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Getting Started

GCE Geography

Edexcel Advanced Subsidiary GCE in Geography (8GE01)

First certification 2014

Edexcel Advanced GCE in Geography (9GE01)

First certification 2014

Issue 2

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Introduction

Edexcel's GCE in Geography has been developed in consultation with schools, colleges, higher education institutes and geography experts, to engage students and teachers and to renew interest in the subject of geography which offers so much to an understanding of our planet.

For centres wishing to teach Edexcel's GCE in Geography for the first time, this Getting Started guide will give you an overview of the GCE in Geography course and what it means for you and your students.

For centres already teaching Edexcel's GCE in Geography, this Getting Started guide contains updated information from the Getting Started guide published in 2007, when Edexcel's GCE Geography 2008 specification was launched. Updating this information is necessary because the January examination series will no longer be available from September 2013. This means that:

- AS candidates who begin their course in September 2013 will sit both AS examinations, for Units 1 and Unit 2, in May 2014
- A2 candidates who began their AS course in September 2012 will sit both A2 examinations, for Unit 3 and Unit 4, in June 2014.

No other changes to the specification unit content, or assessment, have been made. However, centres will need to consider:

- the order of teaching of units at AS and A2 – we have provided updated course planners to help you consider this on pages 9-13
- when to complete the fieldwork for Unit 2 – we have made some suggestions to help you consider this on page 14
- how to approach working on the Advance Information for Units 3 and 4 at the same time – we have provided some updated guidance, based on the Sample Assessment Materials (SAMs) for Unit 3, plus collated advice from past Examiner Reports relating to Units 3 and 4, on pages 64-76.

Key principles

The Edexcel GCE Geography specification has been developed with the following key principles:

Modern and engaging

The specification is designed to address key ideas and debates in our world today, such as climate change, globalisation, urban regeneration and management of the world's resources. Students will explore a range of issues and examine potential solutions to them.

Focus on choice

The specification has been designed to allow teachers the flexibility to build programmes that may suit their own particular interests and needs using a range of approaches. Those with interests in distinct physical, human and environmental approaches will be able to use this specification, as will those with more integrated specialisms.

Development of fieldwork and research skills

While coursework is no longer an option in GCE Geography, fieldwork and research are key features of this specification. There are topics to suit centres with varying and diverse fieldwork resources and approaches, on the basis that an element of out-of-classroom activity adds to the appeal of the study of geography.

Assessment overview

The course will be assessed by examination only.

AS (Year 12) – two units		
Unit 1		
Global Challenges	• 1 hour 30 minute written examination including a colour Resource Booklet.	60% of the total AS marks 30% of the total GCE marks
Unit 2		
Geographical Investigations	• 1 hour 15 minute written examination including a colour Resource Booklet. • Fieldwork and research skills form part of this examination.	40% of the total AS marks 20% of the total GCE marks

A2 (Year 13) – two further units		
Unit 3		
Contested Planet	• 2 hour 30 minute written examination including pre-released synoptic resources (8 working weeks in advance) and a colour Resource Booklet in the examination. • Part 1 of the examination will cover five of the six Unit 3 topics. • Part 2 will cover the sixth topic in a synoptic context, i.e. pulling together aspects of the other five topics and linking to other parts of the whole course.	60% of the total A2 marks 30% of the total GCE marks
Unit 4		
Geographical Research	• 1 hour 30 minute examination including pre-released research focus material (8 working weeks in advance). • One question on chosen option.	40% of the total A2 marks 20% of the total GCE marks

AS		
	Unit 1 Global Challenges	Summer only (May)
	Unit 2 Geographical Investigations	Summer only (May)
A2		
	Unit 3 Contested Planet	Summer only (June)
	Unit 4 Geographical Research	Summer only (June)

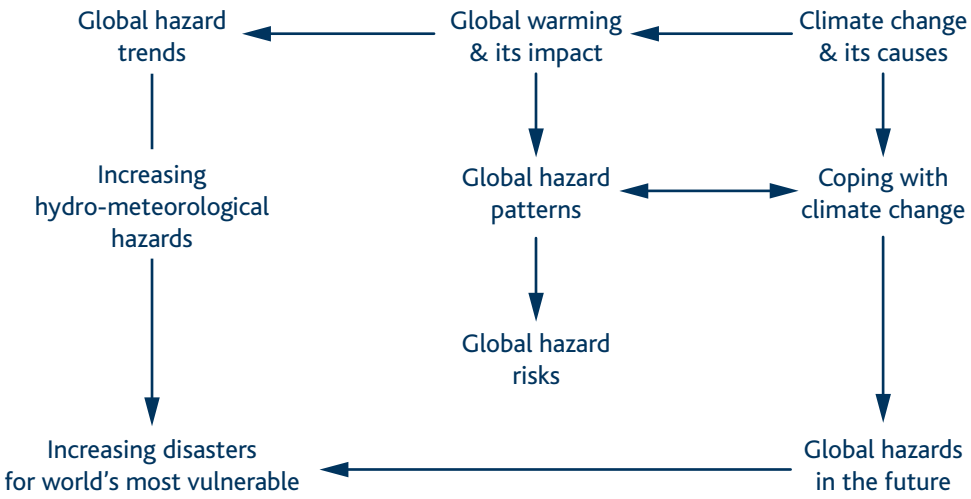
Unit overviews

Here is a brief description of the content of each unit so that you can see at a glance what students may choose to study.

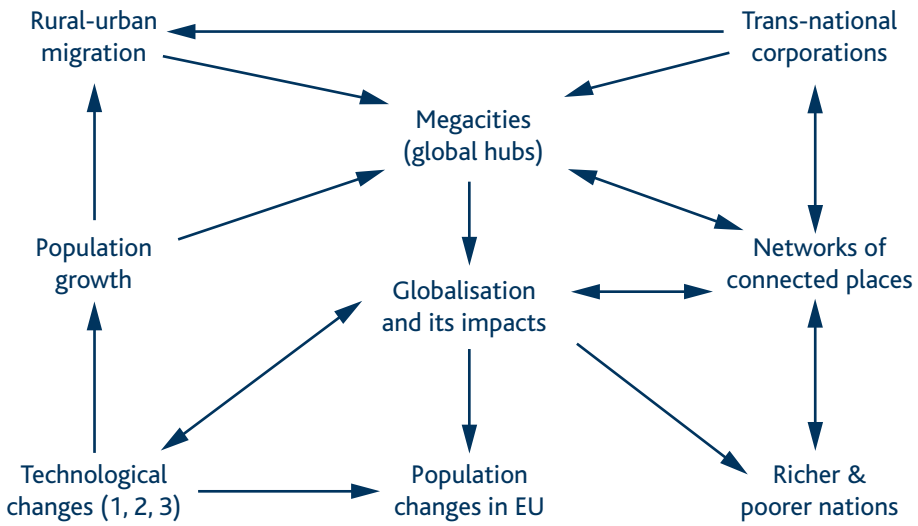
Unit 1: Global Challenges

This unit focuses on the meaning, causes, impacts and management of global challenges and how we can influence global challenges through our own lives. There are two compulsory topics: World at Risk and Going Global.

- World at Risk



- Going Global



Unit 2: Geographical Investigations

This unit focuses on fieldwork and related research. Geographical investigation is an important part of the GCE specification. In the examination, students will be required to show their skills in the planning, collection and analysis of information, as well as concluding and evaluating fieldwork and research findings.

Students study two topics from the four offered in this unit, one physical and one human topic:

Physical topics

- Extreme Weather, with its increasing ferocity and frequency, fascinates some people and threatens others.

OR

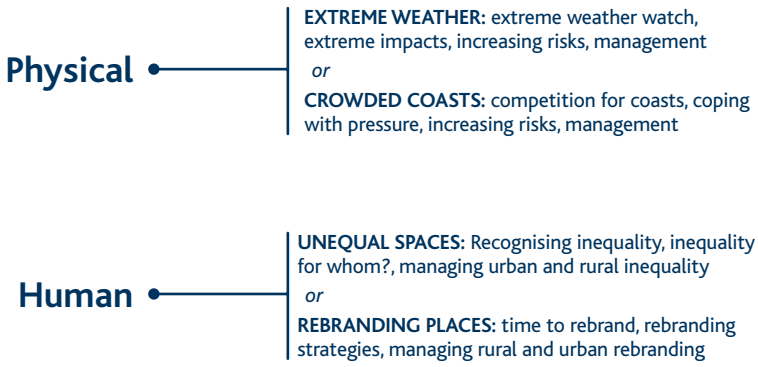
- Crowded Coasts reveal how increasing development is testing our ability to manage these valued environments.

Human topics

- Unequal Spaces explores how we can improve our own and other people's lives in rural and urban areas.

OR

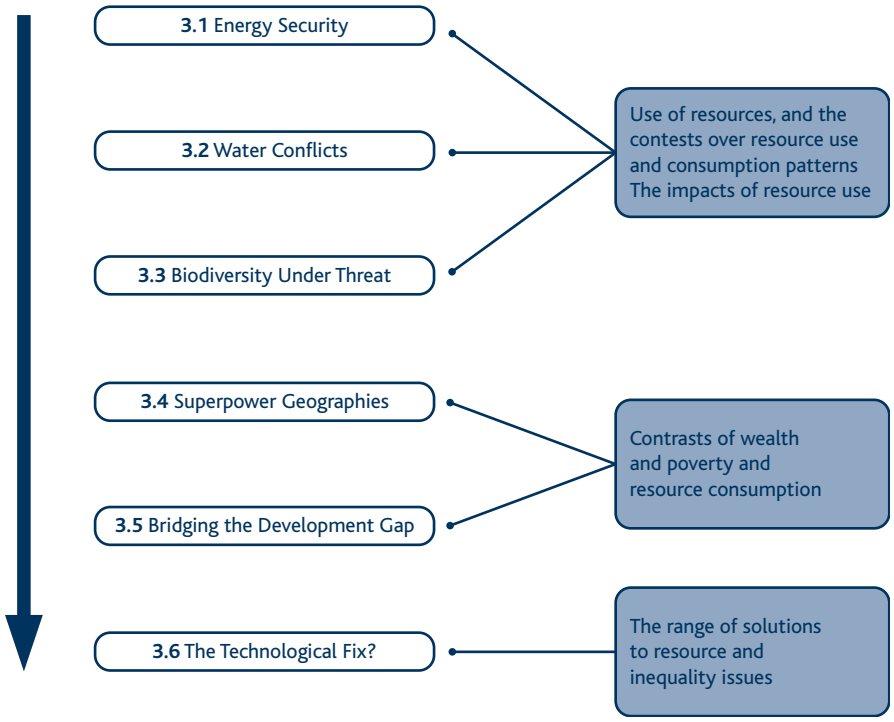
- Rebranding Places focuses on how we need to re-image and regenerate rural and urban places, using appropriate strategies.



Unit 3: Contested Planet

Unit 3, Contested Planet, forms the core of A2 Geography. The unit aims to introduce students to key contemporary global issues, and to allow them to explore the significance of the issues and examine a range of potential solutions to them.

The unit comprises six compulsory topics.



Unit 4: Geographical Research

Research skills and fieldwork are the key feature of this A2 unit. Students choose one topic to study from the six offered in this unit. Topics range from those with a strong physical geography focus (e.g. tectonic hazards), to those concerned more with environmental, social and cultural geographies (e.g. cultural diversity). Students then carry out research into their chosen topic. This is an opportunity for A2 students to specialise in an area of geography that interests them.

Students then write one extended essay about research carried out for their chosen topic, in an exam.

Tectonic Activity and Hazards

Hazards and causes, physical impacts, human impacts, hazard response and the future

Cold Environments

Location, climatic processes and their causes, landforms and landscapes, glaciation, challenges, opportunities and management

Life on the Margins - the food supply problem

Feast or famine, causes of food supply inequalities, desertification and life at the margins, management and security

The World of Cultural Diversity

Definition and value of culture, spatial cultural variations, impact of globalisation, cultural attitudes and the environment

Pollution and Human Health at Risk

Health risks, complex causes, pollution and health risk links, managing health risks

Consuming the Rural Landscape

Growth of leisure and tourism landscapes, fragility of rural landscapes, impact on rural landscapes, management

Course planners

The following course planner covers the content of the whole specification and is based on four to five hours of teaching per week.

Please note that from September 2013:

- all examinations will be taken at the end of Year 12 or Year 13
- there will be no January examinations
- the content and assessment for this specification have not been changed
- **all six topics in Unit 3 Contested Planet** should be taught
- content from Topic 6 may be integrated into other topics in Unit 3 such as Topic 1 Energy Security, Topic 2 Water Conflicts and Topic 3 Bridging the Development Gap.

One-teacher course planner

The following two-year course planner is for **one teacher**. If the course is being taught by **two teachers**, there is an alternative model on page 8.

Term/week	Unit/topic	Detailed content
Autumn term, Year 12		
Week 1	Unit 1 World at Risk	1.1 Global hazards
Week 2	Unit 1 World at Risk	1.2 Global hazard trends
Week 3	Unit 1 World at Risk	1.3 Global hazard patterns
Week 4	Unit 1 World at Risk	1.4 Climate change and its causes
Week 5	Unit 1 World at Risk	1.5 The impacts of global warming
Week 6	Unit 1 World at Risk	1.6 Coping with climate change
Week 7	Unit 1 World at Risk	1.7 The challenges of global hazards for the future
Week 8	Unit 1 World at Risk consolidation and assessment week	
Half-term		
Week 9	Unit 1 Going Global	2.1 Globalisation
Week 10	Unit 1 Going Global	2.2 Global groupings
Week 11	Unit 1 Going Global	2.3 Global networks
Week 12	Unit 1 Going Global	2.4 Roots
Week 13	Unit 1 Going Global	2.5 On the move
Week 14	Unit 1 Going Global	2.6 World cities
Week 15	Unit 1 Going Global	2.7 Global challenges for the future

Term/week	Unit/topic	Detailed content
Christmas break followed by Spring term		
Week 16	Unit 1 Going Global consolidation and assessment week	
Week 17	Unit 2 Extreme Weather or Crowded Coasts	1.1 Extreme weather watch or 2.1 Competition for coasts
Week 18	Unit 2 Extreme Weather or Crowded Coasts	1.2 Extreme impacts or 2.2 Coping with the pressure
Week 19	Unit 2 Extreme Weather or Crowded Coasts	1.3 Increasing risks or 2.3 Increasing risks
Week 20	Unit 2 Extreme Weather or Crowded Coasts	1.4 Managing extreme weather or 2.4 Coastal management
Week 21	Unit 2 Extreme Weather or Crowded Coasts	Fieldwork
Half-term		
Week 22	Unit 2 (physical option) consolidation and assessment week	Analysis of fieldwork and research and exam practice
Week 23	Unit 2 Unequal Spaces or Rebranding Places	3.1 Recognising inequality or 4.1 Time to rebrand
Week 24	Unit 2 Unequal Spaces or Rebranding Places	3.2 Inequality for whom? or 4.2 Rebranding strategies
Week 25	Unit 2 Unequal Spaces or Rebranding Places	3.3 Managing rural inequalities or 4.3 Managing rural rebranding
Week 26	Unit 2 Unequal Spaces or Rebranding Places	3.4 Managing urban inequalities or 4.4 Managing urban rebranding
Easter break followed by Summer term		
Week 27	Unit 2 Unequal Spaces or Rebranding Places	Fieldwork
Week 28	Unit 2 (human option) consolidation and assessment week	Analysis of fieldwork and research and exam practice
Week 29	Revision	
Week 30	Revision	
Week 31	AS Examinations Unit 1	
Week 32	AS Examinations Unit	

Term/week	Unit/topic	Detailed content
Half-term followed by start of the A2 course		
Week 33	AS examinations	
Week 34	Unit 3 Energy Security	1.1 Energy supply, demand and security
Week 35	Unit 3 Energy Security	1.2 Impacts of energy security
Week 36	Unit 3 Energy Security	1.3 Energy security and the future
Week 37	Unit 3 Water Conflicts	2.1 The geography of water supply
Week 38	Unit 3 Water Conflicts	2.2 The risks of water insecurity
Summer break, end of Year 12		
Autumn term, Year 13		
Week 1	Unit 3 Introduction to Year 13/Water Conflicts (continued)	2.2 The risks of water insecurity
Week 2	Unit 3 Water Conflicts	2.3 Water conflicts and the future
Week 3	Unit 3 Water Conflicts consolidation and assessment week	
Week 4	Unit 3 Biodiversity under Threat	3.1 Defining biodiversity
Week 5	Unit 3 Biodiversity under Threat	3.2 Biodiversity threats
Week 6	Unit 3 Biodiversity under Threat	3.3 Managing biodiversity
Week 7	Unit 3 Biodiversity under Threat consolidation and assessment week	
Week 8	Unit 3 Superpower Geographies	4.1 Superpower geographies
Half-term		
Week 9	Unit 3 Superpower Geographies	4.2 The role of superpowers
Week 10	Unit 3 Superpower Geographies	4.3 Superpower futures
Week 11	Unit 3 Superpower Geographies consolidation and assessment week	
Week 12	Unit 3 Bridging the Development Gap	5.1 The causes of the 'development gap
Week 13	Unit 3 Bridging the Development Gap	5.2 The consequences of the 'development gap'
Week 14	Unit 3 Bridging the Development Gap	5.3 Reducing the 'development gap'
Week 15	Unit 3 Bridging the Development Gap consolidation and assessment week	

Term/week	Unit/topic	Detailed content
Christmas break followed by Spring term		
Week 16	Unit 3 The Technological Fix?	6.1 The geography of technology
Week 17	Unit 3 The Technological Fix?	6.2 Technology and development
Week 18	Unit 3 The Technological Fix?	6.3 Technology, environment and the future
Week 19	Unit 3 The Technological Fix? consolidation and assessment week	
Week 20	Unit 4 Geographical Research	Enquiry Question 1
Week 21	Unit 4 Geographical Research	Enquiry Question 1
Half-term		
Week 22	Unit 4 Geographical Research	Enquiry Question 2
Week 23	Unit 4 Geographical Research	Enquiry Question 2
Week 24	Unit 4 Geographical Research	Enquiry Question 3
Week 25	Unit 4 Geographical Research	Enquiry Question 3
Week 26	Unit 4 Geographical Research	Enquiry Question 4
Week 27	Unit 4 Geographical Research	Enquiry Question 4
Easter break followed by Summer term		
Week 28	Unit 4 Geographical Research	Additional research and consolidation
Week 29	Unit 4 Geographical Research	Examination practice
Week 30	Revision	Working on Units 3 and 4 pre-release
Week 31	Revision	Working on Units 3 and 4 pre-release
Week 32	Revision	Working on Units 3 and 4 pre-release
Half-term followed by A2 examinations		

Two-teacher course planner

If the course is being taught by two teachers, then the alternative model below could be followed, by using half of the time in a week for each teacher.

	Teacher 1	Teacher 2
Unit 1	World at Risk (14 × $\frac{1}{2}$ weeks)	Going Global (14 × $\frac{1}{2}$ weeks)
Unit 2	Physical option (10 × $\frac{1}{2}$ weeks)	Human option (10 × $\frac{1}{2}$ weeks)
Unit 3	3 Topics (24 × $\frac{1}{2}$ weeks)	3 Topics (24 × $\frac{1}{2}$ weeks)

For Unit 4 there are several possibilities with two teachers, as below.

	Teacher 1	Teacher 2
All students study one option	Delivers the content in 50% of the lesson time.	Provides, guides and monitors student research in the other 50% of lesson time. This teacher could also focus on research and exam skills.
Students choose from one of two options	In this model, students divide into two groups based on which option they would prefer to study, e.g. Tectonic Activity and Hazards or Cold Environments – Landscapes and Change. As an example, let us say there are 4 × 1 hour lessons in each week. Teacher 1 delivers two taught one-hour lessons to the Tectonic Activity group, while the Cold Environments students sign in/out and either work in the classroom on their own research, or use a learning resources centre or similar. Teacher 2 delivers Cold Environments in the remaining 2 × 1 hour lessons, and similarly monitors the Tectonic Activity group while they research.	

When to deliver Unit 2 fieldwork

With a January exam available, many centres completed their Unit 2 fieldwork in the Autumn term and sat the exam in January. With **no January exam available from September 2013** centres may wish to decide when best to complete the essential fieldwork for Unit 2. There many options and issues to be considered, and those outlined below are provided only to inform centre planning and decision making.

Unit 2 fieldwork in September, as part of the introduction to GCE Geography	
Advantages:	Disadvantages:
• Fieldwork visits are a good way to build group coherence • Makes for an interesting and potentially fun start to GCE Geography • Possibility of good weather	• The 'gap' between fieldwork and the exam is long (although this could be overcome during revision time) • Organisational difficulties so early in the first term • Students may lack the conceptual underpinning, having studied very little of the course

Unit 2 fieldwork in October or November	
Advantages:	Disadvantages:
• Allows time to teach/study the content and concepts of Unit 2 and do some research prior to the field visits • Some possibility of good weather • Field centres, if used, may be less busy	• The 'gap' between fieldwork and the exam is relatively long • Days are getting shorter

Unit 2 fieldwork in March or April	
Advantages:	Disadvantages:
• Closer to exams, so possibly fresher in students' minds • Research and teaching could have been carried out prior to the fieldwork	• Field study centres, if used, are likely to be busy • Other subject teachers may object if students are out of centre as exams approach

The following would be some more general considerations.

- Fieldwork and research are best carried out at the same time as the unit is being taught.
- The fieldwork may be better carried out towards the end of the teaching of the topic, having allowed some time for research and when content and ideas have been delivered.
- Guidance is for at least two days of fieldwork, e.g. one day on Crowded Coasts and one day on Rebranding Places, although additional time is desirable.

Content exemplification

The following material has been written to give you a greater insight into the content of the new specification.

- For the AS units, it fleshes out the content topic by topic and gives ideas for teaching the content in the classroom.
- For the A2 units, there is more of an overview of the content, focusing on the synopticity and research elements. Edexcel will provide content exemplification of the individual A2 topics in due course.

Unit 1: Global Challenges

This unit focuses on macro-scale concerns within the discipline of geography. A key feature of this new AS-level specification is a core AS component specifically focused on the enormous challenges now facing all human societies at a time of:

1 unprecedented global economic progress

2 potentially catastrophic environmental change.

Of course, the two sets of issues are not unconnected and synoptic links between the physical and human elements of this unit have been highlighted.

The nature of the content of this unit means that there is no shortage of literature for students to read beyond whatever material you might provide. The nature of the challenges covered by this unit are such that we can expect the ground to shift rapidly during the lifetime of the specification (whether we are talking about the latest estimates for sea-level rise or for China's economic output). Students are expected to undertake plenty of their own thoroughly up-to-date research to supplement the few resources specifically mentioned in the specification.

Topic 1: World at Risk

The title of this topic reflects its two interlinked strands:

1 spatial patterns and trends in **global hazards**

2 the causes, impacts and solutions to the **context hazard** of **global warming** (a short-term global challenge that relates to the longer-term hazard of climate change).

There is evidence of a strong link between global warming and the frequency and magnitude of **hydrometeorological** hazards.

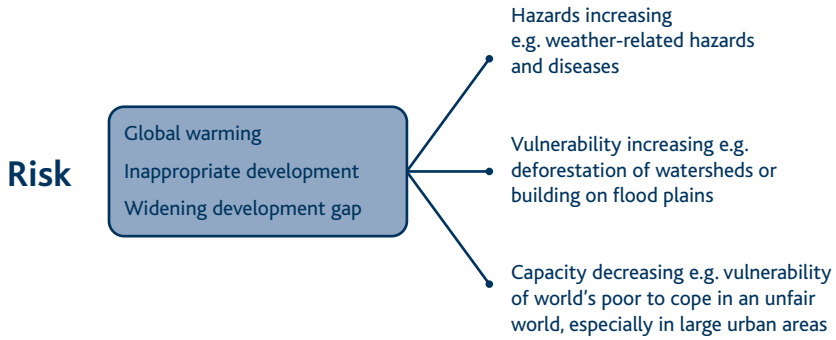
1 Global hazards

1 Disaster and vulnerability

Explore the concepts, processes and geographical terminology relating to **natural hazards**, **disasters** and **global warming**, including:

- The dimensions of disaster — there should be an understanding of the definitions of hazard, disaster, **risk** and **vulnerability**.
- The significance of global warming as a **context hazard** of wide-scale environmental impact (the **biosphere**, **atmosphere** and **hydrosphere** are all affected).
- The context in question is that of an unfair world, in which poor people in poor countries suffer most from both global warming and the disasters resulting from natural hazards.

2 The disaster risk equation



$$\text{Risk} = \frac{\text{Hazards x Vulnerability}}{\text{Capacity}}$$

2 Global hazard trends

1 *Some types of hazard are increasing in magnitude and frequency*

- *Deaths* from disasters have *decreased* dramatically because of improved risk management strategies, e.g. **prediction**, **prevention**, community **preparedness**, education, etc. (Note a levelling-off because of increasing numbers of vulnerable people in low income countries.)
- The numbers of people reported *affected* by hazards and disasters (e.g. injured or with loss of livelihood) have *increased* each decade.
- Economic losses have grown exponentially (note that in **absolute** terms, losses are greatest in high income countries, but in **relative** terms they may be devastating in low income countries where whole economies can be wiped out (e.g. where there is dependency on tourism or banana growing, etc.).
- The number of **reported** disasters has grown significantly.

2 *The increase in natural disasters is due to a combination of physical and human factors*

- Only hydrometeorological hazards (e.g. floods, droughts and storms and **biohazards**) are increasing, almost certainly linked to the **physical** factor of global warming.
- **Human** factors, such as rapid urbanisation or exploitation leading to **deforestation**, increasingly turn natural hazard events into disasters.
- Geophysical hazard numbers have remained broadly similar **globally**, although **hotspots** occur from time to time (e.g. along the Sunda fault in Indonesia at present).

3 *Trends are complex*

Hazard and disaster statistics must always be treated with caution, as overall trends can be upset by a single catastrophic year. For example, 2005 saw the impact of the Boxing Day tsunami and the Kashmiri earthquake (350,000 people killed), along with Hurricane Katrina, which caused the most costly economic losses ever recorded.

3 Global hazard patterns

1 *Local risks and global distributions*

Aim to develop both a **local** and a **global** perspective when looking at why some places are more exposed to risk than others:

- Students should research their local area to identify its hazard risk potential, both at the present time and in the future with the likely advent of global warming (more extreme weather, rising sea levels, etc.). OS maps could be consulted as a starting point for enquiry.
- Students should proceed to research hazard **patterns** for each major type of natural hazard — hydrometeorological and geophysical — and develop GIS skills wherever possible to help them identify the world's hazard **hotspots** [suggested source: *World Bank Hazard Management Unit* reports on hotspots].

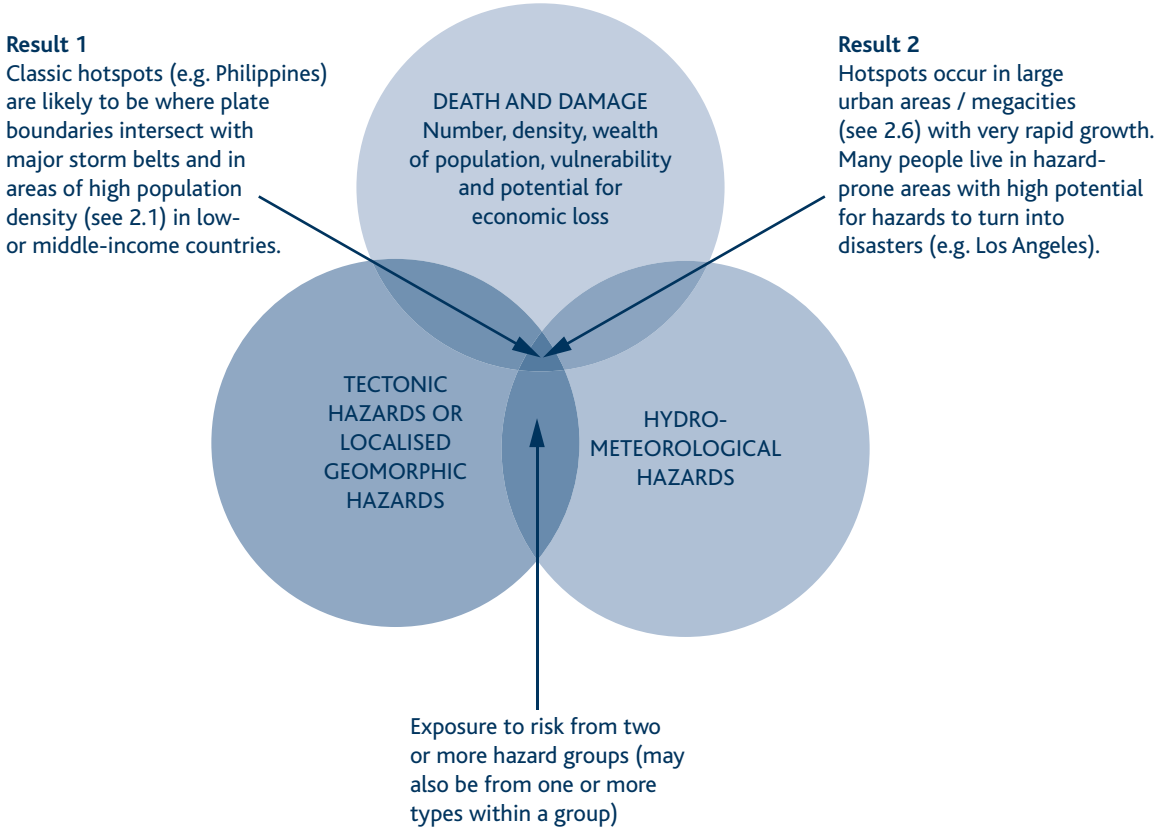
2 *Hazard hotspots*

Some places can be more hazardous and disaster prone than others and so become multiple hazard hotspots.

4 Climate change and its causes

1 The evidence for change

The diagram distinguishes between current and **longer-term** climate change, then puts the **short-term** phenomenon of global warming in context. It shows an exponential and unpredicted (in historic times) rise in global temperatures.



2 Causes and debates

Students should consider whether the causes of climate changes are **natural** (e.g. due to variations in the earth's orbit or solar output levels) or **anthropogenic** (i.e. **human** in origin).

In the context of global warming, evidence should be reviewed to explore the impact of increasing greenhouse gas emissions and the destruction of **natural sinks** such as forests and oceans. This will allow a reasoned assessment to be made as to whether this latest significant short-term climate change is a special case.

5 The impacts of global warming

1 *Impacts of projected change*

Impact can be classified as **direct** or **indirect**. Two case studies of changes in **vulnerable places** must be explored in some depth, and their likely impact analysed and quantified:

- The Arctic (which is vulnerable environmentally and ecologically)
- The African continent (which is most vulnerable economically as it is home to many of the world's most vulnerable people).

These case studies will further demonstrate the concept of an **unfair world** - whereby the poor areas suffer much despite having contributed very little to greenhouse gas emissions.

2 *The indirect effects of global warming*

Equally important are the **indirect** effects resulting from the **eustatic** rise of sea level. These will have a global impact, particularly on low-lying coastal areas including deltas (e.g. 80% of the land area of Bangladesh) and coral atolls such as the Maldives (known as the 'Canaries in the coal mine' [*IPEC*]).

Predictions of the likely impacts depend on the modelling of a number of scenarios developed by the IPCC, ranging from **business as usual** to scenarios involving **sustainable management**.

Depending on the actual future trends, the rate of climate change impact may reach the **tipping point**, at which catastrophic and irreversible changes could occur, contributing to an increasingly hazardous world. Tipping point scenarios often involve a mechanism known as **positive feedback** (e.g. changes in **albedo** (reflectivity) over the Arctic Ocean as ice cover is lost – less sunlight being reflected off darker-coloured waters – will accelerate warming further).

6 Coping with climate change

1 *Mitigation and adaptation*

Strategies for dealing with climate change can be divided into **mitigation** strategies and **adaptation** strategies:

Mitigation	Adaptation
• Quality regulation — proposed carbon tax legislation • Energy conservation and energy mix change, to reduce CO_2 emissions • Waste strategies, e.g. recycling to avoid methane generation from landfill • Green transport strategies • Modified agricultural practices to avoid methane generation • Development of emission-cutting technology • Air quality regulation • Tree planting to create carbon sinks • Offsetting of carbon emissions by businesses and individuals • Planning regulations to encourage sustainable, compact cities and avoid urban sprawl	• Improved water resource management to combat droughts • Coastal and river defence programmes against flooding • Enhanced resilience of buildings (via design) and infrastructures, including flood and coastal plain zoning • Management of wildlife — corridors in protected areas to ensure wildlife survival • Improved short- and long-term risk assessment • Development of greater community awareness and emergency action plans • Developing/Growing new crops and adopting new lifestyles to match change in climate

2 *Views and roles of the key players*

A variety of **key players** are involved, all with differing views and potential to manage climate change. They include governments, businesses, non-governmental organisations (NGOs), environmental pressure groups, communities and individuals. On a national and international scale, governments develop strategies and these are carried out on a local scale (e.g. via the UN's **Agenda 21**).

There are tensions between rich and poor nations, with polluters such as the US and Australia failing in 1997 to sign up to the **Kyoto Protocol** to reduce greenhouse gas emissions. The rapidly industrialising giants of China and India (China is now the largest producer of greenhouse gases) also failed to sign up to the original Kyoto Agreement. They remain concerned not to lose the momentum of economic growth (near 10% per year throughout the 1990s and early 2000s). What compromises will they be willing to commit to?

3 *Act local, think global*

The timeline of milestones in attempts to tackle climate change shows the complexities of meeting a **global** agreement for restricting or even reducing emissions. However, dealing with the projected impacts of climate change needs to be coordinated at all levels from **local** to global. Attempts by individuals to reduce their personal **carbon footprint** should be critically examined (see also sub-section 2.7).

7 The challenge of global hazards for the future

1 *Water and food security*

Refer to a world map (see *Atlas of Climate Change*, for instance) to summarise the potential wide-ranging impact of global warming; impacts on **water supplies** and **food security** are particularly concerning.

Dehydration and famine would be the immediate effects. However, they could also be precursors to political disputes and even warfare over diminishing supplies, especially in highly-stressed regions such as sub-Saharan Africa or the Middle East. We may be looking at the emergence of an increasingly hazardous world.

2 *Innovative choices for sustainable strategies or Costs & benefits of sustainable strategies*

Compare the importance of global warming as a global problem, with other major world issues. In 2004 a group of economists given a hypothetical $50 billion to spend viewed global warming as the 'least cost-effective' problem to solve. Global warming is likely to prove very difficult to manage and perhaps the most costly problem ever.

As perhaps the biggest problem in human history, global warming requires innovative choices to be considered. Students should undertake **benefit-cost analysis** of all the major proposed solutions, such as energy efficiency or renewable energy use (see also sub-section 2.7).

Genuine solutions to a world at risk require decision-makers to focus above all on the underlying issues of risk and human vulnerability.

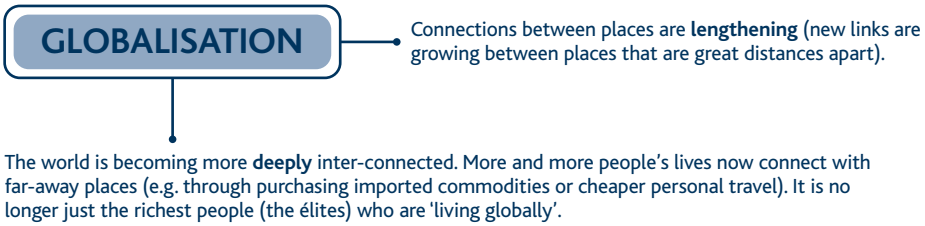
Topic 2: Going Global

The title of this second topic reflects its contents: interconnected areas of human geography, all viewed through the lens of globalisation. Contemporary themes in economic and social geography, along with population studies and migration, are presented in an interlinked way.

1 Globalisation

1 The concept and development of globalisation

Define **globalisation** and briefly describe its history.



Introduce (or re-introduce) useful concepts and terminology relating to population change and migration:

- the **Demographic Transition Model** to describe key global demographic changes:
  - — how fertility and mortality are the drivers
  - — places where population pressure is still building and places where it is not.
- the vocabulary of **push and pull** factors
- the importance of **intervening obstacles** to migration as well as the intervening opportunities that frequently present themselves to global migrants (e.g. Polish migrants heading to Ireland via London may not complete their full journey).

2 *Factors which have accelerated globalisation*

Depth of knowledge is not required, just a brief overview of the forces shaping globalisation. For instance, it is sufficient for students simply to be aware of the existence of the IMF, the World Bank and the WT; they need not study the origins of these agencies in any detail. Nor do they need a detailed knowledge of the origins of the world's stock exchanges; they should merely understand that such activity is not the exclusive preserve of Europe, the USA and Japan (e.g. Mumbai and Shanghai).

3 *Effects of globalisation on population movements*

Look at factors which encourage population movement:

- The 'open door' migration between EU member states
- The ease-of-movement of an **international élite** (e.g. surgeons, bankers, musicians, footballers, actors) — use case studies that are highly relevant to the students
- The role of globalisation in bringing **inward investment** to cities that can then act as magnets for **rural–urban migration** — take a preliminary look at data underscoring the significance of the current rural–urban shifts, notably in India and China.

Also consider factors affecting migration, such as **post-9/11 restrictions** and the 'Fortress Europe' mentality. While the world is relatively free of barriers to the movement of money, food and goods, it is not necessarily the case that people are free to move where they want to — many restrictions still exist. The Mexican–American border is a good example, with its armed patrols and barbed-wire fences.

2 Global groupings

1 Disparities in global wealth and power (shown through broad economic and political groupings of countries)

Talk of 'MEDCs and LEDCs' has become an inadequate way of describing the modern world. Examine the more complex groupings, recognising their incomplete /changing nature.

Consider the major economic groupings of nations:

- **NICs** — Newly Industrialised Countries, including 'the Tigers', China and India
- **LDCs** — Least Developed Countries (around 50 heavily-indebted states)
- **Ex-Soviet states** — Middle-income nations in Eastern Europe and Central Asia
- **OPEC** — The oil-rich Organisation of Petroleum Exporting Countries
- **OECD** — Organisation for Economic Cooperation and Development — the world's richest, most powerful nations (with the top handful called the **G7** or **G8**)
- **LEDCs** — Less Economically Developed Countries (an old and very generalised grouping of all nations of the 'global South' — now a term best avoided).

The world can also be broken up into political groupings. **Trade blocs** are voluntary organisations that exist for trade and security. Membership of such groupings has been growing over time; describe the benefits, referring to the key concepts of **comparative advantage** and **economies of scale**.

2 The role of trans-national corporations

Trans-national corporations (TNCs) are agents of global change. They link together groups of countries through the **production** of goods (large **assembly industries** use parts sourced from many different countries, all of which contribute to the finished product, e.g. cars and computers). TNCs also forge connections between people in different countries by shaping common patterns of **consumption** (e.g. global entertainment brands such as Disney or food retailers such as McDonald's and KFC).

TNCs are sophisticated and complex entities. Explain the significance of **Foreign Direct Investment** (FDI), **acquisitions**, **mergers** and the role that **sub-contractors** play in the production chain (e.g. Nike products are not always made in premises owned by Nike). Many household names are now owned in turn by other big names (e.g. the drinks conglomerate Diageo owns Smirnoff and Guinness).

TNCs are both helped and hindered by the existence of **trade blocs**. Consider how firms have responded. For instance, why does Nissan manufacture cars in Sunderland? How does the existence of the North American Free Trade Association (NAFTA), and a lack of restrictions on US–Mexican trade, help American TNCs increase their profits?

3 Case study of ONE large trans-national corporation

As an extension of their analysis of TNCs, students must investigate **one large global** firm in some detail. Opportunities exist here for independent research or group work and for presentation of findings, perhaps using *PowerPoint*™. Popular choices are likely to include: Tesco, Disney, Ford, General Motors, Ikea, Marvel Entertainment, McDonald's, Nike, Gap, Coca-Cola, Starbucks or Burger King.

Suggested key research questions:

- What is meant by a **spatial division of labour** and how does it work? How does this link together the work of different groups of people in different countries?
- Are there **inequalities** of pay within a typical division of labour? What are the figures?
- What happens to the TNC's **profits** from its overseas operation(s)?
- Does the TNC produce exactly the same product for all different markets, thereby creating a **shared consumer culture** for groupings of countries?
- Or does it change its products and services for different places in the global market place? Does the TNC (e.g. McDonald's) acknowledge **cultural differences** or are its products exactly the same in all of the markets they group together?

3 Global networks

1 Global networks are built up by different flows

GLOBAL NETWORKS
(flows of money, trade, aid, information and people)

RELATIVELY **SWITCHED-ON** PLACES
The most highly-connected countries and important **megacities** in poorer countries. Many people in such places are significant **producers** and **consumers** of goods and services. These places are the **nodes** – sometimes called **global hubs** – of global networks. Energy usage is vast and so too is the ecological footprint of these places.

RELATIVELY **SWITCHED-OFF** PLACES
The very poorest countries and poor peripheral regions in some other countries. People in these places are poorly or unfairly connected to the rest of the world (they may receive **aid** or produce **cash crops** for TNCs for very low wages). They have insignificant **purchasing power** and TNCs do not view them as a market.

The London Underground network map can be used to illustrate the difference between poorly connected and highly connected nodes. Photographs of the world at night can be examined for patterns of energy consumption, providing a visual guide to who is switched-on and who is still relatively switched-off from the flows that create global networks. The meaning of **interconnected** and **interdependent** places should be clearly understood.

2 *The role of technology in a shrinking world*

Technologies responsible for a shrinking world:

- **Telephone** — from the first trans-Atlantic cable to mobile phone money transfers
- **Internet** — (and e-mail) allow distant offices to work together in real time
- **Air travel** — low-cost travel allows many people to travel for work and holidays
- **GIS & GIP** — remote sensing and satellite services give a 24/7 window on the world

The term **shrinking world** conveys a sense that technology has changed our perception of distances between places. Provide practical examples of this. The early cables across the Atlantic are a particularly vivid example of the beginning of the information age.

A case study of a low-cost airline (e.g. easyJet) could show how low-cost air travel helps to create global networks. Some cities (e.g. Tallinn in Estonia) have suddenly become highly connected, bringing flows of tourists and money. More wealth is then created via a **multiplier effect** in the places with the technology to develop into **global hubs**.

3 *Winners and losers*

Globalisation allows **comparative advantages** to be exploited, creating a **multiplier effect**. Both physical and human resources often figure in success stories — include examples of both. For instance, oil has helped many places to gain vast amounts of **petrodollar** wealth (e.g. Saudi Arabia or the city of Dubai). The recent success of some Asian economies, including China, can be viewed as the result of a combination of physical factors (e.g. its coastal Pacific Rim location) and human factors (e.g. large, cheap, but relatively skilled labour force).

Physical challenges, **poor governance** and **political isolation** are problems that figure frequently in the study of places that are poorly integrated into the world economy. Land-locked African countries such as Zambia and Zimbabwe face many difficulties and would be useful examples for students to research. North Korea is similarly worth investigating.

It is important that explanation does not become overly deterministic and students should be aware of at least one example of a region whose physical endowments do not appear to correspond with their level of global success. For example, Las Vegas functions extremely well as a global hub, despite being in the Nevadan desert. Conversely, Sierra Leone's 'blood diamonds' can be viewed as a **resource curse**.

4 Roots

1 *An analysis of local population change in the UK*

Local populations in the UK changed in many ways during the 20th century. Data sources can be national (census), local or personal.

- **Size** — How did individual family sizes change? How did local settlement population sizes grow as a result of natural increase trends?
- **Structure** — What is the age–sex structure of a typical family now? How old are its oldest members? Has life expectancy changed since the days of great-grandparents?
- **Migration** and **ethnicity** — Were older members of local families born overseas or in the UK? How has the ethnic mix of people changed over time? Is it still changing?
- **Employment** — How have jobs and employment structures changed locally?
- **Social status** — Have working-class communities become more middle-class over time?

This section offers opportunities to exploit new online genealogy and family history websites. Census records from 1841 onwards are available online and details of past changes can be found on the National Statistics website *http://www.statistics.gov.uk/*. Some students may wish to share the personal findings of research that members of their own families may have undertaken.

2 *Social and economic factors affecting the UK population*

Changes in the local population structure (both in terms of age-sex and employment status) can be viewed as a response to both internal and external (global) forces. Key ideas should be illustrated with supporting evidence. For instance, the 400% rise in oil prices during 1973–74 contributed to a marked fertility decline in the UK and other European nations. This was a result of an external decision made by OPEC to raise prices.

INTERNAL FACTORS	EXTERNAL (GLOBAL) FACTORS
FALLING BIRTHS	FALLING BIRTHS
Suffragette movement, equal pay and rights	Periods of global recession
Legalisation of abortion	Rising energy costs
Rising costs (e.g. housing market)	LONGER LIFE EXPECTANCY
LONGER LIFE EXPECTANCY	Globalised medicine (health tourism)
Establishment of the NHS	Dangerous jobs migrated overseas
CHANGING WORK AND STATUS	CHANGING WORK AND STATUS
Increased A-level take-up	Loss of manufacturing to overseas
Expansion of universities	Rising challenge of the Asian 'tigers'

3 Geographical challenges presented by an ageing population

Students should know how the **dependency ratio** is calculated and should possess a good understanding of (1) why the UK's dependency ratio is changing and (2) the challenges this brings. **Economic** impacts on the economy (costs of pensions, health and social services) are experienced at both the local (local authority) and national levels. Local impacts are not evenly spread as a result of **age-selective migration** movements (e.g. to some coastal locations). In particular, older people are key players in the **housing market**, now occupying properties for longer than in the past, which results in a supply-and-demand problem that drives up prices for younger people.

Questions that could be addressed (amongst others) are:

- Will today's younger people become 'losers' as a result of an ageing population? Will they be unable to obtain housing, end up paying higher taxes or working as unpaid carers when the health of older family members deteriorates, e.g. through Alzheimer's disease?
- Are problems of dependency sometimes overstated? The elderly can contribute to the national economy and society by investing via private pension funds, helping charities in their spare time and bringing expertise to many walks of life.
- Is the phenomenon of 'greying' set to 'go global'? Which other countries are affected?

5 On the move

1 Key international migrations into Europe

Migration has often taken place into the countries that now make up the EU. Many Western European nations received flows of migrants from their **former colonies** after the Second World War. These past movements can be explored in relation to the specific challenges that existed in former times (e.g. the NHS's drive to recruit Indian doctors, prompted by a shortage of UK-trained medical personnel in the 1950s).

Today, the EU is a highly desirable destination for many non-European **economic migrants**, as well as **refugees** and **asylum-seekers**. All-too-frequent cases of mass drowning of African migrants in the Mediterranean are a reminder of the **risk** that the world's poorest people are now prepared to expose themselves to in order to try and gain entry to **Fortress Europe**. The presence of Chinese workers in the UK came under the media spotlight in 2003, when a large group of recent Chinese migrants were drowned while working at night in Morecambe Bay.

WHO GOES WHERE?

Patterns of in-migration to the EU can sometimes be explained by:

- strong economic and cultural linkages that have evolved out of former **colonial** relationships (e.g. France and its North African ex-colonies or the UK and Uganda)
- a **shared language** (e.g. this explains why so many Indian doctors were able to come to the UK and practise medicine).

2 *TWO contemporary EU migration case studies*

Students MUST make in-depth studies of one **economic** flow and one **retirement** flow taking place **within** the EU. The dynamics of the new EU are historically unprecedented, with so many national borders now rendered permeable to an unfettered flow of migrants from other member states. The UK's decision to open wide the door to migrants from the 2004 accession states (although with some benefits restrictions) resulted in over half a million young Poles relocating to find work in the UK between 2004 and 2007. In contrast, Germany chose to restrict numbers entering for work purposes until at least 2011.

UNRESTRICTED MOVEMENTS OF PEOPLE WITHIN THE EUROPEAN UNION

Case study of an economic flow
Why are certain countries favoured by some groups of EU migrants? (Why have over half a million Poles chosen the UK, for instance?) What are conditions like in the source country? Were there any **intervening obstacles** to overcome? Is the move permanent? Detailed facts should be researched.

Case study of a retirement flow
The Mediterranean is a popular retirement destination for Britons (one million now live in Spain). The study should examine the **push and pull** factors and whether there have been any obstacles to this migration. Detailed facts about the volume of the flow should be known.

3 *Impact of population movements within the EU*

The effects of migration can be categorised in various ways and are experienced by both **sending** (source) region and **receiving** (host) regions. There will usually be a mix of **positive** and **negative** effects. Countries become **interconnected** as flows of money, ideas and information pass back and forth between family members living at a distance from one another.

Consider the varied impacts of migration:

- Demographic — How are population pyramids changed?
- Economic — How are individual working lives and national economies changed?
- Social — What is the impact on families and on migrant health and welfare?
- Cultural — What is the religious reaction and what are the effects on music and art?
- Environmental — Is the travel polluting? Are there stresses for receiving areas?
- Political — Are policies modified (e.g. benefit systems and housing laws)?

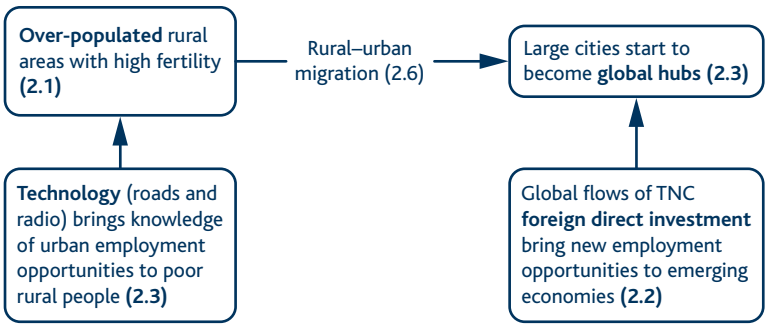
Migration is frequently controversial, provoking fierce reactions and becoming a major political issue in countries that experience mass immigration. **Nationalist** parties have become more popular in many EU states in recent years. Stories about migration often grab newspaper and TV headlines and can easily be adapted for use in the geography classroom. Students can also look at the positive aspects of EU migration (the creation of new mixed or hybrid forms of music, fashion and food, for instance).

6 World cities

1 *Rural–urban migration fuels urban growth*

Rural–urban migration is the most significant type of population movement bar none. Estimates suggest that as many as 300 million ex-rural migrants may now be living in Chinese cities. The percentage of the world's people living in cities now exceeds 50% and is growing daily. Students should grasp the sheer enormity of the changes currently under way.

Use a case study to analyse **push and pull factors**, also looking at how flows of **technology** and **investment** trigger migration flows. Many rural migrants only gain their knowledge of other places from the spread of radio and sometimes television (delivered by satellite). Transport infrastructure (e.g. the China–Tibet sky train) also helps to connect people and allows knowledge of other places — and the opportunities they offer — to diffuse further.



2 *Megacities in different countries develop in contrasting ways*

Two well-chosen case studies can illustrate the contrasts that exist between different large urban environments, according to a range of criteria, including:

- recent population movement and change, including gentrification
- economies and urban functions. (Over-generalisations about LEDC and MEDC cities should be avoided where possible.)

TWO CONTRASTING MEGACITIES (POPULATION 5 MILLION

London (a post-industrial city) is subject to a complex mix of gentrifying and suburban growth processes. A complex urban mosaic of low- and high-class areas results. Financial services and tourism are vital to its economy. Home to 7 million people and the headquarters of many major TNCs, it is also a world city.

Mumbai is one of the world's fastest growing cities. One of the economic hubs of India, its population has passed 13 million. Its economy depends partly on out-sourced work but the city is also the home of Bollywood cinema. What kinds of residential patterns exist and what processes take place at its peri-urban fringe?

The economies and populations of London and Mumbai are also **interlinked** via **global networks** (see section 2.3), with **flows** of **migration** and **investment** between the two cities. For example, Cadbury-Schweppes has its headquarters in London and its subsidiary Cadbury India is based in Mumbai.

3 *Consequences of urban growth & the quest for sustainability*

What are the **housing** issues for **million cities** and **megacities**? What are the predictions and projections for further growth in urban populations? What will the **ecological footprint** of the world's main cities be like in 50 years' time? How will cities in NICs cope with cars replacing bicycles? What additional risks might **climate change** bring to some cities?

"**Sustainable development** is a form of development that meets the needs of the present generation without compromising the ability of **future generations** to meet their own needs."

Brundtland Report

Can a settlement ever become sustainable according to the actual definition of sustainable development? The true meaning of sustainable development should be foremost in students' minds as they critically examine attempts of one urban area to become more sustainable. (A smaller settlement could be looked at, if the schemes are good, e.g. Modbury, where plastic bags are banned.)

Some existing urban schemes set targets for **carbon neutrality**, **recycling** objectives, **water conservation** or reductions in **landfill**. Important UK schemes to watch are:

- the promotion of carbon-neutral homes with financial support (for solar panels, etc.)
- the development of low-carbon urban public transport (e.g. London's hydrogen-powered buses).

7 Global challenge for the future

1 *Globalisation brings economic change*

Global trade can bring immediate national benefits to nations as **Gross Domestic Product** rises in value. The Purchasing Power Parity of individual citizens has been greatly increased in some of the 'success stories' or 'global winners', e.g. South Korea.

POSITIVE ECONOMIC CHANGE	NEGATIVE ECONOMIC CHANGE
The rise of the **Tiger economies** (and now India and China) owes much to the global investment strategies of TNCs. This has brought wealth to poorer places. OECD nations like the UK now educate their populations to a very high level. This is because they must run a **post-industrial** economy in order to remain competitive. This has benefited their citizens, most of whom now work in the more highly-paid office and service-sector.	Wealth is not evenly distributed in these new economies. **The income gap** between poor and rich citizens has widened in places like Indonesia due to globalisation. The manufacturing economies of cities like Sheffield (steel), Manchester (textiles) and Liverpool (chemicals and machine assembly) were decimated by globalisation. **Deindustrialisation** meant that some older workers who lost their jobs have never returned to employment.

2 *The moral and social consequences of globalisation*

THE OTHER SIDE OF THE SWEATSHOP DEBATE

Are factory conditions better than life in the countryside that migrants have left behind? Rural life in China could be looked at, including famines (1959-61) and evidence of malnutrition. Perhaps, despite poor conditions in factories, globalisation is still an overall step in the right direction?

Also, remember there are many poor workers in the world. If those in one country strike for better pay, might TNCs simply go elsewhere? Could improved conditions at work harm a country's ability to attract TNC inward investment?

Worker exploitation remains a major concern, e.g. in China, where some workers suffer conditions similar to those in the UK's factories during the Nineteenth Century. High factory accident rates have made new city Yongkang 'the dismemberment capital of China' (*Financial Times*).

Very often, poorly-waged workers are producing products that used to be made in Europe but without the health and safety controls that European workers demand (and which have made European production more expensive, hence the out-sourcing overseas that now takes place!).

Has globalisation allowed us to simply send dangerous poorly-paid work overseas? When we enjoy products made in such conditions, should we feel responsibility for the workers that made them? Ought we to pay more for the things we buy so that they can have a fair, safe wage?

3 *The environmental costs of global trade*

Consumer waste and packaging ends up as **landfill** if it is not / cannot be recycled, although new European legislation (the WEEE directive) is making it increasingly expensive for local authorities to dispose of waste in this way (Easter eggs are especially wasteful!).

There are **hidden costs of recycling**. Used paper and plastics are shipped to China for recycling, generating even more greenhouse gases.

Oil pollution in major shipping lanes, e.g. near Alaska

Global demand for timber results in tropical **deforestation**.

Global trade builds **carbon emissions**. **Food miles** and **air miles** are attached to consumer goods shipped or flown around the world.

There are many opportunities for students to research these topics. Newspapers such as *The Guardian* and *The Independent* have environmental supplements that regularly report on these topics. A quick on-line search is sure to find up-to-date case studies that document some of the environmental costs of globalisation, e.g. at *http://environment.guardian.co.uk/*

4 The viability of green strategies and ethical purchases

Possible solutions to the challenges of globalisation include actions on a variety of scales. Individuals can help by buying Fair Trade or through charitable giving. **Governments** can do their bit by signing up for carbon trading or giving tax breaks (e.g. for wind turbines, etc.). **Businesses** can add **food miles** labelling to products and use more recycled packaging.

Students need to offer balanced assessments of different actions and not just uncritically assert their merit. Local food may have been grown in powered hothouses. Aid can lead to **dumping** of goods (harming new businesses in poor countries) and **dependency**. Recycling and carbon trading may not reduce use of energy quickly enough. Organic food may clock up excessive food miles, e.g. South American 'organic' asparagus! There are pros and cons to each scheme.

DIFFERENT TYPES OF INDIVIDUAL ACTION

Fair trade
Some purchases (e.g. of coffee) guarantee better producer wages

Organic buying
Some food is grown in natural ways, aiding local biodiversity

Local buying
Locally-sourced products have fewer food miles attached

Charity / Aid
Cash donations can directly help the world's poorest people

Recycling / Re-using / Refusing
Waste can be recycled but it is even better to avoid generating it at all (e.g. avoid using plastic carrier bags)

UNIT 2: Geographical Investigations

Overview

The title of this unit emphasises its focus on fieldwork and related research. Geographical investigation remains an important component of the new A Level specification, despite the removal of coursework. Because of this, the design of fieldwork activity is no longer constrained by the need to produce a written report and so new opportunities, topics and approaches are available to students and teachers. Qualitative work, somewhat neglected of late, may well become more valued.

Fieldwork focuses on particular topics and operates within a wider research framework than before. There is less clear separation of 'primary' and 'secondary' information, and investigation is perhaps better viewed as a continuum from personal fieldwork to wider research activities. This approach makes better use of different types of information, as well as encouraging the use of new technologies including GIS, GPS, electronic maps, etc. as part of the 'interrogation' process. It is expected that out-of-classroom activity and fieldwork may take 1-2 days per unit. This will of course be a function of a number of factors including travel time / distances, size of group, residential versus non-residential and actual work undertaken.

If you have the opportunity to have a residential trip, you could combine two or more units, e.g. coasts and rebranding, perhaps spending 1.5 days on each. Alternatively, the mix could be one day on one unit, and two days on another. These suggested time scales are flexible and may include time for virtual fieldwork, research using GIS, etc., and following-up primary work in the field through *PowerPoint*™ and other audio-visual methods.

In the examination students will be required to show their skills in the planning, collection and analysis of information, as well as in concluding and evaluating fieldwork and research findings.

Topic 1: Extreme Weather

Introduction

- Extreme weather includes a range of phenomena which develop from a variety of meteorological conditions in the UK and in the wider world.
- This topic looks at how extreme weather events lead to immediate (storms), subsequent (floods) and longer-term (drought) hazards.
- The social and economic impacts of extreme weather vary, affecting people and their lives in different ways.
- Risks from extreme weather, such as storms and flooding, are increasing and such weather events seem to be becoming more frequent and more severe.
- Tougher, fairer and more intelligent management decisions need to be taken in both the short and longer term.

Core fieldwork and research opportunities

- In preparing for the assessment of this unit, students need to carry out investigations involving a combination of fieldwork and research activities.
- **Fieldwork opportunities** include a weather log, flood impact survey, flood/drought risk assessments and examining flood management issues.
- **Research** could relate to weather records, satellite images, hurricane data and the use of statistics for flood/drought events, as well as the evaluation of various current and future management strategies.
- These opportunities are identified **in bold text** in the following pages.

1 Extreme weather watch

1 Introduction

This item is seen as a starting point for the unit, though the depth of coverage may depend to some extent upon the prior learning of students.

- Initially, there is a need to understand what is meant by extreme weather. We often use words like *severe*, *unexpected* and *record*, but students need to appreciate just how extreme these events can be, by looking at actual data both locally and in the wider world.
- Students should make regular use of a geographical dictionary, online sources (e.g. Wikipedia), or a textbook to build up clear definitions of appropriate terms such as *hurricane*, *tornado*, *drought*, etc.
- When starting work on different types of extreme weather, it is a good idea to locate and label their varying distributions on a world map, and begin to learn these.
- Explaining why extreme weather events occur in different places is a more difficult but important task. For example, the tropical origins of hurricanes are the key to understanding why they happen.
- Identifying and knowing examples of different types of extreme weather, completes the basic work in this introductory item.
- Drawing up a simple table incorporating all this information would be a useful plenary activity.

2 *Fieldwork and research*

This is a **core fieldwork and research opportunity** which allows students to observe and monitor changes in weather conditions and carry out research into UK weather systems and their underlying meteorology.

Fieldwork could usefully involve:

- weather recording or investigating a microclimate
- keeping a diary of weather conditions and related events. Extremes might have effects on transport, water supplies, sport and local business, as discussed in the next section on impacts. (Note also media links to e.g. global warming, El Niño, records, etc.)

Research should involve looking at the contrasting weather systems that affect the UK and their meteorological make up, as these are what potentially lead to extreme weather conditions.

Case studies like 'The great storm of October 1987' and the heat wave of 2003 are both extreme and well documented, revealing the causes and development of extreme weather patterns.

A focus on the *progressive* (depressions) and *blocked* (anticyclones) phases of UK weather is probably the most useful activity here, especially if students can combine weather station data and secondary sources.

An ideal scenario might be to examine a developing depression, cold snap or heat wave and involve weather recording, TV/newspaper/online coverage, Met Office synoptic charts and satellite images.

3 Meteorological processes

This item looks at how meteorological processes create some of our most extreme weather. It is about **causes** and **events**, not the impacts they have (these will be looked at in the next section).

- Three different types of extreme weather are prescribed: hurricanes, winter conditions and drought. These provide a good contrast in terms of their locations, seasonality, weather conditions (temperatures, precipitation, etc.) and duration.
- Researching hurricane development and movement should enable students to understand the meteorological processes involved in these massive weather systems and how they relate to what happens in the upper atmosphere.
- This item does contain some relatively difficult ideas, where it is important to use technical terms with care, e.g. *jet stream*, *Coriolis*, and *ITCZ*. However, a sound level of understanding is more important here than knowing the detail of the complex meteorology involved.
- Winter conditions are essentially about snow and ice — *blizzards* and *ice storms* being extreme examples.
- The concept of drought needs to be approached carefully, the tropical version being of a very different order to its UK counterpart, which is arguably less of an extreme event.

Case studies are not here prescribed as such, however:

- Atlantic or Caribbean hurricanes are the most likely examples to choose. An audit of later sections might enable teachers or students to select the most useful named examples to suit their schemes of work, maybe Mitch, Katrina, or whatever future events provide.
- Whilst examples of winter weather in the UK fit in well with earlier work on anticyclones, North American examples of blizzards and storms are certainly more extreme and well documented, e.g. the Storm of the Century.
- Drought conditions in SE England may be more accessible and familiar to some students, but the unreliability of rainfall in the African Sahel or in Monsoon Asia does provide a valuable if more complex research alternative to return to later.

2 Extreme impacts

1 Introduction

This section is about the impacts of extreme weather, beginning with an introductory look at how, as with all hazards, impacts can be quite different. The focus is mainly on social and economic impacts, though some environmental effects are considered.

Impacts are different because:

- Some types of extreme weather are larger, more damaging and more deadly than others. This may have been partly explored in Unit 1. A table to compare differing costs (in dollars and lives) might be a useful resource for students to use or create.
- Impacts also relate to the severity of the event. Most hazards have a scale which calibrates their magnitude and effects. This applies to both hurricanes (Saffir-Simpson) and tornadoes (Fujita).
- People in some parts of the world are more at risk from extreme weather because of their level of economic development and their vulnerability (this applies to groups of people within countries too). Hurricanes and floods especially emphasise these differences — arguably, the rich suffer financially, while the poor lose lives.

2 *Fieldwork and research*

This item is a **core fieldwork and research opportunity** in which students should use primary and secondary sources to investigate the impacts of extreme weather. This might include impacts on homes, businesses, health, lives, infrastructure, production and habitats.

Case studies are not prescribed by name but they must focus on:

- an immediate disastrous weather event — a tornado or hurricane
- a subsequent additional hazard — localised river flooding
- a longer-term trend or condition — heat wave or drought.

Fieldwork is best served by a study of flood impacts along a small stream or part of a larger catchment. This might include investigating features of the floodplain, mapping, using surveys of the impacts on land use/values and the resulting management responses. Interviews and related **research** into previous flood events would allow a fuller understanding and analysis of flood impacts. This work would create a good case study.

Research could focus on the following:

- A hurricane or tornado, to explore the social, economic and environmental impacts of a disastrous event. Choices here could be Mitch, Andrew or Katrina, or a supercell from America's tornado alley. British examples of mini-tornadoes such as those in Birmingham and NW London in recent years might provide a useful contrast. The costs of such events could include property damage, interrupted transportation, and losses in crop production or tourism.
- A heat wave or extended drought, to illustrate the longer view of the effects of extreme weather. Whilst New South Wales provides a contemporary example to research, returning to the earlier examples of SE England or the Sahel would be another option for students. Links here include health issues, water supplies, and impacts on business and agriculture.

It would be useful for students to monitor related current weather events as these could help their understanding and provide additional examples of how weather can become extreme, e.g. heat waves, cold snaps and even thunderstorms.

This type of enquiry sequence lends itself to an issues evaluation exercise. This could be researched or set up as a desktop exercise. Alternatively, it could become the basis of a mock public enquiry. This will be a good point at which to introduce the idea of an IEE, an assessment element students will encounter in Unit 3.

3 Increasing risks

1 Introduction

This section looks at the increasing risks posed by extreme weather, and the initial item considers why this is happening.

Risks here are related to the following factors/causes:

- **climate change and global warming** — There are clear links here to Unit 1, but students should focus on extreme examples of storms and flood events, e.g. Carlisle, York or Boscastle.
- **population growth along rivers and coastlines** — This highlights the problem of increased floodplain and shoreline occupancy, as seen for example in the Environment Agency flood map of England and Wales or Defra's 'making space for water'.
- **poor management of land** — This is especially in relation to increased flood risk (developed further in the next item).

2 Fieldwork and research

This is a **core fieldwork and research opportunity** to investigate the flood risks associated with a small stream or part of a river catchment. Whilst case studies like Carlisle and Uckfield are well documented, the use of students' own choice of primary and secondary sources allows a clearer, detailed analysis of flood risks at the local scale.

Definitions can be troublesome here, as they range from **floods** to **flood return intervals**, and need to be carefully taught. Terms relating to **hydrology** and **hydrographs** must also be thoroughly understood.

The following aspects should be covered using **primary and secondary sources**:

- Meteorological causes are likely to relate to heavy or prolonged precipitation or snow melt (locally or upstream). This aspect of the topic could be based upon data from a previous storm/flood. Most sites chosen by teachers for study will have had at least one notable flood event, with information perhaps supported by weather records/rainfall data.
- The physical characteristics of the catchment, such as geology, vegetation and slopes, may increase surface runoff leading to flooding. Here again, primary data collection and site visits will help students understand why floods may occur. Geological maps and land use surveys provide valuable secondary information about hydrological change. River discharge data may be available and **hydrograph** records.
- Growing urbanisation, land use change and attempts at management may further increase flood risk. Here again, a combination of old maps and photographs, together with current fieldwork, could help explain why floods occur locally.

Wider research will almost certainly involve consulting local newspapers (these also being useful in the earlier impacts section), Environment Agency information and perhaps the National River Archive. This research could become a valuable learning vehicle and of course a very useful case study.

4 Managing extreme weather

1 Fieldwork and research

This is a **core fieldwork and research opportunity**, to investigate ways of managing and responding to extreme weather events. The two most important aspects are:

- the need to cover both short and longer-term strategies
- to understand how some management strategies are more successful than others.

Fieldwork could most easily be directed at flood protection, building on ideas from flood risk assessment in earlier sections. A useful exercise would be to evaluate the success of existing flood management strategies in a small area, and suggest how these might be developed or improved in the future.

Secondary information from organisations like the Environment Agency would help give a fuller picture of different approaches, such as flood warning, insuring against loss and flood protection.

Research could consider case studies like Boscastle or York, comparing local as well as integrated catchment options. However one obvious choice might be to investigate the success of hurricane warning and other strategies used in the USA to cope with these major storm events.

2 New technology

This item focuses on the role of new technology in improving community preparedness, event forecasting and reducing impacts

Hurricanes, tornadoes, floods and drought all provide useful examples of how technology is being applied to monitor and forecast extreme weather events.

FEMA and NOAA operate such systems in the USA while the Met Office and the Environment Agency are employing increasingly technology-based systems here.

Technology also has applications in water management and drought alleviation, particularly in tropical countries. Drought-resistant crops are another example of this use of technology.

3 Drought and water management

These need sustainable, longer term solutions.

It is important to keep this item relatively brief as it could easily become a major research topic. For this reason it is best to focus on two contrasting **case studies**. South East England and a contrasting example from East Africa or New South Wales would allow students to assess how successful current or future schemes might be.

Students should consider ways to manage drought through physical, social, economic and political responses. A range of ideas might include some basic aspects of:

- water collection and distribution
- adapting farming techniques
- recycling and conserving water

This also provides a useful starter for the water conflicts option in the A2 course.

Topic 2: Crowded Coasts

Introduction

- The coastal zone is one of the world's most densely populated areas because of favourable location factors, yet it is an area of immense environmental value.
- This topic allows students to carry out detailed studies of contrasting coastal environments at a local/small scale, exploring competing and conflicting land uses, and evaluating the pressures created by development.
- It considers how vulnerable and valuable coastlines face a growing physical risk from rapid coastal erosion and coastal flooding.
- It provides an overview of coastal management, looking at protection and conservation strategies in the present and for the future.

Core fieldwork and research opportunities

- In preparing for the assessment of this unit, students need to carry out investigations involving a combination of fieldwork and research activities.
- **Fieldwork opportunities** include exploring the growth of coastal development, the impacts on high value coastal environments and the risks from coastal erosion or flooding, and evaluating the management strategies for coastal environments.
- **Research** could include using satellite images and maps to explore changing coastlines and land use, to calculate coastal erosion and to evaluate existing shoreline management. Statistics relating to natural and human changes will provide the longer view.

1 Competition for coasts

1 Introduction

This introductory section explores what lies behind the development and growth of many coastal areas. The first item considers how natural factors lead to a variety of coastal environments, creating recognisable features, opportunities for development and pressures on these valuable environments.

Work could begin with a series of images (photos, satellite images, maps, etc.) of examples of varied coastal scenery to highlight these situations. Some examples might include:

- Geological factors can create attractive coastal scenery, e.g. Dorset's Jurassic Coast World Heritage site.
- Upland coastlines can provide sheltered inlets and natural harbours, e.g. Hong Kong.
- Estuaries and their hinterlands allow large industrial and port development, e.g. Rotterdam or Shanghai.
- Coastal ecosystems are valuable natural environments, e.g. Caribbean mangroves and reefs.
- Beaches and equable climate offer potential for recreation and tourism, e.g. Florida or a Costa.
- River floodplains, deltas and inshore areas provide food resources (farming and fishing) to support large urban growth, e.g. satellite image of Cairo.

Some of these images could be annotated to show features, opportunities, pressures and values.

Coastal growth is a major feature of modern population migration. The growth of coastal cities and shoreline population can be explored by:

- using population data and maps of the extent of these global changes
- suggesting reasons for the origins and exponential growth seen in one part of the world, e.g. California or Shanghai.

Reasons may come from the list provided in the specification, e.g. flat land, soil fertility, equable climate, biodiversity, and potential for fishing, tourism, industrial and port development and accessibility.

2 Fieldwork and research

This is a **core fieldwork and research opportunity**, to investigate how contrasting crowded coasts have developed over time. This implies that students study two case studies and need to include both primary and secondary sources. The other obvious choice to fit in with later items is to investigate a UK tourist resort and a foreign holiday destination.

Fieldwork in resorts such as Blackpool or Brighton could link the factors considered in the previous item with surveys of land use, tourist attractions and economic developments. Supporting research using maps, census data and newspaper information would also be useful.

Research into a contrasting foreign coastal area could make use of travel/holiday information, tourist guides and online resources. Mediterranean locations such as Barcelona (Costa) or Cyprus (island) would make useful contrasts. More exotic studies are of course possible and primary data collection may be available to some centres.

These investigations and choices of locations can be organised to complement those in later sections of this and other units.

2 Coping with the pressure

1 Introduction

Coastal developments create patterns of zoning resulting from the competition for space, which in turn lead to pressure on coastal environments. Many coastal resorts/ports show distinctive patterns of land use. These may be linked to distance from the shoreline or waterfront, including:

- The shoreline distorts typical patterns of urban land use.
- Hotels and guest houses are attracted to sea views or promenade sites.
- Tourist/recreational attractions are linked to piers or key sites.
- The pattern may reflect the changing nature of tourism, e.g. Victorian, exclusive, beachfront, rebranded.

There is a need for planning control as the available land decreases and the rate of development intensifies. This could be linked to the previous and following items, using fieldwork or research.

2 Fieldwork and research

This is a **core fieldwork and research opportunity**, to investigate pressures on the coastal environment when development and conservation meet head on.

Fieldwork in coastal areas under pressure from development could be set up to:

- analyse the pressures from overuse of resources, pollution and other developments such as tourist impacts in coastal resorts
- assess the value and level of destruction of high value coastal areas, e.g. in fragile habitats such as dunes or salt marshes and vulnerable SSSIs.

This work can be carried out in urban resort locations, where cultural and architectural concerns are at risk from development, but the more obvious strategy is to investigate threats to ecological sites. Sand dunes and salt marshes on crowded coasts provide considerable opportunities for fieldwork investigations. Surveys of the recreational and biodiversity value of sites are appropriate, especially if linked to the way in which human activity is altering or threatening their survival. Examples might include Studland or Oxwich, where the impacts of trampling, litter and other activities could be assessed.

Supporting **research** could include maps of changing land use, previous surveys, planning applications for development and newspaper coverage. Consultation with interest groups would be valuable, too. Both fieldwork and research could become a useful case study for later items.

3 Benefits and costs

There are economic benefits and environmental costs to coastal development, which influence the success of the development equation.

This is probably best approached via a **case study**. The location is not prescribed, allowing teachers and students to choose their own. This can clearly be a further opportunity for either fieldwork or research. Suitable examples might include local, UK or wider world locations, e.g. Dibden Bay, Marinair (Thames Estuary), Cardiff Bay, Akamas (Cyprus) or Breton Bay (Australia).

Key elements of this item are:

- appreciating the likely issues involved in the development (environmental impact)
- understanding and carrying out a cost-benefit analysis (CBA)
- examining the views and objectives of stakeholders (conflict matrix and values analysis)

This may or may not involve decision-making.

3 Increasing risks

1 Introduction

This item is designed to give an overview of the increasing risks from natural processes faced by people living on coastlines. It also identifies three situations where this risk is most obvious.

The growing level of coastal development faces increasing risks from coastal erosion and flooding because of:

- rapid coastal erosion along vulnerable coasts
- the impact of rising sea levels in areas of dense population and high value installations, particularly those that may be subject to tsunamis and storm surges.

Students need to develop an awareness of how coastal environments are threatened by the growing incidence of coastal hazards, a theme also explored in Unit 1.

Three differing aspects to cover, using brief case studies, are:

- rapid coastal erosion, e.g. California or the US East coast include crowded resorts undergoing significant losses
- rising sea levels especially linked with storm surges, e.g. the Thames Estuary or US Gulf states affected by hurricane impacts
- the localised effects of tsunamis events, e.g. Sri Lanka, Indonesia or Japan.

Students should to be able to locate these three hazards, understand and quantify the processes involved and be aware of their social, economic and environmental impacts. A useful exercise might be to construct a table which compares these characteristics. Assessing which is the greatest threat might be an intriguing final question.

2 Fieldwork and research

This is a core fieldwork and research opportunity to investigate the rate of coastal retreat or degree of coastal flood risk, together with their resulting impacts on developments and people at a small scale.

In this item, teachers and students can opt to investigate the causes and effects of either coastal erosion or coastal flooding, using a combination of **primary and secondary sources**. Fieldwork could be carried out on coastlines that are not necessarily crowded, but it is important to understand the impacts on developments and people locally. Start Bay, Holderness, Porlock, Towyn, etc. would all be possible sites.

		Activities and sources
Fieldwork	**Causes**	Mapping/recording evidence of types of wave, longshore drift, storm conditions, beach morphology, cliff face features (undercutting, slides, slumps, rock falls), low-lying land, salt marsh, flood levels, and the presence of sea defences
Research		Local or Environmental Agency data regarding past and present rates of erosion and flood risk (storm/flood return). Historical documents and maps. Satellite images (e.g. plotting LSD), online sites (university)
Fieldwork	**Effects**	Damage to sea defences, at-risk land use on cliffs or sea front (hotels, residential, recreational, businesses). Survey views of various local people, council, etc., impacts on business, land use
Research		Newspaper coverage of events, secondary questionnaire data, impacts on planning, land use and insurance, longer term economic effects on jobs, etc, environmental losses (beaches, heritage, SSSI), Natural England

4 Coastal management

This final section looks at the range of coastal management options available and assesses how these are being used and adapted along crowded coasts.

1 Introduction

This section concerns how the spectrum of coastal management strategies (hard engineering to 'do nothing') has evolved into shoreline management plans. A number of ideas need to be understood:

- Once an erosion or flooding issue has been identified, four broad options are available to decision-makers: do nothing, advance the line, hold the line or retreat.
- Assessing what to do is based upon cost-benefit analyses, environmental Impact assessments, feasibility studies and risk assessments.

Students should examine a range of coastal defences, both traditional and modern, and consider how these relate to what is feasible, cost-effective and appropriate. This could be via a number of different places or, ideally, one small section of coast that uses a range or combination of defence measures which operate together.

2 Fieldwork and research

This is a **core fieldwork and research opportunity**, to investigate the success of coastal management strategies. These could be designed to be complementary and reduce the need for more case studies.

Teachers and students need to investigate two aspects of coastal management using suitable techniques:

- Examine the success of defence schemes along one stretch of coastline.
- Assess the value of strategies designed to manage coasts of high environmental quality.

Many classic coastal locations, already referred to, could again provide useful locations for fieldwork and research. The table below gives some examples of investigative work:

		Activities and sources
Fieldwork	The success of coastal defences	Mapping/recording structures and their effects as defences in coping with waves, longshore drift, storm conditions, mass movement events, tides, flood levels. How various defences work together, impacts downdrift
Research		Local or Environmental Agency data regarding changes in rates of erosion and flood risk. Historical documents and maps. Satellite images (e.g. plotting LSD), online sites (university) Defra sources
Fieldwork	Managing high quality environments	Surveys of environmental damage from development and visitor pressure, strengths and weaknesses of strategies to manage fragile places and conserve their eco-value. Survey views of various interest groups, e.g. nature reserves
Research		Newspaper coverage, secondary questionnaire data, impacts on planning, land use and insurance, longer-term impacts (beaches, World Heritage sites, Ramsars and SSSIs), Natural England

3 Management strategies for the future

This final item looks at sustainable and integrated approaches such as coastal realignment, shoreline management and integrated coastal zone management (ICZM).

Sustainable coastal defences are relatively new to the UK. They try to accommodate, copy or work alongside natural systems and processes, with ecosystems often playing a key role. As an approach to defence they are environmentally friendly and may offer a longer-term solution for many places along the coast.

Existing defences highlight the growing economic costs and environmental impacts of defending coasts. Reasons for a change in policy also include the impacts of global warming and 'coastal squeeze'.

The two most discussed strategies are as follows:

- Coastal realignment is controversial as it involves 'retreating the line' and no longer defending some parts of the Essex, Kent and North Norfolk coastlines. Salt marsh ecosystems are able to trap material and, through the process of succession, create new land and habitats.
- Shoreline Management Plans (these use a combination of various defence types as set out above) and the wider ICZM Plans (political and economic considerations) are designed to take a longer and wider view of how best to develop coasts sustainably. They are integrated plans.

Appropriate case studies include the Blackwater Estuary (Essex), SMPs like East Sussex or Shepway and the Northumberland coast.

Topic 3: Unequal Spaces

Introduction

Movements of people and money and changing opportunity affect all parts of the rural-urban continuum. Some areas are obviously thriving; others may be in decline. These differences can exist on a variety of scales, even between adjacent neighbourhoods and groups or between rural and urban districts.

This topic explores the social, political and economic causes of disparities and identifies the 'haves' and the 'have-nots'. A range of strategies have been put forward and carried out to reduce disparity; this unit seeks to understand the successes and failures, in both towns and the countryside.

	Core fieldwork in each section	Research / GIS / ICT
3.1	Selection of criteria and design of indices for investigating inequality and disparity	Use of online and other secondary indicators to establish what places are like, e.g. census, 'upmystreet', local newspaper, etc; GIS maps / digital maps of inequality
3.2	Investigating the spatial patterns of inequality using appropriate indices from 3.1.3, e.g. housing quality, photo evidence, etc	Use of own basic GIS to make / manipulate maps of selected locations, e.g. using census mapping tool or dedicated GIS software
3.3	Investigating one or more RURAL locations and using appropriate qualitative and quantitative criteria (e.g. use of interviews / focus groups, photo evidence) to determine the success or otherwise of projects	Secondary research into rural technologies, e.g. broadband and digital TV availability, research work patterns, access and mobility issues through blogs and forums
3.4	Investigating one or more URBAN locations and using appropriate qualitative and quantitative criteria (e.g. burglarability indices, street condition surveys etc) to determine the success or otherwise of projects	Secondary research through investigating local case studies, e.g. City Challenge, SRB, etc. Access to opinions of users and stakeholders, e.g. blogs, recorded interviews, etc.

1 Recognising inequality

1 Introduction

This is a starting point for the unit, though the depth of coverage may depend to some extent upon the prior learning of students. Initially, there is a need to understand what is meant by 'inequality' and all of the ramifications of this notion:

- Students should be encouraged to use a geographical dictionary, compare online sources (e.g. Wikipedia and other 'definitions engines') or a textbook to create clear definitions of appropriate terms such as disparity, difference and inequality, etc.
- When starting work on different types of inequality, it is a good idea to start at the small scale, i.e. using a world map, HDI indices, etc., to locate and label their varying inequalities on a world map, so that patterns can be explored. The online 'worldmapper' resource is useful in this respect (*www.worldmapper.org*).
- At the more local (larger) scale, inequalities can be discussed based on personal experiences, e.g. lack of access to services for students who come from rural areas.
- Use of video, photographic or blogs, as well as more traditional newspaper 'letters' pages, may provide evidence to support such inequalities. Carry out a simple research exercise for the local environment to see how each of these different vehicles is used by different sectors of society.

2 *Processes and causes of inequality*

This item looks at the processes and causes of inequality for people, i.e. environmental quality, access to social opportunity (including jobs and employment) and quality of life. There is an emphasis on researching the processes that initiate inequality.

- This would be a good opportunity to explore the census website in addition to other sources of secondary data (see details below).
- Inequality can be caused by a number of processes, but they are often linked to the economy.
- Explore the differences between: environmental quality, social opportunity, wealth and quality of life. Health is also an important consideration.

3 *Fieldwork and research*

This is a **core fieldwork and research** item. Note that there is a requirement for fieldwork and research in both an urban and rural context.

Discussion may be required as to how the inequalities may vary between urban and rural areas. This could be achieved as a group spider diagram.

Explore the primary and secondary techniques 'toolkit' available for an enquiry into differences — a simple example is provided in the table. It should be possible to distinguish between an 'urban' and 'rural' research framework.

	Research Framework	
	Primary	**Secondary**
Economic Urban Suggest contrasting 'lower output' areas, approximately 1300-1600 people	e.g. Quality surveys — built environment, neighbourhood, etc. Identification and maps of zones of exclusion within the built environment, e.g. fear of crime, no parking / no vehicles.	Use of online census data and websites, e.g. www.checkmyfile.com www.upmystreet.co.uk
Rural Suggest contrasting 'output' areas, approximately 250-300 people	e.g. Questionnaire to determine mobility patterns (mobility maps), services, use of public versus private transport.	Bus timetables, route analysis, etc. GIS maps of sport facilities (also sports facility calculator from Sport England).

Fieldwork will be best served by a visit to contrasting urban and rural areas, but within close proximity of each other. Students should be encouraged to use their own ideas as much as possible in terms of method and approach so that the experience is personalised. The requirement from this part of the unit is the 'pre' fieldwork, i.e. selecting appropriate methods, techniques and criteria by which inequalities at the local scale can be investigated.

One particular area where work can be customised is in the development of bi-polar type scales. Existing versions taken from books, articles, the internet, etc., can be personalised, modified and adapted for better use within the local context.

Typically, the core fieldwork may involve use of semi-quantitative quality type surveys based on small mapping units, e.g. output areas to link with secondary census and postcode derived data. Note that an output area is the highest resolution census area and contains on average about 100 households. The use of more qualitative approaches such as geographical prose, video, photos and audio diaries (digitised onto a mobile phone) would also be useful in terms of recording and reporting differences.

Initial research could focus on:

- Use of the census website (*www.statistics.gov.uk/neighbourhood*) using postcode searches to generate predetermined profiles. Note that there is scope for customising the input and output areas / data to meet the needs of the enquiry more precisely. Raw data can be obtained to carry out an index of dissimilarity.
- Other demographic and profile data is available on websites such as 'checkmyfile' and 'upmystreet', although these tend to have a number of irrelevant items also included.
- Many local authorities also have well-produced and processed ethno-geographic data sets that can be readily accessed.

Case studies here are not prescribed by name, however any area that is visited provides an opportunity to create brief A4 profiles (including the use of digital map data) which reflect the character and nature of the areas studied. This can be an outcome of the data presentation and analysis process. Case studies can also be drawn form contrasting global locations.

2 Inequality for whom

1 Introduction

This section is about the **impacts** of inequality, beginning with an introductory look at exclusion and polarisation. The focus is mainly on social and economic impacts and how these link to quality of life, life chances and life experiences.

Students need to recognise that inequality is all around them — start by creating a table of who the disadvantaged might be and how they might be affected. A range of examples can be used, e.g. access to local health facilities such as an NHS dentist (see the NHS website).

Case studies may be selected from other parts of the world to illustrate differences in the degree of inequality.

2 The effects of disadvantage

This section is about recognising how we are all disadvantaged in one way or another, and how such disadvantage can create social, economic and political marginalisation.

- Carry out an audit of local newspapers, blogs and websites to find out who are the marginalised groups.
- Then do a more in-depth case study research into how and why a particular group or groups is subject to exclusion.

There is a range of linked opportunities for fieldwork in terms of urban and rural exclusion (see examples below).

Other fieldwork may be used, e.g. carrying out an accessibility audit for an urban location (measurement of route quality and width, disabled parking paces, shop door widths, etc.).

A range of other research activities can be suggested in terms of mapping the distribution of the long-term unemployed.

Investigating exclusion – age, gender and ethnicity

Many older people and especially older women can feel excluded from town centres at night, particularly at the weekend. About 45% of 16-34 year-olds go 'out on the town' at least one evening a week, whilst only 15% of the over-55% do and 71% of over-55s would not go out in a town centre in the evening.

Asking participants about their patterns of usage of the night-time economy should involve a daytime questionnaire survey. In particular look to explore ideas of age, gender and ethnicity coupled to patterns and frequency of usage. How do these compare with the overall profile for the area? Look at the census data available at *www.statistics.gov.uk* . If there are differences between the day-profile and night-profile what explanations can be provided?
The questionnaire can be extended to look at patterns of usage in the twilight', 'early', and 'late-night' periods (see below). How and why are there differences between different groups?

Twilight night-time economy 6.00pm – 8.00pm	centered around retailing activities – shops which now have extended opening hours to take in after-work shopping
Early night-time economy 8.00pm -10.30pm	'cultured' night life built around cafés, restaurants, theatres, performance venues, cinemas and festivals.
Later night-time economy after 10.30pm	revolving around city centre bars, pubs and clubs and late night fast food outlets

3 Fieldwork and research

This item is a **core fieldwork and research** item in which students should use **primary and secondary sources** to investigate the pattern and impacts of spatial inequality. This will link together and build on the 'pre' work already done.

Fieldwork is best served by a study into the patterns of deprivation within contrasting areas, both rural and urban. Primary data collection can use various indices to assess 'quality', e.g. housing quality surveys, etc. One focus might be neighbourhood identity, myth and exclusion.

Myth and exclusion: (adapted from *Everyday Geographies*, Hall (2007))
Select a nearby area, e.g. a neighbourhood unit in an urban area or local town. Using a variety of research sources (library, internet, local and national media, interviews) try to build up a profile of myth and exclusion for the area. How does it compare to the established 'place-profile', i.e. what the area is perceived to be like. Questions to ask could include:

1 What is the supposed character of an area?
2 Is this in any way a myth?
3 Who or what is being excluded?
4 Who might be doing the excluding, how and why?

Other types of more innovative fieldwork and research could include the use of mental maps as a mechanism for revealing activity patterns and knowledge of place.

Research should focus on exploring the nature and type of secondary deprivation data that is available, in particular more in-depth interrogation of the census website so that deprivation data can be downloaded and manipulated within a spreadsheet, for instance. Various tools can be used to process this data, e.g. rank.

Patterns of inequality can be researched at different scales, i.e. locally, regionally and nationally. One exercise could be to produce a map of affordable housing for the region.

4 Success or failure

This item takes a brief look at what might make a successful project, in particular the ways in which success or failure can be measured. It can be used an introduction in part to 3.3 or 3.4.

Start by discussing the qualitative and quantitative indicators of success. These could be arranged into a table, for example:

	Qualitative	Quantitative
Social	Types of cars; clothing worn, etc. (general photographic evidence)	Higher disposable incomes / purchasing power; change in the shopping basket of local shops
Economic	General feel of the area, e.g. photos which illustrate changes	Reduction in unemployment / increase in range and type of employment
Environmental	Area 'feels' better, less threatening, cleaner, safer, etc	Litter surveys; biodiversity; street cleanliness

- Which indicators are more important / useful than others? After discussion, put them into rank order of relative significance.
- Try and apply these indicators to a small example. Go through the research.

3 Managing rural inequalities

1 Introduction

This section looks at the range of barriers: economic, social and environmental, as well as how and why they are difficult to overcome. Start by looking at the particular issues and challenges faced by the rural poor from different locations and perspectives, i.e. extreme poverty in Africa versus rural poverty in Cornwall. What are the varying degrees of rural poverty ('extreme' versus 'poor')?

The initial item should explore an identification of the range of barriers, i.e:

- social — unwillingness, inertia, lack of knowledge, scared, lack of educational opportunity, etc
- economic — unattainable goal financially, lack of access to higher-paid employment (e.g. seasonal tourism work only)
- environmental, including climate, topography, remoteness / inaccessibility.

Students also need to discuss the nature of these barriers, i.e. how easy are they to overcome and who might be responsible for that, local self-help groups vs national strategies.

2 Fieldwork and research

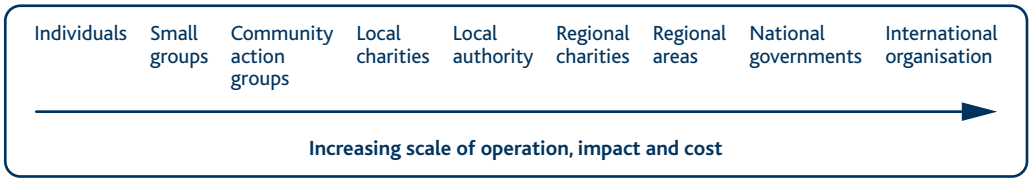
This is a **core fieldwork and research** item, providing an ideal opportunity to combine fieldwork and research activities.

Fieldwork may be based around a survey of a number of villages (suggest about five), some of which may demonstrate solutions, e.g. vital villages *http://www.vitalvillages.org.uk/default.htm*, village action plans (e.g. use of community taxi) and links to other local policies so that the range and type of functions are improved. This fieldwork activity can be combined with the same village visits which seek to identify the types of profiles, service functions, transport facilitates, type and tenure of housing, etc. Again, there are possible links to sustainable communities. It may be possible to organise work with focus groups, e.g. OAPs, about how the area has changed.

Secondary research may look at improvements in the availability of rural technologies, i.e. mobile phone coverage, digital TV and availability of broadband. All these maps can be accessed from the internet. Also, aspects like bus routes can be analysed in terms of frequency and coverage, from downloadable maps. Local case studies can also be used, e.g. rural dial-a-bus schemes.

4 Managing urban inequalities

This section looks at the range of barriers — economic, social and environmental — and the key players involved in overcoming such difficulties. There is a spectrum of players involved in any urban renewable strategy.



Fieldwork and research is suggested to evaluate the success of specific examples.

Fieldwork activities could include:

- Mapping the distribution and location of security cameras in an urban area. Why are there 'hotspots' (this can be linked to a land-use map showing the distribution of facilities which may attract trouble and are open late at night, e.g. pubs, bars, late-night fast food outlets).
- The distribution of neighbourhood-watch stickers and evidence for neighbourhood policing. Consider the use of a burglarability index.
- Mapping the distribution of gated communities within an urban area (it is possible to look at the evolution of such neighbourhoods over time — are they associated with either wealth or poverty?)
- Street cleanliness may reveal something about the quality of the environment and could be used as a surrogate indicator of success.

Case studies should also be drawn from further afield, e.g. studies of WHO initiatives in low HDI countries.

Topic 4: Rebranding Places

Introduction

- Rebranding is about both re-imaging and regeneration (indeed the two often act as catalysts for each other).
- There is a wide range of strategies by which places reinvent themselves in an attempt to provide a more prosperous future.
- This option explores why rebranding is necessary (e.g. spiral of decline, cycle of poverty, economic readjustment and social problems) and considers how public and / or private funding can be used to implement flagship and community projects to improve the social fabric, lifestyle, environment and economy of places.
- Rebranding makes use of a number of strategies, including diversification of employment, landscape improvement, sports tourism, and innovative / sustainable technology.

Section	Core fieldwork in each section	Research / GIS / ICT
1	Looking for evidence of decline and loss of function in selected areas, e.g. perception surveys, environmental quality, survey of dereliction, photo evidence to create a 'place-profile'.	Use of e-mail, blogs, forums, etc. to inform perception of place (i.e. 'myth versus reality'), websites to establish place demographic identity, e.g. Cameo, Acorn profile etc; research GIS / digital maps of decline.
2	Setting up questionnaires and extended interviews with key players / stakeholders locally to evaluate roles and opinions.	Research into the rebranding process, i.e. strategies to market and create identity: importance of environment, economy, socio-cultural identity. Researching the roles, identities and functions of various players through secondary sources and evidence.
3	Selection and establishment of criteria for success in rural rebranding. Visit location(s), collect evidence, e.g. oral histories of change, perception of reputation, change in functional hierarchy, etc.	Research secondary evidence of success, e.g. photos illustrating change, changes in employment, visitor profile and catchment etc; use of blogs, U Tube, MySpace, Flicker, etc. to reveal identity; GIS maps of accessibility / deprivation (or isochrone), etc.
4	Selection and establishment of criteria for success in urban rebranding. Visit location(s), collect evidence, e.g. photos of new design, retail occupancy / footfall, retail diversity / cloning, perception / reputation.	Research secondary evidence of success, e.g. crime statistics, visitor numbers / footfall patterns, change in rateable value (VOA), GIS maps of employment, deprivation, etc.

1 Time to rebrand

1 Introduction

This item is seen as a starting point for the unit, though the depth of coverage may depend to some extent upon the prior learning of students. Initially, there is a need to explore the variety of rebranding ideas and strategies. Students should accept that places have different priorities, e.g. culture/entertainment versus food, and therefore use different approaches.

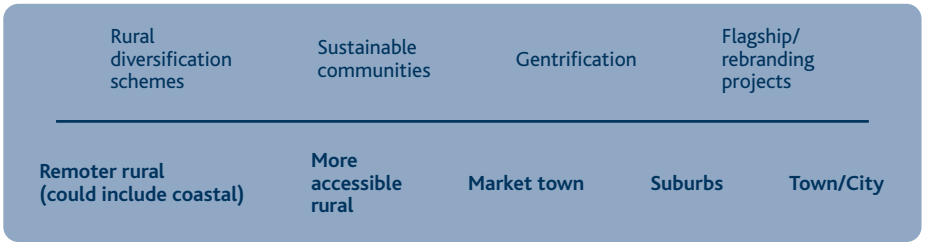
Students should be encouraged to use a geographical dictionary, and to compare online sources (e.g. Wikipedia and others) or a textbook to appreciate the differing interpretation of terms such as *re-imaging*, *rebranding*, *regeneration* and *flagship projects*.

They need to understand that the notion of re-imaging is more than just the visual appearance of a place, but also includes its reputation and, importantly, how people view the place both as internal users (residents) and external customers (visitors).

At the more local (larger) scale, rebranding strategies can be discussed based on personal experiences, e.g. 'rebranding the local college' — changing its name, logo, façade, etc. What type of image is it trying to portrait?

Use successful rebrands as a starter: What has happened? What was the catalyst, etc? Examples include the Barcelona Olympics, 'Big-sheep' Devon (post-production agriculture).

Students need to appreciate the wide variety of schemes, approaches and locations.



2 *Different ideas*

This item builds on the ideas in 1 above and looks at the different ideas for rebranding in towns and the countryside. It offers an opportunity to explore the range of catalysts that are used in order to rebrand a location, in particular an appreciation that art, culture, food and entertainment may all form components.

3 *Why rebranding may be necessary*

This item looks at the reasons why rebranding is necessary in certain places and at the social, economic and environmental processes which may be involved:

- Rebranding is needed for a number of reasons, e.g. loss of traditional industry, cycle of poverty/spiral of decline and population change.
- Brief examples can be chosen to illustrate the models of decline — out migration from a locality, etc.

Reasons for rebranding:

Rural	Declining population, ageing society, limited employment opportunities (low paid, long travel distances), agriculture in decline (low milk prices, bovine TB, etc.), limited availability of public transport, lack of low-order retail services.
Urban	Industrial town lost its function, e.g. mining, textiles, competition from out-of-town retailing causing loss of functions and services, sink suburbs, etc.
Coastal	Decline of traditional fishing industry, competition from DIY overseas holiday / cheap flights, remoteness and inaccessibility, challenges of high concentrations of migrant labour, high concentration of elderly, high cost of housing, loss of young blood for other opportunities (loss of schools, etc. — spiral of decline)

4 Fieldwork and research

This item is a core **Fieldwork and research** item in which students should use primary and secondary sources to determine the 'profile' of places in need of rebranding.

Techniques toolkit: some examples

Exploration of the 'drosscape' — large tracts of abused land on the peripheries of cities and beyond where urban sprawl meets dereliction. Also, declining mining / textile regions have similar areas. These are locations often targeted for rebranding, e.g. proposed super-casino on derelict land in Manchester. Use maps and other sources to produce a map of such locations.

Use of a simple **questionnaire survey** to determine what type of image a location has.

Use of **document analysis**: what type of image is being portrait in adverts, websites, etc?

Use of various **environmental quality surveys** for both urban and rural areas, e.g. index of decay.

A 'Placecheck form' can be used as a basic way of evaluating a rural or urban environment:

www.placecheck.info/how_to_do_a_placecheck/

2 Rebranding strategies

This item is used to introduce the range of players and how they may be pivotal in the success or failure of different schemes. What are the different roles of such partners and why may they want to be involved?

Fieldwork and research should be undertaken using both urban and rural examples. This may be combined with 4.2 and 4.3 (see below). Fieldwork should be centred on a case study approach using photographic and any other historic documentary evidence (e.g. oral histories), so that an impression can be built up about the place before and after rebranding. For some areas, for example, shopping quality surveys may be appropriate, or investigating changes in the retail hierarchy.

Qualitative evidence can be recorded in the form of personal sketch maps and 'place profiles', i.e. a base map annotated with photos illustrating change.

Rebranding for a sustainable future provides a medium and longer-term look at rebranding and the challenge of legacy facilities.

Various case studies and research activities can be utilised to look at the future use of legacy facilities both at home, e.g. Manchester 2002, and abroad, e.g. Barcelona and Athens, which provide contrasting examples.

3 Managing rural rebranding

Fieldwork and research should include at least one visit to an exemplar location where some type of rural rebranding / re-imaging / diversification has occurred. This can easily be combined with a similar approach which attempts to evaluate the success of such strategies (see below).

Ideally, students could be shown contrasting examples to add depth to their understanding, e.g. remote rural versus accessible rural, or large-scale versus small-scale projects. Ideas can be developed through secondary research and case studies.

4 Managing urban rebranding

Fieldwork will have to rely on a blend of qualitative and semi-quantitative research in order to evaluate 'success'.

Fieldwork and research opportunities should seek to promote the analysis of different schemes, e.g. a comparison of sport-led regeneration versus heritage tourism. Different schemes will probably require modification of the fieldwork.

The notion of success can be further developed through suggestions about how urban areas may better promote themselves and become more successful. Is this a desirable outcome, with more visitors being attracted?

There is a case for using virtual fieldwork as a vehicle to set up measurements of success and to calibrate / practise with students the use of various techniques.

The criteria selected should be adapted for different contexts:

To evaluate rebranding in a **coastal context**, there may be a range of primary and secondary research areas:

- **economic** — retail occupancy / retail health, footfall, levels of employment (seasonal, casual, part-time, full time, etc); compare economically with other locations using GIS; affordability of housing
- **social** — crime statistics, graffiti assessment, use of Wikipedia / YouTube, etc, to reveal identity and issues, research local editorial, forums, community action groups, etc.
- **environmental** — beach quality surveys (incorporating 'Blue Flag' criteria), route quality surveys (especially in locations where pedestrianisation, etc. has taken place), visitor surveys: catchment, average spend, impressions of change, etc.

In contrast, to evaluate the success of rebranding in a **large urban context**, there may be a range of primary and secondary research areas:

- **economic** — retail occupancy / retail health, footfall, levels of employment, change in rateable values (VOA) 2000-2005
- **social** — crime statistics, graffiti assessment, use of Wikipedia / YouTube, etc, to reveal identity and issues, research local editorial, forums, community action groups, etc, reputation / image (document analysis)
- **environmental** — mapping access and opportunity to green space, assessment of building design and architecture; assessment of sustainability of particular projects (including green credentials).

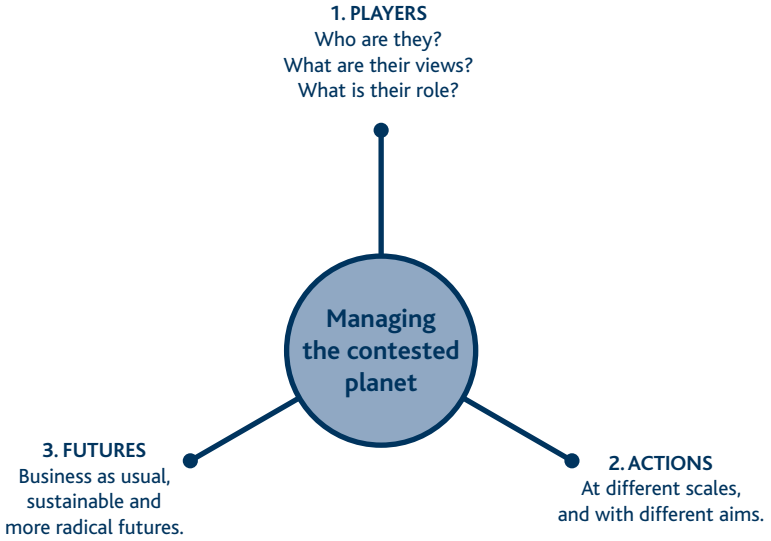
Unit 3: Contested Planet

Overview

Unit 3, Contested Planet, forms the core of A2 Geography.

The unit aims to introduce students to key contemporary global issues, allow them to explore the significance of these issues, and examine a range of potential solutions to them.

The unit has a synoptic element, which addresses the question of 'Managing the Contested Planet'. This takes the form of assessing three broad themes in relation to the topic content:



When planning your Scheme of Work, these themes should be integrated into the content of Unit 3, as indicated in the specification. Some further detail is given below.

Players

This refers to the range of stakeholders and decision-makers who are involved in using resources, managing resources, and monitoring the planet's physical and human systems. These might include:

- Trans-national corporations
- Individual consumers
- National and Local governments
- Government Agencies
- Non-Governmental Organisations and Pressure Groups
- Inter-Governmental Organisations

Students should develop an awareness of the differing views and attitudes held by these groups, in relation to issues such as water resources and biodiversity. They should also be aware that groups hold opposing views, based on their value systems.

Example

On the issue of biodiversity, students might study how a TNC uses biological resources such as forests as part of its production chain, and also the extent to which it tries to minimise environmental damage. This could be contrasted with the activities of a campaigning NGO such as Friends of the Earth and its role in highlighting the issue of deforestation. Individual consumers might be considered in terms of trends in FSC assured products. National Governments are involved in the protection of forest resources, although policies and success varies. Inter-Governmental Organisations, such as UNESCO, also play a role in protecting biodiversity although this often relies heavily on the co-operation of National governments.

Actions

This refers to the variety of management strategies that might be used to mitigate against the negative consequences of resource use, poverty and lack of development. These could be actions at different scales:

- local
- national
- global

as well as actions based on different models and theories.

Example

The problem of the development gap could be investigated in a variety of ways. Students could assess the role of lending, by the World Bank and IMF, in order to judge the success of modernisation approaches to development. This could be contrasted with approaches which encourage Foreign Direct Investment, linked to globalisation, for instance in Asia. The costs and benefits of socialist models could be examined at a national scale through Cuba or Venezuela, which in turn could be contrasted with more small-scale, localised, developed schemes using intermediate technology and led by NGOs.

The consideration of 'actions' also allows for a consideration of 'players'.

Futures

The broad theme of futures focuses on long-term thinking in relation to the contested planet. Students should be encouraged to investigate contrasting theories concerning what this future should be:

- Business as usual — the future based on the current pattern of resource consumption.
- Sustainable development — using strategies to minimise the environmental impacts of market led development.
- Radical approaches, such as green growth.

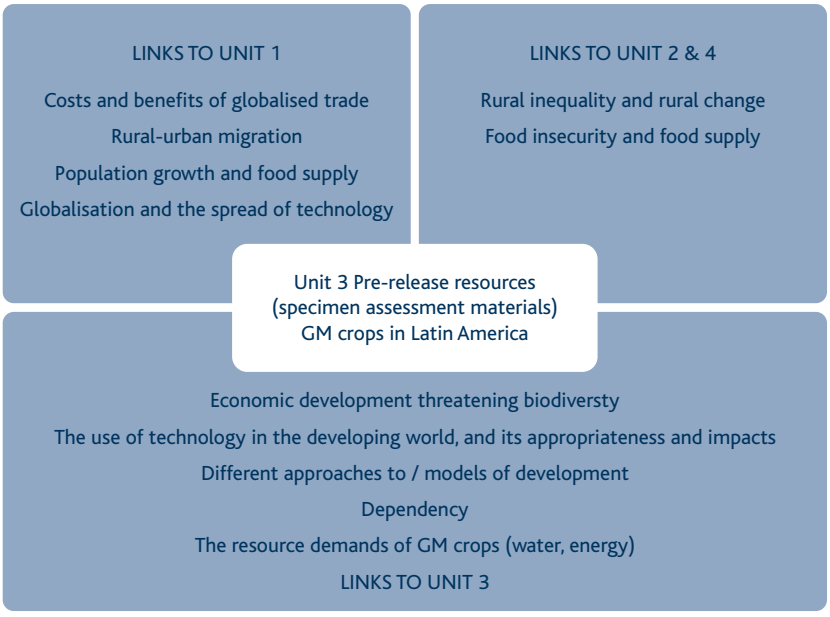
Example

Students might consider this theme through the study of energy. What might the future of fossil fuels be? Investigations include models of 'peak oil and gas' and alternatives that might exist when oil and gas runs out, or become prohibitively expensive. In relation to pollution and climate change, might it be better to reduce fossil fuel consumption now rather than wait until it runs out? Alternative, more radical approaches, might call for drastic reductions in energy use, and changes in lifestyles. These options all have costs and benefits to different 'players'.

Assessment of synopticity

In Unit 3, assessment of synopticity will take several forms:

- In Section A, questions may make direct reference to players, actions or futures, linked to the six topics in the unit.
- In Section B, questions may also refer to these three themes.
- In addition, in Section B (pre-released resources) students will be expected to make links between topics. The specimen assessment materials for Unit 3 Section B show how the issue of GM crops links to many topics within Unit 3, and elsewhere in the AS and A2 Specification.
- These links are shown in the diagram below:



Unit 4: Geographical Research

There are six research options in this unit.

1 Tectonic Activity and Hazards

2 Cold Environments

3 Life on the Margins - the food supply problem

4 The World of Cultural Diversity

5 Pollution and Human Health at Risk

6 Consuming the Rural Landscape (leisure and tourism)

All options offer opportunities for independent study, personal research and field work, and to incorporate topical events and personal interests and strengths of both students and teachers alike.

The options can either be studied from July/September—January or February—May in the upper sixth year, to fit in with individual centres requirements.

Students will research their option and then write an essay in an examination.

Key questions

Each option has four Enquiry Questions to cover, and the final essay set in the exam will cross two of these Enquiry Questions at any one time. The pre-release statement approximately four weeks before the exam will give a guideline as to which two are to be focused upon, although the other two Enquiry Questions will undoubtedly help in the overall answering of the exam question.

The options have Enquiry Questions which build on each other conceptually, so it is recommended that you study them in order. Here are shortened versions of the basic Key Questions for each unit:

Option 1: Tectonic Activity + Hazards	Option 2: Cold Environments - landscapes + changes	Option 3: Life on the Margins: the food supply problem
Enquiry Q1: What are tectonic hazards?	Enquiry Q1: What + where?	Enquiry Q1: Characteristic feast + famine
Enquiry Q2: Impact on landscape	Enquiry Q2: Climatic processes + results	Enquiry Q2: Causes of inequalities in food supply + security
Enquiry Q3: Impact on people	Enquiry Q3: Geomorphological processes, landscapes, landforms	Enquiry Q3: Role of desertification
Enquiry Q4: Response + future issues	Enquiry Q4: Challenges + opportunities	Enquiry Q4: Management

Option 4: The World of Cultural Diversity	Option 5: Pollution + Human Health at Risk	Option 6: Consuming the Rural Landscape
Enquiry Q1: Nature + value of culture in geography	Enquiry Q1: What are health risks?	Enquiry Q1: Growth of leisure + tourism landscapes
Enquiry Q2: Variations spatially	Enquiry Q2: Causes of health risks	Enquiry Q2: Significance + fragility of some landscapes
Enquiry Q3: Impact of globalisation	Enquiry Q3: Link with pollution	Enquiry Q3: Impacts of leisure + tourism
Enquiry Q4: Impact on environment	Enquiry Q4: Managing impacts	Enquiry Q4: Management

What students will need to do

Although some of the background concepts, processes and theories will be taught in a traditional class style, the emphasis in this part of the A Level is on developing and consolidating independent learning skills, which will show in the final range of case studies used in the exam. Some case studies will be common to students whatever the option chosen, but it is in the interests of the student to find their own personalised suite of materials to prove independent research.

Teachers will need to check that students understand how to construct a formal essay style, with paragraphs, clear introduction and conclusion, flowing style, etc. In this essay, credit will be given to sourcing of material, so footnotes and even a small bibliography which has more than Wikipedia ,the BBC or Google will be rewarded!

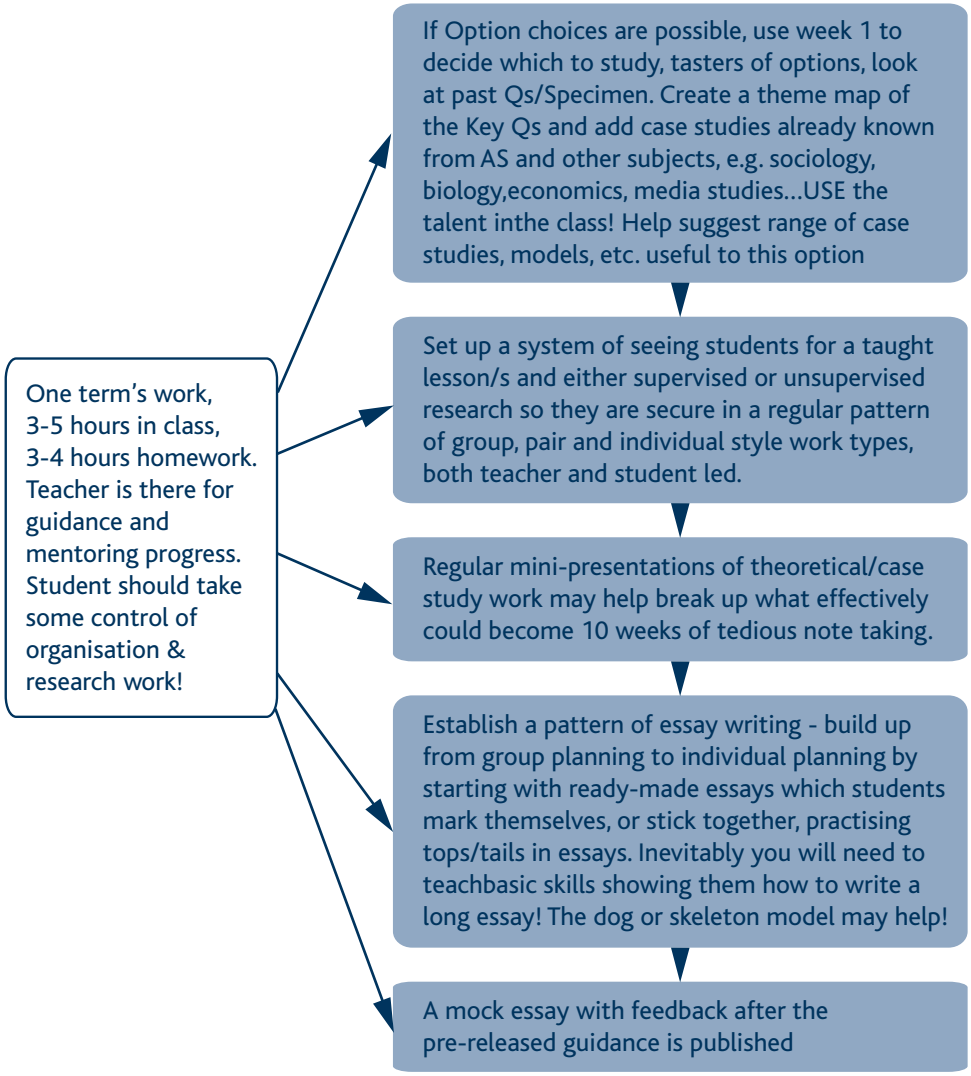
A mixture of sources of secondary information is required, e.g. publications, internet sources, DVDs. Some options also lend themselves easily to primary fieldwork; others may require more effort to visit places like volcanic and glaciated and desertified landscapes.

A careful study and repeated use of the generic mark scheme will help students achieve the best possible individual results.

The role of the teacher

The role of the teacher should shift to a largely guidance and mentoring role rather than taking the lead; the student should take more responsibility for their own work. This means that it may be possible even in small departments to allow a range of options to be studied, and allow some choice by students to play to their own strengths and interests.

Here is a possible model for organising the course:



Dealing with the Advance Information (pre-release) for Units 3 and 4

There will be **no January examination opportunity in 2014**. This means that both Unit 3 and Unit 4 will be sat by A2 students in June 2014.

The Advance Information for both units will now be released 8 weeks in advance of the examination. For many centres, dealing with both sets of Advance Information at the same time will be business as usual but for some it will be a change. Centres may wish to consider the following points.

- Where two teachers share a group, one teacher could deal with Unit 3 and one with Unit 4.
- With only one teacher, care will need to be taken to set aside specific lessons to deal with each pre-release, to avoid confusion.
- To support weaker students, it could be wise to colour-code (using paper of two different colours) handouts, resources, research materials, homework tasks etc. to make linking these to either Unit 3 or Unit 4 as easy as possible.
- It is advisable to spend **four to six hours** in class on the Advance Information for each of Units 3 and 4.

Further guidance on dealing with the Advance Information for Units 3 and 4 in class is provided below. This guidance makes reference to the SAMs and Principal Examiner Reports, both of which can be found at http://www.edexcel.com/quals/gce/gce08/geography/Pages/default.aspx

Unit 3 Advance Information: strategies for the classroom

The teaching and learning strategies suggested below are based on the SAMs Advance Information, which focuses on issues surrounding GM crops in Latin America. The Unit 3 Advance Information Resource Booklet from the SAMs can be found at
http://www.edexcel.com/quals/gce/gce08/geography/Pages/default.aspx
(Sample Assessment Materials pages 111–116).

Understand the main theme

Resist the temptation to get students to begin analysing the figures and text immediately. Take some time to help them understand the main theme, in this case *What are GM crops?* For other past exams this might have been *What is nuclear power?* or *What is biodiversity?*

This is easily overlooked, but misunderstanding at this stage will be problematic later. GM crops are a challenging topic for the following reasons:

- they are often confused with Green Revolution crops
- some basic scientific background on how GM is developed is needed
- there are many GM 'myths' and half-truths, as well as genuine concerns.

Do not assume candidates immediately understand the broad topic that the resources are based on. Perhaps the Biology teacher could give a 15-minute 'GM primer' to your Geographers.

Key terminology

Start a glossary of key terminology. Some key terms are emboldened but others may need clarification too. On the second page of the SAMs Unit 3 Resource Booklet this could include terms such as *transgenic*, *resistance*, *patented*, *precautionary principle.*

Regional background

The region, in this case Latin America, may be familiar to candidates but it may not. Consider the region's broad geography, as outlined below.

Historical Geography	Contemporary Geopolitics
Colonial background, settlement history and ethnicities, long-term regional antagonisms and disputes	Membership of IGOs, regional blocs, recent political disputes and relationships, internal political systems
Economic Development	**Social Conditions**
Levels of development indicated by GDP per capita, HDI, economic sectors; major development differences, e.g. urban/rural	Development differences based on gender/religion, inequality, housing conditions, environmental health issues, demographics

This is an ideal point to set some research-based homework. Split the class into pairs/small groups to research countries and produce an A5 factsheet on each. Websites and other resources can help:

- socio-economic data tables in the back of most atlases to compare countries in the region
- Wikipedia's country pages provide some useful, condensed political and historical background

- online databases such as World Bank data http://data.worldbank.org/ and the CIA World Factbook https://www.cia.gov/library/publications/the-world-factbook/.

In the case of Brazil and Argentina, it is worth recognising that both countries are fiercely independent, often run by 'populist' and charismatic leaders, in need of exports but riven by social divisions. This could help explain the rapid adoption of GM and the fact that it appears to have produced clear winners and losers.

Figures

All of the figures in the Resource Booklet need to be carefully analysed. Some suggestions for the figures in the SAMs Resource Booklet are as follows:

- **Figure 2:** a line graph, so analyse the **trend** (GM crop area grew rapidly in industrial countries, then slowed – but in developing countries it is growing rapidly)
- **Figure 3:** a world map, so analyse the **pattern** (GM is widespread in the Americas, but barely touches Africa; in Europe there are big variations). Ask questions of the figures, e.g. *Why does GM have this global pattern?*
- **Figure 5:** this is a more difficult figure, as it is a stacked area graph (in 2006 cotton has a very small acreage of 2 million, not 59 million); rough percentages for 1981, 1996 and 2006 could be worked out to help analyse the data
- **Figure 9:** this is a more detailed area map for part of Argentina. The areas on the map could be researched in more depth using atlases, Google Earth and other resources
- **Figure 13:** a complex graph with a named source, which could be researched in more detail. Some candidates would benefit from writing an explanation of what this graph shows for Argentina, Brazil and Paraguay.

Themes: players, actions and futures

There are three synoptic themes (see page 51 of the specification) that cut across all six topics in Unit 3. These need to be considered in relation to the resources. Sometimes questions address one or more of these themes directly, sometimes more indirectly.

Players	Actions	Futures
The role, views and values of individuals, pressure groups and political movements, governments, business and international agencies.	Local, national and international scale actions; contrasts between neo-liberal market-led approaches, socialist and grassroots models: sustainable development.	'Business as usual' models, sustainable futures and more radical approaches involving concepts such as 'green growth'.

Players: the players should be listed from the resources and discussed. If any are unfamiliar, these can be researched (see the websites in the Resource Booklet and use others). Use the Views at the end of the Resource Booklet carefully, and draw up views analysis tables such as the one below.

	Player (and type)	For GM	Against GM	Basis for view	Agreement/conflict
View 1	FAO (IGO)	✓		Similar to other types of farming	Similar to NCB, conflicts with GS
View 2	FAO (individual)	Neutral		Conflicting views of players	Leans toward NCB view
View 3	Greenpeace (global pressure group)		✓	Questionable benefits; herbicide use	Agrees with WWF, conflicts with views of TNCs in Resource Booklet
View 4	ISAAA (NFP)	✓		Poverty reduction	Directly conflicts with GS
View 5	NCB (think tank)	✓		Benefits outweigh costs but research needed	Similar standpoint to FAO
View 6	WWF (global pressure group)		✓	Environment, soil erosion, deforestation	Agrees with Greenpeace
View 7	GS (local NGO)		✓	Social/equality concerns, jobs	Directly conflicts with ISAAA

Actions: look for evidence of actions at different scales and by different players in the resources.

- Growth in GM crops, in many cases, is a **market-led** development, with the TNCs who develop the seed and associated products (such as herbicide) essentially motivated by profit.
- For farmers in Latin America, GM represents a move into a more market economy, based on exports, larger farms and specialisation.
- GM is not purely market driven as government has to approve (or not) its use.
- NGOs and environmental pressure groups have led a **grassroots campaign** against GM, locally and globally, which has been partly successful in countries like the UK.
- Many of the Views argue that GM is potentially beneficial, but needs to be made **sustainable** – such as Views 1, 2 and 5.

Futures: this theme can be approached in several ways.

- Continued expansion of GM in Latin America following a similar path to that travelled so far might be seen as the '**business as usual**' future, but consideration needs to be given to whether or not further expansion of GM is, or could be, made more **sustainable**.
- Greenpeace, WWF and others might feel that GM should be banned (the **radical** option).
- Sometimes **options** are given at the end of the resources, e.g. in the January 2011 and January 2013 Resource Booklet. If this is the case, these need to be considered carefully – are they **radical**, **sustainable** or '**business as usual**' and what would be the **impacts/consequences** of each?

Synoptic opportunities and links

Synopticity is crucial to higher-level achievement and is referred to in the mark schemes for Levels 3 and 4, as in the following example from the SAMs question 6b.

Level 4	16–18	Carefully structured. A balanced assessment which makes full use of the resources and synoptic linkages, to procide a genuine assessment; makes evidenced judgements. Descriptive language is well employed and precise. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuations and spelling errors are very rare.

Synopticity can be demonstrated in a large number of ways, but it does need to be considered in advance. Essentially it can be thought of as **broadening** and **deepening**, i.e. going ***beyond*** the Resource Booklet to make links with wider geographical issues, themes and places – and providing ***additional depth*** to issues, examples and themes raised in the booklet. Some suggestions include the following.

Unit 3 context	Global themes	Unit 1 links
Link the resources to the content of the Unit 3 topic they are based upon.	Look for links to globally significant issues such as climate change, food security, population growth, resource depletion.	Look for links to Unit 1, such as global warming, migration, globalisation.

Parallel examples	Parallel regions	Models and theories
Consider other examples from around the world which are similar to, or contrast with, those in the Resource Booklet.	Look at a region with a similar level of development and look for similarities and differences.	Consider any models or theories that link to the themes in the Resource Booklet.

- **Unit 3 context:** the GM crop resources link very strongly to section 6.2 in the specification, Technology and development, as well as to other parts of Topic 6 The Technological Fix? Beyond this there are obvious links to Topic 3 Biodiversity under Threat (deforestation for land for GM crops) and Topic 5 Bridging the Development Gap (GM as an economic development tool).
- **Global themes:** there is a clear link to the global issue of food security and the degree to which GM is part of the solution or part of the problem.
- **Unit 1 links:** the role of TNCs in GM links to the Unit 1 content, as does the theme of climate change and the extent to which GM could be a solution for farmers in a changing climate, or climate change poses a threat to GM's progress.

The three types of synopticity above can very easily be approached in the pre-release phase by getting candidates, in pairs or groups, to produce **spider diagrams/mind maps** to map the links within Unit 3 to Unit 1 and beyond.

- **Parallel examples:** Green Revolution crops are a very obvious parallel example, as is organic farming. Both could be briefly mentioned in questions 6b and 6c as contrasting with GM. The impacts of GR crops in India (social polarisation) could usefully be used to reinforce an argument in question 6c.
- **Parallel regions:** Latin America is similar in terms of development level to East Asia, where GM has made similar (somewhat less) progress; research into GM in China would be an obvious path to pursue.
- **Models and theories:** the sustainability quadrant or stool provides a useful conceptual model that can be directly applied to question 6c and used as a structure; the economic, social and environmental issues in the resources very much signpost sustainability as a key theme.

Lastly, the **websites**, which are always included at the end of the Resource Booklet, offer opportunities for **synoptic research**. Candidates should use these, and other, websites to research some of the issues in more detail. Ideally, ask candidates to make notes about the content of websites, rather than printing huge volumes of material that can never possibly be used.

Any additional material, not in the Resource Booklet, will be credited as synoptic as long as it:

- is relevant to the question
- is accurate and sourced (such as information from a website)
- adds to the quality of the answer.

Questions and skills

Usually there are three sub-questions in Section B, as in the SAMs, totalling 40 marks. The questions below are taken from the SAMs for Unit 3. The exact mark allocation between questions 6a, 6b and 6c does change in each exam series.

6. (a) Explain the factors that have led to Latin America's rapid adoption of GM farming technology.

(10)

(b) Assess the human and environmental impacts of GM farming in Latin America.

(18)

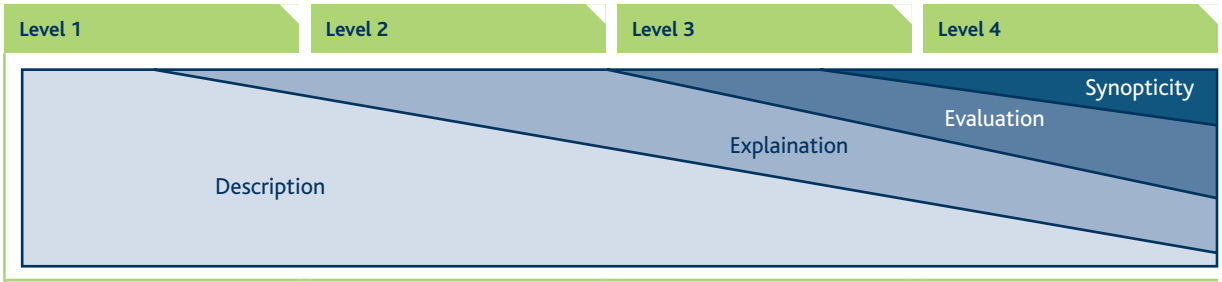
(c) To what extent does GM technology provide a technological fix that is economically sustainable.

(12)

Although the questions differ in each examination, there are some common themes.

- Question 6a is often a broad 'scene-setting' question which requires an explanation of the issue or key factors/reasons that have contributed to an existing situation.
- Questions 6b and 6c usually demand higher-order thinking skills such as assessment and evaluation.
- Question 6b often focuses on prevailing issues and problems and their impacts.
- Question 6c often looks to the future in some way, sometimes by considering the suitability of different options in terms of management and the impacts on different people.

In order to access the upper levels of the mark scheme, candidates need to be aware of the demands of the mark scheme. This is especially the case for questions using command words such as *assess*, *to what extent*, *discuss* and *evaluate*. These questions tend to be marked in four levels and have a tariff of 12+ marks (see the SAMs example above, questions 6b and 6c). These mark schemes can be usefully visualised in the following way.



As candidates move up the levels in the mark scheme, the balance of skills demonstrated in their answers changes significantly.

Level 1	Level 2	Level 3	Level 4
Answers rely, with varying accuracy and appropriateness, on the Resource Booklet to describe the situation, with some partial explanations.	Some aspects of the issue/ situation are explained, and descriptive material supports this. No attempt is made to move beyond the Resource Booklet.	Descriptive material is used selectively, and explanations are clear; evaluation begins but may be implied; some basic synoptic information is used, not fully appropriately.	Description is selective and explanations are concise and applied to the question, which supports evaluative judgements in a synoptic context.

Unit 3 Feedback from past Examiner Reports

The Contested Planet examinations from 2010 to 2013 allow some commonly occurring issues that restrict performance on Unit 3 Section B to be identified. For further details, please read the Principal Examiner Reports referred to above.

- Briefly **planning** answers to all three sub-questions (6a, 6b, 6c) at the start is a good idea. This is because the three sub-questions form a linked sequence. Under pressure in the exam, candidates can wrongly interpret quite different questions as being similar (and write very similar answers). Planning minimises the risk of this happening.
- Some candidates have a weak appreciation of the **basic geography of the region** the resources are set in, e.g. its level of economic development, languages, physical features etc. This can undermine the quality of answers.
- **Timing** can be an issue, with question 6c often suffering. Using a mock exam reduces the likelihood of this happening. A mock could be used as part of revision for another Unit 3 topic, e.g. the January 2011 North America Energy Security exam materials are a very useful 'stand alone' case study of energy security issues.
- Skill in interpreting a wide variety of geographical data forms part of the assessment of Unit 3 Section B. In order to demonstrate this, candidates must carefully select and accurately use information in the resources, and **refer to it directly** (by figure number etc.) in their answers.
- When candidates are presented with **options**, they often struggle to make clear, firm **judgements**. The skill of justifying a choice is underdeveloped. Candidates should be confident in accepting one option and rejecting others, as long as they use evidence and have cogent reasons. If options are part of the exercise, mark schemes *never* indicate that one option is preferred to others.
- The **Views** which appear on the last page of the Resource Booklet are frequently under-used and sometimes misunderstood.
- **Pre-judging** the questions, and over-preparing for assumed questions, is always a mistake.
- **Synoptic links** and ideas are often not included and this restricts achievement.
- Some synopticity is **false or forced**; this most often happens when a case study is 'shoe-horned' into an answer in an inappropriate and usually far too detailed way.
- Candidates often do not fully appreciate the different meanings of **key words** such as *social*, *economic*, *environmental* and *political*.

Unit 4 Advance Information: strategies for the classroom

The purpose of the Advance Information

The purpose of the Advance Information (research focus) is to allow students to focus their final research and revision on particular areas of the option they have researched. It is very important to recognise that:

- the research focus is not provided so that candidates and teachers can 'guess' the question – this approach often leads to candidates answering a pre-prepared question rather than the actual question they are faced with when they open the examination paper
- the research focus usually straddles several specification enquiry questions, not just one.
- the research focus may relate to several specification bullet points across several enquiry questions, rather than all the bullet points in one enquiry question
- the research focus is provided in the form of two bullet points, a 'Research' bullet and an 'Explore' bullet.

Unpicking the 'Research' and 'Explore' bullets

The first task when the research focus is given to candidates is to identify which areas of the specification the two bullets relate to. This might best be done as a group activity.

- Give candidates a copy of the specification for the whole option (Enquiry Questions 1–4 for your chosen option) and a copy of their research focus.
- In groups of two to four, get students to match the research focus with the specification, by matching key words and phrases and thinking about the sorts of ideas and concepts that could be relevant. Students can use highlighters to do this.
- Compare the different results/views of the groups and come to a consensus about which areas of the specification the research focus relates to. Note that some links might be very obvious and strong, whereas others might be weaker (but still relevant).

Although this might seem like a time-consuming activity, it is useful to collate different views. There can be a danger that, if one student, or a single teacher, decides which areas of the specification the research focus relates to, some links are missed.

The 'Explore' bullet focuses on concepts, themes and ideas whereas the 'Research' bullet focuses on examples, places and case studies that should be included in the final research and preparation. It is important to give the same degree of importance to both bullets. For the 'Research' bullet look out for place information, such as:

- 'contrasting locations'
- 'range of locations'
- 'a range of scales and locations'.

This could indicate a need to include developed vs developing world, urban vs rural or local, national and global contrasts.

Look carefully at the key words in the research focus and bear in mind that:

- some words/phrases can appear more prominent that others, leading to concentration on one aspect of the research focus at the expense of others
- it is possible to get 'hung up' on the meaning of some words and concentrate on these, again at the expense of other important parts of the research focus
- words towards the end of the 'Research' bullet can get ignored

- there is sometimes a tendency to focus more on the 'Explore' bullet than the 'Research' bullet
- some words can be wrongly interpreted in a negative-only way, e.g. *impacts*, *challenges*, *effects*, *consequences.*

Filling in gaps

Having considered the research focus and the specification, candidates need to decide which material they have, from lessons and their own research, that is relevant.

- Spend some time organising material in students' files; this could be traffic-lighted as green, amber and red (very relevant, relevant, less relevant).
- During this process gaps can be identified.
- Pay particular attention to place and scale contrast to make sure the required range is present.
- In some options there can be a 'false range' problem. For example, if a student has three examples of earthquakes on destructive plate margins in LEDCs, because these are in different locations they may appear to be 'a range' but in fact illustrate very similar issues. This can also be a problem with disease types in Option 5, for instance.
- Additional research can be carried out to fill in any gaps.

Good-quality answers in the exam often contain a mixture of detailed cases studies and smaller examples. The detailed case studies provide the required depth, whereas the smaller examples provide range and contrast. Bear this is mind when preparing for the exam.

Possible questions and planning

The research focus, inevitably, leads to speculation about what the actual question might be. Consider the following points.

- 'Guessing' the question frequently leads candidates astray and in the exam they often write an answer to a pre-prepared question, which can severely restrict their marks.
- Alternatively, try to generate a large range of questions.
- Put students into groups of two to four and ask them to come up with a question.
- Use past questions to show the formats questions are often in, and the command words used.
- You could give different command words to different groups, to use in their questions (*explain*, *assess*, *discuss*, *evaluate*, *to what extent* etc.).
- Aim to produce a 'question wall', with a lot of possible questions, on A3 sheets of paper.
- Some of these can be planned as a group activity; this is likely to be more effective at making students think about the meaning of questions and different approaches to the answers than trying to nail down one question which then proves to be incorrect.

The Unit 4 generic mark scheme

Students should be introduced to the published generic mark scheme early in the teaching of Unit 4. The generic mark scheme for Unit 4 can be found at http://www.edexcel.com/migrationdocuments/GCE%20New%20GCE/unit-4-generic-mk-scheme-updated-Nov-09.pdf. Ideally, mark practice reports using this mark scheme and provide feedback on each of its five sections. You could use a blank grid on A4 paper and write feedback on this, rather than (or in addition to) writing on the student's work.

This is important because the Unit 4 mark scheme is different from the extended writing levels mark schemes in Units 1–3. In these units, all of a candidate's extended response is read and a mark awarded based on the whole piece of writing (a level is decided on first, then the specific mark in the level).

For Unit 4, marks are awarded for five different parts of the report, i.e. there are specific marks for the introduction, analysis, conclusion etc. Candidates must understand this. Bear in mind that:

- the report is marked out of 70
- the marks available for the introduction, analysis and conclusion total 25 (10 + 15), or 35% of the 70 marks
- there are specific marks for QWC (10).

One way to reinforce this, during the pre-release phase, is to plan some reports as a group activity and make sure the introduction and conclusion are planned, as well as the main body of the report.

If students struggle to get to grips with the lengthy generic mark scheme, they might wish to consider the 'cheeseburger' model below as an *aide memoire*.

←The final conclusion

←The 'extras' such as a methodology, accurate references, diagrams

←The main analysis sections, with the cheese representing ongoing evaluation

←The introduction

(image © Veer (Corbis)/Karandaev)

Unit 4 Feedback from past Examiner Reports

The Researching Geography examinations from 2010 to 2013 allow some commonly occurring issues that restrict performance on Unit 4 to be identified. For further details, please read the Principal Examiner Reports referred to above. The comments below are organised by section of the generic mark scheme.

Introducing, defining and focusing on the question

- Avoid making this section over-long and very descriptive; the majority of candidates write 1½ to 2 sides at most.
- Some introductions suffer from too much general background, e.g. on plate tectonics and types of plate margin, and fail to focus on the question.
- Introductions broken down into headed sub-sections (e.g. definitions, focus, framework) tend to lack coherence.
- Introductions which set out how the question is going to be answered, i.e. provide a 'direction' and perhaps state what the argument/answer is going to be, tend to be the most coherent.
- It is useful to mention the main case studies and examples that are to be used, and briefly justify this (this often addresses issues of scale and contrasting locations within the question).
- Models and theories often provide a useful framework for a whole report, and these can be usefully introduced at the start (but should be referred to again in the analysis and conclusion).

Researching and methodology

- A range of material and research sources need to be used, and this must be a genuine range not a 'false' one (see above).
- Candidates need to include a methodology, containing their sources; most candidates place this after the introduction.
- The methodology could be in the form of a table, a paragraph or extended footnotes – no particular format is preferred.
- The methodology should comment on issues such as research source range, accuracy, bias, age and reliability.
- Care should be taken not to write a methodology in the form of a very long, complex table – the methodology is only one part of the mark scheme for this section and the exam is only 1½ hours in length.
- Candidates should be wary of using many older case studies and examples without justification, as the mark scheme refers to 'topical evidence'.
- The inclusion of theory/concepts is an important part of this section on the mark scheme.
- Factual accuracy is important.

Analysis, application and understanding

- The main body of the report should be sub-divided into sub-sections, using headings.
- There is no need for complex sub-heading numbering systems such as 2.1.2, 2.1.3 etc.

- Conceptual sub-headings (economic, social, environmental) work better than sub-headings based on case studies (Haiti 2010, Mt Pinatubo 1991, Sendai 2011) – the latter tend to lead to very descriptive, non-comparative reports which have a 'and the next case study is' structure.
- Diagrams should be used selectively, be accurate and be referred to in the text.
- Candidates need to go through a double process of case study selection: first, they need to answer the question '*Does this case study help answer the question?*' If the answer is 'Yes', then they should ask, secondly, '*What information from the case study is relevant to this question?*' Failure to be selective in this way tends to lead to an 'everything I know about X' answer.
- Reference back to the question should be made often, to ensure it is still being answered and that evidence used is being applied to the question.
- It is better to compare and contrast examples and case studies than to describe them.

Conclusions and evaluation

- Ongoing evaluation is important.
- This could consist of short, summative paragraphs at the end of different sections of the analysis.
- Use of sub-headings such as 'Summary' or even 'Ongoing evaluation' is acceptable and may help candidates structure their reports.
- Enough time needs to be left to formulate a proper conclusion, i.e. 15 minutes.
- Although in no way a hard-and-fast rule, most good conclusions are three-quarters of a side long; a conclusion of four to five lines is unlikely to score high marks.
- Candidates should refer directly to the question in a conclusion.
- A weakness of many conclusions is that very little of the evidence used in the report is referred to/recalled; case studies and examples, as well as concepts and models, need to be recalled.

Quality of written communication and sourcing

- Sub-sections (i.e. a report, not an essay) must be used.
- The structure of the report needs to be logical (this is one reason why, in the introduction, it is useful to set out the 'direction' of the report).
- Throughout the report, sources should be stated either in brackets or as footnotes.
- Harvard style referencing is not required, but sources should consist of a title, author and date if referring to a textbook, journal or article.
- Bibliographies are normally superfluous if referencing has been included in the main body of the report; the exception is when references are indicated by numbers in the text and are linked to a numbered bibliography given at the end.
- Terminology must be used with accuracy.

Student Guide

What do I need to know, or be able to do, before taking this course?

There are no formal requirements for the GCE in Geography. However, you will benefit from having an interest in the world around you, be it curiosity about how a landscape has formed, or an interest in how a community might be affected by trans-national corporations. You need to be prepared to leave the classroom and see for yourself what is going on!

What will I learn?

The world we live in is changing. Geography allows you to see why and how it is changing. It can enhance communication skills, literacy and numeracy, IT literacy, spatial awareness, team working, problem solving and environmental awareness.

At **AS level (year 1)** you will study global themes, including globalisation and climate change. You will discover how your own actions can relate to the wider world, be it your local area or a country far away. You will study two units, Unit 1 and Unit 2:

- **Unit 1: Global Challenges** — In this unit you will study a range of topics such as Global Hazards, Climate Change and Future Global Challenges.
- **Unit 2: Geographical Investigations** — This gives you an opportunity to undertake geographical research, including fieldwork. You will investigate two topics in depth, one of Extreme Weather or Crowded Coasts (physical geography), and one of Unequal Spaces or Rebranding Places (human geography).

At **A2 level (year 2)** you will learn how the world is contested and develop practical research skills in your chosen area. You will study two units, Unit 3 and Unit 4:

- **Unit 3: Contested Planet** — In this unit you will consider five key world issues and in the sixth topic discuss possible technological solutions to the problems:
  - Energy Security
  - Water Conflicts
  - Biodiversity Under Threat
  - Superpower Geographies
  - Bridging the Development Gap
  - The Technological Fix?

- **Unit 4: Geographical Research** — This will allow you to develop further the investigative skills gained at AS level and prepare you for the demands of higher education or employment.
  You will choose one topic from these six options:
  - Tectonic Activity and Hazards
  - Cold Environments
  - Life on the Margins — the food supply problem
  - The World of Cultural Diversity
  - Pollution and Human Health at Risk
  - Consuming the Rural Landscape

Is this the right subject for me?

The Advanced GCE in Geography will appeal to you if:

- you are curious about the world's places, peoples and environments
- you like asking questions and finding answers
- you are interested in local, regional and global issues
- you have the ability to think independently
- you wish to explore human, physical and environmental geographical relationships.

How will I be assessed?

AS (Year 1) – two units:

Unit 1: Global Challenges

1.5 hour written examination, including a colour Resource Booklet

Unit 2: Geographical Investigations

1 hour 15 mins written examination, including a colour Resource Booklet. You will be asked about your fieldwork skills in this examination.

Unit 1: Global Challenges	Unit 2: Geographical Investigations
1½ hour exam 30% of A Level	1 hour 15 min exam 20% of A Level

A2 (Year 2) - two further units:

Unit 3: Contested Planet

2.5 hour written examination, including pre-released synoptic resources (8 working weeks in advance) and a colour Resource Booklet in the exam. Part 1 of the examination will cover five of the six Unit 3 topics; Part 2 will cover the sixth topic in a synoptic context (i.e. pulling together aspects of the other five topics).

Unit 4: Geographical Research

1.5 hour examination, including a pre-released 'research focus' (8 working weeks in advance). You will be asked to answer one question on the option of your choice.

Unit 3: Contested Planet	Unit 4: Geographical Research
2½ hour exam 30% of A Level	1½ hour exam 20% of A Level

Fieldwork

In Year 1, **Unit 2: Geographical Investigations** offers the opportunity to undertake fieldwork and research when investigating the topics chosen. Fieldwork can be a great experience and allows you to apply your knowledge and understanding in a practical way.

In Year 2, **Unit 4: Geographical Research** also offers opportunities for fieldwork; you won't be asked directly about fieldwork in your exam but it may help you when discussing your research.

What can I do after I've completed the course?

An A Level in Geography opens doors!

You will find that studying geography is a brilliant step towards a wider range of HE courses and/or employment opportunities.

- **Further education** —geographers can go on to study higher level courses, including Foundation degrees, undergraduate degrees and/or BTEC Higher Nationals.
- **Employment** — geographers can go into a wide range of jobs, including:

Advertising
Education
Environmental management
Finance
Law
Marketing
Retailing
Sales
Social/health services

Next steps!

Interested? Talk to your teacher / tutor in the first instance. They should be able to advise you on what steps to take.

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