



Geography

GCSE 2012

Geography B

Schemes of Work and
Lesson Plans

Version 1
October 2012

Introduction

Background

Following re-accreditation from Ofqual, a revised specification is available [here](#) for first teaching from September 2012.

In order to help you plan effectively for the implementation of the new specification we have produced these Schemes of Work and Sample Lesson Plans for Geography B. These Support Materials are designed for guidance only and play a secondary role to the Specification.

Our Ethos

OCR involves teachers in the development of new support materials to capture current teaching practices tailored to our new specifications. These support materials are designed to inspire teachers and facilitate different ideas and teaching practices.

Each Scheme of Work and set of Sample Lesson Plans is provided in Word format – so that you can use it as a foundation to build upon and amend the content to suit your teaching style and students' needs.

The Scheme of Work and sample Lesson plans provide examples of how to teach this unit and the teaching hours are suggestions only. Some or all of it may be applicable to your teaching.

The Specification is the document on which assessment is based and specifies what content and skills need to be covered in delivering the course. At all times, therefore, this Support Material booklet should be read in conjunction with the Specification. If clarification on a particular point is sought then that clarification should be found in the Specification itself.

Suggested teaching time: 30 hours

TOPIC OUTLINE	SUGGESTED TEACHING AND HOMEWORK ACTIVITIES	SUGGESTED RESOURCES	POINTS TO NOTE
1. What is the hydrological cycle?	<ul style="list-style-type: none"> • Discussion of the key components of a system • Draw diagram of the water/hydrological cycle and key components • Use of flashcards to exemplify key words and components of the system 	<ul style="list-style-type: none"> • www.geographyalltheway.com • OCR 'GCSE Geography B' • 'Boardworks' Interactive resources http://www.boardworks.co.uk/ 	<ul style="list-style-type: none"> • Need to stress the key components of a system here – inputs, outputs, flows and stores
2. What is a drainage basin?	<ul style="list-style-type: none"> • Explain that drainage basin is that part of the hydrological cycle that happens on land • Drawing and labelling of a drainage basin highlighting key terms eg Tributary, source, mouth, confluence, channel, and watershed • Comparison of drainage basins around the world - size etc 	<ul style="list-style-type: none"> • www.geographyalltheway.com • OCR 'GCSE Geography B' • Boardworks Interactive resources 	
3. How does the drainage basin work as a system?	<ul style="list-style-type: none"> • Recap of drainage basin and key terms • Outline of drainage basin system provided. Step by step discussion of inputs, processes, stores and outputs. Colour coding of each stage 	<ul style="list-style-type: none"> • www.geographyalltheway.com • OCR 'GCSE Geography B' • Boardworks Interactive resources 	<ul style="list-style-type: none"> • Reference to components of a system essential here
4. How do human and physical factors affect flood risk?	<ul style="list-style-type: none"> • Photographs of recent floods and general discussion of why rivers flood • Introduction of key terms - human and physical factors • Table of human and physical factors. Pupils to explain whether each factor is a high or low flood risk. Stress the affect of 	<ul style="list-style-type: none"> • www.geographyalltheway.com • www.defra.gov.uk • www.environment-agency.gov.uk 	<ul style="list-style-type: none"> • Pupils need to be aware of how geology affects river flooding and human impact eg deforestation and urbanisation

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	<p>human intervention in drainage basins</p> <ul style="list-style-type: none"> • Photographs of flood risk factors - pupils to explain whether photograph shows human or physical factor, and whether factor is high or low flood risk 	<ul style="list-style-type: none"> • www.betterriverbasins.wwf.org.uk 	
5. What are the key features of storm hydrographs?	<ul style="list-style-type: none"> • Recap flood risk factors and exemplify that some factors lead to a river flooding • Provide example of a storm hydrograph. Discussion of discharge and precipitation. Label key features on to graph - rising limb, falling limb, lag time, peak discharge • Construct hydrograph given key data. Working out of lag times from hydrographs. 	<ul style="list-style-type: none"> • www.geographyalltheway.com • OCR 'GCSE Geography B' • Boardworks Interactive resources 	
6. How do storm hydrographs differ in urban and rural drainage basins?	<ul style="list-style-type: none"> • Recap of hydrograph terms - labelling of blank hydrograph • Key question: how do hydrographs differ in urban and rural drainage basins? • Provide 2 hydrographs - label with key differences - lag time, peak discharge etc • Explain reasons why 2 hydrographs differ 	<ul style="list-style-type: none"> • www.geographyalltheway.com • OCR 'GCSE Geography B' • Boardworks Interactive resources 	<ul style="list-style-type: none"> • Pupils must be aware of the key differences between a rural and urban (flashy) drainage basin • The impact of human intervention needs to be stressed here
7. Case study of an MEDC flood.	<ul style="list-style-type: none"> • Using key questions of Where? When? Who? What? Why? Investigate the causes and effects of a river flood in an MEDC of choice • Management strategies to be discussed 	<ul style="list-style-type: none"> • www.geographyalltheway.com • OCR 'GCSE Geography B' • Boardworks Interactive resources 	<ul style="list-style-type: none"> • Possible examples to use - Lynmouth, Boscastle. Mississippi • Possible use of ICT to research case study example

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8. Case study of a LEDC flood.	<ul style="list-style-type: none"> Using key questions of Where? When? Who? What? Why? Investigate the causes and effects of a river flood in an LEDC of choice Management strategies to be discussed 	<ul style="list-style-type: none"> www.geographyalltheway.com OCR 'GCSE Geography B' Boardworks Interactive resources 	<ul style="list-style-type: none"> Possible examples include Mozambique, Bangladesh Possible use of ICT to research case study
9. Flood prevention and control strategies.	<ul style="list-style-type: none"> Evaluation of flood management strategies - presentation of wide variety of flood prevention methods. Evaluation to consider cost, practicality, aesthetics, level of development of country, longevity Discussion about sustainability should occur here 	<ul style="list-style-type: none"> www.geographyalltheway.com OCR 'GCSE Geography B' Boardworks Interactive resources. 	<ul style="list-style-type: none"> Need to refer to hard and soft engineering strategies and evaluate usefulness to countries at different levels of development. Need some link back to hydrographs
10. Synoptic decision-making exercise on flood control.	<ul style="list-style-type: none"> Application of understanding to make an informed decision on the most appropriate management scheme to use OS map extract could be provided with fictional/actual scenario eg Boscastle, Lynmouth etc Details of schemes and costs needs to be provided 	<ul style="list-style-type: none"> www.geographyalltheway.com OCR 'GCSE Geography B' OS map extracts GIS eg Google earth 	<ul style="list-style-type: none"> Important to evaluate usefulness, cost, aesthetics to choose most appropriate strategy/strategies Possible use of OS maps/aerial photographs here
11. How does a rivers profile change from source to mouth?	<ul style="list-style-type: none"> Step by step drawing and labelling of rivers cross-section from source to mouth Discussion and exemplification of landforms found in upper and lower courses eg flood plain, delta, meanders, ox-bow lakes, interlocking spurs, waterfalls 	<ul style="list-style-type: none"> www.geographyalltheway.com OCR 'GCSE Geography B' Boardworks Interactive resources 	<ul style="list-style-type: none"> Possible fieldwork opportunity here. Could use specific example eg River Severn Possible use of OS maps to identify features/section of river

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12. How do waterfalls form?	<ul style="list-style-type: none"> Recap of processes of erosion Step by step diagrams to show formation of waterfalls and descriptions Sequencing exercise 	<ul style="list-style-type: none"> www.geographyalltheway.com http://geography.howstuffworks.com/terms-and-associations/waterfall1.htm OCR 'GCSE Geography B' Boardworks interactive CD Rom 	<ul style="list-style-type: none"> Important to discuss the role of geology in the formation of waterfalls
13. What are meanders and how do they become ox-bow lakes?	<ul style="list-style-type: none"> Draw and label cross-section of a meander to show fastest flow and where erosion and deposition occur Drawing and labelling of diagrams to show sequence of events. Boardworks animations very useful here 	<ul style="list-style-type: none"> www.geographyalltheway.com OCR 'GCSE Geography B' Boardworks Interactive resources http://geobytesgcse.blogspot.co.uk/2006/11/middle-course-of-river-meanders-ox-bow.html 	<ul style="list-style-type: none"> Possible use of aerial photographs here/OS maps
14. Depositional features.	<ul style="list-style-type: none"> Investigation of flood plains, levees and deltas in rivers lower course Diagrams drawn and labelled to illustrate formation of features Named examples could be referred to eg Nile delta Annotation of photographs/map extracts 	<ul style="list-style-type: none"> Boardworks Interactive resources. www.geographyalltheway.com OCR 'GCSE Geography B' 	<ul style="list-style-type: none"> Possible use of OS maps to identify depositional features Possible to use aerial photos/Google earth to identify depositional features
15. Case study of one river valley and its features.	<ul style="list-style-type: none"> Using OS map or fieldwork data, investigate a named river valley of choice. Explanation of key erosional and depositional features identified and where they occur on river's long profile 	<ul style="list-style-type: none"> www.geographyalltheway.com OCR 'GCSE Geography B' Boardworks Interactive resources 	<ul style="list-style-type: none"> Possible fieldwork opportunity here Use of OS maps Possible use of Google Earth Sketch mapping
16. Introduction to coasts. How are waves formed? What are constructive and destructive waves?	<ul style="list-style-type: none"> Introduce photographs of beaches from around the world (Hawaii, Mediterranean, good surfing locations etc.) with different size waves - discuss possible factors influencing their size 	<ul style="list-style-type: none"> OCR 'GCSE Geography B' www.geographyalltheway.com Maps at a variety of scales Photographs 	

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	<ul style="list-style-type: none"> • Measure approximate fetch on world map. • Discuss other factors that affect the height/ power of waves. (Strength of wind etc) • Emphasise the characteristics of the two wave types using labelled diagrams 	<ul style="list-style-type: none"> • Boardworks Interactive resources 	
17. How do waves erode the coastline?	<ul style="list-style-type: none"> • Discussion of the processes of erosion and the effects of geology • Card sorting exercise to match photograph of cliff to rock type and match description of erosion type with diagram 	<ul style="list-style-type: none"> • OCR 'GCSE Geography B' • www.geographyalltheway.com • Rock samples or photographs of different types of cliff • Bitesize • Boardworks Interactive resources 	<ul style="list-style-type: none"> • Appreciation that the coastline is constantly changing
18. Erosional features 1: Cliff retreat.	<ul style="list-style-type: none"> • Discussion of factors causing cliff retreat including erosion, weathering and mass movement • Use photographs of area that has suffered recent rapid erosion. Use variety of sources eg geological map; OS map; relevant weather information and newspaper articles to work out, "what happened here?" 	<ul style="list-style-type: none"> • OCR 'GCSE Geography B' • www.geographyalltheway.com • Before and after photographs • Newspaper articles • Boardworks Interactive resources • GA Classic Landforms series 	<ul style="list-style-type: none"> • There are numerous examples that could be used but the Holderness coastline is good
19. Erosional features 2: Headlands and bays, caves, arches, stacks and stumps.	<ul style="list-style-type: none"> • Starter - recap types of erosion • Discussion of differential erosion - how geology and vegetation influences rate of erosion. Diagrams to show how headlands and bays develop over time 	<ul style="list-style-type: none"> • OCR 'GCSE Geography B' • www.geographyalltheway.com • Boardworks Interactive resources • GA Classic Landforms series 	<ul style="list-style-type: none"> • Possible fieldwork opportunity • Possible map work, aerial photograph exercise • Past examination paper questions available • Numerous DVDs are available illustrating these features

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	<ul style="list-style-type: none"> • Animated diagrams to show how a headland is eroded to form other features such as caves. (sequence and processes involved) • Use of aerial photographs/OS map to identify erosional features and predict future changes to coastlines. 		
20. Transport and deposition – longshore drift.	<ul style="list-style-type: none"> • Process of longshore drift explained using annotated diagrams • Study of geological maps showing the origin of a sample of pebbles found on a beach • Photographic evidence of movement eg build up of material behind harbour wall etc • Design and describe an experiment to test for the existence of longshore drift and measure its speed and direction on a beach. Consider factors that may affect the results. 	<ul style="list-style-type: none"> • OCR 'GCSE Geography B' • www.geographyalltheway.com • Bitesize • Boardworks Interactive resources 	<ul style="list-style-type: none"> • Simple diagrams that are easy to annotate and reproduce are essential here
21. Depositional features 1: Spits.	<ul style="list-style-type: none"> • Discussion of features formed by transported materials and consequences eg deposition in estuaries to form salt marshes 	<ul style="list-style-type: none"> • OCR 'GCSE Geography B' • www.geographyalltheway.com • GIS eg Google earth • Photographs 	
	<ul style="list-style-type: none"> • Identify landforms on an OS map. Annotate main features • Re-sort labels of processes involved in spit formation into correct order 	<ul style="list-style-type: none"> • Boardworks Interactive resources 	

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22. Depositional features 2: Beaches, bars and tombolos.	<ul style="list-style-type: none"> • Discussion about process of deposition • Simple diagrams to show formation of depositional features • Annotated aerial photographs/recognition of features formed on OS maps 	<ul style="list-style-type: none"> • Aerial photographs • Maps at a variety of scales • GIS eg Google earth • Boardworks Interactive resources 	<ul style="list-style-type: none"> • Examples include Spurn Head, Chesil Beach and Portland Bill
23. Coastal management strategies.	<ul style="list-style-type: none"> • Why is it necessary to protect the coastline? Discussion of the effects of erosion and flooding on the environment and people • Hard and soft engineering options • Advantages and disadvantages of different methods and discussion of sustainability 		<ul style="list-style-type: none"> • Examples to use could include the Holderness coast, North Norfolk or Swanage • Possible use of ICT to research examples of management strategies
24. Coastal erosion and management case study.	<ul style="list-style-type: none"> • Use of variety of resources to produce a case study of a chosen area • Case study should address key questions eg Where? What? Why? When? Who? 	<ul style="list-style-type: none"> • OCR 'GCSE Geography B' • www.geographyalltheway.com • www.usgs.gov • Boardworks Interactive resources 	<ul style="list-style-type: none"> • Examples to use could include the Holderness coast, North Norfolk or Swanage • Possible use of ICT to research examples of management strategies
25. Synoptic Decision making exercise (This could be extended over more than one lesson and used to consolidate learning from the topic.)	<ul style="list-style-type: none"> • Decision making exercise - Scenario of coastline (actual/fictitious) subjected to rapid erosion. Choose and cost methods of defence from options given and justify decision. Evaluate chosen method(s) in terms of impact of the environment and economy. • This could be developed into group debate with individuals playing various roles 	<ul style="list-style-type: none"> • OCR 'GCSE Geography B' • www.geographyalltheway.com • Information for DME eg cost of methods of defence, appropriate maps, interview with local residents etc 	<ul style="list-style-type: none"> • Exercises should stress the advantages and disadvantages of different strategies and consider their sustainability and unintended effects further along the coastline

OCR Geography GCSE B

How and why does a river change from its source to its mouth?

OCR recognises that the teaching of this qualification above will vary greatly from school to school and from teacher to teacher. With that in mind this lesson plan is offered as a possible approach but will be subject to modifications by the individual teacher.

Lesson length is assumed to be **one hour**.

Learning Objectives for the Lesson

By the lesson you should KNOW	<ul style="list-style-type: none"> • How the river valley changes from source to mouth • Meanings - meander, flood plain, levee, ox bow lake, interlocking spur, waterfall, upper course, lower course
By the end of the lesson you should UNDERSTAND	<ul style="list-style-type: none"> • Why the river valley changes from source to mouth • Erosion, transport, deposition processes
By the end of the lesson you should BE ABLE TO DO	<ul style="list-style-type: none"> • Name features • Describe how and why the river valley changes from source to mouth

Recap of Previous Experience and Prior Knowledge

Already done:	<ul style="list-style-type: none"> • Hydrological cycle • Drainage basin • The hydrological cycle as a system • Storm hydrograph • MEDC and LEDC flooding • Flood prevention
Recap questions:	<ul style="list-style-type: none"> • Name different methods of flood prevention • What are the good and bad points of dams? • Which do you think is the best form of flood prevention? • How did they prevent floods in the Netherlands? • How did they prevent floods in Bangladesh?
Today's work:	<ul style="list-style-type: none"> • How and why the river valley changes from source to mouth

Resources

- BBC Bitesize website which contains information, diagrams, videos and tests. Look especially at sections on River profiles, River processes and River landforms
- OCR GCSE Specification B textbook published by Heinemann
- O.S. map extracts (1:25000 or 1:50000) to show rivers at different stages

Content

Time	Content
5minutes	<p>Recap of previous lesson and knowledge:</p> <ul style="list-style-type: none"> Name different methods of flood prevention Which do you think is the best form of flood prevention? How did they prevent floods in the Netherlands? How did they prevent floods in Bangladesh?
10 minutes	<p>Key Question 1: How does the river changes from source to mouth?</p> <ul style="list-style-type: none"> Teacher provides long profile diagram. Students look at the changing shape of the long profile and discuss why the shape changes. Teacher provides cross-sections to show upper, middle and lower course of the river. Students identify differences in shape and size and label the cross sections appropriately.
20 minutes	<p>Key Question 2: What are the key processes which form distinctive river landforms?</p> <ul style="list-style-type: none"> Identify key processes such as erosion, transport and deposition. Define these key terms. Compile a word wall (or word grid) which contains key words relating to different processes. Include: erosion, abrasion/corrosion, attrition, hydraulic action, corrosion/solution, transport, solution, suspension, saltation, traction, deposition, gradient, volume, friction. Use the word wall to develop students' understanding through activities such as: <ul style="list-style-type: none"> Grouping words and explaining why they are grouped in this way Choosing four words and asking a partner to identify the 'odd one out' and explain why Linking words in a sensible sentence Play word dominos where students must explain the link between two adjacent words
20 minutes	<p>Key Question 3: What are the distinctive landforms in the upper and lower course of a river?</p> <ul style="list-style-type: none"> Identify the landforms found in each course Upper course - include waterfall, gorge, rapids, interlocking spurs Lower course – include meander, ox-bow lake, floodplain Explain the formation of a waterfall and gorge and a meander and ox-bow lake. Illustrate with named examples of features and rivers where they are found. This provides a good opportunity to use OS maps and revise basic map reading skills of grid references, contours, OS map symbols, scale and direction, as well as identifying specific river features and landforms.

Sample GCSE Lesson Plan

5 minutes	<p>PLENARY SESSION - What have we learnt?</p> <ul style="list-style-type: none">• Using the board and flashcards• Questions:<ul style="list-style-type: none">- What is erosion, transport, deposition?- Name examples of each type of process- What is a levee, flood plain, meander, ox bow lake, interlocking spur, waterfall?- Where do you find: waterfalls, levees, flood plains, source, mouth, flat land, steep land?
	<p>HOMEWORK: Describe how a river changes from source to mouth. You should refer to landforms at each stage and a specific river which you have studied.</p>