

SYLLABUS

**Cambridge O Level
Geography**

2217

For examination in June and November 2016

Changes to syllabus for 2016

The syllabus content has been revised throughout to make the syllabus more contemporary including more material on 21st-century/global issues including globalisation, development and disparities and climate change.

The 'Curriculum content' and 'Amplification for ...' sections have been merged into the new 'Syllabus content' section including each learning objective, further guidance and case studies where applicable. Please see Section 5.

The syllabus theme of 'Geographical Skills and Investigations' is now included in a new Section 6: Description of components.

Minor alterations to the assessment have been shown by black vertical lines on either side of the text.

You are advised to read the whole syllabus carefully before planning your teaching programme.

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1. Introduction

1.1 Why choose Cambridge?

Recognition

Cambridge International Examinations is the world's largest provider of international education programmes and qualifications for learners aged 5 to 19. We are part of Cambridge Assessment, a department of the University of Cambridge, trusted for excellence in education. Our qualifications are recognised by the world's universities and employers.

Cambridge O Level is internationally recognised by schools, universities and employers as equivalent in demand to Cambridge IGCSE® (International General Certificate of Secondary Education). Learn more at www.cie.org.uk/recognition

Excellence in education

Our mission is to deliver world-class international education through the provision of high-quality curricula, assessment and services.

More than 9000 schools are part of our Cambridge learning community. We support teachers in over 160 countries who offer their learners an international education based on our curricula and leading to our qualifications. Every year, thousands of learners use Cambridge qualifications to gain places at universities around the world.

Our syllabuses are reviewed and updated regularly so that they reflect the latest thinking of international experts and practitioners and take account of the different national contexts in which they are taught.

Cambridge programmes and qualifications are designed to support learners in becoming:

- **confident** in working with information and ideas – their own and those of others
- **responsible** for themselves, responsive to and respectful of others
- **reflective** as learners, developing their ability to learn
- **innovative** and equipped for new and future challenges
- **engaged** intellectually and socially, ready to make a difference.

Support for teachers

A wide range of materials and resources is available to support teachers and learners in Cambridge schools. Resources suit a variety of teaching methods in different international contexts. Through subject discussion forums and training, teachers can access the expert advice they need for teaching our qualifications. More details can be found in Section 2 of this syllabus and at www.cie.org.uk/teachers

Support for exams officers

Exams officers can trust in reliable, efficient administration of exams entries and excellent personal support from our customer services. Learn more at www.cie.org.uk/examsofficers

Not-for-profit, part of the University of Cambridge

We are a not-for-profit organisation where the needs of the teachers and learners are at the core of what we do. We continually invest in educational research and respond to feedback from our customers in order to improve our qualifications, products and services.

Our systems for managing the provision of international qualifications and education programmes for learners aged 5 to 19 are certified as meeting the internationally recognised standard for quality management, ISO 9001:2008. Learn more at www.cie.org.uk/ISO9001

1.2 Why choose Cambridge O Level?

Cambridge O Levels have been designed for an international audience and are sensitive to the needs of different countries. These qualifications are designed for learners whose first language may not be English and this is acknowledged throughout the examination process. The Cambridge O Level syllabus also allows teaching to be placed in a localised context, making it relevant in varying regions.

Our aim is to balance knowledge, understanding and skills in our programmes and qualifications to enable candidates to become effective learners and to provide a solid foundation for their continuing educational journey.

Through our professional development courses and our support materials for Cambridge O Levels, we provide the tools to enable teachers to prepare learners to the best of their ability and work with us in the pursuit of excellence in education.

Cambridge O Levels are considered to be an excellent preparation for Cambridge International AS and A Levels, the Cambridge AICE (Advanced International Certificate of Education) Group Award, Cambridge Pre-U, and other education programmes, such as the US Advanced Placement program and the International Baccalaureate Diploma programme. Learn more about Cambridge O Levels at www.cie.org.uk/cambridgesecondary2

Guided learning hours

Cambridge O Level syllabuses are designed on the assumption that learners have about 130 guided learning hours per subject over the duration of the course, but this is for guidance only. The number of hours required to gain the qualification may vary according to local curricular practice and the learners' prior experience of the subject.

1.3 Why choose Cambridge O Level Geography?

Cambridge O Levels are established qualifications that keep pace with educational developments and trends. The Cambridge O Level curriculum places emphasis on broad and balanced study across a wide range of subject areas. The curriculum is structured so that candidates attain both practical skills and theoretical knowledge.

Cambridge O Level Geography is recognised by universities and employers throughout the world as proof of geographical knowledge and understanding. Successful Cambridge O Level Geography candidates develop lifelong skills, including:

- An understanding of the processes which affect physical and human environments.
- A understanding of location on a local, regional and global scale.

- The ability to use and understand geographical data and information.
- An understanding of how communities around the world are affected and constrained by different environments.

Prior learning

We recommend that candidates who are beginning this course should have previously studied Geography.

Progression

Cambridge O Level Certificates are general qualifications that enable candidates to progress either directly to employment, or to proceed to further qualifications.

Candidates who are awarded grades C to A* in Cambridge O Level Geography are well prepared to follow courses leading to Cambridge International AS and A Level Geography, or the equivalent.

1.4 How can I find out more?

If you are already a Cambridge school

You can make entries for this qualification through your usual channels. If you have any questions, please contact us at **info@cie.org.uk**

If you are not yet a Cambridge school

Learn about the benefits of becoming a Cambridge school at **www.cie.org.uk/startcambridge**. Email us at **info@cie.org.uk** to find out how your organisation can register to become a Cambridge school.

2. Teacher support

2.1 Support materials

Cambridge syllabuses, past question papers and examiner reports to cover the last examination series are on the *Syllabus and Support Materials* DVD, which we send to all Cambridge schools.

You can also go to our public website at **www.cie.org.uk/olevel** to download current and future syllabuses together with specimen papers or past question papers and examiner reports from one series.

For teachers at registered Cambridge schools a range of additional support materials for specific syllabuses is available online from Teacher Support, our secure online support for Cambridge teachers. Go to **http://teachers.cie.org.uk** (username and password required).

2.2 Resource lists

We work with publishers providing a range of resources for our syllabuses including textbooks, websites, CDs, etc. Any endorsed, recommended and suggested resources are listed on both our public website and on Teacher Support.

The resource lists can be filtered to show all resources or just those which are endorsed or recommended by Cambridge. Resources endorsed by Cambridge go through a detailed quality assurance process and are written to align closely with the Cambridge syllabus they support.

2.3 Training

We offer a range of support activities for teachers to ensure they have the relevant knowledge and skills to deliver our qualifications. See **www.cie.org.uk/events** for further information.

3. Assessment at a glance

All candidates take both Paper 1 and Paper 2

All candidates take:	Weighting
Paper 1 Geographical Themes Candidates answer three questions, each worth 25 marks. The paper has three sections and each section will be based on Theme 1, 2 or 3. Candidates must answer one question from each section. Section A: Theme 1: Population and settlement Section B: Theme 2: The natural environment Section C: Theme 3: Economic development Questions are structured with gradients of difficulty, may be resource-based, and involve problem-solving and free-response writing. 75 marks	50%
and:	
Paper 2 Geographical Skills and Investigations The paper has two sections. Candidates answer all the questions in Section A and one question from two in Section B. Section A: Geographical skills (60 marks) Candidates answer all the questions. The paper is based on the interpretation and analysis of geographical information including the use of maps. The questions will not require specific information about places but one question will require use of a 1:25 000 or 1:50 000 map with a key. Questions will test the application, analysis and interpretation of a variety of geographical information and will involve decision making and the application of graphical and other techniques. Section B: Geographical investigations (30 marks) Candidates answer one question from a choice of two. The questions involve an appreciation of a range of techniques used in fieldwork studies. The fieldwork scenarios for the two questions will be taken from different aspects of the syllabus content (see Section 5). Questions will test the methodology of data collection enquiry skills, the processing, presentation and analysis of data and will involve decision making and hypothesis testing. Questions are structured with gradients of difficulty, are resource-based and involve problem-solving and free-response writing. 90 marks	50%

Paper 1 and Paper 2 are each answered on a combined question paper and answer booklet, where candidates answer in the spaces provided.

Centres should note that in examinations:

- candidates are allowed to use calculators
- candidates are **not** allowed to use atlases
- all measurements on the written papers will be metric
- the 24-hour clock only will be quoted.

Availability

This syllabus is examined in the June and November examination series.

This syllabus is available to private candidates.

Detailed timetables are available from **www.cie.org.uk/examsOfficers**

Cambridge O levels are available to Centres in Administrative Zones 3, 4 and 5. Centres in Administrative Zones 1, 2 or 6 wishing to enter candidates for Cambridge O Level examinations should contact Cambridge Customer Services.

Combining this with other syllabuses

Candidates can combine this syllabus in an examination series with any other Cambridge syllabus, except:

- syllabuses with the same title at the same level
- 0460 Cambridge IGCSE Geography
- 2230 Cambridge O Level Geography for Brunei

Please note that Cambridge O Level, Cambridge IGCSE and Cambridge International Level 1/Level 2 Certificate syllabuses are at the same level.

4. Syllabus aims and assessment objectives

4.1 Syllabus aims

The syllabus aims are to encourage candidates to develop:

- an understanding of location on a local, regional and global scale
- an awareness of the characteristics, distribution and processes affecting contrasting physical and human environments
- an understanding of the ways in which people interact with each other and with their environment
- an awareness of the contrasting opportunities and constraints presented by different environments
- an appreciation of, and concern for, the environment
- an appreciation of the earth including its people, places, landscapes, natural processes and phenomena.

4.2 Assessment objectives

The assessment objectives (AOs) in Geography are:

AO1 Knowledge with understanding

AO2 Skills and analysis

AO3 Judgement and decision making

AO1 Knowledge with understanding

Candidates should be able to demonstrate knowledge and understanding of:

1. the wide range of processes, including human actions, contributing to the development of
 - (a) physical, economic and social environments and their effects on the landscape
 - (b) spatial patterns and interactions which are important within these environments
2. the relationships between human activity and the environment
3. the importance of scale (whether local, regional or global)
4. the changes which occur through time in places, landscapes and spatial distribution.

AO2 Skills and analysis

Candidates should be able to:

5. interpret and analyse geographical data
6. use and apply geographical knowledge and understanding to maps and in numerical, diagrammatic, pictorial, photographic and graphical form
7. use geographical data to recognise patterns in such data and to deduce relationships
8. select and show understanding of techniques for observing and collecting data
9. select and use techniques for organising and presenting data.

AO3 Judgement and decision making

Through their geographical training candidates should be able to:

10. reason and make judgements and decisions, including evaluation and conclusions, which demonstrate, where appropriate:
 - (a) an appreciation of the attitudes, values and beliefs of others in issues which have a geographical dimension
 - (b) an awareness of the contrasting opportunities and constraints of people living in different places and under different physical and human conditions
 - (c) a willingness to review their own attitudes in the light of the views of others and new knowledge acquired.
11. make judgements and decisions and recognise how these are made within a geographical context as affected and constrained by:
 - (a) the physical and human contexts in which decisions are made
 - (b) the values and perceptions of groups or individuals
 - (c) the choices available to decision makers
 - (d) the increasing level of global interdependence and the need for sustainable development.

4.3 Relationship between assessment objectives and components

The approximate weightings allocated to each of the assessment objectives are summarised in the table below.

Assessment objective	Paper 1 Geographical Themes	Paper 2 Geographical Skills and Investigations	Weighting of AO in overall qualification
AO1 Knowledge with understanding	24%	6.5%	30.5%
AO2 Skills and analysis	16%	37%	53%
AO3 Judgement and decision making	10%	6.5%	16.5%
Weighting of paper in overall qualification	50%	50%	

5. Syllabus content

5.1 Syllabus themes

The syllabus content is divided into three themes which have been designed to develop an understanding of both the natural and human environment.

1. Population and settlement
2. The natural environment
3. Economic development

5.2 Resources

Both written papers include questions which are resource based. The resources may be photographic, map extracts, satellite images, drawings, diagrams, graphs, text extracts, statistics and tables of data.

Resource materials come from various world areas in order to match the aims of an international syllabus and examination. Candidates may be dealing with world areas with which they are not familiar. The resources used in questions **do not** require specific regional knowledge and are designed to prompt candidates to use general principles they have studied.

As a Cambridge International O Level, the units used in all resources and examinations will be metres and kilometres for height and distance, and degrees centigrade for temperature.

5.3 Case studies

The syllabus gives teachers the opportunity to select their own case studies to illustrate the content. Teachers should select appropriate examples where specified.

For example in Topic 1.6, a case study is required of an urban area. This can be in any part of the world. The case study should illustrate the content listed (i.e. land-use, problems of urban areas, their causes and possible solutions). This could be done through the study of one urban area. Alternatively, teachers can use two or more case studies per topic (i.e. settlement X could be used for a case study of land uses and settlement Y for a case study of urban problems).

The same case study can be used to illustrate more than one topic as long as it gives candidates the opportunity to study an example of appropriate content.

5.4 Syllabus content

The following grids identify content which should be covered within the three themes. The content listed is meant to be exhaustive except where ‘including’ is used. Where ‘including’ is used, everything listed should be studied, however, this list is not exhaustive.

For example in Topic 2.3, the only coastal landforms which need to be studied are those listed. However, in Topic 2.5, where ‘including’ is used, other climatic characteristics could be studied in addition to those listed.

5.5 Theme 1: Population and settlement

Please read Section 5.3, 'Case studies' to understand the options when planning case studies. Please also read Section 5.4, 'Syllabus content', and note whether the word 'including' is used.

Topic:	Candidates should be able to:	Further guidance:
1.1 Population dynamics	<ul style="list-style-type: none"> Describe and give reasons for the rapid increase in the world's population 	
	<ul style="list-style-type: none"> Show an understanding of over-population and under-population 	Causes and consequences of over-population and under-population
	<ul style="list-style-type: none"> Understand the main causes of a change in population size 	How birth rate, death rate and migration contribute to the population of a country increasing or declining
	<ul style="list-style-type: none"> Give reasons for contrasting rates of natural population change 	Impacts of social, economic and other factors (including government policies, HIV/AIDS) on birth and death rates
	<ul style="list-style-type: none"> Describe and evaluate population policies 	
Case studies required in 1.1	<ul style="list-style-type: none"> A country which is over-populated A country which is under-populated A country with a high rate of natural population growth A country with a low rate of population growth (or population decline) 	
1.2 Migration	<ul style="list-style-type: none"> Explain and give reasons for population migration 	Internal movements such as rural-urban migration, as well as international migrations, both voluntary and involuntary
	<ul style="list-style-type: none"> Demonstrate an understanding of the impacts of migration 	Positive and negative impacts should be considered, on the destination and origin of the migrants, and the migrants themselves
Case study required in 1.2	<ul style="list-style-type: none"> An international migration 	
1.3 Population structure	<ul style="list-style-type: none"> Identify and give reasons for and implications of different types of population structure 	Age/sex pyramids of countries at different levels of economic development
Case study required in 1.3	<ul style="list-style-type: none"> A country with a high dependent population 	

Topic	Candidates should be able to:	Further guidance:
1.4 Population density and distribution	<ul style="list-style-type: none"> Describe the factors influencing the density and distribution of population 	Physical, economic, social and political factors
<i>Case studies required in 1.4</i>	<ul style="list-style-type: none"> A densely populated country or area (at any scale from local to regional) A sparsely populated country or area (at any scale from local to regional) 	
1.5 Settlements and service provision	<ul style="list-style-type: none"> Explain the patterns of settlement 	Dispersed, linear, and nucleated settlement patterns
	<ul style="list-style-type: none"> Describe and explain the factors which may influence the sites, growth and functions of settlements 	Influence of physical factors (including relief, soil, water supply) and other factors (including accessibility, resources)
	<ul style="list-style-type: none"> Give reasons for the hierarchy of settlements and services 	High-, middle- and low-order settlements and services. Sphere of influence and threshold population
<i>Case study required in 1.5</i>	<ul style="list-style-type: none"> Settlement and service provision in an area 	
1.6 Urban settlements	<ul style="list-style-type: none"> Describe and give reasons for the characteristics of, and changes in, land use in urban areas 	Land use zones including the Central Business District (CBD), residential areas, industrial areas and the rural-urban fringe of urban areas in countries at different levels of economic development
		The effect of change in land use and rapid urban growth in an urban area including the effects of urban sprawl
<i>Case study required in 1.6</i>	<ul style="list-style-type: none"> Explain the problems of urban areas, their causes and possible solutions 	Different types of pollution (air, noise, water, visual), inequality, housing issues, traffic congestion and conflicts over land use change
	<ul style="list-style-type: none"> An urban area (including changing land use and urban sprawl) 	

Topic	Candidates should be able to:	Further guidance:
1.7 Urbanisation	<ul style="list-style-type: none"> <li data-bbox="530 323 926 390">• Identify and suggest reasons for rapid urban growth <li data-bbox="530 399 926 570">• Describe the impacts of urban growth on both rural and urban areas, along with possible solutions to reduce the negative impacts 	<p>Reference should be made to physical, economic and social factors which result in rural depopulation and the movement of people to major cities</p> <p>The effects of urbanisation on the people and natural environment. The characteristics of squatter settlements</p> <p>Strategies to reduce the negative impacts of urbanisation</p>
<i>Case study required in 1.7</i>	<ul style="list-style-type: none"> <li data-bbox="530 795 1355 862">• A rapidly growing urban area in a developing country and migration to it 	

5.6 Theme 2: The natural environment

Please read Section 5.3, 'Case studies' to understand the options when planning case studies. Please also read Section 5.4, 'Syllabus content', and note whether the word 'including' is used.

Topic:	Candidates should be able to:	Further guidance:
2.1 Earthquakes and volcanoes	<ul style="list-style-type: none"> Describe the main types and features of volcanoes and earthquakes 	Types of volcanoes (including strato-volcanoes [composite cone] and shield volcano) Features of volcanoes (including crater, vent, magma chamber) Features of earthquakes (including epicentre, focus, intensity)
	<ul style="list-style-type: none"> Describe and explain the distribution of earthquakes and volcanoes 	The global pattern of plates, their structure, and an awareness of plate movements and their effects – constructive/divergent, destructive/convergent and conservative plate boundaries
	<ul style="list-style-type: none"> Describe the causes of earthquakes and volcanic eruptions and their effects on people and the environment 	
	<ul style="list-style-type: none"> Demonstrate an understanding that volcanoes present hazards and offer opportunities for people 	
	<ul style="list-style-type: none"> Explain what can be done to reduce the impacts of earthquakes and volcanoes 	
<i>Case studies required in 2.1</i>	<ul style="list-style-type: none"> An earthquake A volcano 	

Topic	Candidates should be able to:	Further guidance:
2.2 Rivers	<ul style="list-style-type: none"> • Explain the main hydrological characteristics and processes which operate within rivers and drainage basins 	<p>Characteristics of rivers (including width, depth, speed of flow) and drainage basins (including watershed, tributary, confluence)</p> <p>Processes which operate in a drainage basin (including interception, infiltration, throughflow, groundwater flow, evaporation, overland flow)</p>
	<ul style="list-style-type: none"> • Demonstrate an understanding of the work of a river in eroding, transporting and depositing 	
	<ul style="list-style-type: none"> • Describe and explain the formation of the landforms associated with these processes 	<p>Forms of river valleys – long profile and shape in cross section, waterfalls, potholes, meanders, oxbow lakes, deltas, levées and flood plains</p>
	<ul style="list-style-type: none"> • Demonstrate an understanding that rivers present hazards and offer opportunities for people 	<p>Causes of hazards including flooding and river erosion</p> <p>Opportunities of living on a flood plain, a delta or near a river</p>
	<ul style="list-style-type: none"> • Explain what can be done to manage the impacts of river flooding 	
<i>Case study required in 2.2</i>	<ul style="list-style-type: none"> • The opportunities presented by a river, the hazards associated with it and their management 	

Topic	Candidates should be able to:	Further guidance:
2.3 Coasts	<ul style="list-style-type: none"> Demonstrate an understanding of the work of the sea and wind in eroding, transporting and depositing 	
	<ul style="list-style-type: none"> Describe and explain the formation of the landforms associated with these processes 	Cliffs, wave-cut platforms, caves, arches, stacks, bay and headland coastlines, beaches, spits, and coastal sand dunes
	<ul style="list-style-type: none"> Describe coral reefs and mangrove swamps and the conditions required for their development 	
	<ul style="list-style-type: none"> Demonstrate an understanding that coasts present hazards and offer opportunities for people 	Hazards including coastal erosion and tropical storms
	<ul style="list-style-type: none"> Explain what can be done to manage the impacts of coastal erosion 	
<i>Case study required in 2.3</i>	<ul style="list-style-type: none"> The opportunities presented by an area of coastline, the hazards associated with it and their management 	
2.4 Weather	<ul style="list-style-type: none"> Describe how weather data is collected 	<p>Describe and explain the characteristics, siting and use made of a Stevenson screen</p> <p>Rain gauge, maximum-minimum thermometer, wet-and-dry bulb thermometer (hygrometer), sunshine recorder, barometer, anemometer and wind vane, along with simple digital instruments which can be used for weather observations; observations of types and amounts of cloud</p>
	<ul style="list-style-type: none"> Make calculations using information from weather instruments 	
	<ul style="list-style-type: none"> Use and interpret graphs and other diagrams showing weather and climate data 	

Topic	Candidates should be able to:	Further guidance:
2.5 Climate and natural vegetation	<ul style="list-style-type: none"> • Describe and explain the characteristics of two climates: <ul style="list-style-type: none"> ◦ equatorial ◦ hot desert 	<p>Climate characteristics (including temperature [mean temperature of the hottest month, mean temperature of the coolest month, annual range]; and precipitation [the amount and seasonal distribution])</p> <p>Factors influencing the characteristics of these climates (including latitude, pressure systems, winds, distance from the sea, altitude and ocean currents)</p> <p>Climatic graphs showing the main characteristics of temperature and rainfall of the two climates</p>
	<ul style="list-style-type: none"> • Describe and explain the characteristics of tropical rainforest and hot desert ecosystems 	<p>The relationship in each ecosystem of natural vegetation, soil, wildlife and climate</p>
	<ul style="list-style-type: none"> • Describe the causes and effects of deforestation of tropical rainforest 	<p>Effects on the natural environment (both locally and globally) along with effects on people</p>
<i>Case studies required in 2.5</i>	<ul style="list-style-type: none"> • An area of tropical rainforest • An area of hot desert 	

5.7 Theme 3: Economic development

Please read Section 5.3, 'Case studies' to understand the options when planning case studies. Please also read Section 5.4, 'Syllabus content', and note whether the word 'including' is used.

Topic:	Candidates should be able to:	Further guidance:
3.1 Development	<ul style="list-style-type: none"> • Use a variety of indicators to assess the level of development of a country 	Indicators of development (including GNP per capita, literacy, life expectancy and composite indices, e.g. Human Development Index (HDI))
	<ul style="list-style-type: none"> • Identify and explain inequalities between and within countries 	
	<ul style="list-style-type: none"> • Classify production into different sectors and give illustrations of each 	Primary, secondary, tertiary and quaternary sectors
	<ul style="list-style-type: none"> • Describe and explain how the proportions employed in each sector vary according to the level of development 	Use of indicators of development and employment structure to compare countries at different levels of economic development and over time
	<ul style="list-style-type: none"> • Describe and explain the process of globalisation, and consider its impacts 	<p>The role of technology and transnational corporations in globalisation along with economic factors which give rise to globalisation</p> <p>Impacts at a local, national and global scale</p>
<i>Case study required in 3.1</i>	<ul style="list-style-type: none"> • A transnational corporation and its global links 	

Topic:	Candidates should be able to:	Further guidance:
3.2 Food production	<ul style="list-style-type: none"> • Describe and explain the main features of an agricultural system: inputs, processes and outputs 	<p>Farming types: commercial and subsistence; arable, pastoral and mixed; intensive and extensive</p> <p>The influence of natural and human inputs on agricultural land use. Inputs including natural inputs (relief, climate and soil) and human inputs (economic and social). Their combined influences on the scale of production, methods of organisation and the products of agricultural systems</p>
	<ul style="list-style-type: none"> • Recognise the causes and effects of food shortages and describe possible solutions to this problem 	<p>Natural problems which cause food shortages (including drought, floods, tropical storms, pests) along with economic and political factors (including low capital investment, poor distribution/transport difficulties, wars)</p> <p>The negative effects of food shortages, but also the effects of food shortages in encouraging food aid and measures to increase output</p>
<i>Case studies required in 3.2</i>	<ul style="list-style-type: none"> • A farm or agricultural system • A country or region suffering from food shortages 	

Topic:	Candidates should be able to:	Further guidance:
3.3 Industry	<ul style="list-style-type: none"> • Demonstrate an understanding of an industrial system: inputs, processes and outputs (products and waste) 	Industry types: manufacturing, processing, assembly and high technology industry
	<ul style="list-style-type: none"> • Describe and explain the factors influencing the distribution and location of factories and industrial zones 	<p>The influence of factors including land, labour, raw materials and fuel and power, transport, markets and political factors</p> <p>Their combined influences on the location, scale of production, methods of organisation and the products of the system</p> <p>Industrial zones and/or factories with respect to locational and siting factors</p>
<i>Case study required in 3.3</i>	<ul style="list-style-type: none"> • An industrial zone or factory 	
3.4 Tourism	<ul style="list-style-type: none"> • Describe and explain the growth of tourism in relation to the main attractions of the physical and human landscape • Evaluate the benefits and disadvantages of tourism to receiving areas • Demonstrate an understanding that careful management of tourism is required in order for it to be sustainable 	
<i>Case study required in 3.4</i>	<ul style="list-style-type: none"> • An area where tourism is important 	

Topic:	Candidates should be able to:	Further guidance:
3.5 Energy	<ul style="list-style-type: none"> Describe the importance of non-renewable fossil fuels, renewable energy supplies, nuclear power and fuelwood; globally and in different countries at different levels of development 	Non-renewable fossil fuels including coal, oil and natural gas. Renewable energy supplies including geothermal, wind, HEP, wave and tidal power, solar power and biofuels
	<ul style="list-style-type: none"> Evaluate the benefits and disadvantages of nuclear power and renewable energy sources 	
<i>Case study required in 3.5</i>	<ul style="list-style-type: none"> Energy supply in a country or area 	
3.6 Water	<ul style="list-style-type: none"> Describe methods of water supply and the proportions of water used for agriculture, domestic and industrial purposes in countries at different levels of economic development 	Methods of water supply (including reservoirs/dams, wells and bore holes, desalination)
	<ul style="list-style-type: none"> Explain why there are water shortages in some areas and demonstrate that careful management is required to ensure future supplies 	The impact of lack of access to clean water on local people and the potential for economic development
<i>Case study required in 3.6</i>	<ul style="list-style-type: none"> Water supply in a country or area 	
3.7 Environmental risks of economic development	<ul style="list-style-type: none"> Describe how economic activities may pose threats to the natural environment, locally and globally 	Threats to the natural environment including soil erosion, desertification, enhanced global warming and pollution (water, air, noise, visual)
	<ul style="list-style-type: none"> Demonstrate the need for sustainable development and management 	
	<ul style="list-style-type: none"> Understand the importance of resource conservation 	
<i>Case study required in 3.7</i>	<ul style="list-style-type: none"> An area where economic development is taking place causing the environment to be at risk 	

6. Description of components

6.1 Paper 1: Geographical Themes

Some questions on the paper are resource based. The resources are for interpretation and analysis in answering a question or part questions. Candidates will be expected to know the location of the continents. All of the other information required to answer these part questions is within the resource itself. No previous knowledge is needed of the particular illustration presented. What is required is that candidates use the data provided to illustrate their understanding of the particular concept being assessed.

Questions are structured with gradients of difficulty and combine resource-based tasks and free-response writing requiring place-specific information.

The resources may be:

- photographs
- map extracts
- sketch maps
- drawings
- diagrams
- graphs
- text extracts
- statistics and tables of data
- satellite images
- use of GIS

Resource materials are selected from various world areas and, as a result, candidates may be dealing with world areas with which they are not familiar. The resources **do not** require specific regional knowledge. This should be stressed to the candidates as they may be influenced in their question selection by the nature/location of the resource included.

Candidates should refer to appropriate case studies to illustrate the individual themes.

A case study may be selected because it relates to:

- the local school area
- a contemporary development such as the occurrence of a natural hazard in part of the world
- a particular illustration with which the teacher is familiar
- a presentation in a newspaper, web pages, on video, film, a well documented illustration in a textbook, etc.

A case study may also be based on an investigation undertaken as part of preparation for Paper 2 Section B: Geographical Investigations. Specific questions based on fieldwork will not be set in Paper 1, but candidates may use this information to illustrate answers on this paper.

Case studies should provide candidates with details of a particular illustration which can be profitably used in answers to certain questions on Paper 1. Some part questions on the paper require that reference is made to information from specific case studies made by candidates and opportunity is also provided for candidates to volunteer such details in answering other part questions.

Specific named illustrations of case studies have not been included in the syllabus. This is to give teachers complete freedom in selecting examples which they feel are most appropriate for their candidates.

It is important that candidates comply with the instructions for Paper 1. Only **three** questions are to be selected, one from each of the three sections. Sometimes within individual questions a choice is provided. It is very important that candidates make the correct choice and do not answer more than is required.

Candidates are also advised to note the sub-marks printed on the question paper. These are included in order to guide candidates to the amount of detail and length of response anticipated and to allow them to manage their time effectively.

6.2 Paper 2: Geographical Skills and Investigations

Candidates must answer all the questions in Section A: Geographical Skills and one question from Section B: Geographical Investigations.

Questions are structured with gradients of difficulty and combine resource-based tasks and free-response writing.

Equipment required for Paper 2

Candidates should have the following in the examination room:

- a pencil, rubber, ruler, a protractor and a calculator
- access to a sheet of plain paper for measuring distance or for assisting with cross-sections on the large-scale map.

Section A: Geographical Skills

The paper is based on testing skills of application, interpretation and analysis of geographical information, e.g. topographical maps, other maps, diagrams, graphs, tables of data, written material, photographs and pictorial material, and on the application of graphical and other techniques as appropriate. The questions in Section A do not require specific information of place. Questions within Section A which require knowledge and understanding (AO1) will be based on topics from the three main syllabus themes (see Section 5).

Mapwork question

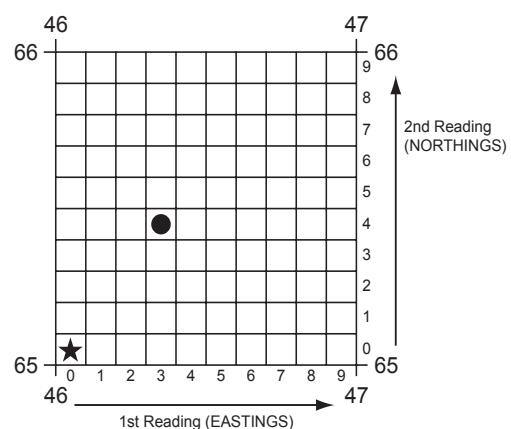
One question will be based on a large-scale map. The large-scale maps chosen for examination purposes will be on a scale of either 1:25 000 or 1:50 000 and will always contain a full key.

20 of the marks available on this paper are awarded to the mapwork question and, therefore, it is essential that candidates are proficient in map reading and interpretation skills to enable them to describe and analyse large-scale maps.

NOTE: All answers to this question must be based on map evidence only.

Candidates should be able to use a co-ordinate reference system and be able to give and to read four-figure and six-figure grid references to locate places. For example, the four-figure reference for the dot is 4665 whilst the six-figure grid reference for the dot is 463654.

To give the six-figure grid reference, first of all identify the grid square, in this case 4665. The third figure is obtained by dividing the space between grid lines 46 and 47 into ten equal parts. Similarly the sixth figure is obtained by a similar division of the gap between northings 65 and 66. This results in a grid reference of 463654 for the dot and 460650 for the star. It should be noted that the first tenth is 0 and the last tenth is 9 in the divided grid square.



Candidates should be able to give directions, both in terms of a 16-point compass, (such as north, north-north east, north east, etc.) and as a bearing from grid north of one place from another. It is, therefore, important that candidates have protractors in the examination room with them.

Candidates should be able to measure horizontal distances. This is most accurately done by using a straight-edged piece of paper and the scale line. If the line to be measured is curved, divide the curve into straight sections and rotate the paper after each straight section to follow the next straight section. Finally place the completed straight-edged piece of paper along the linear scale line on the map extract and read off the distance in kilometres/metres. This method avoids complicated mathematical calculations which can arise when rulers are used.

Contour reading, which enables candidates to calculate differences in height, should be practised.

Cross sections may be set for interpretation and candidates may be required to construct or complete a cross section.

Candidates should be able to translate the scale of a feature by describing its size and shape in real terms. They should also be proficient in using the key to the map to enable them to identify features on the map.

Candidates should be able to draw inferences about the physical and human landscape by interpretation of map evidence such as patterns of relief, drainage, settlement, communication and land use.

Candidates are advised to practise identifying basic landscape features such as river valleys and uplands, and to give brief descriptions of them using appropriate geographical terms (such as ridge, plateau, scarp, flood plain) and simple adjectives showing an appreciation of their nature (such as broad, flat, steep-sided, deeply cut, gently sloping). To interpret these maps, candidates should be able to recognise essential differences in density of drainage, stream patterns, gradients or sizes of streams in relation to the relief. They should be able to describe the physical features of coastlines and the shape and form of river channels as they are shown on large-scale maps.

Practice in describing variations in land use should be part of the preparation for the examination. The interpretation of 'human' features would also require candidates to recognise and analyse patterns of settlement (dispersed, nucleated, linear) and candidates should be able to draw sketch maps illustrating these patterns. Candidates should be able to interpret and describe features of urban morphology as represented on large-scale maps and be able to describe the functions of and services provided by settlements. They should also be able to give reasons for the site and growth of individual settlements. Communication networks should be recognised in terms of their type and density in relation to physical and human features.

Maps, diagrams, graphs, tables of data, written material

Questions will be set using some or all of these resources. They should be regarded as important ways of representing geographical data. They may be used to illustrate a basic principle and it is essential that candidates should be directed towards their interpretation. For example, a population pyramid may be used to illustrate the age and sex structure of a country. With this, a candidate may be required to describe the broad features of the population structure to show comparisons and contrasts between the male and female populations, the working and non-working population and the young-, middle- and old-age groups.

Maps based on global and other scales may be used and candidates may be asked to identify and describe significant features of the human and physical landscape on them, e.g. population distribution, population movements, transport networks, settlement layout, relief and drainage, etc. Candidates may be asked to recognise patterns and deduce relationships.

It is expected that candidates will be able to extract specified geographical information from graphs, diagrams, tables of data and written material. Various types of graphs, maps and diagrams (for example pictograms, line graphs, bar graphs, divided bar graphs, histograms, kite diagrams, flow diagrams, wind rose graphs, dispersion graphs, isoline maps, scatter graphs, choropleth maps, pie graphs, triangular graphs and radial graphs) may be used and candidates may be asked to describe variations and identify trends in information. Graphs may show, for example, temperature, birth rate, death rate, energy, rainfall distribution, river discharge, etc.

Candidates may be required to plot information on graphs when axes and scales are provided.

Data tables may provide information on physical phenomena, on economic activities, on population, on settlement, on agricultural and manufacturing output, etc. and candidates may be asked to describe and analyse features and trends from the data provided. They may also be asked to suggest an appropriate form of graphical representation for the data provided.

Written material may be extracts from books, periodicals and newspapers, and candidates will be expected to show an understanding of the material presented.

Photographic and pictorial material (including field sketches)

Oblique photographs will be used. Candidates should be able to describe human and physical landscapes (landforms, natural vegetation, land use and settlement) and geographical phenomena from photographs, aerial photographs, satellite images and GIS. Simple descriptions only will be required. Candidates may be expected to add specified detail on maps or other material provided, thereby applying geographical knowledge and understanding. Field sketches of physical and human landscapes may be used to stimulate geographical description and annotation. Cartoons illustrating a geographical theme may be set for interpretation and analysis.

Candidates may also be asked to use supporting material in conjunction with large-scale maps to identify, describe and analyse features and thereby recognise patterns and deduce trends.

Section B: Geographical Investigations

Candidates must answer **one** question from a choice of two.

Candidates will be set a series of tasks on this paper on issues relating to one or more of the syllabus themes (syllabus content). Questions test the methodology of questionnaires, observation, counts, measurement techniques, and will involve hypothesis testing appropriate to specific topics. The processing, presentation and analysis of data will be tested.

Candidates should study the principles of geographical investigations and show understanding of the route to geographical enquiry. Some practical experience of fieldwork methodology, however limited, is desirable in preparation for this section. One approach is to introduce the appropriate enquiry skills and techniques relevant to geographical investigations during the teaching of a specific topic for Paper 1 from one of the syllabus themes. For example while studying topic 2.2 (Rivers), time could be spent discussing how key aspects of the form of rivers could be measured, the plotting of depth data and the calculation of cross-sectional area and discharge. The skill required for questionnaires, counts and observations may be introduced in a variety of topics, where practical for the Centre.

References should be made to the range of aspects involved in the route to geographical enquiry, such as identifying aims and hypotheses, using enquiry skills to collect data, presentation techniques to display data, making analyses of data and reading conclusions.

Enquiry skills for 'Geographical investigations'

1 Formulating aims and hypotheses

Candidates should be familiar with hypotheses as statements that form the basis of investigations.

The hypotheses may investigate a geographical concept, e.g. 'A CBD has the highest concentration of comparison shops.' Collecting relevant data, analysis and drawing conclusions using the data as evidence can test these.

2 Enquiry skills to collect data

Questions on this paper will test knowledge and application of the methodology used in the following range of data-collection enquiry skills.

Questionnaires – Questionnaires can be oral or written to gain information from an individual or a group of individuals. Suitable themes in the syllabus where questionnaires may be appropriately studied include spheres of influence, use of services, shopping habits, a farm study, a factory or industrial study, leisure activities, tourism, or attitudes of the public to developments associated with resource development. Consideration should be given to factors influencing the successful design of questionnaires, e.g. layout, format of questions, the appropriate wording of questions and the number of questions. The practical considerations of conducting a questionnaire, e.g. the sampling methods, pilot survey and location of survey should also be discussed.

Observation – Examples of using observations as an enquiry skill to collect data include the recording of land use in an urban area or observations of river or coastal features. Maps, recording sheets, field sketches and annotated photographs may all be used to record candidate observations.

Counts – Pedestrian and traffic counts are two significant examples of this enquiry skill. Appropriate methods for recording the counts should be discussed, including the layout of recording sheets, instructions and the necessary information required to identify the sheet following the count (i.e. time, date, location and name of recorder).

Measurement – When recording measurements, due consideration should be given to planning the layout of the recording sheet, the location of instruments and the sampling methods adopted to provide reliable data. Knowledge of the equipment used in measurement is required, such as the quadrat, the clinometer and the pebbleometer or callipers. Candidates should be familiar with river measurements of channel width, depth, speed of flow and the size and shape of bedload; beach studies of beach profile, the size and shape of pebbles and the movement of beach material and weather study instruments closely linked to theme 2 as well as measurement techniques associated with human fieldwork such as survey strategies and pedestrian/traffic counts.

3 Data-presentation techniques

A knowledge of the illustrative techniques to present data across the topics for Paper 2 is required. This should include various types of graphs, maps and diagrams (for example line graphs, bar graphs, divided bar graphs, histograms, flow diagrams, wind-rose graphs, isoline maps, scatter graphs, pie graphs, triangular graphs, radial graphs, dispersion graphs, choropleth maps, kite diagrams and pictograms).

4 Analysis

Candidates should be able to describe the patterns in data presented in graphs and tables of results. Reference to relevant geographical knowledge and understanding is often required in the interpretation of the data.

5 Making conclusions

Using the evidence from the data, candidates should be able to make judgements on the validity of the original hypothesis or aims of the investigation. Reference is also required to the reliability of the collected data and a critical evaluation of the chosen data-collection methods, along with suggestions of other possible hypotheses and extension work.

7. Glossary of command words

Command words are those words in a question that tell the candidate what they have to do. The glossary has been deliberately kept brief with respect to the descriptions of meanings. Candidates should appreciate that the meaning of a term must depend in part on its context.

This glossary is neither exhaustive nor definitive and should be used specifically with the geography papers.

<i>Annotate</i>	Add labels of notes or short comments, usually to a diagram, map or photograph to describe or explain.
<i>Calculate</i>	Work out a numerical answer. In general, working should be shown, especially where two or more steps are involved.
<i>Compare</i>	Write about what is similar and different about two things. For a comparison, two elements or themes are required. Two separate descriptions do not make a comparison.
<i>Complete</i>	Add the remaining detail or details required.
<i>Contrast</i>	Write about the differences between two things.
<i>Define or State the meaning of or What is meant by</i>	Give the meaning or definition of a word or phrase.
<i>Describe</i>	Write what something is like or where it is. Describe may be used for questions about resources in the question paper (describe the trend of a graph, the location of a settlement on a map, etc.). It may also be used when you need to describe something from memory (describe a meander, etc.). It is often coupled with other command words such as <i>Name and describe</i> (name the feature and say what it is like), <i>Describe and explain</i> (say what it is like and give reasons for this).
<i>Devise or Plan</i>	Present a particular feature such as a form or questionnaire to meet a specific requirement or requirements.
<i>Draw</i>	Make a sketch of. Often coupled with <i>a labelled diagram</i> (draw a diagram/illustration with written notes to identify its features).
<i>Explain or Account for or Give reasons for</i>	Write about why something occurs or happens.
<i>Give your views or Comment on</i>	Say what you think about something.
<i>How far do you agree</i>	Use evidence to make judgements about a statement.
<i>Identify</i>	Pick out something from information you have been given.
<i>Illustrate your answer</i>	Account for by using specific examples or diagrams. (Often coupled with <i>with a labelled diagram</i>).

<i>Insert or Label</i>	Add specific names or details to an illustrative technique in response to a particular requirement.
<i>Justify</i>	Say why you chose something or why you think in a certain way.
<i>List</i>	Identify and name a number of features to meet a particular purpose.
<i>Locate</i>	Find where something is placed or state where something is found or mark it on a map or diagram.
<i>Measure</i>	Implies that the quantity concerned can be directly obtained from a suitable measuring instrument.
<i>Name</i>	To state or specify or identify. To give the word or words by which a specific feature is known.
<i>Predict</i>	Use your own knowledge and understanding, probably along with information provided, to state what might happen next.
<i>Refer to or With reference to</i>	Write an answer which uses some of the ideas provided in a map/photograph/diagram, etc. or other additional material such as a case study.
<i>State</i>	Set down in brief detail. To refer to an aspect of a particular feature by a short statement or by words or by a single word.
<i>Study</i>	Look carefully at (usually one of the figures in the question paper).
<i>Suggest</i>	Set down your ideas on or knowledge of. Often coupled with <i>why</i> (requires a statement or an explanatory statement referring to a particular feature or features).
<i>To what extent</i>	Make judgements based on evidence.
<i>Use or Using the information provided</i>	Base your answer on the information.
<i>With the help of information in</i>	Write an answer which uses some of the information provided as well as additional material.
<i>What differences are shown between A and B</i>	Use comparative statements to describe the changes involved as A changes to B. Separate factual descriptions of A and B are not required.

8. Other information

Equality and inclusion

Cambridge International Examinations has taken great care in the preparation of this syllabus and assessment materials to avoid bias of any kind. To comply with the UK Equality Act (2010), Cambridge has designed this qualification with the aim of avoiding direct and indirect discrimination.

The standard assessment arrangements may present unnecessary barriers for candidates with disabilities or learning difficulties. Arrangements can be put in place for these candidates to enable them to access the assessments and receive recognition of their attainment. Access arrangements will not be agreed if they give candidates an unfair advantage over others or if they compromise the standards being assessed.

Candidates who are unable to access the assessment of any component may be eligible to receive an award based on the parts of the assessment they have taken.

Information on access arrangements is found in the *Cambridge Handbook* which can be downloaded from the website www.cie.org.uk/examsofficer

Language

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

Grading and reporting

Cambridge O Level results are shown by one of the grades A*, A, B, C, D or E, indicating the standard achieved, A* being the highest and E the lowest. ‘Ungraded’ indicates that the candidate’s performance fell short of the standard required for grade E. ‘Ungraded’ will be reported on the statement of results but not on the certificate. The letters Q (result pending), X (no results) and Y (to be issued) may also appear on the statement of results but not on the certificate.

Entry codes

To maintain the security of our examinations, we produce question papers for different areas of the world, known as ‘administrative zones’. Where the component entry code has two digits, the first digit is the component number given in the syllabus. The second digit is the location code, specific to an administrative zone. Information about entry codes can be found in the *Cambridge Guide to Making Entries*.

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