CAMBRIDGE
International Education

Syllabus

Cambridge IGCSE™
Geography 0460

Use this syllabus for exams in 2027, 2028 and 2029. Exams are available in the June and November series. Exams are also available in the March series in India.
This syllabus is not available in all administrative zones.
Please check the syllabus page at **www.cambridgeinternational.org/0460** to see if this syllabus is available in your administrative zone.

Version 1

For the purposes of screen readers, any mention in this document of Cambridge IGCSE refers to Cambridge International General Certificate of Secondary Education.

Cambridge Pathway

Why choose Cambridge?

We work with schools worldwide to build an education that shapes knowledge, understanding and skills. Together, we give learners the confidence they need to thrive and make a positive impact in a changing world.

As part of the University of Cambridge, we offer a globally trusted and flexible framework for education from age 3 to 19, informed by research, experience, and listening to educators.

With recognised qualifications, high-quality resources, comprehensive support and valuable insights, we help schools prepare every student for the opportunities and challenges ahead.

Qualifications that are recognised and valued worldwide

From the world's top-ranked universities to local higher education institutions, Cambridge qualifications open doors to a world of opportunities.

Setting a global standard

With over 160 years of experience in delivering fair, valid and reliable assessments to students worldwide, we offer a global, recognised performance standard for international education.

Your path, your way

Schools can adapt our curriculum, high-quality teaching and learning resources and flexible assessments to their local context. Our aligned offer helps Cambridge schools support every learner to reach their potential and thrive.

Learning with lasting impact

Cambridge learners build subject knowledge and conceptual understanding, and develop a broad range of skills, learning habits and attributes to help make them ready for the world.

Improving learning outcomes through data-led insight and action

Our trusted baseline and diagnostic assessments, together with our insights and evaluation service, help schools turn data into knowledge and actionable insights, to inform teaching decisions and improve learner outcomes.

Bringing together a community of experts

We bring together the collective knowledge of experts and our diverse community of educators worldwide, supporting them to learn from one another and share ideas and information.

Tackling the climate crisis together

We believe that education is key to tackling the climate crisis. Together with Cambridge schools, we can empower young people with the skills and knowledge to take action on climate change, helping them be ready for the world.

School feedback: 'We think the Cambridge curriculum is superb preparation for university.'

Feedback from: Christoph Guttentag, Dean of Undergraduate Admissions, Duke University, USA

Contents

Important: Changes to this syllabus

For information about changes to this syllabus for 2027, 2028 and 2029, go to page 50.

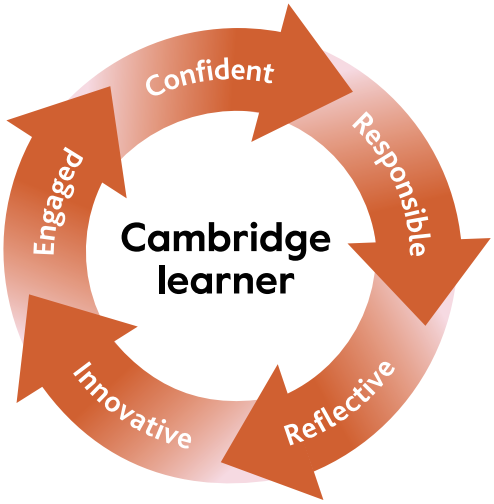
1 Why choose this syllabus?

Key benefits

Cambridge IGCSE is the world's most popular international qualification for 14 to 16 year olds, although it can be taken by students at any age. Taught by over 5000 schools in 150 countries, it is tried, tested and trusted.

Students can choose from 70 subjects in any combination, including 30 languages.

Our programmes promote a thorough knowledge and understanding of a subject and help to develop the skills learners need for their next steps in education or employment.



Cambridge IGCSE Geography encourages learners to think like a geographer and apply their knowledge and understanding to local, regional, national and global contexts. The syllabus provides opportunities to explore key geographical ideas through the study of a range of topics and develop transferable skills, including the ability to use geographical data and information to make informed decisions.

Our approach in Cambridge IGCSE Geography encourages learners to be:

confident, using geographical data to make decisions and interpret the world around them in an analytical and evaluative way.

responsible, and aware of the role present and future generations have in creating sustainable solutions to a range of global issues.

reflective, considering the similarities and differences between and within different communities and economies.

innovative, by encouraging and being open to resourceful and technological solutions to geographical issues.

engaged, with geographical issues, ideas and solutions that will have positive long-term impacts on the physical and human environment.

School feedback: 'The strength of Cambridge IGCSE qualifications is internationally recognised and has provided an international pathway for our students to continue their studies around the world.'

Feedback from: Gary Tan, Head of Schools and CEO, Raffles Group of Schools, Indonesia

Qualifications that are recognised and valued worldwide

Cambridge qualifications prepare and equip learners with the skills they need to thrive at university and beyond. The world's best higher education institutions recognise our qualifications and value the critical thinking skills, independent research abilities and deep subject knowledge that Cambridge learners bring.

We continually work with universities and colleges in every part of the world to ensure that they understand and accept our qualifications. Cambridge IGCSE provides a springboard to the Cambridge Advanced stage, as well as other post-16 routes. The combination of knowledge and skills in Cambridge IGCSE Geography gives learners a solid foundation for further study. Candidates who achieve grades A* to C are well prepared to follow a wide range of courses including Cambridge International AS & A Level Geography.

Many universities require a combination of Cambridge International AS & A Levels and Cambridge IGCSEs or equivalent to meet their entry requirements.

UK ENIC, the national agency in the UK for the recognition and comparison of international qualifications and skills, has carried out an independent benchmarking study of Cambridge IGCSE and found it to be comparable to the standard of the GCSE in the UK. This means students can be confident that their Cambridge IGCSE qualifications are accepted as equivalent to UK GCSEs by leading universities worldwide.

Learn more at **www.cambridgeinternational.org/recognition**

School feedback: 'Cambridge IGCSE is one of the most sought-after and recognised qualifications in the world. It is very popular in Egypt because it provides the perfect preparation for success at advanced level programmes.'

Feedback from: Managing Director of British School of Egypt BSE

Supporting teachers

We believe education works best when teaching and learning are closely aligned to the curriculum, resources and assessment. Our high-quality teaching support helps to maximise teaching time and enables teachers to engage learners of all backgrounds and abilities.

We aim to provide the following support for each Cambridge qualification:

- Syllabus
- Specimen question papers and mark schemes
- Specimen paper answers
- Schemes of Work
- Example candidate responses
- Past papers and mark schemes
- Principal examiner reports for teachers

These resources are available on the School Support Hub at **www.cambridgeinternational.org/support**, our secure online site for Cambridge teachers. Your exams officer can provide you with a login.

Additional teaching & learning resources are also available for many syllabuses and vary according to the nature of the subject and the structure of the assessment of each syllabus. These can include ready-built lesson materials, digital resources and multimedia for the classroom and homework, guidance on assessment and much more. Beyond the resources available on the Schools Support Hub, a wide range of endorsed textbooks and associated teaching and learning support are available from Cambridge at **www.cambridge.org/education** and from other publishers. Resources vary according to the nature of the subject and the structure of the assessment of each syllabus.

You can also contact our global Cambridge community or talk to a senior examiner on our discussion forums.

Sign up for email notifications about changes to syllabuses, including new and revised products and services, at **www.cambridgeinternational.org/syllabusupdates**

Professional development

Find the next step on your professional development journey.

- **Introduction courses** – An introduction to Cambridge programmes and qualifications. For teachers who are new to Cambridge programmes or new to a specific syllabus.
- **Focus on Teaching courses** – These are for teachers who want to explore a specific area of teaching and learning within a syllabus or programme.
- **Focus on Assessment courses** – These are for teachers who want to understand the assessment of a syllabus in greater depth.
- **Marking workshops** – These workshops help you become more familiar with what examiners are looking for, and provide an opportunity to raise questions and share your experiences of the syllabus.
- **Enrichment Professional Development** – Transform your approach to teaching with our Enrichment workshops. Each workshop focuses on a specific area of teaching and learning practice.
- **Cambridge Professional Development Qualifications (PDQs)** – Practice-based programmes that transform professional learning for practicing teachers. Available at Certificate and Diploma level.

For more information visit **www.cambridgeinternational.org/support-for-teachers**

Supporting exams officers

We provide comprehensive support and guidance for all Cambridge exams officers.
Find out more at: **www.cambridgeinternational.org/eoguide**

2 Syllabus overview

Aims

The aims describe the purposes of a course based on this syllabus.

The aims are to enable students to:

- build a core understanding of geographical concepts and processes and apply this to understand and interpret our changing world
- develop a sense of place, space and location, and understand the importance of scale
- develop the ability to interpret and evaluate different types of geographical information
- develop an understanding of the need for accuracy and objectivity in collecting, recording, processing, presenting, analysing and interpreting geographical information
- develop into an informed and responsible global citizen, who recognises the challenges of our changing world and feels empowered to influence change.

We are an education organisation and politically neutral. The contents of this syllabus, examination papers and associated materials do not endorse any political view. We endeavour to treat all aspects of the exam process neutrally.

Content overview

The syllabus is divided into ten topics which have been designed to develop an understanding of both the natural and human environment:

- Changing river environments
- Changing coastal environments
- Changing ecosystems
- Tectonic hazards
- Climate change
- Changing populations
- Changing towns and cities
- Development
- Changing economies
- Resource provision.

Every Cambridge school has the opportunity to deliver climate education, that shapes knowledge, understanding and skills, and gives learners the confidence to thrive and make a positive impact in our changing world. This Cambridge IGCSE Geography syllabus has been designed to help schools do this.

Assessment overview

All candidates take three components. Candidates will be eligible for grades A* to G.

All candidates take:

Paper 1 1 hour 45 minutes
Physical Geography 36%

75 marks

Structured questions containing short answer and extended response items. Some items are based on source material.

Externally assessed

and:

Paper 2 1 hour 45 minutes
Human Geography 36%

75 marks

Structured questions containing short answer and extended response items. Some items are based on source material.

Externally assessed

and either:

Component 3
Coursework 28%

60 marks

Teachers set one centre-based fieldwork assignment of 1800–2200 words.

Internally assessed and externally moderated

or:

Paper 4 1 hour 30 minutes
Geographical Investigations 28%

60 marks

Two compulsory questions containing short answer and extended response items. Some items are based on source material.

Externally assessed

Information on availability is in the **Before you start section.**

Check the samples database at www.cambridgeinternational.org/samples for submission information, forms and deadlines for Component 3.

Assessment objectives

The assessment objectives (AOs) are:

AO1 Knowledge and understanding

Candidates should be able to demonstrate knowledge and understanding of:

- geographical terms, concepts and systems
- geographical principles, theories and models
- the location and character of environments and places
- the physical and human factors and processes which contribute to different environments, spatial patterns and interactions
- the similarities and differences between environments, people and places
- the interactive nature of physical and human systems and environments
- the causes and consequences of change in physical and human environments
- the importance of spatial scale and time scale in the study of geography.

AO2 Skills and analysis

Candidates should be able to:

- select, adapt and use a variety of geographical skills and techniques
- interpret, organise, present and analyse geographical data, information and sources presented in a variety of forms
- use geographical data to identify patterns, trends and relationships
- use and apply the stages of the route to geographical enquiry.

AO3 Evaluation and decision-making

Candidates should be able to:

- evaluate the importance of geographical factors, processes and change on physical and human environments
- recognise the limitations of geographical data, principles, theories, models, and information presented in a variety of forms
- evaluate the impact of different values and attitudes of people in the management of physical and human environments
- make and justify a decision based upon information provided
- evaluate the different options available to decision makers
- evaluate the relative success or failure of strategies and techniques used to manage human and physical environments; including sustainable.

Weighting for assessment objectives

The approximate weightings allocated to each of the assessment objectives (AOs) are summarised below.

Assessment objectives as a percentage of the qualification

Assessment objective	Weighting in IGCSE %
AO1 Knowledge and understanding	32
AO2 Skills and analysis	48
AO3 Evaluation and decision-making	20
Total	100

Assessment objectives as a percentage of each component

Assessment objective	Weighting in components %			
	Paper 1	Paper 2	Component 3	Paper 4
AO1 Knowledge and understanding	37	37	20	20
AO2 Skills and analysis	43	43	60	60
AO3 Evaluation and decision-making	20	20	20	20
Total	100	100	100	100

3 Subject content

This syllabus gives you the flexibility to design a course that will interest, challenge and engage your learners. Where appropriate you are responsible for selecting resources and examples, topics and subject contexts to support your learners' study. These should be appropriate for the learners' age, cultural background and learning context as well as complying with your school policies and local legal requirements.

Candidates are expected to be able to name and locate continents and study examples drawn from a variety of places and environments.

Candidates refer to detailed specific examples to illustrate the individual topics. The syllabus gives teachers the opportunity to select their own detailed specific examples to illustrate the content. We recommend that detailed specific examples are from CE 2000–present day.

The detailed specific examples should give candidates the information to answer certain questions on Paper 1 and Paper 2. Some questions ask candidates to refer to information from detailed specific examples; in addition, candidates may also use details from these examples to support answers to other questions.

Named detailed specific examples are not included in this syllabus. This gives teachers freedom in selecting examples which are most suitable for their candidates. Candidates should be aware of the sub-marks for each part question. These are printed on the question paper. Candidates should use them as a guide to the amount of detail and length of response expected and to help them manage their time effectively.

Some questions in all the written papers are based on resource material, such as photographs, map extracts, satellite images, drawings, diagrams, graphs, text extracts, statistics and tables of data. Resource materials come from various areas of the world and candidates may not be familiar with the world areas used in the resources. The resources are designed to prompt candidates to use the general principles which they have studied throughout the course.

Resource skills

The units used in all resources and examination papers are:

- metres and kilometres for height and distance
- degrees Celsius for temperature
- millimetres for rainfall.

Questions in all papers may include references to latitude or longitude.

Paper 1 – Physical Geography

Candidates study the following **five** topics:

- Changing river environments
- Changing coastal environments
- Changing ecosystems
- Tectonic hazards
- Climate change.

When studying impacts within geography, these are:

- positive and/or negative
- social, economic and environmental
- at a range of scales (local, regional, national, global).

When studying management strategies and techniques, strategies will include action plans and agreements, techniques will cover the methods used.

Sustainability is to be considered when teaching the content for **all** topic areas, especially when studying management strategies and techniques.

1 Changing river environments

1.1 The main hydrological characteristics and processes which operate in rivers and drainage basins

1.1.1 Characteristics of rivers and drainage basins: the long profile, width, depth, speed of flow/velocity, discharge, wetted perimeter, channel, watershed, tributary, confluence, source, mouth.

1.1.2 The Bradshaw model.

1.1.3 How the drainage basin operates within the water cycle.

1.1.4 Processes which operate in a drainage basin: precipitation, interception, infiltration, percolation, overland flow, channel flow, throughflow, groundwater flow, transpiration, evaporation, evapotranspiration.

1.1.5 Processes which operate within a river:

- erosion; hydraulic action, abrasion, attrition, solution
- transportation; traction, suspension, saltation, solution
- deposition.

1.2 The main landforms associated with these processes

1.2.1 The characteristics and formation of landforms: waterfalls, rapids, gorges, V-shaped valleys, meanders, oxbow lakes, levées, floodplains, deltas, interlocking spurs, potholes.

1.3 Rivers present opportunities and hazards for people

1.3.1 The opportunities and hazards of living near a river.

1.3.2 The human and natural causes of river flooding.

1.3.3 The impacts of river flooding.

1.3.4 An evaluation of the strategies and techniques used to manage river flooding; including sustainable.

1.3.5 The human causes of river pollution.

1.3.6 The impacts of river pollution.

1.3.7 An evaluation of the strategies and techniques used to manage river pollution; including sustainable.

1.3.8 One detailed specific example to include:

- the causes and impacts of a flood for a named river
- the strategies and techniques used to manage the flooding of the river; including sustainable.

1.3.9 One detailed specific example to include:

- the causes and impacts of pollution in a named river
- the strategies and techniques used to manage pollution levels in the river; including sustainable.

2 Changing coastal environments

2.1 Physical processes that shape the coast

2.1.1 Coastal erosion: hydraulic action, corrosion, corrasion, attrition; transportation; deposition; longshore drift.

2.1.2 Types of waves: constructive and destructive and wave refraction.

2.2 The main landforms associated with these processes

2.2.1 The characteristics and formation of landforms: headlands, bays, cliffs, wave-cut platforms, caves, arches, stacks, stumps, beaches, spits, bars, sand dunes.

2.2.2 The formation and characteristics of discordant and concordant coastlines.

2.3 Coasts present opportunities and hazards for people

2.3.1 The opportunities of living near the coast.

2.3.2 The hazards of living near the coast.

2.3.3 An evaluation of hard and soft engineering strategies and techniques used to manage coastal erosion and flooding; including sustainable.

2.3.4 The distribution and impacts of tropical storms: cyclones, hurricanes, and typhoons.

2.3.5 An evaluation of the strategies and techniques used to manage the impacts of tropical storms: preparation, planning, protection, prediction.

2.3.6 The global distribution, importance of, threats to, and strategies and techniques used to protect and manage coral reefs and mangroves; including sustainable.

2.3.7 One detailed specific example of a named country or coastal area to include:

- the causes and impacts of coastal erosion
- the strategies and techniques used to protect the coast from tropical storms and manage erosion; including sustainable.

2.3.8 One detailed specific example of a named country or coastal area to include:

- why the coral reef is important
- threats to the coral reef
- the strategies and techniques used to protect and manage and the coral reef; including sustainable.

3 Changing ecosystems

3.1 Characteristics of the Antarctic ecosystem

3.1.1 The location of the Antarctic ecosystem.

3.1.2 The characteristics of the Antarctic climate: high pressure, the influence of latitude, angle of the sun, temperature, precipitation.

3.1.3 The features of the Antarctic ecosystem.

3.1.4 The interrelationships between abiotic and biotic factors in the Antarctic ecosystem and how flora and fauna adapt to survive.

3.2 Threats to the Antarctic ecosystem and how they can be managed

3.2.1 The threats posed to Antarctica, for example, resource exploitation, climate change, fishing, tourism.

3.2.2 The impacts of the destruction of the Antarctic ecosystem.

3.2.3 An evaluation of the strategies and techniques used to manage the Antarctic ecosystem; including sustainable. For example, international agreements and environmental impact surveys.

For the Antarctic ecosystem, a detailed specific example is not listed, this is because the topic content is only based upon Antarctica.

3.3 Characteristics of the tropical rainforest ecosystem

3.3.1 The global distribution of tropical rainforests.

3.3.2 The characteristics of the equatorial climate: overhead sun, low pressure, convectional rainfall, temperature, latitude.

3.3.3 The characteristics and structure of the tropical rainforest ecosystem.

3.3.4 The interrelationships between abiotic and biotic factors in the tropical rainforest ecosystem and how flora and fauna adapt to survive.

3.4 Threats to tropical rainforest ecosystems and how they can be managed

3.4.1 The threats to tropical rainforest ecosystems, for example, deforestation, resource exploitation, logging, road and railway building, cattle ranching, hydroelectric power, farming, settlements.

3.4.2 The impacts of the destruction and deforestation of tropical rainforest ecosystems.

3.4.3 An evaluation of the strategies and techniques used to manage the tropical rainforest ecosystem; including sustainable.

3.4.4 One detailed specific example of a named country or tropical rainforest area to include:

- threats to the tropical rainforest ecosystem
- impacts of the destruction and deforestation of the tropical rainforest ecosystem
- the strategies and techniques used to manage the tropical rainforest ecosystem; including sustainable.

4 Tectonic hazards

4.1 The structure of the Earth and distribution of earthquakes and volcanoes

4.1.1 The characteristics of the layers of the Earth: inner core, outer core, mantle, crust, lithosphere.

4.1.2 The names and location of the main tectonic plates and how tectonic plates move.

4.1.3 Types of plate boundary: divergent/constructive, convergent/destructive, convergent/collision, conservative/transform and the location of earthquakes and volcanoes.

4.2 The processes and features associated with earthquakes and volcanoes

4.2.1 The processes experienced at each type of plate boundary which cause earthquakes and volcanic eruptions.

4.2.2 The main characteristics of earthquakes: focus, epicentre, seismic waves.

4.2.3 Types of volcano: strato-volcano (composite cone), shield, cinder cone.

4.2.4 The classification of volcanoes as active, dormant, or extinct.

4.2.5 The main features of volcanoes: crater, vent, magma, magma chamber, secondary cone.

4.2.6 Volcanic hazards: lava flows, ash falls, lahars, pyroclastic flows, tephra, volcanic rocks, toxic gases; the significance of speed, size, frequency, and spread.

4.3 The impacts of tectonic hazards

4.3.1 Reasons why people live in areas at risk from earthquakes and volcanic eruptions.

4.3.2 The impacts of earthquakes.

4.3.3 The impacts of volcanic eruptions.

4.3.4 How the magnitude of a tectonic event is measured: moment magnitude scale, Richter scale, Mercalli scale, the volcanic explosivity index (VEI).

4.4 Managing the impacts of tectonic hazards

4.4.1 Primary and secondary responses.

4.4.2 An evaluation of the strategies and techniques used to manage the impacts of earthquakes and volcanic eruptions: monitoring, prediction, protection, planning and technology.

4.4.3 One detailed specific example to include:

- the causes and impacts of an earthquake on a named country/area
- the responses to the earthquake
- the strategies and techniques used to manage the impacts of earthquakes.

4.4.4 One detailed specific example to include:

- the causes and impacts of an eruption of a named volcano
- the responses to the volcanic eruption
- the strategies and techniques used to manage the impacts of volcanic eruptions.

5 Climate change

5.1 The natural and human causes of climate change

5.1.1 Evidence of climate change: global temperature data, ice cores, sea ice positions, historic writing and paintings.

5.1.2 Factors influencing natural climate change: orbital changes (Milankovitch cycles), sunspots, volcanic activity.

5.1.3 The human influence on the atmosphere causing the enhanced greenhouse effect. For example, the use of fossil fuels, deforestation, agriculture.

5.2 The impacts of climate change at a range of geographic scales

5.2.1 The present day and predicted future impacts of climate change. For example, rising sea levels, and changes to global temperature, weather patterns, and food production.

5.3 Responses to climate change

5.3.1 The strategies (including national and international agreements) and techniques used to manage the impacts of climate change.

5.3.2 An evaluation of mitigation (including international agreements) and adaptation strategies and techniques used to manage the impacts of climate change.

5.3.3 One detailed specific example of a named country or region to include:

- the impacts of climate change
- the responses to climate change
- the strategies and techniques being used to manage climate change; including sustainable.

Paper 2 – Human Geography

Candidates study the following **five** topics:

- Changing populations
- Changing towns and cities
- Development
- Changing economies
- Resource provision.

Candidates can study examples drawn from a variety of environments. For further information on the use of detailed specific examples see page 12.

Candidates can refer to detailed specific examples drawn from a range of countries that are at different levels of development, including their home country. One form of terminology used to refer to countries at different levels of development is low-income countries (LICs), middle-income countries (MICs) and high-income countries (HICs). We will use these categories to give context to examples in question papers.

At Cambridge we recognise that categorising countries is not always meaningful, and a country can sometimes fall into different categories depending on the types of measures being considered, e.g. economic/income categories or a composite socio-economic index such as the Human Development Index (HDI), or other measures.

When studying impacts within geography, these are:

- positive and/or negative
- social, economic and environmental
- at a range of scales (local, regional, national, global).

When studying management strategies and techniques, strategies will include action plans and agreements, techniques will cover the methods used.

Sustainability is to be considered when teaching the content for **all** topic areas, especially when studying management strategies and techniques.

6 Changing populations

6.1 Populations grow and decline

6.1.1 Patterns and trends in global population growth.

6.1.2 Reasons for the growth and decline of a country's population: fertility rate, birth rate, death rate, natural increase, migration.

6.1.3 An evaluation of the impacts of pro-natalist and anti-natalist policies on birth rates.

6.1.4 The demographic transition model (DTM) and its strengths and limitations.

6.2 Population structures change over time

6.2.1 Factors influencing population structures: natural increase and net migration.

6.2.2 The causes and impacts of youthful and ageing population structures, and an evaluation of their impacts.

6.2.3 One detailed specific example of a named country to include:

- reasons for population growth or decline
- the impacts of a population policy (pro or anti-natalist).

6.3 The causes and impacts of international migration

6.3.1 Types of migrant: economic migrant, asylum seeker and refugee.

6.3.2 Causes of migration, to include push and pull factors.

6.3.3 The impacts of migration on the migrant, their country of origin and the destination country.

6.3.4 An evaluation of the strategies and techniques used to manage international migration.

6.3.5 One detailed specific example to include:

- push and pull factors of a named international migration (named to include the country of origin and destination country)
- the impacts of the migration (on the migrants, their country of origin and the destination country)
- how the migration is managed; including sustainable.

7 Changing towns and cities

7.1 Where people live

7.1.1 Reasons for variations in global urban growth rates.

7.1.2 Causes of rapid urban growth in LICs: rural to urban migration, social, economic, environmental, and political factors, natural increase.

7.2 Opportunities and challenges of urbanisation

7.2.1 Opportunities of urban living, for example, culture, housing, services, leisure, consumption, economic development.

7.2.2 The opportunities and challenges of rapid urban growth: inequality, service provision, housing, employment, transport, waste management, unplanned settlements.

7.2.3 The impact of urban sprawl on the rural-urban fringe/surrounding areas.

7.3 The management of urban growth

7.3.1 An evaluation of the strategies and techniques used to manage urban growth; including sustainable.

7.3.2 One detailed specific example of a named urban area to include:

- causes of urban growth
- challenges and opportunities brought about by urban growth
- the strategies and techniques used to manage urban growth; including sustainable.

8 Development

8.1 Measuring development

8.1.1 Social and economic indicators of development. For example, gross national product (GNP), gross domestic product (GDP), gross national income (GNI), literacy rate, life expectancy, Human Development Index (HDI), infant mortality rate, calorie intake, doctors per person.

8.1.2 The use of indicators of development to compare countries at different levels of development and an evaluation of their usefulness.

8.1.3 Factors affecting quality of life and standard of living.

8.2 The world is developing unevenly

8.2.1 Reasons for differences in levels of development and the development gap, to include social, economic, and environmental factors.

8.2.2 The current global pattern of low-income countries (LICs), middle-income countries (MICs) and high-income countries (HICs).

8.3 Achieving sustainable development

8.3.1 Definition(s) of sustainable development.

8.3.2 Social, economic, and environmental strategies and techniques used to try to achieve sustainable development.

8.3.3 An evaluation of the strategies and techniques used to try to reduce uneven development, for example, trade, international aid, and debt relief.

8.3.4 One detailed specific example of a named country classified as an MIC or LIC, to include:

- the reasons for its current level of development
- the strategies and techniques used to try to raise its level of economic development, quality of life and standard of living.

9 Changing economies

9.1 Changing employment structures

9.1.1 Classification of different industries: primary, secondary, tertiary, and quaternary.

9.1.2 The changing employment structure of low-income countries (LICs), middle-income countries (MICs) and high-income countries (HICs).

9.1.3 Factors influencing the location and distribution of different types of industries: land, labour, raw materials, energy, transportation, markets, political policies, technology, communications, containerisation.

9.2 The impact of globalisation and the role of transnational corporations

9.2.1 What is meant by globalisation.

9.2.2 The key features of globalisation.

9.2.3 The impacts of globalisation on trade, transport, culture, communications, and technology.

9.2.4 The role and global organisation of transnational corporations (TNCs).

9.2.5 An evaluation of the impacts of TNCs on the countries in which they are located.

9.2.6 One detailed specific example of a named country or area, to include:

- the impacts of globalisation
- the impacts of a named TNC which is located in the country or area.

9.3 Tourism is a growing industry

9.3.1 The factors that have led to the growth of tourism as an industry.

9.3.2 The Butler model and its strengths and limitations.

9.3.3 The benefits and problems caused by tourism, at a range of scales.

9.3.4 An evaluation of the strategies and techniques used to sustainably manage tourism, at a range of scales.

9.3.5 One detailed specific example of a named country or area to include:

- reasons for the growth of tourism
- the benefits and problems caused by tourism
- the strategies and techniques used to sustainably manage tourism in the named country or area.

10 Resource provision

10.1 How food is produced

10.1.1 Farming types: subsistence, commercial, arable, pastoral, mixed, aeroponics, aquaponics, hydroponics.

10.1.2 Farming systems: inputs, processes, outputs.

10.2 The global patterns of food supply and demand

10.2.1 Global patterns of calorie intake and reasons for variations.

10.2.2 The reasons for the changing global production and consumption of food.

10.2.3 The strategies used to increase food supply.

10.2.4 The reasons for the globalisation of food supplies.

10.2.5 The impacts of the globalisation of food supplies.

10.3 The challenges of food supply

10.3.1 The human and natural factors negatively affecting food supply.

10.3.2 The problems caused by food insecurity in countries at different levels of development.

10.3.3 The strategies and techniques used to increase food supply.

10.3.4 An evaluation of the role of food aid in improving food security.

10.3.5 An evaluation of the strategies and techniques used to manage desertification and soil erosion; including sustainable.

10.3.6 One detailed specific example of a named country or area to include:

- factors affecting food supply
- causes of food insecurity
- problems caused by food insecurity
- strategies and techniques used to increase food supply.

10.4 How our energy is produced

10.4.1 Types of energy:

- renewable: biomass, geothermal, hydroelectric power (HEP), solar, tidal, wave, wind
- non-renewable: fossil fuels (coal, gas, oil), nuclear
- fuelwood, which can be either renewable or non-renewable.

10.5 The global patterns of energy supply and demand

10.5.1 Reasons for the increasing global production and consumption of energy.

10.5.2 The global patterns of energy surplus and deficit and the importance of energy security.

10.5.3 The reasons for variations in types of energy used within a country and between countries at different levels of development.

10.6 The impacts of energy production

10.6.1 The advantages and disadvantages of different energy sources, including renewable and non-renewable.

10.6.2 The strategies and techniques used to increase energy supplies.

10.6.3 An evaluation of the strategies and techniques used to manage energy supplies; including sustainable.

10.6.4 One detailed specific example of a named country to include:

- the energy mix
- the impacts of the different types of energy being used
- the strategies and techniques used to manage energy supplies; including sustainable.

Geographical Skills

Geographical skills are applicable across all components.

Cartographic skills

Candidates should be able to:

- select, construct and interpret maps using direction, scale, symbols, a key, and other information
- extract, interpret, analyse and evaluate information presented on maps
- use co-ordinates, latitude and longitude, 4 and 6 figure grid references
- give directions using the 16-point compass and bearings from grid north
- measure and estimate distances and area
- use and interpret gradient, contour lines and spot heights; calculate differences in height
- interpret cross-sections and transects.

Types of map to be used:

- atlas maps
- base maps
- choropleth maps
- desire line maps
- distribution maps
- flow line maps
- isoline maps
- maps of different scales, including 1 : 50 000 and 1 : 25 000
- route maps
- sphere of influence maps
- sketch maps
- thematic maps
- topographical maps.

Graphical skills

Candidates should be able to:

- select, present, construct and communicate data through appropriate graphs, charts and diagrams using relevant scales and annotations to present information
- extract, interpret, analyse and evaluate information presented on graphs, charts and diagrams
- identify and evaluate variations, trends and patterns from data provided.

Types of graphs, charts and diagrams to be used:

- bar graphs: horizontal, vertical, and divided
- climate graphs
- cross-sections
- dispersion graphs
- doughnut graphs
- flow diagrams
- histograms (with equal class interval)
- kite graphs
- line graphs
- pictograms
- pie charts
- population pyramids
- proportional symbols
- radial graphs
- rose charts
- scatter graphs (including best fit line)
- systems diagrams
- triangular graphs
- venn diagrams
- flood hydrographs.

GIS and image skills

Candidates should be able to:

- deconstruct, interpret, analyse and evaluate visual images including photographs (aerial: vertical and oblique and ground level), cartoons, pictures, diagrams, satellite images
- analyse written text from a variety of sources for understanding, interpretation and to recognise bias
- suggest improvements to, issues with, or reasons for using maps, graphs, statistical techniques and visual sources including photographs (aerial: vertical and oblique and ground level) and diagrams
- use GIS to identify trends, patterns, issues and solve problems
- recognise the benefits and limitations of using GIS.

Mathematical skills

Candidates should be able to:

- demonstrate an understanding of number (add, subtract, multiply and divide), area and scale
- use standard notation, including positive and negative indices
- understand and use significant figures
- understand and use proportion, ratio, magnitude and frequency
- understand and use mean, mode and median, range, decimals, fractions, percentages, and ratios
- design fieldwork data collection sheets and collect data with an understanding of accuracy, sample size and procedures, control groups and reliability
- complete, interpret and evaluate tables of data
- identify and describe relationships between two or more sets of data
- identify and interpret trends or relationships over time and draw line of best fit
- make predictions, interpolate and extrapolate trends from data
- identify weaknesses and limitations in statistical presentations of data
- draw and justify conclusions from numerical and statistical data.

Calculators may be used in all examinations.

Fieldwork skills

Candidates should be able to:

- follow the route to geographical enquiry
- select and use appropriate fieldwork equipment
- select and conduct appropriate fieldwork techniques
- devise and use appropriate fieldwork data collection sheets
- devise and use risk assessments and be able to work safely whilst out in the field.

Fieldwork equipment

Candidates should be familiar with and know how to use:

- ranging poles
- flow meters
- stopwatch/timer
- quadrats
- noise meters
- tape measure or other distance measuring device
- clinometer.

This list is not exhaustive, and candidates should use equipment relevant to the fieldwork they are conducting.

Fieldwork techniques

Candidates should be able to conduct or describe how to conduct:

- environmental quality surveys
- bi-polar surveys
- questionnaires
- interviews
- observations
- field sketches
- photographs
- traffic counts
- pedestrian counts
- land use surveys
- transects
- delimiting the sphere of influence/CBD
- roundness index/other indices.

This list is not exhaustive, and candidates should conduct fieldwork techniques relevant to the fieldwork they are conducting, please see the enquiry skills section of the syllabus on page 43 for further information.

Equipment for Paper 1, 2 and 4

In the examination room candidates must have:

- a pencil, eraser, ruler, protractor and calculator
- access to a sheet of plain paper to measure distance, or assist with cross-sections etc.

Faculty feedback: 'Understanding how and why our climate is changing and providing the knowledge and skills to explore the challenges plays a key role in every student's education.'

Feedback from: Dr Amy Munro-Faure, Head of Education and Student Engagement of Cambridge Zero

4 Details of the assessment

Paper 1 – Physical Geography

Compulsory written paper, 1 hour 45 minutes, 75 marks

Externally assessed.

Paper 1 tests assessment objectives AO1, AO2 and AO3.

This paper contains **two** sections and candidates answer **three** questions in total.

Section A

Section A is worth 25 marks.

In Section A, candidates answer one compulsory structured question.

Question 1 consists of a range of short-answer items and an extended response. Some items are based on source material.

Section B

Section B is worth 50 marks.

In Section B, candidates answer **two** out of **three** structured questions.

Each structured question is worth 25 marks and consists of a range of short-answer items and an extended response. Some items are based on source material.

Paper 1 assesses content from topics 1–5.

Paper 2 – Human Geography

Compulsory written paper, 1 hour 45 minutes, 75 marks.

Externally assessed.

Paper 2 tests assessment objectives AO1, AO2 and AO3.

This paper contains **two** sections and candidates answer **three** questions in total.

Section A

Section A is worth 25 marks.

In Section A, candidates answer one compulsory structured question.

Question 1 consists of a range of short-answer items and an extended response. Some items are based on source material.

Section B

Section B is worth 50 marks.

In Section B, candidates answer **two** out of **three** structured questions.

Each structured question is worth 25 marks and consists of a range of short-answer items and an extended response. Some items are based on source material.

Paper 2 assesses content from topics 6–10.

Component 3 – Coursework

Optional component, 60 marks.

Internally assessed and externally moderated.

Component 3 tests assessment objectives AO1, AO2 and AO3.

Candidates submit **one** coursework assignment, set by teachers, of **1800–2200** words.

Coursework assignments will be based on physical geography or human geography or on an interaction between physical and human geography. Coursework will be clearly related to one or more of the subject topics (see page 8).

The focus of assignments can be common to all candidates at a centre, but they do not have to be. *

There should be enough variety and differentiation of tasks, and opportunity for individual initiative in all assignments, to fulfil the assessment criteria at all levels of achievement.

Coursework will be assessed on the quality of the content of the assignment in relation to the criteria on which assessment is based. The time candidates spend on their coursework assignments should reflect the weighting of the component in the total assessment (28 per cent).

Centre-based assessment provides a complementary assessment of the assessment objectives tested in Papers 1 and 2, with an emphasis on AO2, skills and analysis.

Coursework assignments must cover the assessment criteria in the proportions given below.

Assessment criteria	Marks allocated
AO1: **Knowledge and understanding**	12
AO2: **Skills and analysis**	
Observation and collection of data	12
Organisation and presentation of data	12
Analysis and interpretation	12
AO3: **Evaluation and decision-making** (conclusion and evaluation)	12

* It is not the intention that data is collected in the field by candidates individually. Where this is unavoidable, e.g. due to there being only one candidate, then the candidate must be accompanied by an adult. It is expected that studies are based on primary data collection and that secondary data is used to complement this, e.g. for comparison purposes or to introduce the topic.

Coursework guidance

Setting up a coursework assignment

You should structure each coursework assignment to promote the:

- acquisition of geographical knowledge
- understanding and application of ideas
- development of skills and the clarification of values in a geographical context.

The coursework assignment will follow the accepted 'route to geographical enquiry' as outlined below.

The route to geographical enquiry		
1	**Identification of issue, question or problem – the hypothesis**	A topic for investigation is recognised through observation, discussion, reading or previous study. The design of hypotheses or guiding questions to test the issue, overall question, or problem.
2	**Objectives of the study are defined**	The objectives of the study are defined in specific terms. Decisions are made on: (a) what data are relevant to the study (b) how the data can be collected.
3	**Collection of data**	Candidates carry out a set of tasks, which should include fieldwork to collect primary data, such as undertaking questionnaires, mapping or sketching, observation, recording counts or measurements. This may also involve gathering data from secondary sources such as census information, the internet, published maps, books, newspapers or magazines.
4	**Selection and collation of data**	You may collate data for class use. Candidates select data to develop the aims or hypotheses for the topic.
5	**Presentation and recording of the results**	Candidates individually record results and present findings in appropriate forms using a variety of maps, graphs, etc.
6	**Analysis and interpretation**	Candidates individually analyse and interpret their findings in response to the issue/question/problem with reference to relevant geographical concepts.
7	**Making effective conclusions, evaluation and suggestions for further work**	Candidates individually draw conclusions from their findings and make evaluations related to the original objectives. Comments are made on the strengths and limitations of the data together with improvements and possibilities for further study.

Examples of suitable coursework assignments

The coursework assignments listed below identify issues, questions or problems which could be investigated.

Physical geography

- Does river velocity increase downstream?
- Does the bedload of a local river become smaller and more rounded downstream?
- How far do a river's characteristics fit the Bradshaw model?
- Does pollution increase as a river flows downstream?
- A comparison of two beaches to see if the size of beach material gets larger towards the top of a beach nearer to the cliff.
- The variation in sand-dune ecosystems with distance from the sea.
- How effective are sea defences in managing longshore drift?
- Does the direction of the wind and waves influence the size and location of pebbles on a beach?
- Does the amount of carbon stored in trees vary between two different woodlands?
- Is there a relationship between vegetation and variation in abiotic factors in a local area?
- How does the carbon cycle vary between local woodlands and is this reflected in differences in their management (taking into account tree felling)?
- Comparing the influence on local businesses of an extreme weather event such as a cyclone.

Human geography

- Are push factors more important than pull factors influencing migrants to a named area?
- Are the leisure facilities of a settlement area adequate for the needs of its population?
- How effective is waste management within different areas of a city?
- Do pedestrian and traffic patterns vary from the urban fringe to the centre of a city?
- How and why does environmental quality vary in different housing areas of a city?
- Comparing the quality of life between urban and rural areas.
- Comparing the quality of life within an urban area.
- Which stage of the Butler Model have different tourist towns in the region or named area reached?
- Comparing the environmental benefits and problems caused by tourism in the local area.
- How sustainable is the management of tourism in a local National Park?
- Evaluating a range of sites for a solar power farm or wind farm in the local area.
- Do the benefits for the local community of a named mine (or industry) outweigh the disadvantages?
- Is there a pattern to the location of TNC's in a nearby city?
- How sustainable are farming systems in the local area?

This list is not prescriptive and other titles are equally valid providing they fall within the scope of this syllabus.

Assessment criteria for Component 3: Coursework

Guidance on using levels-based mark schemes

Marking of work should be positive, rewarding achievement where possible, but clearly differentiating across the whole range of marks, where appropriate.

The marker should look at the work and then make a judgement about which level statement is the best fit. In practice, work does not always match one level statement precisely so a judgement may need to be made between two or more level statements.

Once a best-fit level statement has been identified, use the following guidance to decide on a specific mark:

- If the candidate's work **convincingly** meets the level statement, award the highest mark.
- If the candidate's work **adequately** meets the level statement, award the most appropriate mark in the middle of the range (where middle marks are available).
- If the candidate's work **just** meets the level statement, award the lowest mark.

The candidate's coursework is internally marked and externally moderated using the following marking grids. These remain the same year-on-year.

The coursework assignment should be between **1800–2200 words**. The title, stated word count, appendices and raw data presented in tables are not included in the word count. Candidates must not confuse length with quality.

Assignments that are significantly over or under the word count guidance may be self-penalising.

Criterion 1: Knowledge and understanding (AO1)

Level	Description	Marks
3	• Accurate use of a range of appropriate geographical terminology. • Aims clearly related to relevant key geographical ideas. • Geographical ideas are clearly linked to the study area. • Comprehensive and relevant information provided using a range of secondary sources. • Geographical ideas are consistently well applied throughout the study. • Focuses on up to three hypotheses/guiding questions which are well justified with expected outcomes clearly stated.	9–12
2	• Uses some appropriate geographical terminology. • Develops a link between aims and geographical ideas. • Some tentative links between geographical ideas and the study area. • Relevant information provided or use of secondary source(s). • Geographical ideas are applied but inconsistently. • Some justification of hypothesis(ses)/guiding question(s) and some expected outcomes stated.	5–8
1	• Shows a limited understanding of the aims. • Geographical ideas may be partially linked to the study area. • Describes information or uses secondary source(s) in simple geographical terms. • Hypothesis(ses)/guiding question(s) stated with little or no justification or expected outcomes stated.	1–4
0	• No creditable response.	0

Criterion 2: Observation and collection of data (AO2)

Level	Description	Marks
3	• Collects and records detailed data from primary source(s). • Demonstrates comprehensive and relevant planning. • Detailed reference and justification of sampling strategy(ies) used.	9–12
2	• Collects and records appropriate data from primary source(s). • Some evidence of appropriate planning. • Includes reference to sampling strategy(ies) used.	5–8
1	• Collects and records basic information from primary source(s). • Some evidence of simple planning. • Limited or no evidence of an appropriate sampling strategy used.	1–4
0	• No creditable response.	0

Criterion 3: Organisation and presentation of data (AO2)

Level	Description	Marks
3	• A concise, well-balanced study following the route to geographical enquiry. • Study is well ordered with a contents page, page numbers and clear headings. • Includes tables of data relevant to the aims/hypotheses/guiding questions. • Effective use of at least two appropriate complex data presentation techniques. • Effective use of at least one relevant map.	9–12
2	• The study is logically ordered following the route to geographical enquiry. • Includes some appropriate tables of data. • Effective use of two or more simple data presentation techniques. • Includes one relevant map.	5–8
1	• The study has some structure and may follow some of the stages of the route to geographical enquiry. • Includes one or two simple tables of data. • Uses one simple data presentation technique.	1–4
0	• No creditable response.	0

Criterion 4: Analysis and interpretation (AO2)

Level	Description	Marks
3	• Thorough and relevant analysis and interpretation of the data. • Clearly identifies both trends and anomalies and could include correctly interpreted results of statistical testing. • Provides reasoned explanations of the data collected clearly based on geographical theory or identified characteristics of the study area.	9–12
2	• Some appropriate analysis and interpretation of the data. • Some identification of simple trends which may include anomalies. • Provides some appropriate explanations of the data collected with reference to geographical theory or identified characteristics of the study area.	5–8
1	• Makes simple or descriptive statements about the data collected.	1–4
0	• No creditable response.	0

Criterion 5: Conclusion: Evaluation and decision-making (AO3)

Level	Description	Marks
3	• States clear conclusions which are directly linked to the aims and hypotheses/guiding questions. • Conclusions are supported by key primary quantitative and/or qualitative data or through specific reference(s) to figures such as graphs, maps or photographs. • Conclusions are directly linked to relevant geographical theory or specific characteristics of the study area. • Clear evaluation, identifying strengths and weaknesses of the study, including specific justified suggestions of how weaknesses could be overcome. • Suggests some ideas for further study.	9–12
2	• States some appropriate conclusions with links to the aims/hypothesis(ses)/guiding question(s). • Conclusions are supported by reference to data collected or some explanation of the findings. • Some evaluation of a limited range of strengths and/or weaknesses, with some simple suggestions of how weaknesses could be overcome.	5–8
1	• States simple and unsupported conclusion(s) with minimal links to aims/ hypothesis(ses)/guiding question(s). • Simple evaluative statements which show limited awareness of strengths and/or weaknesses of the study.	1–4
0	• No creditable response.	0

Notes

Simple data presentation techniques include the following:

bar charts, doughnut graphs, line-graphs, pie charts, pictographs, appropriately labelled photographs, maps which are clearly utilised by the candidate, e.g. to show data collection sites.

'Effectively' means that the technique is appropriate for the data and is constructed accurately, e.g. graphs having axes with appropriate labels to include the units. It is expected that scanned images are totally legible.

Complex data presentation techniques include the following:

located bars, pies and proportional symbols or arrows, desire lines, flow lines, radar graphs, rose charts, river cross-sections or beach profiles (if more than one, they need to be to the same scale), bi-polar graphs, well annotated graphs (at least three appropriate annotations), scatter graphs with lines of best-fit, compound/ divided/stacked bar graphs and age/sex pyramids, a fully and correctly worked example of a statistical technique, e.g. Spearman's Rank Correlation Coefficient and a hand-drawn map or field sketch with appropriate labels or annotations.

Administration of coursework

Using the samples database

The coursework is to be submitted via Submit for Assessment.

The samples database refers you to key information about administering coursework, speaking tests and examined coursework for each syllabus.

Use the database to find out:

- when and how to submit your marks for moderated coursework and non-coursework tests
- when and how to submit your candidates' work
- which forms to complete and return with your candidates' work.

The samples database at **www.cambridgeinternational.org/samples** will ask you for:

- your country/territory
- the syllabus code (i.e. 0460 for this syllabus).

The database will then take you to the information you need, including dates and methods of submission of candidates' marks and work, as well as any forms you may need to complete.

Cover sheets

You should submit a cover sheet completed for each candidate attached to the front of their work. Include the cover sheets with the sample materials you send to Cambridge International. Download the cover sheet from the samples database at **www.cambridgeinternational.org/samples**. Follow the instructions on the form itself to complete it.

Recording and submitting candidates' marks and work

Please refer to the samples database at **www.cambridgeinternational.org/samples** for information, dates and methods of submission of candidates' marks and work. You should follow the instructions for coursework component name(s) and number(s) on the samples database.

You should record marks on the required form(s) which you should download each year from the samples database at **www.cambridgeinternational.org/samples**. Follow the instructions on the form to complete it. The marks on these form(s) must be identical to the marks you submit to Cambridge International.

Internal moderation

If more than one teacher in your centre is marking internal assessments, you must make arrangements to moderate or standardise your teachers' marking so that all candidates are assessed to a common standard. If only one teacher is marking internal assessments, no internal moderation is necessary. You can find further information on the process of internal moderation in the *Cambridge Handbook* and on the samples database for the relevant year of assessment.

You should record the internally moderated marks for all candidates on the Coursework Assessment Summary Form and submit these marks to Cambridge International according to the instructions on the samples database at **www.cambridgeinternational.org/samples**

External moderation

Cambridge International will externally moderate all internally assessed components.

- You must submit the marks of all candidates to Cambridge International.
- You must also submit the marked work of a sample of candidates to Cambridge International.

The sample you submit to Cambridge International should ideally include examples of the marking of each teacher. The samples database at **www.cambridgeinternational.org/samples** explains how the sample will be selected.

The samples database at **www.cambridgeinternational.org/samples** also provides details of how to submit the marks and work.

External moderators will produce a short report for each centre with feedback on your marking and administration of the assessment.

Supervising coursework

Coursework must be a candidate's own, unaided work. The teacher must be able to authenticate the work is the candidate's own.

A general discussion on the progress of coursework is a natural part of the teacher–candidate relationship, as it is for other parts of the course. Candidates can revise their work following feedback, but you should only give brief summative comments on progress.

Teachers can support candidates by reviewing their work before it is handed in for final assessment. Teachers can do this orally or through written feedback. Teachers should not correct or edit draft coursework. Advice should be kept at a general level so that the candidate leads the discussion and makes the suggestions for any amendments. Teachers must not give detailed advice to individual candidates or groups of candidates on how their work can be improved to meet the assessment criteria.

For further information about supervising coursework, see the *Cambridge Handbook* for the relevant year of assessment at **www.cambridgeinternational.org/eoguide**

Authenticity and academic honesty/avoidance of plagiarism

It is the centre's responsibility to make sure all assessed work is the candidate's original work. Candidates must **not** submit someone else's work as their own, or use material produced by someone else without citing and referencing it properly. You should make candidates aware of the academic conventions governing quotation and reference to the work of others, and teach candidates how to use them.

A candidate taking someone else's work or ideas and passing them off as their own is an example of plagiarism. It is your responsibility as a teacher to prevent plagiarism from happening and to detect it if it does happen. For more information, search for 'Preventing plagiarism – guidance for teachers' on our website at **www.cambridgeinternational.org/teachingandassessment**. Cambridge International has robust systems in place to detect, investigate and address plagiarism once work has been submitted.

Cambridge International has a policy on the use of generative AI by candidates in coursework. The inappropriate use of AI should be treated as a form of plagiarism. The policy includes guidance on how to detect use of AI in coursework and what action teachers should take. It can be found at: **www.cambridgeinternational.org/generative-ai-in-coursework**

You will be requested to declare the authenticity of the work at the point of submitting the work. The candidate must sign a statement confirming that they are submitting their own work. You countersign it to confirm that you believe the work is theirs. Centres should use the cover sheet on the samples database for this purpose, and it must appear on or before the title page of the document.

Paper 4 – Geographical Investigations

Optional written paper, 1 hour 30 minutes, 60 marks

Externally assessed.

Paper 4 tests assessment objectives AO1, AO2 and AO3.

This paper contains **two** compulsory questions each worth 30 marks.

The Geographical Investigations Paper provides a complementary assessment of the assessment objectives tested in Papers 1 and 2, with an emphasis on AO2, Skills and analysis.

The breakdown of marks in Paper 4 assess the same assessment objectives in the same proportions as provided by the route to geographical enquiry and generic mark scheme for the coursework option.

Assessment criteria	Marks allocated
AO1: **Knowledge and understanding**	12
AO2: **Skills and analysis**	
Observation and collection of data	12
Organisation and presentation of data	12
Analysis and interpretation	12
AO3: **Evaluation and decision-making** (conclusion and evaluation)	12

Candidates are set a series of tasks on issues relating to the topics covered on Paper 1 and Paper 2. Questions test the methodology of questionnaires, observation, counts and measurement techniques, and involve testing hypotheses appropriate to specific topics. Questions also test processing, presentation, analysis and evaluation of data.

Paper 4 guidance

Candidates should be aware of the general requirements for this paper.

To prepare for this paper candidates should follow the route to geographical enquiry, as for Component 3 (Coursework). **It is also very important that they should have some practical experience of fieldwork methodology.**

One approach is to introduce the appropriate enquiry skills and techniques relevant to Paper 4 during the teaching of specific topics for Paper 1 and Paper 2. For example, when teaching Topic 1 Changing river environments, you could discuss how key aspects of the form of rivers can be measured, how depth data can be plotted and how cross-sectional area and discharge can be calculated. You could introduce the skills required for questionnaires, counts and observations in a variety of topics, wherever this is practical for the centre.

Candidates should be aware of the range of aspects involved in the route to geographical enquiry for coursework assignments, such as identifying aims and hypotheses/guiding questions, using enquiry skills to collect data, using presentation techniques to display data, making analyses of data and reaching conclusions and evaluating their methods, results and conclusions.

Enquiry skills involved in coursework assignments are stated in items 1 to 7 of ‘The route to geographical enquiry’ (page 33).

Enquiry skills for Paper 4

Formulating aims and hypotheses

Candidates should be familiar with hypotheses as statements that form the basis of coursework assignments. The hypotheses may investigate a geographical concept, for example, 'The CBD has better waste collection compared with the suburbs.' Hypotheses can be tested by collecting relevant data, by analysis and by drawing conclusions using the data as evidence.

Collection of data

Questions will test knowledge and application of the methodology used in the following range of enquiry skills to collect data. Questionnaires can be oral or written to gain information from an individual or a group of individuals. Questionnaires can be used when studying a number of syllabus topics, including spheres of influence; use of services; a farm study; a factory or industrial study; leisure activities; tourism; or attitudes of the public to developments associated with resource development.

Candidates should be aware of:

factors influencing the successful design of questionnaires, for example:

- layout
- format of questions
- appropriate wording of questions
- number of questions.

the practical considerations involved in conducting a questionnaire, for example:

- sampling methods
- pilot survey
- location of survey.

Observation

Examples of using observations to collect data include the recording of land use in an urban area or observations of river or coastal features. Candidates can use maps, recording sheets, field sketches and annotated photographs to record their observations.

Counts

Examples of counts include pedestrian and traffic counts. Candidates should be aware of suitable methods for recording counts, including the layout of recording sheets, instructions and the information required to identify the sheet following the count (time, date, location and name of recorder).

Measurement

Candidates should be aware that when they are recording measurements, it is important to plan the layout of the recording sheet, the location of instruments and the sampling methods used to provide reliable data.

Candidates should know what measurement equipment 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
- measurement techniques associated with human fieldwork such as survey strategies and pedestrian/traffic counts.

Data presentation techniques

Candidates need to know about the illustrative techniques that can be used to present data. These include various types of graphs, maps and diagrams, for example:

- line graphs
- bar graphs
- divided bar graphs
- histograms, flow diagrams
- rose charts
- isoline maps
- scatter graphs (including best-fit lines)
- pie graphs
- triangular graphs
- radial graphs
- dispersion graphs
- choropleth maps
- kite diagrams
- pictograms.

See also the previous list on page 27 for a list of data presentation techniques.

Analysis and interpretation

Candidates learn how to describe the patterns in data presented in graphs and tables of results. Questions often require candidates to refer to relevant geographical knowledge and understanding when they are interpreting data.

Making effective conclusions, evaluation and suggestions for further work

Using the evidence from the data, candidates should be able to make judgements on the validity of the original hypothesis or the aims of the assignment. They must refer to the reliability of the data collected and give a critical evaluation of the data collection methods chosen, along with suggestions for other possible hypotheses/guiding questions and extension work.

Command words

Command words and their meanings help candidates know what is expected from them in the exams. The table below includes command words used in the assessment for this syllabus. The use of the command word will relate to the subject context.

Command word	What it means
Assess	make an informed judgement
Calculate	work out from given facts, figures or information
Compare	identify/comment on similarities and/or differences
Define	give precise meaning
Describe	state the points of a topic / give characteristics and main features
Devise	create a questionnaire to present other information according to specific requirements
Discuss	write about issue(s) or topic(s) in depth in a structured way
Estimate	use judgement to give a unit value to a distance or area
Evaluate	judge or calculate the quality, importance, amount, or value of something
Explain	set out purposes or reasons / make the relationships between things clear / say why and/or how and support with relevant evidence
Give	produce an answer from a given source or recall/memory
Identify	name/select/recognise
Justify	support a case with evidence/argument
Locate	indicate the position of a place, feature or entity from/in a resource
Plan	create a method to obtain or present certain information (such as a questionnaire) according to specific requirements
Plot	mark point(s) on a graph/diagram/map
Predict	suggest what may happen based on available information
Sketch	make a simple freehand drawing showing the key features, taking care over proportions
State	express in clear terms
Suggest	apply knowledge and understanding to situations where there are a range of valid responses in order to make proposals / put forward considerations

Phrases such as ‘How far do you agree ...?’ and ‘To what extent ...?’ may also be seen in the assessment of this syllabus.

5 What else you need to know

This section is an overview of other information you need to know about this syllabus. It will help to share the administrative information with your exams officer so they know when you will need their support. Find more information about our administrative processes at **www.cambridgeinternational.org/eoguide**

Before you start

Previous study

We recommend that learners starting this course should have studied a broad curriculum such as the Cambridge Lower Secondary programme or equivalent national educational framework.

We do not expect learners starting this course to have previously studied geography.

Guided learning hours

We design Cambridge IGCSE syllabuses to require about 130 guided learning hours for each subject. This is for guidance only. The number of hours a learner needs to achieve the qualification may vary according to each school and the learners' previous experience of the subject.

Availability and timetables

All Cambridge schools are allocated to one of six administrative zones. Each zone has a specific timetable. Find your administrative zone at **www.cambridgeinternational.org/adminzone** This syllabus is **not** available in all administrative zones. To find out if this syllabus is available to your administrative zone check the syllabus page at **www.cambridgeinternational.org/0460**

You can view the timetable for your administrative zone at **www.cambridgeinternational.org/timetables**

You can enter candidates in the June and November exam series. If your school is in India, you can also enter your candidates in the March exam series.

Check you are using the syllabus for the year the candidate is taking the exam.

Private candidates can enter for this syllabus. Some components are not available to private candidates. For more information, please refer to the *Cambridge Guide to Making Entries*.

Combining with other syllabuses

Candidates can take this syllabus alongside other Cambridge International syllabuses in a single exam series. The only exceptions are:

- Cambridge IGCSE (9–1) Geography (0976)
- Cambridge O Level Geography (2217)
- syllabuses with the same title at the same level.

Cambridge IGCSE, Cambridge IGCSE (9–1) and Cambridge O Level syllabuses are at the same level.

Group awards: Cambridge ICE

Cambridge ICE (International Certificate of Education) is a group award for Cambridge IGCSE. It encourages schools to offer a broad and balanced curriculum by recognising the achievements of learners who pass exams in a range of different subjects.

Learn more about Cambridge ICE at **www.cambridgeinternational.org/cambridgeice**

Making entries

Exams officers are responsible for submitting entries. We encourage them to work closely with you to make sure they enter the right number of candidates for the right combination of syllabus components. Entry option codes and instructions for submitting entries are in the *Cambridge Guide to Making Entries*. Your exams officer has access to this guide.

Exam administration

To keep our exams secure, we produce question papers for different areas of the world, known as administrative zones. We allocate all Cambridge schools to an administrative zone determined by their location. Each zone has a specific timetable.

Some of our syllabuses offer candidates different assessment options. An entry option code is used to identify the components the candidate will take relevant to the administrative zone and the available assessment options.

Support for exams officers

We know how important exams officers are to the successful running of exams. We provide them with the support they need to make entries on time. Your exams officer will find this support, and guidance for all other phases of the Cambridge Exams Cycle, at **www.cambridgeinternational.org/eoguide**

Retakes and carrying forward marks

Candidates can retake the whole qualification as many times as they want to. Information on retake entries is at **www.cambridgeinternational.org/retakes**

Candidates cannot resubmit, in whole or in part, coursework from a previous series for remarking. For information, refer to the *Cambridge Handbook* for the relevant year of assessment at **www.cambridgeinternational.org/eoguide**

Marks achieved in Cambridge IGCSE Geography Component 3 – Coursework can be carried forward to future series, subject to the requirements set out in the *Cambridge Handbook* for the relevant year of assessment and the *Carry-forward regulations supplement* at **www.cambridgeinternational.org/eoguide**

To confirm what entry options are available for this syllabus, refer to the *Cambridge Guide to Making Entries* for the relevant series. Regulations for carrying forward component marks can be found in the *Cambridge Handbook* for the relevant year of assessment at **www.cambridgeinternational.org/eoguide**

Language

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

Accessibility and equality

Syllabus and assessment design

At Cambridge we recognise that our candidates have highly diverse socio-economic, cultural and linguistic backgrounds, and may also have a variety of protected characteristics. Protected characteristics include special educational needs and disability (SEND), religion and belief, and characteristics related to gender and identity.

We follow accessible design principles to make our syllabuses and assessment materials as accessible and inclusive as possible. We review language accessibility, visual resources, question layout and the contexts used in questions. Using this approach means that we give all candidates the fairest possible opportunity to demonstrate their knowledge, skills and understanding.

Access arrangements

Our design principles aim to make sure our assessment materials are accessible for all candidates. To further minimise barriers faced by candidates with SEND, illness or injury, we offer a range of access arrangements and modified papers. This is the principal way in which we comply with our duty to make 'reasonable adjustments', as guided by the UK Equality Act 2010.

Important:

Requested access arrangements should be based on evidence of the candidate's barrier to taking an assessment and should also reflect their normal way of working. This is explained in section 1.3 of the *Cambridge Handbook* **www.cambridgeinternational.org/eoguide**

- For Cambridge to approve an access arrangement, we need to agree that it constitutes a reasonable adjustment and does not affect the security or integrity of the assessment.
- Details of our standard access arrangements and modified question papers are available in section 1.3 of the *Cambridge Handbook* **www.cambridgeinternational.org/eoguide**
- Centres are expected to check the availability of access arrangements and modified question papers at the start of the course. All applications should be made by the deadlines published in section 1.3 of the *Cambridge Handbook* **www.cambridgeinternational.org/eoguide**
- Contact us at the start of the course to find out if we can approve an access arrangement that is not included in the list of standard access arrangements.
- Candidates who cannot access parts of the assessment may be able to receive an award based on the parts they have completed.

After the exam

Grading and reporting

Grades A*, A, B, C, D, E, F or G indicate the standard a candidate achieved at Cambridge IGCSE.

A* is the highest and G is the lowest. 'Ungraded' means that the candidate's performance did not meet the standard required for grade G. 'Ungraded' is reported on the statement of results but not on the certificate.

In specific circumstances your candidates may see one of the following letters on their statement of results:

- Q (PENDING)
- X (NO RESULT).

These letters do not appear on the certificate.

On the statement of results, Cambridge IGCSE is shown as INTERNATIONAL GENERAL CERTIFICATE OF SECONDARY EDUCATION (IGCSE).

On certificates, Cambridge IGCSE is shown as International General Certificate of Secondary Education.

How students and teachers can use the grades

Assessment at Cambridge IGCSE has two purposes:

1 to measure learning and achievement

The assessment confirms achievement and performance in relation to the knowledge, understanding and skills specified in the syllabus.

2 to show likely future success

The outcomes help predict which students are well prepared for or likely to be successful in a particular course or career.

The outcomes help students choose the most suitable course or career.

Changes to this syllabus for 2027, 2028 and 2029

The syllabus has been reviewed and revised for first examination in 2027.

You must read the whole syllabus before planning your teaching programme.

Changes to syllabus content	• The content has been divided into physical and human geography topics. • Some content has been reorganised, added or removed in response to subject expert guidance. • A new topic on climate change has been added. • The settlement, water, and weather topics have been removed. • More focus has been given to sustainability. • The terms MEDCs and LEDCs have been replaced with HICs, MICs and LICs. • Case studies have been replaced by detailed specific examples.
Changes to assessment (including changes to specimen papers)	• The subject content has been divided between Paper 1 and Paper 2 for assessment. • Paper 1 is based upon physical geography and Paper 2 is based upon human geography. • There will no longer be a specific skills paper. Geographical skills will be tested across all components. • Paper 2 has been changed to match the Paper 1 format. The number of marks will increase to 75 and the examination will be 1 hour 45 minutes. • Paper 4 has been renamed as Geographical Investigations.
Other changes	• The coursework handbook has been revised and updated. • Coursework will now be submitted via Submit for Assessment (SFA).

In addition to reading the syllabus, you should refer to the updated specimen assessment materials. The specimen papers will help your students become familiar with exam requirements and command words in questions. The specimen mark schemes show how students should answer questions to meet the assessment objectives.

Any textbooks endorsed to support the syllabus for examination from 2027 are suitable for use with this syllabus.

Syllabuses and specimen materials represent the final authority on the content and structure of all of our assessments.

With a Customer Services team available 24 hours a day, 6 days a week, and dedicated regional teams supporting schools in 160 countries, we understand your local context and are here to guide you so you can provide your learners with everything they need to prepare for Cambridge IGCSE.

Quality management

We are committed to providing exceptional quality. In line with this commitment, our quality management system for the provision of international education programmes and qualifications for students aged 5 to 19 is independently certified as meeting the internationally recognised standard, ISO 9001:2015.
Learn more at **www.cambridgeinternational.org/about-us/our-standards/**

School feedback: ‘While studying Cambridge IGCSE and Cambridge International A Levels, students broaden their horizons through a global perspective and develop a lasting passion for learning.’

Feedback from: Zhai Xiaoning, Deputy Principal, The High School Affiliated to Renmin University of China

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