



Pearson

Pearson Edexcel International Advanced Level in Geography SCHEME OF WORK: Unit 2: Geographical Investigations

Introduction

The outline Scheme of Work has been specifically designed to provide teachers with a starting point, from which to aid and build their own Scheme of Work. It is not intended as a definitive document. Teachers must use the scheme of work outline in combination with the published specification IAL in Geography. The document is in Word format and is easy to adapt to meet teachers' specific needs.

- This unit is worth 40% of the total International Advanced Subsidiary (IAS) raw marks and 20% of the International Advanced Level in this subject.
- This scheme of work is designed to be taught over 12 weeks, although consideration of prior learning must be taken into account as part of that planning
- There are two compulsory topics with the following **suggested teaching plan**
 - 8 weeks of teaching
 - 4 weeks for the development of fieldwork skills
 - 2 days of actual fieldwork
- The research and fieldwork (which carries 12% AO3) must be given ample time for the development of skills, hence the 4 weeks indicated in this planner. Lessons should be used as an opportunity to deepen understanding in this area, which frequently students find challenging.

In the SOW below:

[KI] refers to the Key Ideas in the left hand column of the Specification

[PC] Refers to the requirement to deliver the content in the context of a Place Context (case study) in the detailed content column of the Specification.

Content Topic 1: Crowded Coasts		
Week 1	Suggested activities/resources	<u>Teaching points to note</u>
Coastal processes:	<ul style="list-style-type: none"> Understanding the littoral zone Classifications of coastlines Geological structure / world geology Use geology maps to link maps of features, erosion loss etc. so that students appreciate the relationship and importance of geology: structure, rock type etc. 	<p>[KI] The coast, and wider littoral zone, has distinctive features and landscapes</p> <p>[KI] Geological structure influences the development of coastal landscapes</p> <p>[KI] Rates of coastal recession and stability depend on lithology and other factors</p>
Aims and learning outcomes:		
<ul style="list-style-type: none"> Define what a coastal area is, in the context of a littoral zone Understand that coasts can be classified by using different criteria; geology, energy type, changes of sea level, relief and sediment types Understand nature and influence of different rock types Watch a video on concordant and discordant coasts – here: https://www.youtube.com/watch?v=BAxIs1npqY Research the range of different cliff profiles and role of micro-features Annotate a local map with geological variations in terms of lithology and structure and then include comments about variations in risk and resilience Find out about geological mapping in terms of field techniques Understand the processes of differential erosion and how this influences recession rates and impacts on people and property 		

Content Topic 1: Crowded Coasts

Week 2 Coastal landscapes and landforms:	Suggested activities/resources <ul style="list-style-type: none">• Background reading on coastal sediment cells• Find out about the range of coastal landforms• Use Google Earth / GIS / satellite images to look for evidence of sub-aerial weathering• Different types of coastal wave• Drawing a cross section of winter and summer beach profiles• Interpretation of sediment cell concept in understanding the coast as a holistic system	Teaching points to note <p>[KI] Marine processes are major influences on coastal development [KI] Coastal landforms are formed by erosion and subaerial processes [KI] Sediment transport and deposition are important in coastal development</p>
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Aims and learning outcomes <ul style="list-style-type: none">• Understand why different wave types control beaches and how there is a time dimension to this.• Understand that rates of erosion and cliff profiles are determined by the interaction of rock type and structure, and erosional processes; Use local scale maps to draw and construct places where different wave types will occur based on student research of the area• Use an online source to research the formation of the classic suite of coastal landforms including videos which illustrate their development• Understand the role of subaerial weathering processes and mass movement in the formation of cliff profiles.• Understand the significance of coastal systems and the different models that can be used to interpret how they work, e.g. click here• Understand the formation of particular features in respect of coastal sediment deposition (e.g. deltas, spits, bars and barrier beaches)• Research an example of how longshore drift could be used as part of a wider piece of fieldwork

Content Topic 1: Crowded Coasts

Week 3

Coastal ecosystems and environments hazards

Suggested activities/resources

- Use of the US NOAA as a source of information <http://oceanservice.noaa.gov/ecosystems/coastalecosci/>
- Research into plant succession, e.g. <http://study.com/academy/lesson/what-is-ecological-succession-definition-types-stages.html>
- [IS] Analysis of link between climate change and coastal threats
- Case study research on rapid urbanisation and impacts on the coast.

Teaching points to note

[KI] Plant succession and vegetation help stabilise many coastal environments
[KI] Coastal ecosystem services are threatened by human activity
[KI] Economic development at the coast has costs and benefits

Aims and learning outcomes:

- Understand how coasts have particular ecosystems, e.g. mangroves and corals and these provide a range of important goods and services.
- Annotate cross-section of coastal ecosystem succession
- Understand the range of economic opportunities that both corals and mangroves provide people, at a range of scales.
- Research IPCC sea level rise data ([2013 report](#))
- Research data into the global loss of coastal ecosystems, understanding spatial differences and global "hotspots". Millennium Ecosystem Assessment (coasts) is a very detailed [report](#).
- Understand the implications, both economic and environmental, of land reclamation and artificial island development,
- Research a case study of the causes and consequences of long-term trends in environmental degradation, e.g. airport expansion in [Hong Kong](#)

Content Topic 1: Crowded Coasts

Week 4

Managing coastal change

Suggested activities/resources

- Research policy decisions and how they can lead to conflict
- Assess a range of real coastal management options to find out about cost/benefit
- Develop a case study which shows various types of management (including policies) and the potential conflicts this can bring. Evaluate success or not (economic, political, environmental, social).
- Examine the role of hard and soft engineering of protecting against extreme storms
- Researching case studies of sustainable vs other approaches to coastal management?
- and evaluating the pros and cons and short terms vs longer-term resilience (opportunity for in-depth research and role play activity)

Teaching points to note

[KI] There are both hard and soft engineering approaches used to manage the coastline
[KI] Coastal management can lead to conflict, but this can be reduced
[KI] Sustainable policies and defences are now more commonly used

Aims and learning outcomes:

- Understand that there are a range (or spectrum) of coastal management options. There will be considerable differences in both approach, cost, impact and effectiveness etc. Example is in this paper from (click) [New Zealand](#)
- Appreciate the range of coastal management defence types, e.g. high cost: low cost, traditional: modern.
- [Mangroves](#) as an example of a resilient coastal ecosystem
- The role of sustainable and integrated approaches to coastal management, e.g. SMPs and ICZM
- Appreciate that groups and individuals, with different values and or interests, can have very different views as to how change should be managed in the coastal environment

Content Topic 2: Urban Problems, Planning and Regeneration

Week 5 Urban social and environmental issues

Suggested activities/resources

- [Live air quality](#) levels in cities round the world. A good GIS tool
- Identifying factors that affect pollution on a day to day basis
- Mapping and analysing pollution in different cities (comparative data)
- Reasons for rapid growth of some cities (background [reading here](#))
- Explore how contrasting cities manage their waste (informal recycling vs managed approach)
- Differences in problems (social and economic) between developing and developed world.
- Nature of urban inequality in developing cities – examine issues raised in (Pumpkin – Challenges of Urbanisation: Inequalities in Bangalore (DVD)

Teaching points to note

[KI] Housing provision is a major challenge in growing urban areas
 [KI] Poor service provision can lead to impacts on human and environmental health
 [KI] Cities often exhibit stark economic and social inequalities

Aims and learning outcomes:

- Use the [GIS air quality](#) tool to explore how and why pollution varies over the course of 24hrs and from day to day for local and distant places
- Example the costs and benefits of a local major infrastructure project (and who it benefits), e.g. [Dubai Metro](#)
- Explore and define the term “peri-urbanisation”
- Use this [blog](#) as a place to kick start discussion regarding city affordability. This is also an interesting infographic [here](#), plus read the comments
- Explore house price differences in London using this [GIS tool](#). Centre on London and look at the “metrics”
- Find out about the different metrics that can be used to measure inequality in different places and how these in turn might translate into a fieldwork exercise, e.g. qualitative and quantitative data approaches.

Content Topic 2: Urban Problems, Planning and Regeneration

Week 6

Transport issues in cities

Suggested activities/resources

- Reasons for the increase in numbers of people, and numbers of vehicles in cities
- Global [bike share map tool](#) (GIS skill)
- Critical analysis of solutions to urban transport problems
- Undertake a cost-benefit analysis of different solutions in different places and find out which are the preferred sustainability models.

Teaching points to note

[KI] Urban transport is a major source of pollution in many cities
[KI] Transport problems have consequences for people and the urban environment
[KI] There are a range of solutions to urban transport issues

Aims and learning outcomes:

- Data on growth of car usage in China [for selected cities](#)
- Explore how the impacts of increased traffic affect different groups of people in cities in different stages of development. Reference World Health Organisation standards and reports.
- Research the negative impacts of traffic congestion both in terms of economic development and people.
- Research how the VW (2015) scandal may impact on peoples and government attitudes toward diesels in cities, plus the likely health impacts
- Explore a planned new sustainable transport system in Florida using [interactive maps](#)
- Use this [document](#) to find out more about a range of sustain transport schemes

Content Topic 2: Urban Problems, Planning and Regeneration

Week 7	Suggested activities/resources	<u>Teaching points to note</u>
<p>Urban Planning</p> <p>How significant is the 'housing crisis' in developing and developed world cities and how can it be reduced?</p>	<ul style="list-style-type: none"> Investigate the variety of forms that social housing can include and how it is managed in different places Research / construct a large scale local map of social housing Find out how housing affordability is a contested term Research different NGOs who might play a role in improving both housing and services, e.g. civic societies to NGOs in Costa Rica Explore the reasons behind the development of Garden cities, New towns and Eco-cities: their characteristics and the views of interested parties as to their success or failure. 	<p>[KI] Public housing is one solution to the housing crisis</p> <p>[KI] NGO and community action can help improve housing stock</p> <p>[KI] Large-scale 'ideal' cities have been planned with mixed success</p>
<p>Aims and learning outcomes:</p> <ul style="list-style-type: none"> Use a GIS Storymap to investigate the variety of ways in which some places can be improved with planning and architecture, example from Phoenix Use these articles from the UK Guardian to kick-start a discussion about aspects and challenges of social housing. Make notes on slum housing redevelopment and improvement from UNHABITAT Set up a discussion based on this diagram – how useful is it in terms of affordable housing? Research the different stakeholders involved in large scale regeneration – how the can be linked to this model for Dublin Use this as an example as Masdar – sustainable city and contrast with this wider sustainable cities program (UNHABITAT) 		

Content Topic 2: Urban Problems, Planning and Regeneration

Week 8 Urban regeneration

Suggested activities/resources

- The concept of sustainability through the [Egan wheel](#)
- Reasons why some places have fallen into decline, e.g. role of [de-industrialisation](#) and / or outward migration etc.
- Examine both small scale and large scale (Flagship project) approaches to regeneration OR the role of re-imagining and rebranding in regenerating an area. DOUCET, B (2007) Abstract Flagship Regeneration: panacea or urban problem?
- An appreciation that there are different meanings of [sustainability](#) that could be contextualised against urban regeneration
- Role of different players / stakeholders: local vs national and an evaluation of those different approaches in urban improvements

Teaching points to note

[KI] Different players have contrasting roles in urban regeneration
[KI] There are contrasting approaches to regeneration
[KI] Sustainability is a key part of urban regeneration schemes

Aims and learning outcomes:

- Use images / Google StreetView to create a discussion as to why some places (even those close to each other) might need regeneration whilst others don't.
- Use a [GIS Storymap](#) to explore how urban design has been used as part of regeneration
- Use this as a case study of regeneration in [Spain](#), from the Economist (www.economist.com) and contrast with this less successful ["ghost" airport](#)
- Make notes on the example of bottom-up regeneration from [Germany](#)
- Make notes on the range of impacts of the Emirates effect from this [infographic](#)
- Evaluate the "winners" and "losers" from a local sustainability project.

Content: Research and fieldwork preparation

Week 9 Understanding the route to enquiry	Suggested activities/resources <ul style="list-style-type: none">• Planning the stages in a route to enquiry• Defining key terms and ideas that underpin high quality fieldwork• Evaluate the difference between data and information and how this can help “kick-start” an enquiry or geographical question	<u>Teaching points to note</u> You are using the information contained within the specification Appendix 2, page 69
Aims and learning outcomes: <ul style="list-style-type: none">• Understand the significance of the route to enquiry, including the various stages involved in the route to enquiry• Recognise that it represents a sequential series of linked stages• Define the term enquiry (and how it might be flawed in some instances as an approach)• Investigate the scientific enquiry and see how it is similar and different to a geographical enquiry		

Content: Research and fieldwork preparation

Week 10

Pre-fieldwork:
planning and
research

Suggested activities/resources

- Define the terms fieldwork and research and suggest why there might be overlap between the two
- Explore possible topics for investigation using a variety of sources
- Map fieldwork opportunities in the local area, based on coasts / and or urban locations
- Understand the concept of a literature research and recognise the limitations of [some sources](#).
- Investigate any local social media ,e.g. Twitter searches that may be relevant to a topic focus
- Find out about any models or theories that underpin a particular topic, e.g. [winter vs summer storm beach profiles](#)

Teaching points to note

You are using the information contained within the specification Appendix 2, page 69

Aims and learning outcomes:

- An activity using a photograph of an environment to ask geographical questions (split into physical and human)
- Role of GIS is providing background information and data.
- Research some [big data](#) that might be relevant to the topic focus
- Produce a poster which explores the advantages and disadvantages of GIS in terms of data representation and meaning.
- Examine the pros and cons of two different literature research source types, e.g. newspaper editorial / blog vs published report
- Learn how to develop either a title, aim or question focus and peer assess the outcomes based on a chosen topic focus

Content: Research and fieldwork preparation

Week 11

Primary fieldwork data collection

Suggested activities/resources

- Exploration of fieldwork locations and design
- Researching the number of samples required to get an accurate outcome
- Different types of [sampling](#)
- Importance and relevance of risk assessments
- Consideration of the difference between accuracy and reliability (and why it's important at the planning stage).

Teaching points to note

You are using the information contained within the specification Appendix 2, page 69

Aims and learning outcomes:

- Exploration of the differences between [quantitative and qualitative data](#)
- Evaluating an existing risk assessments, e.g. [for coasts](#) (site working cards)
- Justify sampling methodology chosen and evaluate its effectiveness.
- Practice the adaptation of an existing recording sheet, e.g. [judgment surveys](#)
- Make notes on how to investigate opinions, including advantages and disadvantages of [different methods](#)
- Develop a presentation which displays, in diagram form, the differences between systematic, stratified and random sampling. Why and when would the different techniques be used?

Content: Research and fieldwork preparation

Week 12

Presentation, analysis, conclusions and evaluation

Suggested activities/resources

- Exploration of the range of different presentation techniques
- Pros and cons of primary vs secondary data in terms of reliability
- Comparison of different cartographic techniques to show information, e.g. map and graph overlays
- Role of simple statistics, e.g. descriptive
- How to write a conclusion – can be researched [here](#)

Teaching points to note

You are using the information contained within the specification Appendix 2, page 69

Aims and learning outcomes:

- Find out about [Anscombe's quartet](#) – how does this link with the need to plot data as well as analyse it?
- Describe the advantages and disadvantages of different types of [measures of centrality](#) (statistically)
- Explore the strange spurious statistics and correlations, e.g. [here](#)
- Research how to write a critical evaluation of the overall investigative process
- Use a computer to calculate statistical measures, e.g. using a large data set from [here](#). Explore how it helps to better understand data.
- Write down how the literature research assisted the investigative process at different stages and also critically reflect on its applicability.
- Evaluate methodology and results, and the conclusions drawn from analysis of data and information collected and their wider geographical significance.