Cambridge Pre-U Syllabus

Cambridge International Level 3 Pre-U Certificate in **GEOGRAPHY**

For examination in 2013, 2014 and 2015

UNIVERSITY of CAMBRIDGE
International Examinations

Cambridge Pre-U

Geography (9768)

Cambridge International Level 3
Pre-U Certificate in Geography (Principal)

For examination in 2013, 2014 and 2015

QAN 500/4328/6

Support

CIE provides comprehensive support for all its qualifications, including the Cambridge Pre-U. There are resources for teachers and candidates written by experts. CIE also endorses a range of materials from other publishers to give a choice of approach. More information on what is available for this particular syllabus can be found at **www.cie.org.uk**.

Syllabus updates

This syllabus is for teaching from 2011 and is valid for examination in 2013, 2014 and 2015.

If there are any changes to this syllabus, CIE will write to Centres to inform them. This syllabus will also be published annually on the CIE website **(www.cie.org.uk/cambridgepreu)**. The version of the syllabus on the website should always be considered as the definitive version.

Further copies of this, or any other Cambridge Pre-U syllabus, can be obtained by either downloading from our website **www.cie.org.uk/cambridgepreu**

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Cambridge International Level 3 Pre-U Certificate

Geography

9768

Contents

Introduction

Cambridge Pre-U syllabuses aim to equip candidates with the skills required to make a success of their subsequent studies at university, involving not only a solid grounding in each specialist subject at an appropriate level, but also the ability to undertake independent and self-directed learning and to think laterally, critically and creatively. The Cambridge Pre-U curriculum is underpinned by a core set of educational principles:

- A programme of study which supports the development of well-informed, open and independent-minded individuals capable of applying their skills to meet the demands of the world as they will find it and over which they may have influence.
- A curriculum which retains the integrity of subject specialisms and which can be efficiently, effectively and reliably assessed, graded and reported to meet the needs of universities.
- A curriculum which is designed to recognise a wide range of individual talents, interests and abilities, and which provides the depth and rigour required for a university degree course.
- A curriculum which encourages the acquisition of specific skills and abilities, in particular the skills of problem solving, creativity, critical thinking, team working and effective communication.
- The encouragement of 'deep understanding' in learning – where that deep understanding is likely to involve higher order cognitive activities.
- The development of a perspective which equips young people to understand a range of different cultures and ideas and to respond successfully to the opportunity for international mobility.

All Cambridge Pre-U Principal Subject syllabuses are linear. A candidate taking a Principal Subject must take all the components together at the end of the course in one examination session.

Prior knowledge and progression

The syllabus builds on the knowledge, understanding and skills typically gained by candidates taking Level 2 qualifications. The subject content in this Pre-U Geography syllabus allows a smooth progression from IGCSE/GCSE in Geography but prior study of the subject is not essential. It is recommended that candidates have attained communication and literacy skills at a level equivalent to IGCSE/GCSE Grade C in English.

The Pre-U Geography course aims to equip candidates with the skills required to make a success of their subsequent studies at university, involving not only a solid grounding in specialist subject knowledge at an appropriate level, but also the ability to undertake independent and self-directed learning and to think laterally, critically and creatively. Although designed for candidates intending to continue their studies in higher education, the skills fostered also provide solid grounding for candidates intending to progress directly into employment or professional training.

Studying geography involves:

- Investigating the interaction of people with their environment.
- Understanding the processes and factors that shape that environment.
- Understanding both how the physical environment influences people and how people influence the physical environment.
- Recognising that these interactions create opportunities and problems, which require careful management.
- Understanding that management needs to be sustainable to maintain the environment for future generations.
- Developing the enquiry skills necessary to understand and explain these geographical matters.

Aims

The syllabus is underpinned by the belief that candidates should acquire the following aspects of geographical learning:

Knowledge and understanding

- A knowledge and understanding of the physical and human environments within which people live.
- A knowledge and understanding of the two-way relationship between physical and human environments.
- An awareness of both the hazards presented by the physical environment and the threat that people pose to the physical environment.
- An understanding of some of the problems facing the world now and in the future from a geographical standpoint.
- An appreciation of the ways in which these problems can be managed.
- Knowledge and understanding should be placed in a locational context, so that candidates have a grasp of where places in the world are in relation to each other and in relation to places that they live in and know.
- An appreciation of the role of scale in all aspects of geographical study: the study of scale should range from the individual, through local, regional and national to international and global.

Skills

- An ability to present and interpret geographical information using a variety of techniques involving maps, photographs, graphs, diagrams and tables and the use of information technology, including Geographical Information Systems (GIS).
- An ability to interpret Survey maps at different scales.
- An ability to undertake fieldwork as part of geographical investigation.
- An ability to research topics, using appropriate secondary sources, including the internet.
- An ability to communicate effectively through a variety of different methods, using appropriate geographical terminology.

Analysis and evaluation

- An ability to analyse geographical information, questions and issues.
- An ability to evaluate information, evidence and arguments to produce reasoned conclusions.
- An understanding of how geographical outcomes are influenced by complex links between various physical and human factors and processes.

Scheme of assessment

For the principal Pre-U qualification in Geography, candidates take all four components together at the end of the course in the same session.

Component	Component name	Duration	Weighting (%)	Type of assessment
1	Geographical Issues	Two hours 30 minutes	40	Written paper, externally set and marked
2	Global Environments	One hour 30 minutes	20	Written paper, externally set and marked
3	Global Themes	One hour 30 minutes	20	Written paper, externally set and marked
4	Research Topic	One hour 30 minutes	20	Written paper, externally set and marked

Assessment objectives

Candidates will be expected to:

AO1	Show knowledge and understanding of the places, concepts, processes and principles of the syllabus content.
AO2	Select and use appropriate skills and techniques (including the use of fieldwork and information technology) to investigate questions and issues and communicate findings.
AO3	Analyse and evaluate geographical information, issues and viewpoints; apply understanding in unfamiliar contexts; draw conclusions from evidence presented.

Relationship between scheme of assessment and assessment objectives

Assessment objective	Component 1 (marks)	Component 2 (marks)	Component 3 (marks)	Component 4 (marks)	Weighting (%)
AO1	20	12	12	4	48
AO2	10	3	3	10	26
AO3	10	5	5	6	26
Total	40	20	20	20	100 / 100

Description of components

Component 1: Geographical Issues

The focus of this component is the study of a number of geographical issues that pose a threat to human well-being, activity and life. These issues should be studied in the context of their causes, impacts and management, with an emphasis upon how physical and human environments influence the impact of these issues and how they can be managed to reduce that impact. The study of geographical issues should recognise the heterogeneity of viewpoints and opinions relating to these issues and that these vary in place, time and between different groups of people.

This written paper is divided into three sections. Candidates answer five questions. Candidates must answer two questions from Section A, two questions from Section B and one question from Section C.

Section A	Section B
Tectonic hazards	The geography of crime
Hazardous weather	Health and disease
Hydrological hazards	Spatial inequality and poverty

Sections A and B comprise three structured questions, from which candidates choose two.

Section C consists of three general questions, from which candidates choose one. This section gives an opportunity for extended writing based on more than one of the issues studied.

Candidates will be expected to have studied at least one example of a location where several of these issues are present.

In all issues, candidates will be expected to be able to use examples and case studies from a range of scales and places. Where relevant, such exemplar material should include material from countries and areas at different levels of development.

Through studying these issues, candidates will be expected to have used and developed the following geographical skills:

- An ability to interpret geographical information using a variety of techniques involving maps, tables, graphs and diagrams, and the use of information technology including, where relevant, Geographical Information Systems (GIS), in order to identify, describe and explain geographical patterns.
- An ability to interpret Survey maps at different scales, and to link them to photographs, aerial photographs and satellite images to identify, describe and explain geographical patterns.
- An ability to evaluate information and arguments and produce reasoned conclusions based upon the evidence assembled.

Component 2: Global Environments and Component 3: Global Themes

Components 2 and 3 are examined consecutively with a short break between the two.

Each written paper is divided into six topics, arranged in two sections. Candidates must answer one question in each of Section A and Section B.

Component 2: Global Environments
Section A
Arid and semi-arid environments
Glacial and periglacial environments
Coastal environments
Section B
Tropical environments
Temperate grassland and forest environments
The atmospheric environment

Component 2 focuses on different types of physical environment, with an emphasis upon the inter-relationships between physical and human components of those environments. The study of these environments aims to achieve knowledge and understanding of:

- the relevant physical processes and factors operating in the environment
- how these physical processes and factors influence human activity in the environment
- how human activity influences the environment
- how the environment might be managed sustainably

Component 3: Global Themes
Section A
Migration and urban change
Trade, debt and aid
The world of work
Section B
Energy and mineral resources
The provision of food
Tourism spaces

Component 3 focuses on selected aspects of human activity from a geographical viewpoint. The study of these global concerns aims to achieve knowledge and understanding of:

- the nature of the issues at different scales associated with these global themes
- how these issues relate to both physical and human environments
- how and why these issues have developed
- how these aspects of human activity might be managed more sustainably

In all options on Components 2 and 3, candidates will be expected to be able to use examples and case studies from a range of scales and places. Where relevant, such exemplar material should include material from countries and areas at different levels of development.

Where it is feasible and if the option lends itself, opportunities should be taken to enhance candidates' learning through fieldwork.

Through studying these options, candidates will be expected to have used and developed the following geographical skills:

- An ability to interpret geographical information using a variety of techniques involving maps, tables, graphs and diagrams, and the use of information technology, where relevant, including Geographical Information Systems (GIS), in order to identify, describe and explain geographical patterns.
- An ability to interpret Survey and other published maps at different scales, and to link them to photographs, aerial photographs and satellite images to identify, describe and explain geographical patterns.
- An ability to evaluate information and arguments and produce reasoned conclusions based upon the evidence assembled.

Component 4: Research Topic

This component is assessed by a written examination. However, in preparation, candidates must carry out a research investigation involving fieldwork. Candidates will be expected also to carry out secondary research, both in support of their individual research investigation and in making a wider study of their chosen topic. Candidates should draw on a variety of resources including textbooks, journals, internet searches and other broadcast media and, where possible, visits to appropriate out-of-classroom locations.

There are three prescribed topics, from which candidates select one. For examination in 2013 the topics are:

- **Microclimates**
- **Conservation**
- **Central Business Districts**

The prescribed topics will be cycled and in future the topics and research guidance will be issued 18 months before the examination. For the examination in June 2013, for example, the topics and research guidance will be issued in December 2011.

Research investigation

With guidance from the teacher, candidates identify a suitable geographical question or hypothesis from within one of the prescribed topics for their individual research investigations. Candidates should devise their own individual questions or hypotheses and follow through the investigation independently but it is acceptable for fieldwork to be carried out as a group. The investigation should reflect the following stages in research:

1 Identify a suitable geographical question or hypothesis for investigation

Questions/hypotheses should:
- be at a suitable scale
- be capable of research
- be clearly defined, with named location(s)
- be based upon wider geographical theories, ideas or concepts

2 Develop a plan for conducting the investigation

Plans should:
- establish the data needed to examine the question/hypothesis posed
- establish appropriate strategies and methods for collecting the necessary data (including sampling where appropriate)
- understand limitations imposed by resources
- appreciate and minimise potential risks in undertaking research

3 Collect and record data appropriate to the geographical question or hypothesis

Collection and recording of data should:
- make use of primary and secondary data as appropriate to the question/hypothesis posed
- consider issues of accuracy and reliability in relation to the data being collected

4 Present the data collected in appropriate forms

Presentation should:
- use appropriate techniques to present the data collected
- be appropriately organised
- be relevant to the question/hypothesis posed

5 Analyse and interpret the data

Analysis and interpretation should:
- describe the findings of the data presentation
- analyse the data using statistical techniques if appropriate
- interpret the results in relation to the original question/hypothesis posed

6 Present a summary of the findings and an evaluation of the investigation

A summary and evaluation should:

- draw upon evidence presented in previous sections to provide a clear conclusion, which relates back specifically to the original question/hypothesis posed
- evaluate the extent to which the study supports or otherwise the general geographical theories, ideas or concepts being studied
- evaluate the limitations of the study in terms of the methods used and the data collected

Research guidance

Since Component 4 relates to *research* topics, exhaustive syllabus content is not provided, allowing candidates to follow their own particular interests within the prescribed topic and giving a range of opportunities for fieldwork. However, guidance is published on the CIE website in advance to indicate possible ideas for investigation, and themes for wider study.

Examination format

The examination is set in three sections, one on each of the research topics published in advance.

Candidates answer three questions, in the section for their chosen research topic:

- A compulsory structured data response question, on the chosen research topic but in an unfamiliar context.
- One question, divided into two parts, based on the wider research topic.
- One question from a choice of two, based on the individual research investigation.

Candidates are <u>not</u> permitted to take their research investigation into the examination.

In studying their chosen research topic, candidates will be expected to have used and developed the following geographical skills:

- an ability to carry out research using both primary and secondary data collection
- an ability to interpret geographical information using a variety of techniques involving maps, tables, graphs and diagrams and the use of information technology including, where relevant, Geographical Information Systems (GIS), in order to identify, describe and explain geographical patterns
- an ability to interpret Survey and other published maps at different scales, and to link them to photographs, aerial photographs and satellite images to identify, describe and explain geographical patterns
- an ability to evaluate information and arguments and produce reasoned conclusions based upon the evidence assembled

Core geographical skills

Candidates will be expected to be competent in the following core geographical skills:

Use and interpretation of maps:

- Candidates should be familiar with Ordnance Survey maps at 1:50 000 and 1:25 000, but should also be able to react to and interpret Survey maps from other countries, provided with appropriate keys.
- Candidates should be able to select, draw and interpret a variety of thematic maps, including land-use and geology maps, distribution maps (choropleth, isoline, dot, flow-line, desire line).

Use and interpretation of graphic techniques:

- Candidates should be able to select, use and interpret a variety of forms of graphical presentation, including pie charts, bar charts, histograms, scatter graphs, dispersion diagrams, triangular graphs.

Use and interpretation of photographic resources:

- Candidates should be able to annotate and interpret simple photographs, aerial photographs and satellite images.

Use and interpretation of sketch maps and diagrams:

- Candidates should be able to draw, annotate and interpret various forms of sketch map and diagram, including flow diagrams.

Use of information from secondary sources:

- Candidates should be able to access, interpret and draw relevant information from secondary sources, including textbooks, articles, censuses, internet and Geographical Information Systems (GIS).

Use of written skills:

- Candidates should be able to contrast and compare resources, places and ideas, and be able to evaluate ideas and strategies.

These skills should be taught as an integral part of the content of the options within the syllabus.

Curriculum content

The following pages contain a detailed breakdown of the content of each of the options contained in:

Component 1: Geographical Issues

Component 2: Global Environments

Component 3: Global Themes

Component 1 Geographical Issues: Section A – Tectonic hazards

Main themes	Specified content
Classification and distribution patterns	The main tectonic hazards and their global distribution: • Volcanoes • Earthquakes
Causes of distribution pattern	The evidence in support of plate tectonic theory: • Continental drift and the 'jigsaw' fit of continents • Geological and fossil records • Palaeomagnetism The mechanisms, directions and rates of plate movement. The processes operating and the landforms created at different types of plate margin: • Constructive: sea floor spreading, mid-ocean ridges, rift valleys, volcanic activity • Destructive: subduction zones, earthquakes, deep ocean trenches, island arcs, fold mountains • Conservative: faults, earthquakes • Hot spots • Supervolcanoes
Change over time	The changes that occur in tectonic areas over differing timescales: • Very long-term change: ancient volcanic chains • Medium-term change: growth of volcanic islands • Short-term change: immediate post-eruptive landscapes

Main themes	Specified content
Consequences and impacts of tectonic activity	A range of primary and secondary impacts of tectonic activity on the landscape, people and the built environment, with examples to explain the nature of the volcanic hazard: • Types of eruption and their products • Pyroclastic flows (nuées ardentes), lava flows, tephra, ash falls, lahars, jökulhlaups, toxic gases A range of primary and secondary impacts of tectonic activity on the landscape, people and the built environment, with examples to explain the nature of the earthquake hazard, variations in level of magnitude and their outcomes: • Ground-shaking • Liquefaction • Landslides • Tsunami The short-term and long-term consequences of tectonic hazards and how these may differ according to the level of development.
Management	A range of mitigation strategies for tectonic hazards at different scales, including: • Prediction and prevention, risk identification, analysis and minimising risk by environmental modification • Protection, control and reduction of impacts during the event by planning • Rescue and recovery, including insurance and aid

Component 1 Geographical Issues: Section A – Hazardous weather

Main themes	Specified content
Classification and distribution patterns	The definition of an atmospheric hazard and methods of classification: • By scale (regional/local) and frequency • By nature of the hazard (wind, precipitation, temperature) • By scale of intensity for wind hazards (Saffir-Simpson and Fujita) • By wind speed for wind hazards (depressions, tropical disturbance, tropical depression, tropical storms, tropical cyclones) The distribution of atmospheric hazards at different scales, with examples of extreme and record-breaking events, and their location.
Causes of the distribution pattern and the formation of regional scale atmospheric hazards	Regional-scale atmospheric hazards (tropical storms and cyclones). The causes of the global distribution of regional-scale atmospheric hazards linked to the global energy budget: • Vertical transfers of energy: conduction, convection, radiation and latent heat • Horizontal transfers of energy: global atmospheric circulation (tri-cellular model) and ocean currents • The role of the Coriolis force The structure and characteristics of tropical storms and cyclones. The formation of tropical storms and cyclones, including the role of the Coriolis force and the Bernoulli effect. The seasonality of regional-scale atmospheric hazards. The changing nature of the regional-scale atmospheric hazards: patterns of intensity, periodicity and clustering of hazards and the changing nature of tropical cyclones in recent years.
Causes of the distribution pattern and the formation of local scale atmospheric hazards	Local-scale atmospheric hazards: tornadoes, hail, blizzards, fog, lightning: • Tornadoes: the structure, characteristics, processes of formation, (including super-cell formation), distribution pattern and causes of it • Hail: the formation of hail, distribution pattern and causes of it • Blizzards: the formation of snow, conditions leading to blizzards, distribution pattern and causes of it • Fog: the processes of fog formation, radiation fog, advection fog, distribution pattern and causes of it • Lightning: the formation of lightning, solar wind and neutralisation of the ionosphere, weather conditions associated with lightning, different forms of lightning: cloud to ground, cloud to cloud, ball and mega-lightning, the properties of the ground in determining the frequency and intensity of lightning, distribution pattern and causes of it

Main themes	Specified content
Consequences and impacts	The primary and secondary impacts and the social, economic and environmental impacts of regional-scale and local-scale atmospheric hazards with examples from a variety of places. Variations in impact which can occur between countries and areas at contrasting levels of development and between different regional-and local-scale atmospheric hazards in terms of the nature, scale and intensity of the impacts.
Management	Management of atmospheric hazards at different scales with examples from a variety of places at different levels of development: • Modifying the risk: monitoring, prediction, prevention • Modifying the hazard: preparation, protection and reduction of impacts • Modifying the loss: rescue, relief and recovery including insurance and aid

Component 1 Geographical Issues: Section A – Hydrological hazards

Main themes	Specified content
Classification and distribution patterns	The movement of water through the hydrological cycle using a systems approach. Definitions of key terms: • Transfers: interception, infiltration, percolation, stemflow, throughfall, overland flow/surface runoff, throughflow, groundwater flow/baseflow, evaporation, transpiration, condensation and precipitation • Stores: atmosphere (clouds), vegetation (interception and through roots), surface (channel, lake, ocean), soil, ground/bedrock The meaning of the terms permeable, impermeable, pervious and porous in relation to both soils (clay, silt, sand) and rock types (granite, limestone, chalk, sandstone, clay). Water table, springs and springlines. The patterns of precipitation at global and national scales and the impact of these on annual water budgets at the local or regional scale. • River regimes • Storm hydrographs
Causes of the distribution pattern	Hazards occur at different points in the hydrological cycle due to both natural and human causes; these hazards can include either excess or deficit of water and its existence in different states. Floods: • Natural causes: prolonged rainfall, snowmelt, intense storms leading to flash flooding, storm surges, and monsoon rainfall • Human causes: changing land-use, river mismanagement, dam failures Water deficit: • Meteorological causes: seasonal variation or longer-term climate change • Human causes: depleting aquifers and surface water resources by inappropriate agricultural, urban and industrial abstraction People modify the hydrological cycle by agriculture, deforestation or afforestation, urbanisation, water abstraction and flood management.
Consequences and impacts	There are both short-term and long-term impacts and consequences of flooding and of water shortages and these may differ according to level of development.

Main themes	Specified content
Management	There is a range of mitigation strategies for flooding and water shortage at different scales and different levels of development: • Emergency responses • Hard engineering solutions • Soft engineering solutions • Managed retreat and 'do nothing' options

Main themes	Specified content
Classification and distribution patterns	The definition of crime. Types of crime and their spatial characteristics: • International: terrorism, drug trafficking, illegal migration and people-smuggling • Crimes against people: violence, slavery, racial crimes and child prostitution • Crimes against property: burglary, car crime, graffiti, animal theft • Employment crimes: corporate crime, gang masters • Anti-social crime: vandalism, alcohol and drug-induced crime • Environmental crimes: fly tipping and pollution spills The types and locations of crime and perpetrators of crime may overlap. Distribution patterns can vary: • Spatially: internationally, nationally, locally (city centre, inner city, suburbs, rural areas) • Temporally: day versus night, match days and special events, seasons Patterns of some crimes will distinguish the home location of the criminal and the place where criminality took place; suburbs and office, outer estate and leafy suburb.
Causes of crime	The causes of crime can be understood in terms of the relationship between the victim, the criminal and their environment. Causes of crime: • Vulnerability of the victim: gender, ethnicity, household/family structure, socio-economic circumstances, household occupation, accommodation type, location of housing, and housing tenure • Socio-economic characteristics of the criminal: spatial disparities (at a variety of scales), marginalisation and social inequalities, including poverty and illiteracy • The characteristics of the physical and built environment may promote vulnerability to crime: street layout and lighting, building height and density, presence of vegetation and the amount of open space, and building design.
Consequences and impacts	The consequences of high criminal activity with regard to: • The social impacts on communities • The economic impacts on communities • The physical impacts on the natural and built environments Perception of the crime hazard and the influence of the media and politicians on people's perception.

Main themes	Specified content
Management	Strategies designed to minimise the risk, or perception of risk, of crime and reduce the amount of crime at different scales: • International-scale initiatives: border control, airport security, role of passports and identity cards, terrorism databases, role of international media, co-operation between countries, repatriation • National-scale initiatives: 'secured by design', increased visibility and CCTV (closed circuit television), privatisation of public space including shopping centres and gated communities, increased policing on the streets, strategies to alleviate socio-economic deprivation, drug rehabilitation schemes • Local-scale initiatives: philosophy of 'defensible space', designing out crime, target-hardening, mobilisation of communities, Neighbourhood Watch, securing farm premises and equipment

Component 1 Geographical Issues: Section B – Health and disease

Main themes	Specified content
Classification and distribution patterns	The definition of key terms to include: epidemic, pandemic, endemic, contagious, infectious, viral, bacterial, parasitic, death rate, infant mortality rate, life expectancy and attack rate (with reference to age-sex pyramids). The means of transmission of disease. The anthropogenic, environmental, lifestyle and living conditions influencing health, welfare, mortality, and the spread of disease including level of development, socio-economic status and employment, housing conditions, diet and access to clean water, ecological transmitters and climate change, pollution, traffic accidents, lifestyle choices (such as binge drinking). Examples of plagues and famines to illustrate the spatial element in the occurrence of ill health.
Causes of spatial variation in health	The geographical variation in the prevalence of disease and its human and environmental causes. The ways in which diseases spread, patterns of diffusion, and the work of early epidemiologists. The spread of emergent diseases such as HIV/AIDS, SARS, Ebola fever and 'bird flu'. The geographical causes of variation in health: • Sources of radiation: geological and anthropogenic (power sources) • Industrial diseases such as silicosis associated with mining • The influence of transnational corporations (TNCs) in exploiting weak legislation and unprotected markets • Effect of variations in affluence on diet and health, linked to obesity, osteoporosis, coronary heart disease and deficiency diseases • The incidence of water-based diseases such as cholera, typhoid, malaria, and dysenteric diseases • The potential for spread of diseases such as HIV/AIDS and tuberculosis (TB) with the increase in international migration
Consequences and impacts of disease	The demographic, social and economic impacts of disease, famine and illness with reference to: • Population structure • Socio-economic status • Migration patterns • Local and national economies Examples of such impacts at international and national scales, with reference to both historic incidence of disease and famine, as well as to newly emergent diseases such as HIV/AIDS.

Main themes	Specified content
Management	Differences in welfare and health-care provision can be and have been improved through: • Increasing the number of doctors, nurses and hospitals • Greater awareness of the importance of good diet • Extending access to clean water • Industrial and environmental welfare provision (in terms of protective legislation) • Use of vaccinations to eradicate diseases such as measles, whooping cough, polio, TB, smallpox • The role of the World Health Organization (WHO) • The role of government, such as in facilitating and encouraging family planning • The role of non-governmental organisations such as Médecins Sans Frontières, charities such as WaterAid and Comic Relief and events such as Live8

Component 1 Geographical Issues: Section B – Spatial inequality and poverty

Main themes	Specified content
Classification and distribution patterns	Concepts of inequality and poverty (absolute and relative), deprivation and social exclusion. Measuring poverty and inequality: composite indices, such as Human Development Index (HDI), Physical Quality of Life Index (PQLI), Human Poverty Index (HPI): single criterion indices, such as GNP per person, adult literacy rate, infant mortality rate. Patterns of inequality and poverty at different scales: • Global patterns: the validity of the North/South divide; the development continuum • Regional patterns: core and peripheral areas within countries • Intra-urban patterns: areas of social exclusion; inner city and peripheral areas of poverty.
Causes of poverty and inequality	Global scale: • Rostovian and neo-Marxist theories • Colonialism and neo-colonialism • The environmental dimension: long-term environmental disadvantage/degradation; short-term environmental events • Internal and external political influences Regional scale: • Friedmann's concept of core and periphery and cumulative causation • The role of economic decline and growth • The environmental dimension: long-term environmental disadvantage/degradation; short-term environmental events • Internal and external political influences Local scale: • The concepts of social exclusion and marginalisation

Main themes	Specified content
Consequences and impacts of poverty and inequality	Global scale: • The development gap and its continuation • Poverty in countries at lower levels of economic development and its economic and social consequences: access to employment; access to health and education; mortality and life expectancy; crime and prostitution; social tension National scale: • Emergence of regions of economic disadvantage • Outmigration • Access to basic services and amenities Local scale: • Emergence of areas of multiple deprivation • The poverty trap • Poor quality housing and lack of basic amenities
Management	The UN Millennium Development Goals Approaches to reducing poverty and inequality: top-down and bottom-up strategies; international aid; intermediate/appropriate technology. Development strategies at different scales and their impacts: • Promotion of economic development: industrialisation, resource exploitation, tourism • Iconic international events (such as sporting events), cities of culture/heritage • Infrastructural investment: transport, health, education, local services.

Component 2 Global Environments: Section A – Arid and semi-arid environments

Main themes	Specified content
Classification and distribution patterns	The meaning of aridity and the current global distribution of arid and semi-arid areas. Past changes in the extent of aridity relating to climatic change: tertiary and quaternary deserts and pluvials. Definition of desertification and the global distribution of desertified areas.
Climate and hydrological cycle	The climatic determinants of arid and semi-arid environments: • Pressure and wind systems • Ocean current • Drought periodicity The characteristics of typical desert climates: • Temperature ranges and extremes • Rainfall totals and reliability (including extreme rainfall events) • Evapotranspiration • Winds Climate change and its relationship to desertification. The hydrological cycle and water balance in arid and semi-arid environments: • Desert hydrological system and regime • Episodic rainfall, flash floods and sheet and stream floods The role of climate in influencing natural sources of water in arid and semi-arid environments: • Drainage patterns, perennial rivers and wadis, saltpans and intense evaporation • Aquifers • Snow and ice and coastal mist and fog
The processes shaping arid and semi-arid environments	Weathering processes: • Thermal fracture, exfoliation, frost shattering, wetting and drying, chemical weathering, salt weathering Processes of erosion: • By wind (abrasion, deflation) • By water (sheet runoff, abrasion) Processes of transportation: • Saltation, suspension, surface creep

Main themes	Specified content
Landforms and landscapes of the past and present	The variety of arid and semi-arid landscapes: • Mountain deserts, sand deserts, shield deserts, stony deserts, desert rivers and floodplains, desert lake basins The formation of erosional landforms: • By wind (deflation hollows, ventifacts, rock pedestals and zeugen, yardangs) • By water (wadis, canyons, mesas, buttes and inselbergs, pediments) The formation of depositional and transportational landforms: • By wind (dunes: barchans, seifs, star, and draa) • By water (alluvial fans, bahadas/bajadas, chotts) Badland landscapes and landforms in semi-arid environments: • Relict hills, hoodoos, piping, caves and arches, wadis, debris fans
The impact of the hot arid and semi-arid environments on human activity and the impact of human activity on these environments	Traditional human interaction with hot arid and semi-arid environments Opportunities and constraints for human activity and their impact on the physical environment, including their contribution to desertification: The causes to include: • Overgrazing, overcultivation and vegetation clearance • Resource exploitation: water collection and storage, irrigation and mineral extraction • Secondary, tertiary and quaternary sectors: manufacturing, tourism, film industry, scientific research, space and defence industries • Urban development • Climate change The consequences to include: • Rates of soil degradation and erosion (including salinisation) • Feedback mechanisms: albedo change through denudation, atmospheric dust • People: migration, traditional response and preparation, famine and drought
Management	Management strategies in arid and semi-arid environments illustrated by: • The issues associated with settlement and economic development • The issues associated with water supply and demand • The role of sustainable development and intermediate technology

Component 2 Global Environments: Section A – Glacial and periglacial environments

Main themes	Specified content
Classification and distribution patterns	The meaning of the glacial and the periglacial environments. Recognition of the range of glacial environments (including relict glacial landscapes, ice cap environments, upland and lowland glacial environments). The present distribution of periglacial and glacial environments. The past distribution of periglacial and glacial environments: • Climatic change through geological time with particular emphasis on the Quaternary Ice Age (glacial and interglacial cycles and stadial periods)
Causes of distribution and glacial movement	The possible causes of global climate change during the Quaternary. The reasons for growth and decline of these environments in the context of the glacial budget. The process of glacial advance and movement: • Internal deformation, basal sliding and subglacial deformation, surge conditions, compressional/extensional flow
Glacial processes and landforms	The processes of glacial weathering, erosion, transportation and deposition. The formation of erosional landforms: • Corries, arêtes, pyramidal peaks, truncated spurs, U-shaped valleys, ribbon lakes, hanging valleys, roches moutonnées, whalebacks, crag and tail, striations, knock and lochan The transportation of moraine (supraglacially, englacially and subglacially). The formation of glacially deposited landforms: • Till deposits, erratics, moraine, drumlins The formation of fluvio-glacial landforms of deposition: • Outwash plains, varves, kames and kame terraces, eskers, kettles and braided streams
Periglacial processes and landforms	Permafrost, the active layer and their importance in the formation of specific periglacial landforms. Ground ice formation and landforms associated with it: • Involutions, ice lenses, ice wedge polygons, patterned ground, pingos, thermokarst landscape Landforms associated with frost weathering and mass movement: • Blockfields, tors, scree slopes, nivation hollows, gelifluction lobes, head and coombe deposits, asymmetrical valleys Landforms associated with water and wind: • Water: dry valleys • Wind: loess deposits

Main themes	Specified content
The impact of the glacial and periglacial environments on human activity and the impact of human activity on these environments	Traditional human interaction with glacial and periglacial environments and the impact of modernisation within these societies. The opportunities and constraints of glacial and periglacial environments: • Tourism, water supply and energy, agriculture, mining and quarrying and settlement, infrastructural developments • The significance of the active layer • Military, strategic and geopolitical considerations The hazards of glacial and periglacial environments (including avalanches and glacial outburst floods). The role of human-induced climate change in changing glacial and periglacial landscapes.
Management	Management issues in glacial and periglacial environments, recognising their fragility and scenic value, as illustrated by: • Issues associated with settlement, transport and infrastructural development • Issues associated with economic development, including oil extraction • The role of sustainable development

Component 2 Global Environments: Section A – Coastal environments

Main themes	Specified content
Factors influencing coastal environments	The range of factors which can influence coastal environments Temporal variations: • Diurnal: tides • Long term: isostatic and eustatic influences on sea level Wind-generated waves: • Formation, structure and energy • The shoaling translation; swash, backwash, refraction, reflection • Classification of different wave types: spilling, plunging, surging The tidal wave: • The tidal cycle • Rotating tides: amphidromic points and variations in tidal direction and strength • Bi-directional tides in bays and enclosed seas Currents: wave induced, shore normal, long-shore, rip cell circulation, offshore and onshore currents Temperature and salinity variation within oceans: the North Atlantic Ocean Temperature Conveyor Processes of marine erosion, transport and deposition: • Hydraulic action, wave quarrying, corrasion, attrition, solution • Longshore drift, sediment sorting Sub-aerial processes: • Weathering • Mass movements Structure, lithology and coastal morphology: • Variation in resistance of coastlines to marine processes • Variation of supply and characteristics of sediment in the marine environment Human influence

Main themes	Specified content
Landforms produced in coastal environments	Coastal landforms as associated with different coastal environments: • Macrotidal environment landforms (range above 4 metres): mudflats, saltmarshes, sand dunes • Microtidal environment landforms (range under 2 metres): spits, barrier islands Wave induced landforms independent of the tidal environment: • Beaches in profile and plan • Cliffs and shore platforms Concordant/Pacific and discordant/Atlantic coastlines. Features associated with relative sea level change: • Emergent and submergent coastlines: rias, fjords, estuaries, raised beaches, relict cliff lines
Ecosystems produced in coastal environments	The formation and development of different coastal ecosystems produced within a range of coastal environments: • Psammoseres: coastal sand dunes • Haloseres: coastal salt marshes and mangroves • Coral coastlines: coral reefs
The impacts of coastal environments on human activity and the impact of human activity on these environments	The opportunities for and constraints on human activity and the impacts of various economic developments on the coastal environment: • Resource exploitation: fishing • Manufacturing and energy industries • The tertiary and quaternary sectors: recreation • Settlement • Military use • Coastal flooding • Rapid coastal erosion • Degradation of marine ecosystems
Management	The issues and processes associated with management schemes to be implemented in coastal environments. The contrast of engineering approaches as solutions: • Non-intervention • Soft engineering: beach nourishment and sand dune stabilisation • Hard engineering: sea walls, revetments, rip-rap, gabions, breakwaters, groynes, floodgates • Managed retreat Managing coastal environments for sustainability.

Component 2 Global Environments: Section B – Tropical environments

Main themes	Specified content
Classification and distribution patterns	While the focus of this paper is on the tropical rainforest, other environments should be considered by way of an introduction and as an appreciation of the tropical environment as a whole. Different tropical environments and their location today: • Tropical lowland evergreen rainforest, tropical semi-evergreen rainforest, the montane rainforest, heath forest, peat swamp forest and freshwater swamp forest; tropical savanna (tree, bush, scrub)
Tropical climates	The role of climate in determining the distribution of tropical environments: • Atmospheric circulation in the tropics • Tropical rainfall and tropical storms • Tropical mountain climates
The tropical rainforest ecosystem	The abiotic environment: • Plant nutrients and nutrient cycling • The structure and formation of tropical soils • Tropical rainfall, tropical storms, mountain climates, tropical hydrology The biotic environment: • Biological diversity and the range of theories explaining biological diversity, methods of co-existence, refugia theory, neutral theory, competition • Forest structure (shade tolerance and altitudinal changes) • Plant life and the factors influencing it (climbers and epiphytes; trees and ground species; seasonal rhythm; pioneer/climax species; gap theory; forest microclimates) • Animal life of the forest (richness and diversity, modes of coexistence, carrying capacity of the forest) • The interconnections between plants and animals (pollination, dispersal, food webs)

Main themes	Specified content
Human use of the tropical rainforest	Traditional human interaction with tropical rainforest and the impact of modernisation within these societies: • Tribal communities, hunter-gatherers and sustainable interaction • Shifting cultivation The unsustainable use of tropical rainforest: • Rates of disappearance • Logging and the timber trade, plantations and intensified tropical agriculture, animal production and utilisation (including ranching), construction (including dams, infrastructure), mineral extraction The impact of unsustainable development on natural cycles and the implications of this for humankind at different scales: • Soil erosion and leaching, interruptions to the water cycle, desertification, species loss and extinction, climate change, impacts on society
Management	Management for sustainability: • International, governmental and NGOs' (non-governmental organisations') responses • Strategies for sustainability at the regional and national scales; ecotourism, selective logging (opportunities for silviculture), medicinal extraction, collection of produce • Sustainability at the individual and local scales: traditional responses and cultures, responsible tourism

Main themes	Specified content
Classification and distribution patterns	Different temperate ecosystems: • Temperate deciduous forest, northern coniferous forest, temperate grasslands (prairies and steppes), smaller-scale ecosystems such as heathland and moorland The current global distribution of temperate ecosystems and the distribution of associated zonal soils, to include brown earths, podsols and chernozems.
Temperate climates	The role of climate in determining the distribution of temperate environments (Df, Dw, Cf, and Bsk): • Atmospheric circulation in mid-latitudes • Seasonal patterns of precipitation and temperature • Influence of continentality • Influence of relief
Temperate ecosystem structure and function	The structure and functioning of temperate deciduous woodland, northern coniferous forest, and temperate grasslands (prairies and steppes): • Characteristic vegetation communities • Associated fauna • Food chains and webs • Nutrient cycling • Development of associated zonal soils, to include brown earths, podsols and chernozems The principles of succession and development of different climax communities (subclimax and seral stages), and the reasons for the development of plagioclimax vegetation. Natural causes of ecological change, which may be cyclical, such as Dutch elm disease and natural disturbance theory.

Main themes	Specified content
Human use of and impact on temperate environments	The range and a variety of economic uses of temperate deciduous woodland: • Exploitation for timber • Land clearance for agriculture • Coppice and pollard management • Recreation How and why deliberate and accidental introduction of non-native species has occurred. The role of forest clearance for agriculture and its consequences in changing the natural landscape for economic exploitation: • Removal of hedgerows Livestock farming and the creation of plagioclimactic communities. The reasons for and impact of human activities in changing the natural landscape: • Environmental degradation of forests due to acid deposition • Climate change • Recreational use of forest, heath and moorland • The role of fire • The introduction of conifers The role of the American Mid-West and other regions as 'bread baskets' in supplying world grain needs and the impact of this, such as the development of the dustbowl in the 1930s.
Management	The range of responses to deforestation and other changes to vegetation, such as: • Conservation initiatives by governments, NGOs (non-governmental organisations) and international organisations at different scales • Low-impact farming initiatives • Countryside Stewardship Schemes in the UK These schemes should be evaluated in terms of sustainability with reference to Agenda 21.

Component 2 Global Environments: Section B – The atmospheric environment

Main themes	Specified content
Classification and distribution patterns	The spatial distribution of global climate zones: equatorial, semi-arid tropical, arid tropical, arid temperate, humid temperate, boreal, arctic.
Physical atmospheric processes causing the distribution of climatic zones	The components of the atmospheric system (inputs, transfers, stores and outputs). The processes of the atmospheric system in terms of the global energy budget: • Vertical energy budget: inputs (solar ultra-violet radiation), transfers (direct and diffuse radiation, scattering, reflection), stores (role of ozone and other atmospheric gases, clouds, buildings/roads), outputs (terrestrial infrared radiation, convection, conduction, latent heat, albedo) • Spatial differences in the energy budget and reasons for them • Horizontal energy budget and the redistribution of energy: – Atmospheric energy transfers in global atmospheric circulation (tri-cellular model) – The formation and location and characteristics of high/low pressure zones – Ocean energy transfers by warm and cold ocean currents
Management of short term change in the atmospheric environment	The atmospheric characteristics of the cool temperate western maritime environment, emphasising short-term variations in weather. The physical atmospheric processes responsible for the atmospheric characteristics of the environment: • Air masses and anticyclones • The polar front, depressions and mid-latitude storms How human activity is directed by short-term day-to-day changes and periods of persistent low or high pressure in the cool temperate maritime environment and resultant management strategies: • Impacts of the atmospheric characteristics through the opportunities for, and constraints on, human activities: agriculture, commercial spending patterns, tourism, construction industry, sporting events, water supply issues, flooding, insurance

Main themes	Specified content
Management of seasonal change in the atmospheric environment	The atmospheric characteristics and processes of the tropical monsoon climate: • Wet and dry monsoons • The differential heating of land and sea • The migration of the inter-tropical convergence zone (ITCZ) and changes in the trade winds The influence of areas of high relief. How human activity is directed by the tropical monsoon environment: • Impacts of the atmospheric characteristics through the opportunities for, and constraints on, human activities: agriculture, cattle herding management, tourism, water supply issues, settlement and housing development • The monsoon as a hazard Short-term and long-term management strategies in areas affected by the monsoon climate: • Seasonal changes • The unreliable nature of the monsoons • The risk of flooding
Management of cyclical change in the atmospheric environment	Changes which occur to the atmospheric environment in the Pacific region during El Niño and La Niña events. The physical atmospheric processes occurring in the Pacific region during El Niño and La Niña events. The socio-cultural, economic, political and environmental impacts of El Niño events (Pacific and worldwide). The short-term and long-term management strategies associated with El Niño and La Niña events at a regional, national and global level: • Prediction through monitoring of changes in the atmosphere-ocean environment • Preparation to minimise the impacts of the change in the atmospheric environment • Rescue and recovery through minimising the loss caused by changes in the atmospheric environment
Management of long-term change in the atmospheric environment	The changes which occur to the global energy budget through the enhanced greenhouse effect and global warming. The range of views and attitudes regarding the existence and causes of the enhanced greenhouse effect. The natural and human causes of the enhanced greenhouse effect. The predicted socio-cultural, economic, political and environmental impacts of global warming at different scales. The relative success of a range of strategies, at different scales, to manage the enhanced greenhouse effect and the impacts of global warming.

Component 3 Global Themes: Section A – Migration and urban change

Main themes	Specified content
Classification and distribution patterns	Types of population movements: • Scale: intra-national, international, local • Direction: rural-rural, rural-urban, urban-rural, urban-urban, periphery-core, core-periphery • Motivation: forced, impelled, free (voluntary) • Spatial: step migration, migration streams and counter-streams • Temporal: daily and weekly commuting, seasonal, periodic, permanent Patterns of population movement: • Major international migration streams • Examples of intra-national migration streams: rural-rural, rural-urban, urban-rural, urban-urban, periphery-core, core-periphery Urbanisation and counterurbanisation and their definition: • Global patterns • Contrasts in urbanisation between countries at different levels of development
Causes of migration and urbanisation	The factors influencing migration, illustrated at a variety of spatial and temporal scales: • Push/pull factors, intervening opportunities and obstacles • Economic, socio-cultural, environmental and political influences • Force and choice • Refuge and refugees Urbanisation and counterurbanisation: • The relative importance of rural-urban migration and natural increase in urbanisation • Urban-rural migration and rural depopulation

Main themes	Specified content
Consequences and impacts	Costs and benefits to donor and recipient areas and to the migrants at different scales. The impacts of international migration: • Economic: employment/unemployment, remuneration and remittances • Social: provision of services, housing, deprivation, social tension, family, community • Political • Environmental: resource pressure The consequences of urbanisation: • Primacy and the economic dominance of urban areas • The provision of housing and associated amenities and services • The development of slums, shanty towns and squatter settlements • Strain on urban infrastructure • Effects on rural donor areas The consequences of counterurbanisation: • The growth of dormitory, commuter and suburbanised settlements • Pressure for development on the countryside • Impacts on rural services
Management	Managing migration flows through strategies to encourage or restrict population movement: • International: immigration controls, international agreements, financial incentives • Rural-urban: rural development schemes, New Towns as alternative urban destinations • Urban-rural: rural housing developments, urban regeneration and re-urbanisation Managing the impacts of urbanisation and counterurbanisation: • Housing improvements: site and service schemes, upgrading poor quality housing (slums, squatter settlements), rural housing schemes • Infrastructural improvements: water and sanitation, transport, accessibility • Social improvements: education and health • Economic improvements: providing work opportunities, self-help schemes • Environmental protection: greenbelts, other measures

Component 3 Global Themes: Section A – Trade, debt and aid

Main themes	Specified content
Global capital transfers	Global transfers of capital occur in a variety of ways including trade, foreign direct investment (FDI) and aid. Global capital transfers can create debt. Different types of debt: trade deficits, serviceable debt, unserviceable debt. The global pattern of debt.
Patterns of world trade, their consequences and management	Patterns of world trade: • Major importers and exporters of raw materials; commodities, manufactured products, services, hi-tech goods • Global trade balances Changing patterns of world trade since 1900: • Colonial and neo-colonial patterns • The rise of newly industrialised countries (NICs) • Terms of trade • The changing importance and nature of goods being traded Factors responsible for patterns of world trade: • The principle of comparative advantage • Levels of economic development • The influence of trade blocs, protectionism, the World Trade Organization (WTO) The benefits and problems of trade for exporters and importers: • Balance of payments and trade deficits/surpluses • The significance of foreign currency • Overdependence on primary products • Neo-colonial control and trade as a political weapon The management of global trade: • WTO and GATT (General Agreement on Tariffs and Trade) • The role of Fair Trade

Main themes	Specified content
Patterns of foreign direct investment (FDI), its consequences and management, including the issue of debt	Foreign direct investment involves transnational corporations (TNCs) and international agencies and has led to national debt. The global patterns of serviceable and non-serviceable debt. The global patterns of foreign direct investment: • Major donors and recipients of investment, outward FDI and inward FDI • Changing patterns of investment over time Reasons for the patterns of foreign direct investment: • The benefits for both recipient and donor • The role of TNCs and global financial institutions such as the World Bank and the IMF (International Monetary Fund) The impact of foreign direct investment: • Economic growth and development • The problem of debt The management of foreign direct investment and its impacts; the debt crisis and debt relief.
Patterns of international aid and its consequences	Different forms of aid: • Long-term development aid • Short-term relief aid • Bilateral/multilateral aid • Tied aid The global pattern of aid: • Major donors, major recipients and reasons aid is given to specific countries/projects • The role of international institutions, governments and NGOs (non-governmental organisations) in giving aid The consequences of aid for recipient countries: • Socio-economic, effects on local people, agriculture, markets • Political, dependence on foreign governments and NGOs, corruption
Economic globalisation	The roles of trade, foreign direct investment and aid in the globalisation of the world economy. The advantages and disadvantages of globalisation.

Component 3 Global Themes: Section A – The world of work

Main themes	Specified content
Classification and distribution patterns	The classification of employment into primary, secondary, tertiary and quaternary sectors and the differences between these sectors. Variations in employment structure between countries: • Relationships between these variations and levels of economic development • Theories associated with such variations (such as Rostow, Clarke) The reasons for spatial differences in employment structure within individual countries.
Changing patterns of structural employment	Changing patterns in employment structure over time: • The decline of the secondary sector and the growth of tertiary and quaternary sectors in countries at a higher level of development • The growth of the secondary, tertiary and quaternary sectors in newly industrialising countries (NICs) The reasons for these changes: • Technological development • Globalisation, transnational corporations (TNCs) and the new international division of labour (NIDL) • Other economic factors • Social factors • Political factors
Contemporary issues associated with the global work place	Unemployment: • Current and past trends in unemployment in countries at a higher level of development and the effects of these patterns on people and the local economy Labour exploitation: • Causes and effects of labour exploitation in countries at different levels of development • The changing role of trade unions within countries Wage disparities: causes and effects within and between countries at different levels of development. Informal sector employment: the causes and effects of its growth in countries at different levels of development. Prejudice in the work place: • Causes of prejudice in, and effects on, different groups • The similarities and differences in the nature of prejudice between different countries and within different sectors Changes in working practices, such as homeworkers, teleworkers, e-workers, video-conferencing.

Main themes	Specified content
Migrant labour	The distribution patterns of migrant labour at both international and national scales: • Unskilled migrant labour flows • Skilled migrant labour flows • Seasonal migrant labour flows • Long-term and short-term migrant labour The reasons for these distribution patterns: • Push and pull factors • The role of governments in encouraging and restricting migration The consequences of such migration for source and destination areas and the migrants themselves: • Benefits • Problems
Management	Strategies for managing labour resources at different scales. Managing labour resources at the international scale: • International Labour Organization (ILO), minimum wages, legal and illegal international migrant flows Managing labour resources at a national scale: • Labour rights, the role of unions, minimum wages, women's rights, job centres Managing labour resources locally: • Seasonal demands within local areas such as employment in tourism or agriculture

Component 3 Global Themes: Section B – Energy and mineral resources

Main themes	Specified content
Classification	Energy and mineral resources. Metallic and non-metallic mineral resources. Renewable and non-renewable resources, finite and infinite resources. Flow resources. Non-renewable resources in terms of stocks and reserves. The influence of economic and technological factors on the availability of energy and mineral resources. The resource continuum.
Energy resources: supply and demand	Distribution patterns of supply and demand of selected energy resources, including oil and at least one renewable resource. The variations in energy resource mix between countries in relation to development and resource availability. Changing sources of energy over time both globally and within individual countries: • The shift from coal to oil and gas • The growth of renewables and alternative sources of energy • Variations in the use of nuclear power
Mineral resources	Distribution patterns of supply and demand of a range of mineral resources both metallic and non-metallic. Changes in these patterns over time. Factors influencing these distribution patterns and how they change over time: • Price variations • Geological conditions • Levels of economic and technological development • The role of foreign direct investment • The cycle of exploitation • Product cycles

Main themes	Specified content
The impact of resource exploitation	The national impact of mineral resource exploitation: • Economic benefits, such as foreign exchange earnings, employment, the multiplier effect, debt payment • Social, economic and environmental problems, such as living conditions and environmental degradation The national impact of changes in energy resource supply and demand in economic, social and environmental terms: • Changes in the balance between domestic and imported energy resources • Attempts to increase renewability • Arguments over the energy mix, including the debate over nuclear and renewable solutions The global impact of changing energy and mineral demand: resource depletion, climate change, increasing economic costs, political implications.
Management	Managing energy and mineral resource exploitation at different scales: • International commodity organisations, such as OPEC (Organization of the Petroleum Exporting Countries) • National resource policies, such as nationalisation, rationalisation, subsidies Managing the environmental impact of energy and mineral resource exploitation at different scales: • International agreements and protocols, such as Brundtland, Club of Rome, Kyoto, Antarctic Treaty • The application of international agreements at a national scale • National policies, such as resource substitution, promotion of alternative energy use • Local approaches, such as the application of Agenda 21, land reclamation schemes Managing the socio-economic impact of energy and mineral resource exploitation at different scales: • National policies, such as minimum wages, regeneration grants, inward investment, import tariffs • Local approaches, such as regeneration schemes, local employment initiatives

Component 3 Global Themes: Section B – The provision of food

Main themes	Specified content
Classification and distribution patterns	The physical constraints on food supply with reference to optima and limits models to demonstrate the constraints of climate, topography and soil on the development of agriculture. The significance of limiting factors for plant growth. The patterns of agricultural production globally and nationally resulting from these constraints and factors. The difference between subsistence and commercial agriculture. The location of major marine fish stocks and the reasons for their location. The location of fish farming and reasons for its location.
The demand for food	The increasing demand for food as global population increases and the mismatch between population distribution and food availability. The concept of carrying capacity with reference to the theories of Malthus and Boserup, to Brundtland, and the prospect of sustainability. Patterns of food consumption (including fish) and the consequences of these with regard to: • Health, including an understanding that there are geographical and social differences in health that can be linked to diet • Religion and culture • The need for food aid • Ethical considerations (including the growing demand for organic produce; vegetarianism and veganism)

Main themes	Specified content
The supply of food in countries at higher levels of development	The modernisation of food production after 1950 and its consequences: • Changes to the means of supply • Increased yields to the point of overproduction • Improved farm incomes • Changes in land tenure and farm size • Significant landscape change The 'post-productionist' phase of food production and its influence on food production systems and policy: • Farm diversification schemes • The introduction of countryside stewardship schemes • The application of top-down approaches such as set-aside, ESAs (Environmentally Sensitive Areas) and NSAs (Nitrate Sensitive Areas) in the UK • The growth of bottom-up approaches such as low impact techniques and organic farming • Diversification of food production to increase income levels • Reduction in the number of farms The exploitation of marine resources and the depletion of fish stocks as a result of: • The difficulties inherent in the working of fisheries policies • The development of larger and more efficient trawlers The growth of fish farming and its economic and environmental impacts.
The supply of food in the wider world	Changes in the means of supplying food in the wider world, with particular regard to: • The intensification and extensification of agriculture in response to population pressure and the consequences of overcultivation and overgrazing • How the Green Revolution served to increase food production in selected countries with reference to: – The development of high yielding varieties of wheat, maize and rice – The extension of irrigation, drainage and terracing schemes – The use of machinery in place of manual or animal labour • The application of fertilisers, herbicides, insecticides and other pesticides • Different approaches to land reform and the benefits and drawbacks for agrarian communities of such reform • The pressure to replace subsistence agriculture with cash crop production and the social, economic and environmental implications of the commercialisation of agriculture • The range of alternative, intermediate technology solutions to food shortages including intercropping and polyculture

Main themes	Specified content
The supply of food: the globalisation of production and supply	Issues of food supply in the 21st century, such as: • Ethical issues, such as exploitation of animals, cultural differences in diets, exploitation of migrant labour, the introduction of genetically modified (GM) crops • Environmental issues, such as the loss of tropical forests and mangroves, the introduction of monocultures, tropical prawn fisheries, air transport and food miles, the potential impact of global climate change on food production • Economic issues, such as Fair Trade, the pressure to replace subsistence production with commercial • Political issues, such as the roles of TNCs (transnational corporations), NGOs (non-governmental organisations) and food aid in relation to agricultural aid

Component 3 Global Themes: Section B – Tourism spaces

Main themes	Specified content
Classification	The definitions of tourism, recreation and leisure. Classifying tourism using a variety of criteria, including destination, activity, scale, tourist characteristics, ecological impact.
Change over time	The changing nature of the tourism industry from 1800 to the present day, including its changing scale and the changing demands of tourists. Reference should be made to the Butler life-cycle model. The reasons for these changes in relation to: • Economic conditions • Socio-cultural values and attitudes • Technological developments, including transport • Logistical nature of the holiday product, such as package tourism • Political influences, including political instability • Unforeseen natural events • Role of the media
Socio-cultural issues and management in tourism spaces	The factors influencing the level of socio-cultural impact: • Scale of tourism/number of tourists • Size/population of the destination • Level of interaction between tourists and local communities • Similarity between the culture of the home and destination countries • Attitudes of tourists towards local communities The nature of the socio-cultural impacts and the associated management strategies: Positive impacts: • Community benefits through social development projects in health and education • Local cultural promotion and preservation in an increasingly globalised world Negative impacts: • Destruction of traditional local socio-cultural patterns including social demographic changes and cultural tensions between tourists and local communities • Commodification of culture as a tourist resource • Development of antisocial and illegal activities including crime, prostitution and sex tourism

Main themes	Specified content
Economic issues and management in tourism spaces	The nature of the economic impacts and the associated management strategies: Positive impacts: • Tourism and development within countries at different levels of development through income generation and employment • Redistribution of wealth spatially within a country including the roles of urban tourism in regenerating areas of urban deprivation and of rural tourism Negative impacts: • Problems of seasonal tourism • Lack of political and economic ownership within the tourism industry in some countries • Uneven spatial distribution of tourism investment and growth, including the core-periphery model, the development of enclaves and the decline of tourist areas over time
Environmental issues and management in tourism spaces	The factors influencing the level of environmental impact: • Scale of tourism/number of tourists • Nature of the tourist activity • Fragility of the local environment or ecosystem • Local community perceptions of the value of the environment • Management strategies in place The nature of the environmental impacts and associated management strategies: Negative impacts • Pressures on habitats and on rural and urban landscapes • Pressures on ecosystem environments with a particular focus on the impact on management of tourism in coral reef ecosystems • Pressures on protected and wilderness environments • Pollution, including visual pollution of the landscape, noise pollution, air and water pollution Positive impacts: • Locally, such as conservation, preservation of monuments and zoning strategies • Nationally, including the role of National Parks • Globally, including the role of international co-operation and legislative designations • The role of sustainable tourism and ecotourism

Appendix 1: Grade descriptors

The following grade descriptors indicate the level of attainment characteristic of the middle of the given grade band. They give a general indication of the required standard at each specified grade. The descriptors should be interpreted in relation to the content outlined in the syllabus; they are not designed to define that content.

The grade awarded will depend in practice upon the extent to which the candidate has met the assessment objectives overall. Shortcomings in some aspects of the examination may be balanced by better performances in others.

Distinction (D2)

Candidates demonstrate wide-ranging, detailed and accurate knowledge of places and environments identified in the syllabus. They have clear and critical understanding of how a comprehensive range of geographical concepts, principles and processes apply to geographical issues, environments and global concerns. They apply this knowledge and understanding effectively to analyse familiar and unfamiliar contexts. They support their responses with the use of detailed examples and case studies at different scales, where appropriate.

Candidates show an ability to identify and investigate appropriate questions clearly and perceptively. They interpret maps, photographs, graphs, diagrams and tables proficiently, demonstrating skills of analysis and synthesis. Written communication is clear, concise and organised effectively, using geographical terminology accurately.

Candidates show clear understanding of the often complex links between factors, processes and outcomes. They recognise that outcomes may vary spatially, temporally and between different groups of people. They evaluate and assess strategies to address issues and global concerns with insight, making well-reasoned judgments based on evidence, to present their conclusions.

Merit (M2)

Candidates demonstrate a sound and substantial knowledge of places and environments identified in the syllabus. They have a clear understanding of how a range of geographical concepts, principles and processes apply to geographical issues, environments and global concerns. They apply this knowledge and understanding soundly to familiar and unfamiliar contexts. They support their responses with relevant examples and case studies, some at different scales.

Candidates show an ability to identify and investigate appropriate questions. They can interpret maps, photographs, graphs, diagrams and tables competently. Written communication is clear and organised and uses geographical terminology appropriately.

Candidates show understanding of many of the often complex links between factors, processes and outcomes and recognise the diversity of possible outcomes. They are able to evaluate and assess strategies to address issues and global concerns in a balanced manner and present appropriate supported conclusions.

Pass (P2)

Candidates demonstrate some knowledge of places and environments identified in the syllabus. They show some understanding of how a number of geographical concepts, principles and processes apply to geographical issues, environments and global concerns. They show some ability to apply this knowledge and understanding to familiar and unfamiliar contexts. They support their responses with some relevant examples and case studies which may lack detail and an appreciation of scale.

Candidates show some ability to identify and investigate questions. They offer partial interpretation of maps, photographs, graphs, diagrams and tables. Written communication is mostly clear but may lack organisation. There is largely accurate use of geographical terminology with some generality of expression.

Candidates show some understanding of the links between factors, processes and outcomes. They are able to evaluate and assess strategies to address issues and global concerns but these assessments may lack depth or not cover all the main relevant areas. They are able to draw simple supported conclusions.

Appendix 2: Additional information

Guided learning hours

It is intended that each Principal Subject should be delivered through 380 hours of guided learning. This is a notional measure of the substance of the qualification. It includes an estimate of the time that might be allocated to direct teaching or instruction, together with other structured learning time such as directed assignments or supported individual study and practice. It excludes learner-initiated private study.

Certification title

This qualification is shown on a certificate as:

- Cambridge International Level 3 Pre-U Certificate in **Geography (Principal)**

The qualification is accredited at Level 3 of the UK National Qualifications Framework and provides a solid grounding for candidates to pursue a variety of progression pathways.

Entries

For entry information please refer to the *UK E3 booklet*.

Grading and reporting

The Cambridge International Level 3 Pre-U Certificates in the Principal Subjects are qualifications in their own right. They are acceptable as an alternative to A Level (or other Level 3 qualifications) for entry into higher education or employment. Each individual Principal Subject is graded separately on a scale of nine grades: Distinction 1, Distinction 2, Distinction 3, Merit 1, Merit 2, Merit 3, Pass 1, Pass 2, Pass 3.

Subjects can also be combined with two core components to meet the requirements for eligibility for the Cambridge International Level 3 Pre-U Diploma. More details about the Diploma requirements and the core components can be found in a separate Diploma syllabus. The results of the individual Principal Subjects are reported on a separate certificate to the Diploma result.

Classification code for UK Centres

In the UK, every syllabus is assigned to a national classification code that indicates the subject area to which it belongs. UK Centres should be aware that candidates who enter for more than one qualification with the same classification code will have only one grade (the highest) counted for the purpose of the School and College Performance Tables.

The classification code for this syllabus is **3910**.

Overlap with other qualifications

There is no overlap between this syllabus and any others in the Cambridge Pre-U suite, apart from Global Perspectives. Candidates could build on certain topics studied in Geography to support their work for Global Perspectives, which forms part of the Pre-U Diploma.

Language

This syllabus and the associated assessment materials are currently available in English only.

Procedures and regulations

This syllabus complies with the *CIE Code of Practice* and *The Statutory Regulation of External Qualifications 2004*.

Further information about the administration of Cambridge Pre-U qualifications can be found in the *CIE Handbook for UK Centres* available from CIE Publications or by contacting **international@cie.org.uk**.

Spiritual, moral, ethical, social and cultural issues

Through worldwide examples studied in the topic areas, candidates' awareness of these issues may be enhanced. They can gain an appreciation of the variation in attitudes and values across different parts of the world, as well as reflecting on and developing their own attitudes and values with regard to spiritual, moral, ethical, social and cultural issues.

Examples of topics under which such issues can be explored include:

- The Geography of Crime, Component 1, including the study of international terrorism, the illegal drug trade, illegal immigration and racial harassment.
- Health and Disease, Component 1, including the study of the spread of HIV/AIDS.
- The Provision of Food, Component 3, including ethical issues such as exploitation of animals and the introduction of genetically modified crops.

Legislative and economic issues

The syllabus contributes to an understanding of legislative and economic issues and how these may vary in different locations in the world. Topics with a management element given in the syllabus may give particular opportunities to explore legislative and economic issues. This is the case for all topics for Component 1, Geographical Issues, plus those topics where a management element is stated for Component 2, Global Environments, and for Component 3, Global Themes.

Examples of specific topics under which such issues may arise include:

- Hydrological Hazards, Component 1, including mitigation strategies for flooding.
- Trade, Debt and Aid, Component 3, including foreign direct investment (FDI).

Sustainable development, environmental education, health and safety considerations, European dimension and international agreements

The syllabus, with its emphasis on the physical environment and the relationship of people with their environment, provides considerable support for the more general development of environmental education and raises awareness of the issue of sustainable development.

Examples where sustainable development can be explored include:

- Tropical Environments, Component 2, including strategies for sustainability in relation to tropical rainforest and responsible tourism.
- Temperate Grassland and Forest Environments, Component 2, including Countryside Stewardship Schemes in the UK.

Investigative work, carried out either in support of syllabus topics or in fieldwork in preparation for the Research Topic, provides opportunities to raise awareness of health and safety issues through risk assessment.

CIE has developed this syllabus in line with UK, European and international legislation and agreements. This syllabus provides opportunities to consider both the European dimension and the international dimension, especially through case studies which candidates pursue in support of syllabus topics.

Avoidance of bias

CIE has taken great care in the preparation of this syllabus and assessment materials to avoid bias of any kind.

Key Skills

Through work in class, in individual learning time, including preparation for external assessment, and through any investigation work or fieldwork undertaken, either in preparation for Papers 1, 2 and 3 or 4, candidates may provide evidence for Key Skills at Level 3. This syllabus provides opportunities for the development of evidence for the Key Skills of: *Communication*, *Application of Number*, *Information Technology*, *Working with Others*, *Improving Own Learning and Performance* and *Problem Solving* at Levels 2 and/or 3. However, the extent to which this evidence fulfils the Key Skills criteria at these levels will be totally dependent on the style of teaching and learning adopted for each section.

The Key Skills awarding bodies and the regulatory authorities have produced a suite of example portfolios that will help to give candidates and practitioners a clear understanding of the requirements for the Key Skills portfolio. These are available on the QCDA Key Skills website (**www.qcda.org.uk/keyskills**). Full details of the requirements for certification can be obtained from the awarding bodies that are approved to offer Key Skills. For further information about Key Skills assessment, please see the document *The Key Skills Qualifications Standards and Guidance* published by the Qualifications and Curriculum Authority 2004 (ISBN 1 85838 548 2).

The following table indicates where opportunities may exist for at least some coverage of the various Key Skills criteria at Levels 2 and/or 3 for each section.

Component	Communication	Application of Number	IT	Working with Others	Improving own Learning and Performance	Problem Solving
1	✓	✓	✓	✓	✓	
2	✓		✓	✓	✓	
3	✓		✓	✓	✓	
4	✓	✓	✓		✓	✓

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