations. Evaluate examples of a pro-natalist policy and an anti-natalist policy.	4 hours
• Movement responses—migration	Discuss the causes of migrations, both forced and voluntary. Evaluate internal (national) and international migrations in terms of their geographic (socio-economic, political and environmental) impacts at their origins and destinations.	6 hours
• Gender and change	Examine gender inequalities in culture, status, education, birth ratios, health, employment, empowerment, life expectancy, family size, migration, legal rights and land tenure.	4 hours

Sub-topic	Development	Teaching hours
2. Disparities in wealth and development		
<ul style="list-style-type: none"> Measurements of regional and global disparities 	Define indices of infant mortality, education, nutrition, income, marginalization and Human Development Index (HDI). Explain the value of the indices in measuring disparities across the globe.	3 hours
<ul style="list-style-type: none"> Origin of disparities 	Explain disparities and inequities that occur within countries resulting from ethnicity, residence, parental education, income, employment (formal and informal) and land ownership.	3 hours
<ul style="list-style-type: none"> Disparities and change 	Identify and explain the changing patterns and trends of regional and global disparities of life expectancy, education and income. Examine the progress made in meeting the Millennium Development Goals (MDGs) in poverty reduction, education and health.	5 hours
<ul style="list-style-type: none"> Reducing disparities 	Discuss the different ways in which disparities can be reduced with an emphasis on trade and market access, debt relief, aid and remittances. Evaluate the effectiveness of strategies designed to reduce disparities.	5 hours
3. Patterns in environmental quality and sustainability		
<ul style="list-style-type: none"> Atmosphere and change 	Describe the functioning of the atmospheric system in terms of the energy balance between solar and longwave radiation. Explain the changes in this balance due to external forcings (changes in solar radiation, changes in the albedo of the atmosphere and changes in the longwave radiation returned to space). Discuss the causes and environmental consequences of global climate change.	4 hours
<ul style="list-style-type: none"> Soil and change 	Explain the causes of soil degradation. Discuss the environmental and socio-economic consequences of this process, together with management strategies.	4 hours
<ul style="list-style-type: none"> Water and change 	Identify the ways in which water is utilized at the regional scale. Examine the environmental and human factors affecting patterns and trends in physical water scarcity and economic water scarcity. Examine the factors affecting access to safe drinking water.	5 hours

Sub-topic	Development	Teaching hours
<ul style="list-style-type: none"> Biodiversity and change 	Explain the concept and importance of biodiversity in tropical rainforests. Examine the causes and consequences of reduced biodiversity in this biome.	3 hours
<ul style="list-style-type: none"> Sustainability and the environment 	Define the concept of environmental sustainability. Evaluate a management strategy at a local or national scale designed to achieve environmental sustainability.	3 hours
4. Patterns in resource consumption		
<ul style="list-style-type: none"> Patterns of resource consumption 	Evaluate the ecological footprint as a measure of the relationship between population size and resource consumption. Identify international variations in its size. Discuss the two opposing views (neo-Malthusian and anti-Malthusian) of the relationship between population size and resource consumption.	4 hours
<ul style="list-style-type: none"> Changing patterns of energy consumption 	Examine the global patterns and trends in the production and consumption of oil. Examine the geopolitical and environmental impacts of these changes in patterns and trends. Examine the changing importance of other energy sources.	2 hours 6 hours
<ul style="list-style-type: none"> Conservation strategies 	Discuss the reduction of resource consumption by conservation, waste reduction, recycling and substitution. Evaluate a strategy at a local or national scale aimed at reducing the consumption of one resource.	4 hours

Part 2: Optional themes

Option A: Freshwater—issues and conflicts

This optional theme focuses on water on the land as a scarce resource. It considers the ways in which humans respond to the challenges of managing the quantity and quality of freshwater, as well as the consequences (whether intended or unintended, positive or negative) of management. The theme includes both the physical geography of freshwater (basic hydrology and floods) and human impacts on water quality.

This theme should include the study of **at least one** detailed case study at the drainage basin level. Reference should be made to additional examples, at a range of scales, in less depth, wherever appropriate.

Definitions

The definitions of the terms used in studying this theme, “Freshwater—issues and conflicts”, vary from one source to another. To avoid confusion, the following definitions are given and expected of students.

Term	Definition
Drainage basin	The area drained by a river and its tributaries.
Drainage divide	Also known as a watershed, it is the line defining the boundary of a river or stream drainage basin separating it from adjacent basin(s).
Maximum sustainable yield	The maximum level of extraction of water that can be maintained indefinitely for a given area.
Wetlands	Areas that are regularly saturated by surface water or groundwater, including freshwater marshes, swamps and bogs.

Details

Sub-topic	Development	Teaching hours
1. The water system		
<ul style="list-style-type: none"> The hydrological cycle 	Examine the inputs, outputs, stores and transfers of the hydrological cycle. Discuss the causes and consequences of the changing balance between water stored in oceans and ice.	3 hours
<ul style="list-style-type: none"> The water balance 	Explain the concept of maximum sustainable yield of freshwater in terms of a balance between inputs and outputs.	

Sub-topic	Development	Teaching hours
2. Drainage basins and flooding		
• Drainage basins	Examine the functioning of a drainage basin as an open system with inputs, outputs, transfers, stores and feedback loops.	2 hours
• Discharge	Define stream discharge. Examine its relationship to stream flow and channel shape.	1 hour
• Hydrographs	Describe the characteristics of a hydrograph. Examine the reasons for spatial and temporal (short-term and long-term) variations in hydrographs. Examine the role of hydrographs in forecasting the magnitude, spatial extent and timing of floods.	3 hours
• Floods	Discuss the natural and human causes and consequences of a specific river flood.	3 hours
3. Management issues and strategies		
• Dams and reservoirs	Examine the hydrological changes resulting from the construction of dams and reservoirs. Examine the costs and benefits of dams and reservoirs as part of multi-purpose schemes.	2 hours
• Floodplain management	Explain the stream channel processes (erosion, transport, deposition) and explain the resultant landforms found on floodplains. Examine the human modifications of a floodplain and their effect on the size and probability of floods. Evaluate the costs and benefits of alternative stream management strategies.	3 hours
• Groundwater management	Explain the functioning and management of artesian basins and aquifers, distinguishing between natural and artificial recharge. Examine the environmental impacts of groundwater abstraction.	2 hours
• Freshwater wetland management	Describe the role of wetlands as a water resource. Evaluate the effectiveness of the management strategies that have been adopted in a major wetland.	2 hours
• Irrigation and agriculture	Examine the environmental impact of agriculture and irrigation on water quality: salinization, agro-chemical run-off, the pollution of groundwater and the eutrophication of lakes, rivers and wetlands.	3 hours

Sub-topic	Development	Teaching hours
4. Competing demands for water		
<ul style="list-style-type: none"> Conflicts at the local or national scale 	Examine the competing demands for water in a specific river basin. Evaluate the strategies that have been adopted to meet these demands.	6 hours
<ul style="list-style-type: none"> Conflicts at the international scale 	Discuss an example of an international conflict related to freshwater.	

Option B: Oceans and their coastal margins

Covering over 70% of the Earth's surface, oceans are of great importance to humans in a number of ways. This optional theme provides an introduction to the physical characteristics and processes of the oceans with particular reference to the atmosphere–ocean link, concentrating on the important role that oceans play in influencing climatic conditions. Issues arising from the oceans as resource bases are also considered.

The emphasis in the section on coastal margins is on management. Consequently, a detailed study of the physical characteristics and processes of coasts is not required, although some knowledge is essential for understanding management strategies.

The material has been organized in this theme to provide a sequenced structure for teaching. Attention is drawn to the need to provide detailed examples or case studies in several topics.

Definitions

The definitions of the terms used in studying this theme, "Oceans and their coastal margins", vary from one source to another. To avoid confusion, the following definitions are given and expected of students.

Term	Definition
Advancing coasts	Depositional coasts that are growing as a consequence of sediment deposit and/or the infill of coastal marshes. Advancing coasts may also arise from a negative change in sea level (sea level fall or uplift of land).
Exclusive economic zone (EEZ)	An area in which a coastal nation has sovereign rights over all the economic resources of the sea, seabed and subsoil, extending up to 200 nautical miles from the coast.
Littoral drift	The movement of sediment along a coast by wave action; also called longshore drift.
Oceanic conveyor belts	A global thermohaline circulation, driven by the formation and sinking of deep water and responsible for the large flow of upper ocean water.
Retreating coasts	Coasts along which the dominant processes are erosional, resulting in the coastline moving inland. Retreating coasts may also be caused by a positive change in sea level (sea level rise or a fall in land level).

Details

Sub-topic	Development	Teaching hours
1. Introduction to oceans		
<ul style="list-style-type: none"> Distribution of oceans Morphology of oceans Oceanic water 	<p>Describe the distribution of oceans and ocean currents.</p> <p>Describe the main features of oceanic crust and ocean floor morphology.</p> <p>Explain the occurrence of oceanic volcanic features, trenches, transform faults, mid-ocean ridges and rifts in terms of plate margins.</p> <p>Describe the horizontal and vertical spatial variations in the temperature and salinity of ocean water.</p>	2 hours
2. Oceans and climate		
<ul style="list-style-type: none"> Energy transfers El Niño Southern Oscillation (ENSO) Carbon dioxide 	<p>Explain the thermal transfers of energy within oceans and the importance of oceanic conveyor belts.</p> <p>Explain the atmosphere–oceanic interactions associated with ENSO.</p> <p>Explain the El Niño and La Niña phenomena and their climatic, environmental and economic effects.</p> <p>Examine the role of oceans as a store and source of carbon dioxide (CO₂).</p>	4 hours
3. The value of oceans		
<ul style="list-style-type: none"> Resource base Fishing Case study Waste 	<p>Identify the biotic and abiotic resources of continental shelves, oceans and ocean floor deposits.</p> <p>Examine the spatial and temporal consequences of overfishing.</p> <p>Evaluate a case study of a conservation policy implemented to provide sustainable fish yields.</p> <p>Describe the sources and distribution of pollution in the oceans.</p> <p>Discuss the implications of the pollution of oceans by the disposal of radioactive material, oil and chemical waste.</p>	4 hours 3 hours
4. Geopolitics of oceans		
<ul style="list-style-type: none"> Sovereignty rights Conflict 	<p>Discuss the sovereignty rights of nations in relation to territorial limits and exclusive economic zones (EEZ).</p> <p>Examine a geopolitical conflict in relation to an oceanic resource, other than fishing.</p>	3 hours

Sub-topic	Development	Teaching hours
5. Coastal margins		
• Physical characteristics	Examine the relationship between coastal processes (tides, wave action, littoral drift, wind action), lithology, subaerial processes and different coastal landforms. Identify the major landforms of beaches, dunes and cliffs along advancing and retreating coasts.	4 hours
• Management strategies	Discuss the conflicts that arise from competing land uses and from attempts to manage coastal hazards (tsunamis and storm surges, erosion, cliff failure), pollution, habitat restoration and aquaculture.	6 hours
• Case study	Describe the conflicting pressures on a particular coastline. Discuss the management strategies adopted to resolve these pressures and evaluate their effectiveness.	
6. Coral reefs and mangroves		
• Development	Examine the development and the environmental and economic value of coral reefs and mangrove swamps.	4 hours
• Causes and consequences	Examine the causes and consequences of the loss of coral reefs and mangrove swamps.	

Option C: Extreme environments

This optional theme considers two different kinds of extreme environment.

- Cold and high-altitude environments (polar, glacial areas, periglacial areas, high mountains in non-tropical latitudes)
- Hot, arid environments (hot deserts and semi-arid areas)

These environments are relatively inaccessible and tend to be viewed as inhospitable to human habitation. Despite this, they provide numerous opportunities for settlement and economic activity. This theme examines the essential landscape characteristics of the two kinds of extreme environment, together with the natural processes operating in them, and the way in which people have responded to the opportunities they offer and the challenges they pose for management and sustainability.

While some parts of the theme focus on the global scale, other parts are best studied by the use of **one or more** localized case studies. It is expected that extensive use will be made of large-scale maps and visual material, since it is unlikely that most students will be personally familiar with more than one of these two kinds of extreme environment.

While the details below suggest one possible way of teaching the theme, other approaches are equally valid. Teachers may prefer to look first at all aspects of one kind of extreme environment and then examine the other kind of extreme environment.

Details

Sub-topic	Development	Teaching hours
1. Challenging environments		
<ul style="list-style-type: none"> Global distribution of extreme environments 	<p>Explain the global distribution of each of the two kinds of extreme environment.</p> <p>Describe the relief and climatic characteristics that make these environments extreme. Explain how these characteristics present challenges for resource development and human habitation.</p>	4 hours
<ul style="list-style-type: none"> Population 	<p>Explain the other factors responsible for a low density of population in these areas: human discomfort, inaccessibility, remoteness.</p> <p>Identify ways in which people adapt their activities to extremes of weather and climate.</p>	2 hours
2. The physical characteristics of extreme environments		
<ul style="list-style-type: none"> Glacial environment 	<p>Explain the advance and retreat of glaciers and the main features resulting from the processes of erosion and deposition by glaciers.</p>	3 hours
<ul style="list-style-type: none"> Periglacial environment 	<p>Explain permafrost, patterned ground, solifluction, thermokarst, pingos.</p>	3 hours
<ul style="list-style-type: none"> Hot, arid environments (hot deserts and semi-arid areas) 	<p>Explain weathering and the processes involved in wind- and water-formed features. Explain the occurrence of flash floods.</p>	4 hours
3. Opportunities and challenges for management		
<ul style="list-style-type: none"> Agriculture 	<p>Hot, arid areas: examine the opportunities for agriculture in these areas, the distinction between aridity and infertility, the importance of irrigation and risk of salinization, and the processes and factors involved in desertification.</p>	4 hours
<ul style="list-style-type: none"> Mineral extraction 	<p>Periglacial areas: examine the opportunities and challenges posed by permafrost and other characteristics of periglacial areas for resource development (mineral extraction and any associated settlement and communications).</p>	2 hours
	<p>Hot, arid areas: examine the opportunities and challenges posed for resource development (mineral extraction and any associated settlement and communications).</p>	2 hours

Sub-topic	Development	Teaching hours
<ul style="list-style-type: none"> Tourism 	Examine the opportunities and challenges posed by the development of tourism and any associated settlement and communications in one type of extreme environment. Examine the impacts of tourism on the environment, such as mass movements and erosion, land degradation, vulnerability to hazards, aesthetic change, water usage and waste disposal.	3 hours
4. Sustainability		
<ul style="list-style-type: none"> Human activity Impact 	<p>Discuss the degree to which human activities in extreme environments are unsustainable.</p> <p>Discuss the potential impact of global climatic change (global warming) on the indigenous populations, settlement and economic activities in extreme environments.</p>	3 hours

Option D: Hazards and disasters—risk assessment and response

Environmental hazards exist at the interface between physical geography and human geography. Natural hazard events are often exacerbated by human actions, although conversely, human-induced hazard events are also affected by natural environmental conditions. The principles involved in studying natural hazards are identical to those involved in studying human-induced hazards.

The focus of this optional theme is on the full range of human adjustments and responses to hazards and disasters at a variety of scales. The term “natural disaster” is deliberately avoided in this theme because it is not considered to be an accurate reflection of the multitude of underlying reasons that expose people to risk and subsequently create the pre-conditions necessary for a disaster to occur.

In studying this theme, students are expected to examine the following **four** hazards.

- **Either** earthquakes **or** volcanoes
- Hurricanes (tropical cyclones, typhoons)
- Droughts
- Any one recent human-induced (technological) hazard resulting in an explosion or escape of hazardous material

These four hazards do not necessarily require an equal allocation of time; the precise balance will vary according to local preferences. The syllabus is designed to allow for flexibility but it is recommended that the overall approach should be concept by concept (such as vulnerability, risk and risk assessment), rather than entirely thematic (hazard by hazard). At least **one** case study of a hazard event (or disaster) is required for each of the four hazard types.

Definitions

The definitions of the terms used in studying this theme, “Hazards and disasters—risk assessment and response”, vary from one source to another. To avoid confusion, the following definitions are given and expected of students.

Term	Definition
Disaster	A major hazard event that causes widespread disruption to a community or region that the affected community is unable to deal with adequately without outside help.
Hazard	A threat (whether natural or human) that has the potential to cause loss of life, injury, property damage, socio-economic disruption or environmental degradation.
Hazard event	The occurrence (realization) of a hazard, the effects of which change demographic, economic and/or environmental conditions.
Risk	The probability of a hazard event causing harmful consequences (expected losses in terms of deaths, injuries, property damage, economy and environment).
Vulnerability	The susceptibility of a community to a hazard or to the impacts of a hazard event.

Details

Sub-topic	Development	Teaching hours
1. Characteristics of hazards		
<ul style="list-style-type: none"> Characteristics 	<p>Explain the characteristics and spatial distribution of the following hazards.</p> <ul style="list-style-type: none"> Either earthquakes or volcanoes Hurricanes (tropical cyclones, typhoons) Droughts Any one recent human-induced (technological) hazard (explosion or escape of hazardous material) <p>Distinguish between the chosen hazards in terms of their spatial extent, predictability, frequency, magnitude, duration, speed of onset and effects.</p>	7 hours
2. Vulnerability		
<ul style="list-style-type: none"> Vulnerable populations 	<p>Explain the reasons why people live in hazardous areas.</p>	1 hour
<ul style="list-style-type: none"> Vulnerability 	<p>Discuss vulnerability as a function of demographic and socio-economic factors, and of a community's preparedness and ability to deal with a hazard event when it occurs.</p> <p>Explain the reasons for some sectors of a population being more vulnerable than others.</p>	3 hours

Sub-topic	Development	Teaching hours
3. Risk and risk assessment		
<ul style="list-style-type: none"> Analysis of risk 	<p>Examine the relationships between the degree of risk posed by a hazard and the probability of a hazard event occurring, the predicted losses and a community's preparedness for it.</p> <p>Explain the reasons why individuals and communities often underestimate the probability of hazard events occurring.</p> <p>Discuss the factors that determine an individual's perception of the risk posed by hazards.</p>	3 hours
<ul style="list-style-type: none"> Hazard event prediction 	<p>Examine the methods used to make estimates (predictions) of the probability (in time and space) of hazard events occurring, and of their potential impact on lives and property.</p> <p>Discuss these methods by examining case studies relating to two different hazard types.</p>	3 hours
4. Disasters		
<ul style="list-style-type: none"> Definition Measuring disasters 	<p>Distinguish between a hazard event and a disaster. Explain why this distinction is not always completely objective.</p> <p>Describe the methods used to quantify the spatial extent and intensity of disasters.</p> <p>Explain the causes and impacts of any one disaster resulting from a natural hazard.</p> <p>Explain the causes and impacts of any one recent human-induced hazard event or disaster.</p> <p>Examine the ways in which the intensity and impacts of disasters vary in space and have changed over time.</p>	4 hours
5. Adjustments and responses to hazards and disasters		
<ul style="list-style-type: none"> Responses to the risk of hazard events Before the event 	<p>Discuss the usefulness of assessing risk before deciding the strategies of adjustment and response to a hazard.</p> <p>Describe attempts that have been made to reduce vulnerability by spreading the risk (aid, insurance) and by land-use planning (zoning).</p> <p>Describe strategies designed to limit the damage from potential hazard events and disasters.</p>	4 hours

Sub-topic	Development	Teaching hours
<ul style="list-style-type: none"> Short-term, mid-term and long-term responses after the event 	<p>Describe the range of responses, at the community, national and international levels, during and after a hazard event or disaster.</p> <p>Distinguish between rescue, rehabilitation and reconstruction responses.</p> <p>Explain how these responses are affected by individual and community perceptions.</p> <p>Examine the factors that affected the choice of adjustments before, and responses to, actual hazard events or disasters.</p> <p>Discuss the importance of re-assessing risk, and re-examining vulnerability, following any major hazard event or disaster.</p>	5 hours

Option E: Leisure, sport and tourism

Leisure is defined for the purposes of this optional theme as any freely chosen activity or experience that takes place in non-work time.

The leisure industry is a significant and rapidly expanding global economic sector. This option is designed to illustrate the pattern and diversity of leisure activities, their increasing popularity and their impact on environments, culture and economy on a range of scales from global to local. Issues and conflicts arise for planners and managers in meeting leisure demand, conserving natural resources and avoiding social conflict.

The theme focuses specifically on **tourism, sport and recreation**. Although the three terms are defined separately, they overlap and participation in them may be simultaneous. For example, a sporting activity may occur during a vacation.

Definitions

The definitions of the terms used in studying this theme, "Leisure, sport and tourism", vary from one source to another. To avoid confusion, the following definitions are given and expected of students.

Term	Definition
Carrying capacity	The maximum number of visitors/participants that a site/event can satisfy at one time. It is customary to distinguish between environmental carrying capacity (the maximum number before the local environment becomes damaged) and perceptual carrying capacity (the maximum number before a specific group of visitors considers the level of impact, such as noise, to be excessive). For example, young mountain bikers may be more crowd-tolerant than elderly walkers.
Leisure	Any freely chosen activity or experience that takes place in non-work time.

Term	Definition
Primary tourist/recreational resources	The pre-existing attractions for tourism or recreation (that is, those not built specifically for the purpose), including climate, scenery, wildlife, indigenous people, cultural and heritage sites. These are distinguished from secondary tourist/recreational resources , which include accommodation, catering, entertainment and shopping.
Recreation	A leisure-time activity undertaken voluntarily and for enjoyment. It includes individual pursuits, organized outings and events, and non-paid (non-professional) sports.
Resort	A settlement where the primary function is tourism. This includes a hotel complex.
Sport	A physical activity involving a set of rules or customs. The activity may be competitive.
Tourism	Travel away from home for at least one night for the purpose of leisure. Note that this definition excludes day-trippers. There are many possible subdivisions of tourism. Sub-groups include: <ul style="list-style-type: none"> ecotourism—tourism focusing on the natural environment and local communities heritage tourism—tourism based on a historic legacy (landscape feature, historic building or event) as its major attraction sustainable tourism—tourism that conserves primary tourist resources and supports the livelihoods and culture of local people.

Details

Sub-topic	Development	Teaching hours
1. Leisure		
<ul style="list-style-type: none"> Definitions 	<p>Discuss the difficulties in attempting to define leisure, recreation, tourism and sport.</p> <p>Discuss the influence of accessibility, changes in technology and affluence upon the growth of these activities.</p>	2 hours
2. Leisure at the international scale: tourism		
<ul style="list-style-type: none"> Changes in demand Changes in supply 	<p>Explain the long- and short-term trends and patterns in international tourism.</p> <p>Examine the changes in location and development of different tourist activities. Explain the growth of more remote tourist destinations.</p>	4 hours

Sub-topic	Development	Teaching hours
3. Leisure at the international scale: sport		
<ul style="list-style-type: none"> International participation and success Case study of a contemporary international sports event 	<p>Examine the social, cultural, economic and political factors affecting participation and success in two major international sports.</p> <p>Analyse the geographic factors that influenced the choice of venue(s).</p> <p>Examine the factors affecting the sphere of influence for participants and supporters.</p> <p>Evaluate the short- and long-term geographic costs and benefits of hosting such an event at both the local and national level.</p>	4 hours
4. Leisure at the national/regional scale: tourism		
<ul style="list-style-type: none"> Case study of a national tourist industry Case study of ecotourism Tourism as a development strategy 	<p>Examine the economic, social and environmental impacts of tourism.</p> <p>Evaluate the strategies designed to manage and sustain the tourist industry.</p> <p>Examine the importance of tourism as a development strategy for low-income countries.</p>	6 hours
5. Leisure at the national/regional scale: sport		
<ul style="list-style-type: none"> Case study of a national sports league 	<p>Explain the hierarchy of a league and the location of its teams. Examine the relationship between team location and the residence of its supporters.</p>	3 hours
6. Leisure at the local scale: tourism		
<ul style="list-style-type: none"> Tourism management in urban areas Tourism management in rural areas 	<p>For one named city or large town:</p> <ul style="list-style-type: none"> describe the distribution and location of primary and secondary tourist resources discuss the strategies designed to manage tourist demands, maximize capacity and minimize conflicts between local residents and visitors, and avoid environmental damage. <p>Examine the concept of carrying capacities in a rural tourist area.</p> <p>Discuss strategies designed to maximize capacity and minimize conflicts between local residents and visitors, and avoid environmental damage.</p>	4 hours

Sub-topic	Development	Teaching hours
7. Leisure at the local scale: sport and recreation		
<ul style="list-style-type: none"> The leisure hierarchy 	Explain the relationship between urban settlements and recreational and sports facilities in terms of frequency, size, range and catchment area.	4 hours
<ul style="list-style-type: none"> Intra-urban spatial patterns 	Examine the distribution and location of recreational and sports facilities in urban areas and relate the patterns to accessibility, land value and the physical and socio-economic characteristics of each urban zone (from the central business district to the rural–urban fringe).	
<ul style="list-style-type: none"> Urban regeneration 	Discuss the role of sport and recreation in regeneration strategies of urban areas.	
8. Sustainable tourism		
<ul style="list-style-type: none"> Sustainable tourism 	<p>Define sustainable tourism.</p> <p>Examine the extent to which it might be successfully implemented in different environments.</p>	3 hours

Option F: The geography of food and health

This optional theme is based on the underlying premise that the health of a population is the direct consequence of having enough food, a balanced diet and reduced susceptibility to disease. It covers a large area of knowledge, and time constraints mean that some parts may need to be covered in breadth rather than in depth.

The topic on health serves as an introduction to the theme, with more detailed coverage required for the remaining two topics on food and disease. These latter sections relate to some of the United Nations' Millennium Development Goals (MDGs), particularly those that challenge hunger and combat disease.

Detailed case studies are recommended, especially when impacts and evaluations are required. Case studies of **two** diseases are required, chosen from two **different** categories out of the following three: vector-borne, water-borne or sexually transmitted disease.

Definitions

The definitions of the terms used in studying this theme, "The geography of food and health", vary from one source to another. To avoid confusion, the following definitions are given and expected of students.

Term	Definition
Food miles	A measure of the distance that food travels from its source to the consumer. This can be given either in units of actual distance or of energy consumed during transport.
HALE	Health-adjusted life expectancy, based on life expectancy at birth but including an adjustment for time spent in poor health (due to disease and/or injury). It is the equivalent number of years in full health that a newborn can expect to live, based on current rates of ill health and mortality.
Transnational corporation (TNC)	A firm that owns or controls productive operations in more than one country through foreign direct investment.

Details

Sub-topic	Development	Teaching hours
1. Health		
<ul style="list-style-type: none"> Variations in health 	Describe the variations in health as reflected by changes in life expectancy at national and global scales since 1950. Explain the patterns and trends in terms of differences in income and lifestyle.	4 hours
<ul style="list-style-type: none"> Measuring health 	Evaluate life expectancy, infant mortality rate (IMR) and child mortality, HALE (health-adjusted life expectancy), calorie intake, access to safe water and access to health services as indicators of health.	
<ul style="list-style-type: none"> Prevention relative to treatment 	Discuss the geographic factors that determine the relative emphasis placed by policy-makers, in one country or region, on prevention as opposed to treatment of disease.	
2. Food		
<ul style="list-style-type: none"> Global availability of food 	Identify global patterns of calorie intake as one measure of food availability. Distinguish between malnutrition, temporary hunger, chronic hunger and famine. Discuss the concept of food security.	1 hour
<ul style="list-style-type: none"> Areas of food sufficiency and deficiency 	Explain how changes in agricultural systems, scientific and technological innovations, the expansion of the area under agriculture and the growth of agribusiness have increased the availability of food in some areas, starting with the Green Revolution and continuing since. Examine the environmental, demographic, political, social and economic factors that have caused areas of food deficiency and food insecurity.	3 hours

Sub-topic	Development	Teaching hours
• Case study	Examine the variety of causes responsible for a recent famine.	4 hours
• Production and markets	Examine the impacts at a variety of scales of trade barriers, agricultural subsidies, bilateral and multilateral agreements, and transnational corporations (TNCs) on the production and availability of food.	3 hours
• Addressing imbalances	Evaluate the relative importance of food aid, free trade and fair trade in alleviating food shortages.	3 hours
• Sustainable agriculture	Examine the concept of sustainable agriculture in terms of energy efficiency ratios and sustainable yields. Examine the concept of food miles as an indicator of environmental impact.	2 hours
3. Disease		
• Global patterns of disease	Explain the global distribution of diseases of affluence. Explain the global distribution of diseases of poverty.	2 hours
• The spread of disease	Explain how the geographic concepts of diffusion by relocation and by expansion apply to the spread of diseases. Examine the application of the concept of barriers in attempts to limit the spread of diseases. Describe the factors that have enabled reduction in incidence of a disease.	4 hours
• Geographic factors and impacts	Examine the geographic factors responsible for the incidence and spread of two diseases. Evaluate the geographic impact of these two diseases at the local, national and international scales. Evaluate the management strategies that have been applied in any one country or region for one of these diseases.	4 hours

Option G: Urban environments

This optional theme considers cities as places of intense social interaction and as focal points of production, wealth generation and consumption. They exhibit diversity in patterns of wealth and deprivation, which can result in conflict. Transport improvements have led to rapid growth and shifts in population and economic activities, producing stresses and challenges for planners.

The theme also considers issues of sustainability where the city is regarded as a system with inputs and outputs that need to be managed to minimize environmental impacts.

This theme recognizes that cities and towns may share common characteristics and processes irrespective of the national level of economic development.

For all sections of this optional theme (unless stated otherwise), **two** case studies of cities/large urban areas must be studied in **two** countries at contrasting levels of development.

Definitions

The definitions of the terms used in studying this theme, “Urban environments”, vary from one source to another. To avoid confusion, the following definitions are given and expected of students.

Term	Definition
Brownfield site	Abandoned, derelict or under-used industrial buildings and land that may be contaminated but have potential for redevelopment.
Counter-urbanization	The movement of population away from inner urban areas to a new town, a new estate, a commuter town or a village on the edge or just beyond the city limits/rural–urban fringe.
Ecological footprint	The theoretical measurement of the amount of land and water a population requires to produce the resources it consumes and to absorb its waste under prevailing technology.
Re-urbanization	The development of activities to increase residential population densities within the existing built-up area of a city. This may include the redevelopment of vacant land, the refurbishment of housing and the development of new business enterprises.
Suburb	A residential area within or just outside the boundaries of a city.
Suburbanization	The outward growth of towns and cities to engulf surrounding villages and rural areas. This may result from the out-migration of population from the inner urban area to the suburbs or from inward rural–urban movement.
Sustainable urban management strategy	An approach to urban management that seeks to maintain and improve the quality of life for current and future urban dwellers. Aspects of management may be social (housing quality, crime), economic (jobs, income) or environmental (air, water, land, resources).
Urbanization	An increasing percentage of a country’s population comes to live in towns and cities. It may involve both rural–urban migration and natural increase.
Urban sprawl	The unplanned and uncontrolled physical expansion of an urban area into the surrounding countryside. It is closely linked to the process of suburbanization.

Details

Sub-topic	Development	Teaching hours
1. Urban populations		
<ul style="list-style-type: none"> Urbanization Inward movement Outward movement Natural change The global megacity 	<p>Define urbanization and explain the variation in global growth rates and patterns.</p> <p>Explain the processes of centripetal movements (rural–urban migration, gentrification, re-urbanization/urban renewal).</p> <p>Explain the processes of centrifugal movements (suburbanization, counter-urbanization, urban sprawl).</p> <p>Explain the contribution of natural change to patterns of population density within urban areas.</p> <p>Explain the global increase in the number and location of megacities (population over 10 million).</p>	2 hours
2. Urban land use		
<ul style="list-style-type: none"> Residential areas Areas of economic activity 	<p>Explain the location of residential areas in relation to wealth, ethnicity and family status (stage in life cycle).</p> <p>Examine patterns of urban poverty and deprivation (such as slums, squatter settlements, areas of low-cost housing and inner-city areas).</p> <p>Examine the causes and effects of the movement of socio-economic groups since the 1980s.</p> <p>Explain the spatial pattern of economic activity, the zoning of urban and suburban functions and the internal structure of the central business district (CBD).</p> <p>Describe the informal sector; its characteristics and location in urban areas.</p> <p>Examine the causes and effects of the movement of retailing, service and manufacturing activities to new locations, including brownfield sites.</p>	<p>4 hours</p> <p>4 hours</p>
3. Urban stress		
<ul style="list-style-type: none"> Urban microclimate Other types of environmental and social stress 	<p>Examine the effects of structures and human activity on urban microclimates, including the urban heat island effect and air pollution.</p> <p>Examine the other symptoms of urban stress including congestion, overcrowding and noise, depletion of green space, waste overburden, poor quality housing, social deprivation, crime and inequality.</p>	<p>4 hours</p> <p>4 hours</p>

Sub-topic	Development	Teaching hours
4. The sustainable city		
<ul style="list-style-type: none"> The city as a system 	<p>Describe the city as a system in terms of:</p> <ul style="list-style-type: none"> inputs—energy, water, people, materials, products, food (urban agriculture) outputs—solid, atmospheric and liquid waste, noise, people. <p>Distinguish between a sustainable circular system where inputs are reduced and outputs are recycled and an unsustainable (open/linear) city system with uncontrolled inputs and outputs.</p>	2 hours
<ul style="list-style-type: none"> Case studies 	<p>Referring to at least two city case studies, discuss the concepts of:</p> <ul style="list-style-type: none"> sustainable city management the urban ecological footprint. 	4 hours
<ul style="list-style-type: none"> Sustainable strategies 	<p>Evaluate one case study of each of the following.</p> <ul style="list-style-type: none"> One socially sustainable housing management strategy. One environmentally sustainable pollution management strategy. One strategy to control rapid city growth resulting from in-migration. 	6 hours

Part 3: HL extension

Global interactions

Rationale and conceptual framework

The study of global interactions in this syllabus has a broader perspective than a more conventional study of globalization that emphasizes a linear process involving the domination and the imposition of western culture on the world. In the context of this syllabus, global interaction suggests a two-way and complex process whereby cultural traits and commodities may be adopted, adapted or resisted by societies. The process is neither inevitable nor universal.

The HL extension theme focuses on the global interactions, flows and exchanges arising from the disparities that exist between places. It presents important and contestable geographic issues of change in space and time for the HL student to question. This part of the syllabus is divided into seven topics relating to global interactions as outlined in the following table. Each topic has a conceptual base that is developed through the content.

Topic	Purpose of the topic	
1. Measuring global interactions	Provides an introduction to the course by identifying the level and rate of global interactions.	Topics 1 and 2 provide a basis for further study by examining the pattern(s) and process(es) of global interactions and the technology that has enabled them.
2. Changing space—the shrinking world	Identifies improved information and communications technology and transport as fundamental to all forms of global interaction.	
3. Economic interactions and flows	Topics 3–6 identify the economic, environmental, sociocultural and political consequences of global interactions. They present an alternative perspective on these interactive processes and outcomes and question their inevitability. These topics recognize that the globalization process is not static but is still evolving. They examine the variation in its course and its speed and how it results in different levels of involvement and acceptance. Globalization may be resisted and rejected in some countries or sub-regions where local forces may reassert themselves as a reaction against the loss of distinctiveness and sovereignty.	
4. Environmental change		
5. Sociocultural exchanges		
6. Political outcomes		
7. Global interactions at the local level	Topic 7 examines responses to the two-way global interactions operating at more local scales. Global interactions may encounter local obstacles and resistance, which modify them and result in hybridized outcomes. This topic involves local investigation.	

Teacher guidance

This sequence of topics in the HL extension is not fixed and may be modified, although it is recommended that topics 1 and 2 are taught as an introduction to the course. The time allocation provides a rough guide to the depth of study and emphasis required for each. It should also be recognized that there is overlap between topics, concepts and content, and that these links should be emphasized to give a holistic view of the unit. This unit allows for student-centred activities including research projects, presentations and group work. All topics must be covered and be illustrated through the use of case studies and local examples where relevant.

Definitions

The definitions of the terms used in studying the HL extension—global interactions, vary from one source to another. To avoid confusion, the following definitions are given and expected of students.

Term	Definition
Civil society	Any organization or movement that works in the area between the household, the private sector and the state to negotiate matters of public concern. Civil societies include non-governmental organizations (NGOs), community groups, trade unions, academic institutions and faith-based organizations.
Core and periphery	The concept of a developed core surrounded by an undeveloped periphery. The concept can be applied at various scales.
Cultural imperialism	The practice of promoting the culture/language of one nation in another. It is usually the case that the former is a large, economically or militarily powerful nation and the latter is a smaller, less affluent one.
Food miles	A measure of the distance food travels from its source to the consumer. This can be given either in units of actual distance or of energy consumed during transport.
Globalization	“The growing interdependence of countries worldwide through the increasing volume and variety of cross-border transactions in goods and services and of international capital flows, and through the more rapid and widespread diffusion of technology” (source: IMF).
Globalization indices	The AT Kearney <i>Foreign Policy</i> index measures twelve variables, which are subdivided into four “baskets”: economic integration, personal contact, technological connectivity and political engagement. Nations are ranked according to a calculated globalization index. The KOF index measures three main dimensions of globalization: economic, political and social, and nations are ranked accordingly. It is designed by the Swiss Federal Institute of Technology on a yearly basis.
Glocalization	A term that was invented to emphasize that the globalization of a product is more likely to succeed when the product or service is adapted specifically to each locality or culture in which it is marketed. The increasing presence of McDonald’s restaurants worldwide is an example of globalization, while changes made to the menus of the restaurant chain, in an attempt to appeal to local tastes, are an example of glocalization.

Term	Definition
GNI	Gross national income (now used in preference to gross national product—GNP). The total value of goods and services produced within a country together with the balance of income and payments from or to other countries.
Outsourcing	The concept of taking internal company functions and paying an outside firm to handle them. Outsourcing is done to save money, improve quality or free company resources for other activities.
Time–space convergence	The reduction in the time taken to travel between two places due to improvements in transportation or communication technology.
Transnational corporation (TNC)	A firm that owns or controls productive operations in more than one country through foreign direct investment.

Details

Sub-topic	Development	Teaching hours
1. Measuring global interactions		
<ul style="list-style-type: none"> Global participation 	Describe and evaluate one of the following two globalization indices: the AT Kearney index or the KOF index, as a measure of global interaction. Describe how the globalization index may be represented spatially.	4 hours
<ul style="list-style-type: none"> Global core and periphery 	Discuss the spatial pattern of global interactions through the mapping of core areas at the focus of interaction (network hubs/nodes), the peripheries and areas relatively unaffected by these interactions.	
2. Changing space—the shrinking world		
<ul style="list-style-type: none"> Time–space convergence and the reduction in the friction of distance 	<p>Explain how a reduction in the friction of distance results in time–space convergence.</p> <p>Examine the relative changes in the speed and capacity of two types of transport (air, ocean, road, rail, pipeline) responsible for the flow of goods, materials and people.</p>	12 hours
<ul style="list-style-type: none"> Extension and density of networks 	<p>Examine the changes in a transport, internet or telecommunications network in terms of the extension of links and nodes and the intensity of use at a national or global scale.</p> <p>Describe the role of information and communications technology (ICT) in civil society and the transmission and flow of images, ideas, information and finance.</p> <p>Examine the contrasting rates, levels and patterns of adoption of an element of ICT in two countries.</p>	

Sub-topic	Development	Teaching hours
3. Economic interactions and flows		
<ul style="list-style-type: none"> • Financial flows • Labour flows • Information flows 	<p>Examine the importance of loans, debt repayment, development aid, remittances, foreign direct investment and repatriation of profits in the transfer of capital between the developed core areas and the peripheries.</p> <p>Examine the influence of governments, world trading organizations and financial institutions (such as the World Trade Organization, International Monetary Fund and World Bank) in the transfer of capital.</p> <p>Explain the causes and effects of one major flow of labour between two countries.</p> <p>Explain the role of ICT in the growth of international outsourcing.</p>	8 hours
4. Environmental change		
<ul style="list-style-type: none"> • Degradation through raw material production • The effects of transnational manufacturing and services • Transboundary pollution • Homogenization of landscapes 	<p>Identify the effects of agro-industrialization and changes in international production and consumption on the physical environment.</p> <p>Discuss the environmental consequences of increasing international demand for one raw material. Examine the concept of food miles and the environmental consequences of increasing volumes of air freight.</p> <p>Discuss the reasons for and consequences of the relocation of polluting industries (such as some TNCs) and waste disposal (such as ICT, chemical and nuclear waste) to countries with weaker environmental controls and safety regulations.</p> <p>Describe one major pollution event affecting more than one country and examine the consequences of and responses to this event.</p> <p>Examine the growth of environmental awareness as a consequence of these global interactions.</p> <p>Examine the role of one international civil society organization in fostering improved environmental management.</p> <p>Explain the evolution of uniform urban landscapes; the effects of common commercial activity, structures, styles of construction and infrastructure.</p>	8 hours

Sub-topic	Development	Teaching hours
5. Sociocultural exchanges		
<ul style="list-style-type: none"> • Cultural diffusion: the process • Consumerism and culture • Sociocultural integration 	<p>Describe cultural traits in terms of language, customs, beliefs, dress, images, music, food and technology. Examine the diffusion of cultural traits resulting from the international movement of workers, tourists and commodities.</p> <p>Describe the role of TNCs and the media in spreading consumer culture. Select two different branded commodities and examine the spatial and temporal pattern of adoption on a global scale.</p> <p>Examine the role of diasporas in preserving culture in one country and the adoption of minority traits by host societies.</p> <p>Examine the impact of cultural diffusion on one indigenous and remote society through the influence of international interactions.</p> <p>Examine the ways in which international interactions may result in the homogenization and dilution of culture. Define and exemplify the concept of cultural imperialism.</p>	8 hours
6. Political outcomes		
<ul style="list-style-type: none"> • Loss of sovereignty • Responses 	<p>Discuss the links between the diminishing effectiveness of political borders and the flow of goods, capital, labour and ideas, and the role of one multi-governmental organization such as the European Union (EU), the Association of Southeast Asian Nations (ASEAN), the North American Free Trade Agreement (NAFTA) and MERCOSUR (the common market of South America). Discuss the shift of power from nation state to TNCs as a result of their economic size and dominance. Compare the wealth of TNCs with that of nation states.</p> <p>Examine the resurgence of nationalism in one country as it attempts to retain control of its resources and culture.</p> <p>Discuss anti-globalization movements.</p> <p>Discuss the attempts to control migration into one country.</p>	10 hours

Sub-topic	Development	Teaching hours
7. Global interactions at the local level		
<ul style="list-style-type: none"> • Defining glocalization • Adoption of globalization • Local responses to globalization • Alternatives 	<p>Distinguish between the terms globalization and glocalization.</p> <p>Examine the extent to which commercial activities at a local scale have become globalized. Examine the reasons why the level and rate of adoption varies from place to place.</p> <p>Discuss civil society responses to globalization; the adoption, adaptation (glocalization) or rejection of globalized goods, services and cultural traits.</p> <p>Evaluate the relative costs and benefits of local commercial production to the producer, the consumer and the local economy, compared with the costs and benefits of globalized production.</p> <p>Describe the role of civil societies in raising awareness of local and global environmental, social and cultural issues. Examine the role of civil societies in supporting local economic activity and strengthening local cultural values. Discuss the position held by anti-globalization groups.</p> <p>Evaluate the quality of life of a contemporary non-globalized society.</p>	<p>10 hours</p>

Assessment in the Diploma Programme

General

Assessment is an integral part of teaching and learning. The most important aims of assessment in the Diploma Programme are that it should support curricular goals and encourage appropriate student learning. Both external and internal assessment are used in the Diploma Programme. IB examiners mark work produced for external assessment, while work produced for internal assessment is marked by teachers and externally moderated by the IB.

There are two types of assessment identified by the IB.

- Formative assessment informs both teaching and learning. It is concerned with providing accurate and helpful feedback to students and teachers on the kind of learning taking place and the nature of students' strengths and weaknesses in order to help develop students' understanding and capabilities. Formative assessment can also help to improve teaching quality, as it can provide information to monitor progress towards meeting the course aims and objectives.
- Summative assessment gives an overview of previous learning and is concerned with measuring student achievement.

The Diploma Programme primarily focuses on summative assessment designed to record student achievement at, or towards the end of, the course of study. However, many of the assessment instruments can also be used formatively during the course of teaching and learning, and teachers are encouraged to do this. A comprehensive assessment plan is viewed as being integral with teaching, learning and course organization. For further information, see the IB *Programme standards and practices* document.

The approach to assessment used by the IB is criterion-related, not norm-referenced. This approach to assessment judges students' work by their performance in relation to identified levels of attainment, and not in relation to the work of other students. For further information on assessment within the Diploma Programme please refer to the publication *Diploma Programme assessment: Principles and practice*.

To support teachers in the planning, delivery and assessment of the Diploma Programme courses a variety of resources can be found on the OCC or purchased from the IB store (<http://store.ibo.org>). Teacher support materials, subject reports, internal assessment guidance, grade descriptors, as well as resources from other teachers, can be found on the OCC. Specimen and past examination papers as well as markschemes can be purchased from the IB store.

Methods of assessment

The IB uses several methods to assess work produced by students.

Assessment criteria

Assessment criteria are used when the assessment task is open-ended. Each criterion concentrates on a particular skill that students are expected to demonstrate. An assessment objective describes what students should be able to do and assessment criteria describe how well they should be able to do it. Using assessment criteria allows discrimination between different answers and encourages a variety of responses.

Each criterion comprises a set of hierarchically ordered level descriptors. Each level descriptor is worth one or more marks. Each criterion is applied independently using a best-fit model. The maximum marks for each criterion may differ according to the criterion's importance. The marks awarded for each criterion are added together to give the total mark for the piece of work.

Markbands

Markbands are a comprehensive statement of expected performance against which responses are judged. They represent a single holistic criterion divided into level descriptors. Each level descriptor corresponds to a range of marks to differentiate student performance. A best-fit approach is used to ascertain which particular mark to use from the possible range for each level descriptor.

Markschemes

This generic term is used to describe analytic markschemes that are prepared for specific examination papers. Analytic markschemes are prepared for those examination questions that expect a particular kind of response and/or a given final answer from the students. They give detailed instructions to examiners on how to break down the total mark for each question for different parts of the response. A markscheme may include the content expected in the response to questions or may be a series of marking notes giving guidance on how to apply criteria.

Assessment outline—SL

First examinations 2011

Assessment component	Weighting
<p>External assessment (2 hours 50 minutes)</p> <p>Paper 1 (1 hour 30 minutes) Syllabus content: Core theme Assessment objectives 1–4 Section A: Students answer all short-answer questions. Some include data. (45 marks) Section B: Students answer one extended response question. (15 marks) Section A and section B are common to both SL and HL assessment. (60 marks)</p> <p>Paper 2 (1 hour 20 minutes) Syllabus content: Two optional themes Assessment objectives 1–4 Students answer two structured questions based on stimulus material, each selected from a different optional theme. For each theme there is a choice of two questions. (20 marks per question) Some stimulus material is included in the resources booklet. This paper is common to both SL and HL assessment. (40 marks)</p>	<p>75%</p> <p>40%</p> <p>35%</p>
<p>Internal assessment (20 hours) This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Syllabus content: Any topic from the syllabus Assessment objectives 1–4 Written report based on fieldwork. Maximum 2,500 words (30 marks)</p>	<p>25%</p>

Assessment outline—HL

First examinations 2011

Assessment component	Weighting
<p>External assessment (4 hours 30 minutes)</p> <p>Paper 1 (1 hour 30 minutes) Syllabus content: Core theme Assessment objectives 1–4 Section A: Students answer all short-answer questions. Some include data. (45 marks) Section B: Students answer one extended response question. (15 marks) Section A and section B are common to both SL and HL assessment. (60 marks)</p> <p>Paper 2 (2 hours) Syllabus content: Three optional themes Assessment objectives 1–4 Students answer three structured questions based on stimulus material, each selected from a different theme. For each theme there is a choice of two questions. (20 marks per question) Some stimulus material is included in the resources booklet. This paper is common to both SL and HL assessment. (60 marks)</p> <p>Paper 3 (1 hour) Syllabus content: Higher level extension Assessment objectives 1–4 Students answer one of three essay questions. (25 marks)</p>	<p>80%</p> <p>25%</p> <p>35%</p> <p>20%</p>
<p>Internal assessment (20 hours) This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Syllabus content: Any topic from the syllabus Assessment objectives 1–4 Written report based on fieldwork. Maximum 2,500 words (30 marks)</p>	<p>20%</p>

External assessment

Two different methods are used to assess students.

- Detailed markschemes specific to each examination paper
- Markbands

The markbands are published in this guide.

For all three examination papers, there are markbands and markschemes. The markbands are related to the assessment objectives established for the geography course and the group 3 grade descriptors. The markschemes are specific to each examination paper.

Written papers

The external assessment in geography consists of two examination papers at SL and three at HL that are externally set and externally moderated. They are designed to allow students to demonstrate their competencies in relation to the geography assessment objectives and specific parts of the geography syllabus, namely the geographic skills, the core theme, the optional themes and, at HL, the higher level extension. The external components contribute 75% to the final assessment at SL and 80% at HL.

Use of maps and diagrams

Students are expected to include well-drawn, large, relevant maps, sketches, tables and diagrams as often as applicable.

Only metric maps will be used for examinations.

Annotated maps

Examination questions frequently refer to “annotated maps”. Annotating maps requires students to include comments on the map itself and to place these comments in the relevant locations. Comments must not be written separately below the map.

Annotated diagrams

Examination questions frequently refer to the need to include “annotated diagrams”. These diagrams require some comment to be added to the actual diagram to explain, elaborate on or emphasize particular features. A comment such as “high birth rates” is best added directly to the diagram in the appropriate place, which means the diagrams need to be large.

Use of case studies and specific examples

A case study is a detailed, located example for discussion or discursive approach. Students are expected to illustrate their answers in examinations with case studies and examples where appropriate, and to be prepared to demonstrate, when relevant, that these have contrasting levels of development. Each case study or example chosen must reveal something different in terms of the level of social, economic or political development reached in the country or region selected so that a comparison between them can be demonstrated. Ideally, the case studies selected should be within the students' lifetime, although there is more detail on this in "Further guidance" in the "Approaches to the teaching of geography" section. Examples must be used to demonstrate links between the concepts and case studies as appropriate. When examples are used, students should not provide just one word responses, as this is too limited, but should offer some explanation of the example.

It is expected that students will use maps, diagrams, tables, sketches, case studies and examples where applicable in examination answers and teachers are recommended to advise students of this. Instructions on the examination papers also advise students of this requirement.

Sometimes individual questions specify that the use of case studies or examples is essential because more detailed information is required from the students to show specific knowledge and understanding in the answer.

Use of calculators

Calculators are not allowed in geography examinations.

Links to the specific details in the syllabus

Quotations from this syllabus, from the introduction to the core theme and from the introductions to the optional themes and HL extension, may be used to provide a context for examination questions, but questions will only be drawn from the main two columns of the syllabus table—topic and development.

External assessment details—SL

Paper 1 SL

Duration: 1 hour 30 minutes

Weighting: 40%

This paper is common to SL and HL and is divided into two sections, A and B. Its purpose is to assess students' ability to demonstrate the following objectives in relation to the core theme—patterns and change.

- Knowledge and understanding (assessment objective 1) in sections A and B
- Application and analysis (assessment objective 2) in sections A and B
- Synthesis and evaluation (assessment objective 3) in section B
- The ability to use appropriate terminology and, if appropriate, to use a variety of skills in a response in sections A and B, and produce well-structured written material (assessment objective 4) in section B

The questions in each section may include stimulus material, such as tables/diagrams/maps.

Section A

- There are four compulsory short-answer questions covering each of the four topics within the core theme. Students are required to answer all four.
- The questions are subdivided into parts. The first part requires knowledge and understanding and the subsequent part or parts require knowledge and understanding, and application and analysis. The command terms used in each question indicate the depth required.
- Each question is worth 10–12 marks and is subdivided.
- The maximum for this section is 45 marks.
- Responses are assessed with an analytic markscheme specific to the question paper that indicates the required responses and allocation of marks.

Section B

- Students are required to answer one extended response question from a choice of three.
- The questions require a broad treatment of the content and may integrate topics across the core.
- The questions require knowledge and understanding, application and analysis, and synthesis and evaluation.
- The command terms used in each question indicate the depth required.
- The maximum for this section is 15 marks.
- Responses are assessed with an analytic markscheme specific to the question paper and with the paper 1 section B markbands.

Overall, the maximum for this paper is 60 marks.

Paper 2 SL

Duration: 1 hour 20 minutes

Weighting: 35%

The purpose of this paper, which is common to SL and HL, is to assess students' ability to demonstrate the following objectives in relation to the seven optional themes.

- Knowledge and understanding (assessment objective 1)
- Application and analysis (assessment objective 2)
- Synthesis and evaluation (assessment objective 3)
- The ability to use appropriate terminology, to use a variety of skills and produce well-structured written material (assessment objective 4) in the last part of each structured question

For each of the seven optional themes there is a choice of two questions; all questions are structured and worth 20 marks. The first parts, of which there are at least two, add up to 10 marks but the marks for each part differ according to the demands of the question. The last part is always worth 10 marks. Earlier parts of the question are related and test knowledge and understanding, and application and analysis. The last part, which may or may not be directly related to earlier parts, draws on content learned from across the theme and tests synthesis and evaluation. It requires extended writing. The command terms used in each question indicate the depth required.

The layout of the paper matches the order of the seven optional themes set out in this syllabus. The title of each theme is given on the paper and the questions are numbered 1–14 (two questions on each theme). Questions on “Option C: Extreme environments” are labelled, for example, as Optional Theme C: Extreme environments, questions 5 and 6.

- SL students must answer one question from **two** optional themes; that is, they must produce two responses in total.
- Students must choose one question from one theme and **not** answer two questions from the same theme.
- At least one of the two questions in each theme has stimulus material. This may include maps (including topographic maps), graphs, images, photographs, satellite images, diagrams or tables (but not cartoons or text extracts).
- Where appropriate, the stimulus material is presented in the resources booklet, which includes coloured material.
- The maximum for each question is 20 marks.
- Responses are assessed with an analytic markscheme specific to the question paper, which indicates the required responses and allocation of marks for the parts of each question. The last part of each question, worth 10 marks, is assessed both with an analytic markscheme that indicates the required response and with the paper 2 markbands.

Overall, the maximum for paper 2 for SL students is 40 marks and the maximum for HL students is 60 marks.

External markbands—SL and HL

Paper 1 and 2 markbands

These markbands are to be used for papers 1 and 2 at both standard level and higher level.

	AO1	AO2	AO3	AO4	Paper 1 Section B	Paper 2
Level descriptor	Knowledge/understanding	Application/analysis	Synthesis/evaluation	Skills	Marks 0–15	Marks 0–10
A	No relevant knowledge; no examples or case studies	No evidence of application; the question has been completely misinterpreted or omitted	No evaluation	None appropriate	0	0
B	Little knowledge and/or understanding, which is largely superficial or of marginal relevance; no or irrelevant examples and case studies	Very little application; important aspects of the question are ignored	No evaluation	Very low level; little attempt at organization of material; no relevant terminology	1–3	1–2
C	Some relevant knowledge and understanding, but with some omissions; examples and case studies are included, but limited in detail	Little attempt at application; answer partially addresses question	No evaluation	Few or no maps or diagrams, little evidence of skills or organization of material; poor terminology	4–6	3–4

	AO1	AO2	AO3	AO4	Paper 1 Section B	Paper 2
Level descriptor	Knowledge/understanding	Application/analysis	Synthesis/evaluation	Skills	Marks 0–15	Marks 0–10
D	Relevant knowledge and understanding, but with some omissions; examples and case studies are included, occasionally generalized	Some attempt at application; competent answer although not fully developed, and tends to be descriptive	No evaluation or unsubstantiated evaluation	Basic maps or diagrams, but evidence of some skills; some indication of structure and organization of material; acceptable terminology	7–9	5–6
E	Generally accurate knowledge and understanding, but with some minor omissions; examples and case studies are well chosen, occasionally generalized	Appropriate application; developed answer that covers most aspects of the question	Beginning to show some attempt at evaluation of the issue, which may be unbalanced	Acceptable maps and diagrams; appropriate structure and organization of material; generally appropriate terminology	10–12	7–8
F	Accurate, specific, well-detailed knowledge and understanding; examples and case studies are well chosen and developed	Detailed application; well-developed answer that covers most or all aspects of the question	Good and well-balanced attempt at evaluation	Appropriate and sound maps and diagrams; well structured and organized responses; terminology sound	13–15	9–10

External assessment details—HL

The external assessment at HL is the same as at SL but with the following differences.

Paper 1

Duration: 1 hour 30 minutes

Weighting: 25%

Please see the “External assessment details—SL” section for further details. This paper demands the same of HL students as for SL students but is worth 25% of the final assessment.

Paper 2

Duration: 2 hours

Weighting: 35%

HL students must answer one question from **three** optional themes; that is, they must produce three responses in total.

Please see the “External assessment details—SL” section for further details.

Paper 3

Duration: 1 hour

Weighting: 20%

The purpose of this paper is to assess HL students’ ability to demonstrate the following in relation to the HL extension—global interactions.

- Knowledge and understanding (assessment objective 1)
- Application and analysis (assessment objective 2)
- Synthesis and evaluation (assessment objective 3)
- The ability to use appropriate terminology and, if appropriate, use various skills in the response and produce well-structured written material (assessment objective 4)

The questions draw on knowledge and understanding, application and analysis, and synthesis and evaluation from across and/or within the seven topics in the HL extension. Knowledge of the core theme is assumed. Students are required to answer one essay question from a choice of three.

- Each question is divided into two parts—part (a): 10 marks; part (b): 15 marks.
- Part (a) questions test knowledge and understanding, and application and analysis.
- Part (b) tests synthesis and evaluation, and writing skills in addition to knowledge and understanding, and application and analysis. Students are expected to demonstrate synthesis and evaluation by showing, wherever possible, the links and relationships between the sub-topics/topics, and to demonstrate skill in producing a structured response.
- Students are advised to plan their response before writing.
- The depth of treatment required is reflected in the command terms used in the questions.
- The maximum for the paper is 25 marks.
- The responses for part (a) and part (b) are assessed with an analytic markscheme specific to the question paper, and paper 3 part (a) and part (b) markbands.

External markbands—HL

Paper 1 and 2 markbands

Please see the “External markbands SL and HL” section for the markbands for papers 1 and 2.

Paper 3 markbands

Part (a)

Level descriptor	Knowledge/ understanding AO1	Application/ analysis AO2	Skills AO4	Marks 0–10
A	No relevant knowledge, or inappropriate	The question has been completely misinterpreted or omitted	None appropriate	0
B	Little relevant knowledge and/or understanding	Important aspects of the question are ignored	Little attempt at organization of material	1–3
C	Some relevant knowledge and understanding	Answer partially addresses the question	Some indication of structure or organization	4–6
D	Generally accurate knowledge and understanding	Answer is developed and covers most aspects of the question	Appropriate structure with generally appropriate terminology	7–8
E	Accurate, relevant knowledge and understanding	Well-developed answer that covers most or all aspects of the question	Well-structured response with sound terminology	9–10

Part (b)

Level descriptor	Knowledge/ understanding AO1	Application/ analysis AO2	Synthesis/ evaluation AO3	Skills AO4	Marks 0–15
A	No relevant knowledge, or inappropriate	The question has been completely misinterpreted or omitted	No synthesis/ evaluation	None appropriate	0
B	Little relevant knowledge and/or understanding	Important aspects of the question are ignored	Little attempt at synthesis/ evaluation	Little attempt at organization of material	1–4
C	Some relevant knowledge and understanding	Answer partially addresses the question	Basic synthesis/ basic or unsubstantiated evaluation	Some indication of structure or organization	5–8
D	Generally accurate knowledge and understanding	Answer is developed and covers most aspects of the question	Synthesis that may be partially undeveloped/ evaluation that may be partially unsubstantiated	Appropriate structure with generally appropriate terminology	9–12
E	Accurate, relevant knowledge and understanding	Well-developed answer that covers most or all aspects of the question	Clear, developed synthesis/clear, substantiated evaluation	Well-structured response with sound terminology	13–15

Internal assessment

Purpose of internal assessment

Internal assessment is an integral part of the course and is compulsory for both SL and HL students. It enables students to demonstrate the application of their skills and knowledge, and to pursue their personal interests, without the time limitations and other constraints that are associated with written examinations. The internal assessment should, as far as possible, be woven into normal classroom teaching and not be a separate activity conducted after a course has been taught.

The internal assessment requirements at SL and at HL are the same. The time allowed is 20 hours and the weightings are 25% at SL and 20% at HL. Students are required to undertake fieldwork collecting primary information and produce one written report that is based on a fieldwork question.

Guidance and authenticity

The SL and HL written reports submitted for internal assessment must be the student's own work. However, it is not the intention that students should decide upon a title or topic and be left to work on the internally assessed component without any further support from the teacher. The teacher should play an important role during both the planning stage and the period when the student is working on the internally assessed work. It is the responsibility of the teacher to ensure that students are familiar with:

- the requirements of the type of work to be internally assessed, including the methods of information collection, regulations on group work and the format of the written report
- the ethical guidelines and risk assessment advice given under the internal assessment requirements in this syllabus
- the assessment criteria; students must understand that the work submitted for assessment must address these criteria effectively.

Teachers and students must discuss the internally assessed work. Students should be encouraged to initiate discussions with the teacher to obtain advice and information, and students must not be penalized for seeking guidance. However, if a student could not have completed the work without substantial support from the teacher, this should be recorded on the appropriate form from the *Handbook of procedures for the Diploma Programme*.

It is the responsibility of teachers to ensure that all students understand the basic meaning and significance of concepts that relate to academic honesty, especially authenticity and intellectual property. Teachers must ensure that all student work for assessment is prepared according to the requirements and must explain clearly to students that the internally assessed work must be entirely their own.

As part of the learning process, teachers can give advice to students on a first draft of the internally assessed work. This advice should be in terms of the way the work could be improved, but this first draft must not be heavily annotated or edited by the teacher. The next version handed to the teacher after the first draft must be the final one.

All work submitted to the IB for moderation or assessment must be authenticated by a teacher, and must not include any known instances of suspected or confirmed malpractice. Each student must sign the coversheet for internal assessment to confirm that the work is his or her authentic work and constitutes the final version of that work. Once a student has officially submitted the final version of the work to a teacher (or the coordinator) for internal assessment, together with the signed coversheet, it cannot be retracted.

Authenticity may be checked by discussion with the student on the content of the work, and scrutiny of one or more of the following:

- the student's initial proposal
- the first draft of the written work
- the references cited
- the style of writing compared with work known to be that of the student.

The requirement for teachers and students to sign the coversheet for internal assessment applies to the work of all students, not just the sample work that will be submitted to an examiner for the purpose of moderation. If the teacher and student sign a coversheet, but there is a comment to the effect that the work may not be authentic, the student will not be eligible for a mark in that component and no grade will be awarded. For further details refer to the IB publication *Academic honesty* and the relevant articles in the *General regulations: Diploma Programme*.

The same piece of work cannot be submitted to meet the requirements of both the internal assessment and the extended essay.

Group work

Group work may be undertaken by students as described below but the written report must be the students' individual work.

The fieldwork topic, fieldwork question and methods of information collection may be chosen by the teacher, the whole class, small groups or individuals. In the early stages of the investigation, students may collect fieldwork information in groups and collaborate on these findings and suitable methods of presentation.

Once the research is completed and the necessary fieldwork information and possible methods of presentation exchanged, the emphasis must be on individual work. The writing of the report, the justification of methods, the analysis and the conclusion must be entirely the work of the individual student. These elements are assessed by criteria D–F, worth a maximum of 15 marks. The quality of presentation by the individual student is also assessed by criterion G and is worth a maximum of four marks.

Time allocation

Internal assessment is an integral part of the geography course, contributing 25% to the final assessment in the SL course and 20% in the HL course. This weighting should be reflected in the time that is allocated to teaching the knowledge, skills and understanding required to undertake the work, as well as the total time allocated to carry out the work.

It is recommended that a total of approximately 20 hours should be allocated to the work at both SL and HL. This should include:

- time for the teacher to explain to students the requirements of the internal assessment
- time to review the geography course ethical guidelines and risk assessment advice
- time at the survey site
- class time for students to work on the internal assessment component
- time for consultation between the teacher and each student
- time to review and monitor progress, and to check authenticity.

Requirements and recommendations

Rationale

The purpose of the internally assessed fieldwork is to amplify, reinforce and extend principal geographic concepts and skills taught in class. Fieldwork is intended to enrich the study of particular themes within the course. It adds to the student's knowledge, understanding and awareness and helps to make learning more engaging and relevant. It provides opportunities for learning through practical work and fosters the skills of cooperation, organization, investigation and presentation. It also presents opportunities for leadership.

Fieldwork involves the collection of primary data in the field and the subsequent treatment, display and analysis of this information using appropriate skills. The material is presented in a written report.

Fieldwork activities allow students to practise many of the skills listed for internal assessment in the "Geographic skills" section of the guide and to develop specific skills appropriate to the chosen fieldwork question.

Choice of fieldwork investigation

Scale and site

Many types of investigation are possible and the choice depends on the opportunities offered by the local environment. The investigation must be manageable and the site accessible. The topic chosen for investigation must be on a **local** scale but it does not need to be undertaken near the school. If necessary, when there are logistical or security concerns, for example, the school site may be used and can provide several fieldwork possibilities.

Risk assessment

Schools are advised to follow health and safety guidelines (risk assessment) in fieldwork, observing standard regulations as appropriate. Each school is ultimately responsible for the health and safety of its students.

Ethical guidelines

Students should consider whether there are any ethical implications involved in collecting fieldwork information, such as respect for the views of individuals expressed during interviews, respect for the environment and the integrity of the information. Further details are given in the poster *Ethical practice in the Diploma Programme* available from the online curriculum centre.

Using assessment criteria for internal assessment

For internal assessment, a number of assessment criteria have been identified. Each assessment criterion has level descriptors describing specific levels of achievement together with an appropriate range of marks. The level descriptors concentrate on positive achievement, although for the lower levels failure to achieve may be included in the description.

Teachers must judge the internally assessed work at SL and at HL against the criteria using the level descriptors.

- The same assessment criteria are provided for SL and HL.
- The aim is to find, for each criterion, the descriptor that conveys most accurately the level attained by the student, using the best-fit model. A best-fit approach means that compensation should be made when a piece of work matches different aspects of a criterion at different levels. The mark awarded should be one that most fairly reflects the balance of achievement against the criterion. It is not necessary for every single aspect of a level descriptor to be met for that mark to be awarded.
- When assessing a student's work, teachers should read the level descriptors for each criterion until they reach a descriptor that most appropriately describes the level of the work being assessed. If a piece of work seems to fall between two descriptors, both descriptors should be read again and the one that more appropriately describes the student's work should be chosen.
- Where there are two or more marks available within a level, teachers should award the upper marks if the student's work demonstrates the qualities described to a great extent. Teachers should award the lower marks if the student's work demonstrates the qualities described to a lesser extent.
- Only whole numbers should be recorded; partial marks, such as fractions and decimals, are not acceptable.
- Teachers should not think in terms of a pass or fail boundary, but should concentrate on identifying the appropriate descriptor for each assessment criterion.
- The highest level descriptors do not imply faultless performance but should be achievable by a student. Teachers should not hesitate to use the extremes if they are appropriate descriptions of the work being assessed.
- A student who attains a high level of achievement in relation to one criterion will not necessarily attain high levels of achievement in relation to other criteria. Similarly, a student who attains a low level of achievement for one criterion will not necessarily attain low achievement levels for other criteria. Teachers should not assume that the overall assessment of the students will produce any particular distribution of marks.
- It is recommended that the assessment criteria be available to students.

Internal assessment details—SL/HL

Duration: 20 hours

Weighting: 25% at SL, 20% at HL

Relationship to the syllabus

The fieldwork study for both HL and SL students must be related to material in a specific sub-topic or development column listed in the syllabus, whether it is from the core theme, the optional themes or the HL extension. It can combine two or more topics or themes.

The fieldwork must be on a **local** scale and involve the collection of **primary** information. The chosen topic may be physical or human, or may integrate the two approaches.

Global issues are unsuitable for study unless they can be adapted to the local scale. For example, topic 4 “Patterns in resource consumption” in the core theme could be applied at the local scale.

The following topics within the core theme, the optional themes B, C, D, E and F, and the HL extension are **unlikely** to be suitable for fieldwork investigation.

Part of course	Topics
Core theme	Topic 1 Populations in transition Topic 2 Disparities in wealth and development
Optional themes	<p>Option B Oceans and their coastal margins</p> <p>Topic 1 Introduction to oceans</p> <p>Topic 2 Oceans and climate</p> <p>Topic 4 Geopolitics of oceans</p> <p>Option C Extreme environments</p> <p>Topic 1 Challenging environments</p> <p>Option D Hazards and disasters—risk assessment and response</p> <p>Topic 1 Characteristics of hazards</p> <p>Option E Leisure, sport and tourism</p> <p>Topic 2 Leisure at the international scale: tourism</p> <p>Option F The geography of food and health</p> <p>Topic 2 Food: sub-topics—global availability of food; production and markets</p> <p>Topic 3 Disease: sub-topic—global patterns of disease</p>
HL extension—global interactions	All topics are unsuitable except topic 7, “Global interactions at the local level”, which is suitable.

Types of information for collection

Primary information

This information must come from the student’s own observations and measurements collected in the field. This “primary information” must form the basis of each investigation. Fieldwork must provide sufficient information to enable adequate interpretation and analysis.

Fieldwork investigations may involve the collection of both **qualitative** and **quantitative** primary information. The type of information collected should be determined by the aim and fieldwork question.

Quantitative information is collected through measurement and may be processed using statistical and other techniques.

Qualitative information is collected through observation or subjective judgment and does not involve measurement. Qualitative information may be processed or quantified where appropriate or it may be presented through images or as text. (Students are advised to remember the word limit when presenting qualitative information as text only.)

The nature of qualitative data should provide **sufficient** information for analysis and conclusion.

Secondary information

This research involves gathering information from sources that have already been compiled in written, statistical or mapped forms. Secondary information may supplement primary information but must only play a small part in the investigation.

All secondary information must be referenced, using a standard author–date system, such as the Harvard system. This includes information from the internet, where references should include titles, URL addresses and dates when sites were visited. All sources of secondary information must be referenced. Footnotes may be used to reference material and, provided that these are brief, up to 15 words as noted below will not be included in the word count.

Written reports

Students should produce **one** written report of their investigation. The report must not exceed 2,500 words.

Word limit

The following are **not** included in the word count.

- Title page
- Acknowledgments
- Contents page
- Titles and subtitles
- References
- Footnotes—up to a maximum of 15 words each
- Map legends and/or keys
- Labels—of 10 words or less
- Tables—of statistical or numerical data, or categories, classes or group names
- Calculations
- Appendices—containing only raw data and/or calculations

All the main text is included in the word count, including the research question, analysis, conclusion and evaluation, as well as all annotations over 10 words and any footnotes over 15 words.

Where work is over the limit, moderators are advised to stop reading and students are likely to lose marks not only under criterion G, but possibly also under other criteria, such as E and F.

Emphasis

The emphasis of the written report must be **analytical** and include focus on the method(s) employed for information collection, its treatment and analysis. A purely descriptive report and/or a long theoretical introduction must be avoided.

Format

Students are advised to use the following guidelines to format their reports, which will ensure that the reports fulfill the requirements of the criteria.

Report section	Criterion	Marks allocated out of 30	Suggested word limit within 2,500 words
Fieldwork question and geographic context	A	3	300
Method(s) of investigation	B	3	300
Quality and treatment of information collected and written analysis (integrated)	C and D	5 + 10	1,350
Conclusion	E	2	200
Evaluation	F	3	300
Formal requirements	G	4	n/a
Total		30	2,450

The suggested breakdown of the word limit is offered as **guidance** and is not prescriptive. Students will not be penalized if they write more or less for each section provided the work remains within the total word limit of 2,500 words.

It is helpful if students add the number of words per section in the main body of the report and provide the total number of words on the front cover of the report.

The details below explain the requirements for each section, how each must be related to the assessment criteria and how the marks are allocated for each.

A Fieldwork question and geographic context

The fieldwork question (the precise inquiry) guides the fieldwork investigation. It must be narrowly focused, appropriate and stated as a question that can be answered through the collection of primary information in the field. (Where appropriate, students can make a brief preliminary judgment or prediction answering the fieldwork question. This prediction may be formulated as a hypothesis.)

Students must also comment **briefly** on the geographic context, explaining why and where the fieldwork investigation is to be carried out. This can include relevant spatial, physical, socio-economic conditions and other background information, concepts or characteristics. A map of the research area and/or the locations used in the fieldwork investigation is essential to provide the necessary spatial element.

Students must also state the area(s) of the syllabus to which the study relates, whether it is from the topic or development columns within the core, the optional themes or HL extension. It can be drawn from a combination of two or more topics or themes.

The suggested length of this section for work appropriate to criterion A is approximately 300 words.

B Method(s) of investigation

Students must describe the method(s) used to collect information. The description may include sampling techniques, time, location and circumstances of information collection where relevant.

The method(s) used must be justified and must enable a **sufficient** quality and quantity of primary data to be produced to allow the fieldwork question to be investigated.

The suggested length of this section for work appropriate to criterion B is approximately 300 words.

C Quality and treatment of information collected and

D Written analysis

Students should treat and display the information collected using the most appropriate techniques. These techniques must be the most effective way of representing the type of information collected and must be well used. The precise techniques employed will differ depending on the nature of the fieldwork question but may include statistical tests (including confidence limits), graphs, diagrams, maps, annotated photographs and images, matrices and field sketches.

In the written analysis, students must demonstrate their knowledge and understanding of the fieldwork investigation by interpreting and explaining the information they have collected in relation to the fieldwork question. This includes recognizing any trends and spatial patterns found in the information collected.

Where **appropriate**, an attempt should be made to identify and explain any anomalies.

Students must also refer to the geographic context, information collected and the ways in which the material has been treated and presented.

The treatment and display of material and the written analysis must be **integrated** within this section.

The suggested length for the work in the section related to criterion C and criterion D is 1,350 words.

E Conclusion

Students should summarize the findings of the fieldwork investigation. There should be a clear, concise statement answering the fieldwork question. It is acceptable for the conclusion to state that the findings do not match the student's preliminary judgment or prediction.

The suggested length of this section for work appropriate to criterion E is approximately 200 words.

F Evaluation

Students should review their investigative methodology, including methods of collecting primary information. Within this, they should consider any factors that may have affected the validity of the data, including personal bias and unpredicted external circumstances such as the weather.

Students should suggest specific and plausible ways in which the study might have been improved and could be extended in the future.

The suggested length of this section for work appropriate to criterion F is approximately 300 words.

G Formal requirements

The fieldwork written report must meet the following **five** formal requirements of organization and presentation.

- The work is within the 2,500 word limit.
- Overall presentation is neat and well structured.
- Pages are numbered.
- References used for background information follow standard conventions. (Guidance on referencing is given in the earlier section on secondary information.)
- All illustrative material is numbered, is fully integrated into the body of the report and is not relegated to an appendix.

General advice

Maps

It is strongly recommended that maps are student-generated, either by being hand drawn or computer-derived, and they must be made relevant to the study. Maps that are downloaded or photocopied should be adapted to the student's own information and this may be achieved effectively by overlays. Normal map conventions must be followed.

Appendices

A very limited use of appendices is acceptable and, if appendices are used, these should contain only examples of materials that have been used or are representative of the material used, such as a data sheet or a translation of a questionnaire. It should not include all materials used, for example, every survey or questionnaire completed. Further, it should not include secondary information.

Binding the report

Details on how to bind and present the reports for moderation are available in the *Handbook of procedures for the Diploma Programme*.

Internal assessment criteria—SL/HL

There are seven internal assessment criteria for fieldwork.

Criterion A	Fieldwork question and geographic context	3 marks
Criterion B	Method(s) of investigation	3 marks
Criterion C	Quality and treatment of information collected	5 marks
Criterion D	Written analysis	10 marks
Criterion E	Conclusion	2 marks
Criterion F	Evaluation	3 marks
Criterion G	Formal requirements	4 marks
	Total	30 marks

The purpose of this assessment, which is common to SL and HL, is to assess students' ability to demonstrate the following in relation to the fieldwork research question.

- Knowledge and understanding (assessment objective 1)—criteria A and D
- Application and analysis (assessment objective 2)—criteria A and D
- Synthesis and evaluation (assessment objective 3)—criteria D, E and F
- The ability to select, use and apply a variety of appropriate skills and techniques (assessment objective 4)—criteria B, C and G

The criteria should be applied systematically against the relevant parts of the written report.

A Fieldwork question and geographic context

This criterion assesses the focus and geographic context of the fieldwork and whether the fieldwork question is related to the material in the syllabus.

Marks	Level descriptor
0	The work does not reach the standard described by the descriptors below.
1	The fieldwork question is inappropriate, or the geographic context or locational map or relationship to the syllabus is missing.
2	The fieldwork question is adequate with an acceptable attempt made to place it in its geographic context and relate it to the syllabus. A locational map is presented.
3	The fieldwork question is well focused with a detailed, accurate explanation of the geographic context and is related to the syllabus. A good locational map is presented.

B Method(s) of investigation

This criterion assesses the description, justification and appropriateness of the method(s) used to investigate the fieldwork question.

Marks	Level descriptor
0	The work does not reach the standard described by the descriptors below.
1	There is only a brief description of the method(s) used for information collection, and the method(s) are generally inappropriate for the investigation of the fieldwork question.
2	There is an adequate description but limited justification of the method(s) used for information collection. The method(s) used are generally appropriate for the investigation of the fieldwork question.
3	There is a clear description and justification of the method(s) used for information collection. The method(s) used are well suited to the investigation of the fieldwork question.

C Quality and treatment of information collected

This criterion assesses the quality of information collected and its suitability for analysis in criterion D, and whether appropriate techniques have been used for both the treatment and display of information.

Marks	Level descriptor
0	The work does not reach the standard described by the descriptors below.
1	Limited or inappropriate information has been collected and very little attempt has been made to treat or display the information collected.
2	Some relevant information has been collected and some attempt has been made to treat or display the information collected.

Marks	Level descriptor
3	The information collected is generally relevant to the fieldwork question and allows for some analysis. Limited techniques have been used for both the treatment and display of information collected.
4	The information collected is generally relevant to the fieldwork question and is sufficient in quantity and quality to allow for analysis. Appropriate techniques have been used for both the treatment and display of information collected.
5	The information collected is directly relevant to the fieldwork question and is sufficient in quantity and quality to allow for in-depth analysis. The most appropriate techniques have been used effectively for both the treatment and display of information collected.

D Written analysis

This criterion assesses the quality of the analysis of the results, referring to the fieldwork question, geographic context, information collected and illustrative material.

Marks	Level descriptor
0	The work does not reach the standard described by the descriptors below.
1–2	The report reveals very limited knowledge and understanding. The approach is descriptive with little or no attempt at analysis.
3–4	The report reveals some knowledge and understanding. There is an attempt at analysis, which may be incomplete or superficial, making little or no reference to the fieldwork question, geographic context, information collected and illustrative material.
5–6	The report reveals an adequate level of knowledge and understanding. There is an adequate level of analysis, which generally refers to the fieldwork question, geographic context, information collected and illustrative material.
7–8	The report reveals a good level of knowledge and understanding. There is a well-reasoned, detailed analysis of the results with references to the fieldwork question, geographic context, information collected and illustrative material. There is an attempt to explain any anomalies in results.
9–10	The report reveals a very good level of knowledge and understanding. There is a clear and well-reasoned, detailed analysis of the results with strong references to the fieldwork question, geographic context, information collected and illustrative material. The attempt to explain any anomalies in results is good.

E Conclusion

This criterion assesses the ability of the student to summarize the findings of the fieldwork investigation.

Marks	Level descriptor
0	The work does not reach the standard described by the descriptors below.
1	There is some attempt to draw a conclusion to the fieldwork question, which may not be completely consistent with the analysis.
2	There is a clear conclusion to the fieldwork question, consistent with the analysis.

F Evaluation

This criterion assesses the student's ability to review the investigative methodology.

Marks	Level descriptor
0	The work does not reach the standard described by the descriptors below.
1	There is either some attempt to evaluate methods of collecting fieldwork information or some suggestion is made for improvement or extension.
2	Methods of collecting fieldwork information have been evaluated or there are valid recommendations for improvements or extensions.
3	Methods of collecting fieldwork information have been evaluated clearly. There are valid and realistic recommendations for improvements or extensions. There may be some suggestions for modifying the fieldwork question.

G Formal requirements

This criterion assesses the extent to which the student meets the five formal requirements of writing, organizing and presenting the written report.

- The work is within the 2,500 word limit.
- Overall presentation is neat and well structured.
- Pages are numbered.
- References used for background information follow standard conventions. (Guidance on referencing is given in the earlier section on secondary information.)
- All illustrative material is numbered, is fully integrated into the body of the report and is not relegated to an appendix.

Marks	Level descriptor
0	The work exceeds the 2,500 word limit or meets none of the other formal requirements.
1	The work is within the 2,500 word limit and meets one of the other formal requirements.
2	The work is within the 2,500 word limit and meets two of the other formal requirements.
3	The work is within the 2,500 word limit and meets three of the other formal requirements.
4	The work is within the 2,500 word limit and meets the other four formal requirements.

Glossary of command terms

Command terms with definitions

Students should be familiar with the following key terms and phrases used in examination questions, which are to be understood as described below. Although these terms will be used frequently in examination questions, other terms may be used to direct students to present an argument in a specific way.

The assessment objectives (AOs) listed in the table are those referred to in the geography syllabus.

Analyse	AO2	Break down in order to bring out the essential elements or structure.
Annotate	AO4	Add brief notes to a diagram or graph.
Classify	AO2	Arrange or order by class or category.
Compare	AO3	Give an account of the similarities between two (or more) items or situations, referring to both (all) of them throughout.
Compare and contrast	AO3	Give an account of similarities and differences between two (or more) items or situations, referring to both (all) of them throughout.
Construct	AO4	Display information in a diagrammatic or logical form.
Contrast	AO3	Give an account of the differences between two (or more) items or situations, referring to both (all) of them throughout.
Define	AO1	Give the precise meaning of a word, phrase, concept or physical quantity.
Describe	AO1	Give a detailed account.
Determine	AO1	Obtain the only possible answer.
Discuss	AO3	Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.
Distinguish	AO2	Make clear the differences between two or more concepts or items.
Draw	AO4	Represent by means of a labelled, accurate diagram or graph, using a pencil. A ruler (straight edge) should be used for straight lines. Diagrams should be drawn to scale. Graphs should have points correctly plotted (if appropriate) and joined in a straight line or smooth curve.
Estimate	AO1	Obtain an approximate value.

Evaluate	AO3	Make an appraisal by weighing up the strengths and limitations.
Examine	AO3	Consider an argument or concept in a way that uncovers the assumptions and interrelationships of the issue.
Explain	AO2	Give a detailed account including reasons or causes.
Identify	AO1	Provide an answer from a number of possibilities.
Justify	AO3	Give valid reasons or evidence to support an answer or conclusion.
Label	AO4	Add labels to a diagram.
Outline	AO1	Give a brief account or summary.
State	AO1	Give a specific name, value or other brief answer without explanation or calculation.
Suggest	AO2	Propose a solution, hypothesis or other possible answer.
To what extent	AO3	Consider the merits or otherwise of an argument or concept. Opinions and conclusions should be presented clearly and supported with empirical evidence and sound argument.