Paper 1: Living with the physical environment

This unit is concerned with the dynamic nature of physical processes and systems, and human interaction with them in a variety of places and at a range of scales.

The aims of this unit are to develop an understanding of the tectonic, geomorphological, biological and meteorological processes and features in different environments, and the need for management strategies governed by sustainability and consideration of the direct and indirect effects of human interaction with the Earth and the atmosphere.

Section A: The challenge of natural hazards

In this section, students are required to study all the themes.

Natural hazards

| Key idea | Specification content |
| --- | --- |
| Natural hazards pose major risks to people and property. | Definition of a natural hazard.  Types of natural hazard.  Factors affecting hazard risk. |

Tectonic Hazards

| Key idea | Specification content |
| --- | --- |
| Earthquakes and volcanic eruptions are the result of physical processes. | Plate tectonics theory.  Global distribution of earthquakes and volcanic eruptions and their relationship to plate margins.  Physical processes taking place at different types of plate margin (constructive, destructive and conservative) that lead to earthquakes and volcanic activity. |
| The effects of, and responses to, a tectonic hazard vary between areas of contrasting levels of wealth. | Primary and secondary effects of a tectonic hazard.  Immediate and long-term responses to a tectonic hazard.  Use **named examples** to show how the effects and responses to a tectonic hazard vary between two areas of contrasting levels of wealth. |
| Management can reduce the effects of a tectonic hazard. | Reasons why people continue to live in areas at risk from a tectonic hazard.  How monitoring, prediction, protection and planning can reduce the risks from a tectonic hazard. |

Weather hazards

| Key idea | Specification content |
| --- | --- |
| Global atmospheric circulation helps to determine patterns of weather and climate. | General atmospheric circulation model: pressure belts and surface winds. |
| Tropical storms (hurricanes, cyclones, typhoons) develop as a result of particular physical conditions. | Global distribution of tropical storms (hurricanes, cyclones, typhoons).  An understanding of the relationship between tropical storms and general atmospheric circulation.  Causes of tropical storms and the sequence of their formation and development.  The structure and features of a tropical storm.  How climate change might affect the distribution, frequency and intensity of tropical storms. |
| Tropical storms have significant effects on people and the environment. | Primary and secondary effects of tropical storms.  Immediate and long-term responses to tropical storms.  Use a **named example** of a tropical storm to show its effects and responses.  How monitoring, prediction, protection and planning can reduce the effects of tropical storms. |
| The UK is affected by a number of weather hazards. | An overview of types of weather hazard experienced in the UK. |
| Extreme weather events in the UK have impacts on human activity. | An **example** of a recent extreme weather event in the UK to illustrate:   * causes * social, economic and environmental impacts * how management strategies can reduce risk.   Evidence that weather is becoming more extreme in the UK. |

Climate change

| Key idea | Specification content |
| --- | --- |
| Climate change is the result of natural and human factors, and has a range of effects. | Evidence for climate change from the beginning of the Quaternary period to the present day.  Possible causes of climate change:   * natural factors – orbital changes, volcanic activity and solar output * human factors – use of fossil fuels, agriculture and deforestation.   Overview of the effects of climate change on people and the environment. |
| Managing climate change involves both mitigation (reducing causes) and adaptation (responding to change). | Managing climate change:   * mitigation – alternative energy production, carbon capture, planting trees, international agreements * adaptation – change in agricultural systems, managing water supply, reducing risk from rising sea levels. |

Section B: The living world

In this section, students are required to study [Ecosystems](https://www.aqa.org.uk/subjects/geography/gcse/geography-8035/subject-content/living-with-the-physical-environment#id-Ecosystems_1_1_3_1), [Tropical rainforests](https://www.aqa.org.uk/subjects/geography/gcse/geography-8035/subject-content/living-with-the-physical-environment#id-Tropical_rainforests_1_1_3_2) and [Hot deserts](https://www.aqa.org.uk/subjects/geography/gcse/geography-8035/subject-content/living-with-the-physical-environment#id-Hot_deserts_1_1_3_3).

Ecosystems

| Key idea | Specification content |
| --- | --- |
| Ecosystems exist at a range of scales and involve the interaction between biotic and abiotic components. | An **example** of a small scale UK ecosystem to illustrate the concept of interrelationships within a natural system, an understanding of producers, consumers, decomposers, food chain, food web and nutrient cycling.  The balance between components. The impact on the ecosystem of changing one component.  An overview of the distribution and characteristics of large scale natural global ecosystems. |

Tropical rainforests

| Key idea | Specification content |
| --- | --- |
| Tropical rainforest ecosystems have a range of distinctive characteristics. | The physical characteristics of a tropical rainforest.  The interdependence of climate, water, soils, plants, animals and people.  How plants and animals adapt to the physical conditions.  Issues related to biodiversity. |
| Deforestation has economic and environmental impacts. | Changing rates of deforestation.  A **case study** of a tropical rainforest to illustrate:   * causes of deforestation – subsistence and commercial farming, logging, road building, mineral extraction, energy development, settlement, population growth * impacts of deforestation – economic development, soil erosion, contribution to climate change. |
| Tropical rainforests need to be managed to be sustainable. | Value of tropical rainforests to people and the environment.  Strategies used to manage the rainforest sustainably – selective logging and replanting, conservation and education, ecotourism and international agreements about the use of tropical hardwoods, debt reduction. |

Hot deserts

| Key idea | Specification content |
| --- | --- |
| Hot desert ecosystems have a range of distinctive characteristics. | The physical characteristics of a hot desert.  The interdependence of climate, water, soils, plants, animals and people.  How plants and animals adapt to the physical conditions.  Issues related to biodiversity. |
| Development of hot desert environments creates opportunities and challenges. | A **case study** of a hot desert to illustrate:   * development opportunities in hot desert environments: mineral extraction, energy, farming, tourism * challenges of developing hot desert environments: extreme temperatures, water supply, inaccessibility. |
| Areas on the fringe of hot deserts are at risk of desertification. | Causes of desertification – climate change, population growth, removal of fuel wood, overgrazing, over-cultivation and soil erosion.  Strategies used to reduce the risk of desertification – water and soil management, tree planting and use of appropriate technology. |

Section C: Physical landscapes in the UK

In this section, students are required to study [UK physical landscapes](https://www.aqa.org.uk/subjects/geography/gcse/geography-8035/subject-content/living-with-the-physical-environment#id-United_Kingdom_1_1_2_1), [Coastal landscapes in the UK](https://www.aqa.org.uk/subjects/geography/gcse/geography-8035/subject-content/living-with-the-physical-environment#id-Coastal_landscapes_1_1_2_2) and [River landscapes in the UK](https://www.aqa.org.uk/subjects/geography/gcse/geography-8035/subject-content/living-with-the-physical-environment#id-River_landscapes_1_1_2_3).

UK physical landscapes

| Key idea | Specification content |
| --- | --- |
| The UK has a range of diverse landscapes. | An overview of the location of major upland/lowland areas and river systems. |

Coastal landscapes in the UK

| Key idea | Specification content |
| --- | --- |
| The coast is shaped by a number of physical processes. | Wave types and characteristics.  Coastal processes:   * weathering processes – mechanical, chemical * mass movement – sliding, slumping and rock falls * erosion – hydraulic power, abrasion and attrition * transportation – longshore drift * deposition – why sediment is deposited in coastal areas. |
| Distinctive coastal landforms are the result of rock type, structure and physical processes. | How geological structure and rock type influence coastal forms.  Characteristics and formation of landforms resulting from erosion – headlands and bays, cliffs and wave cut platforms, caves, arches and stacks.  Characteristics and formation of landforms resulting from deposition – beaches, sand dunes, spits and bars.  An **example** of a section of coastline in the UK to identify its major landforms of erosion and deposition. |
| Different management strategies can be used to protect coastlines from the effects of physical processes. | The costs and benefits of the following management strategies:   * hard engineering – sea walls, rock armour, gabions and groynes * soft engineering – beach nourishment and reprofiling, dune regeneration * managed retreat – coastal realignment.   An **example** of a coastal management scheme in the UK to show:   * the reasons for management * the management strategy * the resulting effects and conflicts. |

River landscapes in the UK

| Key idea | Specification content |
| --- | --- |
| The shape of river valleys changes as rivers flow downstream. | The long profile and changing cross profile of a river and its valley.  Fluvial processes:   * erosion – hydraulic action, abrasion, attrition, solution, vertical and lateral erosion * transportation – traction, saltation, suspension and solution * deposition – why rivers deposit sediment. |
| Distinctive fluvial landforms result from different physical processes. | Characteristics and formation of landforms resulting from erosion – interlocking spurs, waterfalls and gorges.  Characteristics and formation of landforms resulting from erosion and deposition – meanders and ox-bow lakes.  Characteristics and formation of landforms resulting from deposition – levées, flood plains and estuaries.  An **example** of a river valley in the UK to identify its major landforms of erosion and deposition. |
| Different management strategies can be used to protect river landscapes from the effects of flooding. | How physical and human factors affect the flood risk – precipitation, geology, relief and land use.  The use of hydrographs to show the relationship between precipitation and discharge.  The costs and benefits of the following management strategies:   * hard engineering – dams and reservoirs, straightening, embankments, flood relief channels * soft engineering – flood warnings and preparation, flood plain zoning, planting trees and river restoration.   An **example** of a flood management scheme in the UK to show:   * why the scheme was required * the management strategy * the social, economic and environmental issues. |

Paper 2: Challenges in the human environment

This unit is concerned with human processes, systems and outcomes and how these change both spatially and temporally. They are studied in a variety of places and at a range of scales and must include places in various states of development, such as higher income countries (HICs), lower income countries (LICs) and newly emerging economies (NEEs).

The aims of this unit are to develop an understanding of the factors that produce a diverse variety of human environments; the dynamic nature of these environments that change over time and place; the need for sustainable management; and the areas of current and future challenge and opportunity for these environments.

Section A: Urban issues and challenges

| Key idea | Specification content |
| --- | --- |
| A growing percentage of the world’s population lives in urban areas. | The global pattern of urban change.  Urban trends in different parts of the world including HICs and LICs.  Factors affecting the rate of urbanisation – migration (push–pull theory), natural increase.  The emergence of megacities. |
| Urban growth creates opportunities and challenges for cities in LICs and NEEs. | A **case study** of a major city in an LIC or NEE to illustrate:   * the location and importance of the city, regionally, nationally and internationally * causes of growth: natural increase and migration * how urban growth has created opportunities:   + social: access to services – health and education; access to resources – water supply, energy   + economic: how urban industrial areas can be a stimulus for economic development * how urban growth has created challenges:   + managing urban growth – slums, squatter settlements   + providing clean water, sanitation systems and energy   + providing access to services – health and education   + reducing unemployment and crime   + managing environmental issues – waste disposal, air and water pollution, traffic congestion.   An **example** of how urban planning is improving the quality of life for the urban poor. |
| Urban change in cities in the UK leads to a variety of social, economic and environmental opportunities and challenges. | Overview of the distribution of population and the major cities in the UK.  A **case study** of a major city in the UK to illustrate:   * the location and importance of the city in the UK and the wider world * impacts of national and international migration on the growth and character of the city * how urban change has created opportunities:   + social and economic: cultural mix, recreation and entertainment, employment, integrated transport systems   + environmental: urban greening * how urban change has created challenges:   + social and economic: urban deprivation, inequalities in housing, education, health and employment   + environmental: dereliction, building on brownfield and greenfield sites, waste disposal   + the impact of urban sprawl on the rural–urban fringe, and the growth of commuter settlements.   An **example** of an urban regeneration project to show:   * reasons why the area needed regeneration * the main features of the project. |
| Urban sustainability requires management of resources and transport. | Features of sustainable urban living:   * water and energy conservation * waste recycling * creating green space.   How urban transport strategies are used to reduce traffic congestion. |

Section C: The challenge of resource management

In this section, students are required to study [Resource management](https://www.aqa.org.uk/subjects/geography/gcse/geography-8035/subject-content/challenges-in-the-human-environment#id-Resource_management_1_2_3_1) and [Water](https://www.aqa.org.uk/subjects/geography/gcse/geography-8035/subject-content/challenges-in-the-human-environment#id-Water_1_2_3_3).

Resource management

| Key idea | Specification content |
| --- | --- |
| Food, water and energy are fundamental to human development. | The significance of food, water and energy to economic and social well-being.  An overview of global inequalities in the supply and consumption of resources. |
| The changing demand and provision of resources in the UK create opportunities and challenges. | An overview of resources in relation to the UK.  Food:   * the growing demand for high-value food exports from low income countries and all-year demand for seasonal food and organic produce * larger carbon footprints due to the increasing number of ‘food miles’ travelled, and moves towards local sourcing of food * the trend towards agribusiness.   Water:   * the changing demand for water * water quality and pollution management * matching supply and demand – areas of deficit and surplus * the need for transfer to maintain supplies.   Energy:   * the changing energy mix – reliance on fossil fuels, growing significance of renewables * reduced domestic supplies of coal, gas and oil * economic and environmental issues associated with exploitation of energy sources. |

Water

| Key idea | Specification content |
| --- | --- |
| Demand for water resources is rising globally but supply can be insecure, which may lead to conflict. | Areas of surplus (security) and deficit (insecurity):   * global patterns of water surplus and deficit * reasons for increasing water consumption: economic development, rising population * factors affecting water availability: climate, geology, pollution of supply, over-abstraction, limited infrastructure, poverty.   Impacts of water insecurity – waterborne disease and water pollution, food production, industrial output, potential for conflict where demand exceeds supply. |
| Different strategies can be used to increase water supply. | Overview of strategies to increase water supply:   * diverting supplies and increasing storage, dams and reservoirs, water transfers and desalination * an **example** of a large scale water transfer scheme to show how its development has both advantages and disadvantages.   Moving towards a sustainable resource future:   * water conservation, groundwater management, recycling, ‘grey’ water * an **example** of a local scheme in an LIC or NEE to increase sustainable supplies of water. |

Paper 3: Geographical applications

The Geographical applications unit is designed to be synoptic in that students will be required to draw together knowledge, understanding and skills from the full course of study. It is an opportunity for students to show their breadth of understanding and an evaluative appreciation of the interrelationships between different aspects of geographical study.

Section A: Issue evaluation

This section contributes a critical thinking and problem-solving element to the assessment structure. The assessment will provide students with the opportunity to demonstrate geographical skills and applied knowledge and understanding by looking at a particular issue(s) derived from the specification using secondary sources.

The issue(s) will arise from any aspect of the compulsory sections of the subject content but may extend beyond it through the use of resources in relation to specific unseen contexts. Students develop knowledge and understanding of physical geography themes in unit 3.1 and human geography themes in unit 3.2. This section is synoptic and the assessment will require students to use their learning of more than one of the themes in units 3.1 and 3.2 so that they can analyse a geographical issue at a range of scales, consider and select a possible option in relation to the issue(s) and justify their decision.

A resource booklet will be available twelve weeks before the date of the exam so that students have the opportunity to work through the resources, enabling them to become familiar with the material. Students will not be allowed to take the original resource booklet into the examination room but will be issued with a clean copy in the exam. Sources could include maps at different scales, diagrams, graphs, statistics, photographs, satellite images, sketches, extracts from published materials, and quotes from different interest groups.

Assessment will consist of a series of questions related to a contemporary geographical issue(s), leading to a more extended piece of writing which will involve an evaluative judgement. Students will apply knowledge and understanding to interpret, analyse and evaluate the information and issue(s) in the pre-release resources booklet and the question paper. They will also use geographical skills to set the issue(s) in context and to examine conflicting viewpoints about the issue(s).

Students will develop a critical perspective on the issue(s) studied, consider the points of view of the stakeholders involved, make an appraisal of the advantages and disadvantages, and evaluate the alternatives.

The exam will also require students to consider physical and human interrelationships and to make reasoned justifications for proposed solutions in terms of their likely impact on both people and the physical environment.

Section B: Fieldwork (unknown)

Students’ understanding of the enquiry process will be assessed in the following two ways:

1. questions based on the use of fieldwork materials from an unfamiliar context

Students will be expected to:

1. apply knowledge and understanding to interpret, analyse and evaluate information and issues related to geographical enquiry.
2. select, adapt and use a variety of skills and techniques to investigate questions and issues and communicate findings in relation to geographical enquiry.

Geographical skills (across all three papers)

Students are required to develop and demonstrate a range of geographical skills, including cartographic, graphical, numerical and statistical skills, throughout their study of the specification. Skills will be assessed in all three written exams. Ordnance Survey (OS) maps or other map extracts may be used in any of the three exams.

Cartographic skills

Cartographic skills relating to a variety of maps at different scales.

Atlas maps:

* use and understand coordinates – latitude and longitude
* recognise and describe distributions and patterns of both human and physical features
* maps based on global and other scales may be used and students may be asked to identify and describe significant features of the physical and human landscape on them, eg population distribution, population movements, transport networks, settlement layout, relief and drainage
* analyse the inter-relationship between physical and human factors on maps and establish associations between observed patterns on thematic maps.

Ordnance Survey maps:

* use and interpret OS maps at a range of scales, including 1:50 000 and 1:25 000 and other maps appropriate to the topic
* use and understand coordinates – four and six-figure grid references
* use and understand scale, distance and direction – measure straight and curved line distances using a variety of scales
* use and understand gradient, contour and spot height
* numerical and statistical information
* identify basic landscape features and describe their characteristics from map evidence
* identify major relief features on maps and relate cross-sectional drawings to relief features
* draw inferences about the physical and human landscape by interpretation of map evidence, including patterns of relief, drainage, settlement, communication and land-use
* interpret cross sections and transects of physical and human landscapes
* describe the physical features as they are shown on large scale maps of two of the following landscapes – coastlines, fluvial and glacial landscapes
* infer human activity from map evidence, including tourism.

Maps in association with photographs:

* be able to compare maps
* sketch maps: draw, label, understand and interpret
* photographs: use and interpret ground, aerial and satellite photographs
* describe human and physical landscapes (landforms, natural vegetation, land-use and settlement) and geographical phenomena from photographs
* draw sketches from photographs
* label and annotate diagrams, maps, graphs, sketches and photographs.

Graphical skills

Graphical skills to:

* select and construct appropriate graphs and charts to present data, using appropriate scales – line charts, bar charts, pie charts, pictograms, histograms with equal class intervals, divided bar, scattergraphs, and population pyramids
* suggest an appropriate form of graphical representation for the data provided
* complete a variety of graphs and maps – choropleth, isoline, dot maps, desire lines, proportional symbols and flow lines
* use and understand gradient, contour and value on isoline maps
* plot information on graphs when axes and scales are provided
* interpret and extract information from different types of maps, graphs and charts, including population pyramids, choropleth maps, flow-line maps, dispersion graphs.

Numerical skills

Numerical skills to:

* demonstrate an understanding of number, area and scales, and the quantitative relationships between units
* design fieldwork data collection sheets and collect data with an understanding of accuracy, sample size and procedures, control groups and reliability
* understand and correctly use proportion and ratio, magnitude and frequency
* draw informed conclusions from numerical data.

Statistical skills

Statistical skills to:

* use appropriate measures of central tendency, spread and cumulative frequency (median, mean, range, quartiles and inter-quartile range, mode and modal class)
* calculate percentage increase or decrease and understand the use of percentiles
* describe relationships in bivariate data: sketch trend lines through scatter plots, draw estimated lines of best fit, make predictions, interpolate and extrapolate trends
* be able to identify weaknesses in selective statistical presentation of data.

Use of qualitative and quantitative data

Use of qualitative and quantitative data from both primary and secondary sources to obtain, illustrate, communicate, interpret, analyse and evaluate geographical information.

Examples of types of data:

* maps
* fieldwork data
* geo-spatial data presented in a geographical information system (GIS) framework
* satellite imagery
* written and digital sources
* visual and graphical sources
* numerical and statistical information.

Literacy

Most communication is through the written word, raising the importance of good literacy skills. Students should be able to communicate information in ways suitable for a range of target audiences.