

## Scheme of Work

# Cambridge O Level Geography 2217

For examination from 2020



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## Introduction

This scheme of work has been designed to support you in your teaching and lesson planning. Making full use of this scheme of work will help you to improve both your teaching and your learners' potential. It is important to have a scheme of work in place in order for you to guarantee that the syllabus is covered fully. You can choose what approach to take and you know the nature of your institution and the levels of ability of your learners. What follows is just one possible approach you could take and you should always check the syllabus for the content of your course.

Suggestions for independent study (**I**) and formative assessment (**F**) are also included. Opportunities for differentiation are indicated as **Extension activities**; there is the potential for differentiation by resource, grouping, expected level of outcome, and degree of support by teacher, throughout the scheme of work. Timings for activities and feedback are left to the judgment of the teacher, according to the level of the learners and size of the class. Length of time allocated to a task is another possible area for differentiation.

## Guided learning hours

Guided learning hours give an indication of the amount of contact time you need to have with your learners to deliver a course. Our syllabuses are designed around 130 hours for Cambridge O Level courses. The number of hours may vary depending on local practice and your learners' previous experience of the subject. The table below give some guidance about the order we suggest you teach the topics in and a recommended amount of time to spend on each.

Topic	Suggested teaching time (hours / % of the course)
Population	15 hours (12% of the course)
Settlements	15 hours (12% of the course)
Earthquakes and volcanoes	10 hours (7% of the course)
Rivers and coasts	10 hours (7% of the course)
Coursework or alternative to coursework activities	10 hours (7% of the course)
Development	Although not outlined in this document, it may be useful to complete the coursework or a small scheme of work on Paper 4 at this point. It is recommended that this should take about 20 hours (15% of the course).
Food production and industry	6 hours (5% of the course)
Tourism	6 hours (5% of the course)
Energy and water	6 hours (5% of the course)
Environmental risks of economic development	6 hours (5% of the course)

## Resources

The up-to-date resource list for this syllabus, including textbooks endorsed by Cambridge International, is listed at [www.cambridgeinternational.org](http://www.cambridgeinternational.org). Endorsed textbooks have been written to be closely aligned to the syllabus they support, and have been through a detailed quality assurance process. As such, all textbooks endorsed by Cambridge International for this syllabus are the ideal resource to be used alongside this scheme of work as they cover each learning objective.

## School Support Hub

The School Support Hub [www.cambridgeinternational.org/support](http://www.cambridgeinternational.org/support) is a secure online resource bank and community forum for Cambridge teachers, where you can download specimen and past question papers, mark schemes and other resources. We also offer online and face-to-face training; details of forthcoming training opportunities are posted online. This scheme of work is available as PDF and an editable version in Microsoft Word format; both are available on the School Support Hub at [www.cambridgeinternational.org/support](http://www.cambridgeinternational.org/support). If you are unable to use Microsoft Word you can download Open Office free of charge from [www.openoffice.org](http://www.openoffice.org).

## Websites

This scheme of work includes website links providing direct access to internet resources. Cambridge Assessment International Education is not responsible for the accuracy or content of information contained in these sites. The inclusion of a link to an external website should not be understood to be an endorsement of that website or the site's owners (or their products / services).

The website pages referenced in this scheme of work were selected when the scheme of work was produced. Other aspects of the sites were not checked and only the particular resources are recommended.

## How to get the most out of this scheme of work – integrating syllabus content, skills and teaching strategies

We have written this scheme of work for the Cambridge O Level Geography 2217 syllabus and it provides some ideas and suggestions of how to cover the content of the syllabus. We have designed the following features to help guide you through your course.

**Learning objectives** help your learners by making it clear the knowledge they are trying to build. Pass these on to your learners by expressing them as 'We are learning to / about...'

**Suggested teaching activities** give you lots of ideas about how you can present learners with new information without teacher talk or videos. Try more active methods which get your learners motivated and practising new skills.

Syllabus ref.	Learning objectives	Suggested teaching activities
1.1 Population Dynamics	Describe and give reason for the rapid increase in the world's population	<p>Learners should define 'population', 'population growth rate' and 'population explosion'. <a href="http://www.worldometers.info/world-population/">www.worldometers.info/world-population/</a> 'Key word anagrams' activity – learners solve anagrams and discuss the meaning of key words in pairs. Learners to build up a key word glossary with precise definitions of key words for each unit of work. This should also include command words as learners complete past examination questions.</p> <p><b>Extension activity:</b> learners devise their own key word puzzle/game. Provide learners with key facts and figures about world population growth to illustrate the concept of 'population explosion'.</p> <p>Using evidence, learners describe a line graph to show world population growth. Learners could also draw part of the graph themselves. This should include projections for future population growth. <b>(I)</b></p> <p>Learners should get their questionnaires filled in by 10 different people and analyse and present their findings. As an extension task learners could be asked to evaluate what worked well and what could be improved in the questionnaire.</p>
<b>Past and specimen papers</b>		
Past/specimen papers and mark schemes are available to download at <a href="http://www.cambridgeinternational.org/support">www.cambridgeinternational.org/support</a> <b>(F)</b>		

**Extension activities** provide your abler learners with further challenge beyond the basic content of the course. Innovation and independent learning are the basis of these activities.

**Independent study (I)** gives your learners the opportunity to develop their own ideas and understanding with direct input from you.

**Past papers, specimen papers and mark schemes** are available for you to download at: [www.cambridgeinternational.org/support](http://www.cambridgeinternational.org/support)

Using these resources with your learners allows you to check their progress and give them confidence and understanding.

**Formative assessment (F)** is on-going assessment which informs you about the progress of your learners. Don't forget to leave time to review what your learners have learnt, you could try question and answer, tests, quizzes, 'mind maps', or 'concept maps'. These kinds of activities can be found in the scheme of work.

## 1. Population dynamics

Syllabus ref.	Learning objectives	Suggested teaching activities
1.1 Population dynamics	Describe and give reasons for the rapid increase in the world's population	<p>Learners should define 'population', 'population growth rate' and 'population explosion'. A method to introduce this could be a 'Key word anagrams' activity – learners solve anagrams and discuss the meaning of key words in pairs. Learners should build up a key word glossary with precise definitions of key words for each unit of work. It would be useful if this also included command words which can be collated as learners complete past examination questions. <b>(I)</b></p> <p>Provide learners with key facts and figures about world population growth to illustrate the concept of 'population explosion'. Use the current world population statistics: <a href="http://www.worldometers.info/world-population/">www.worldometers.info/world-population/</a> and <a href="http://www.s-cool.co.uk/gcse/geography/population">www.s-cool.co.uk/gcse/geography/population</a></p> <p><b>Extension activity:</b> Using evidence, learners describe a line graph to show world population growth. They could also draw part of the graph themselves. This should include projections for future population growth. <b>(I)</b></p> <p>Learners consider what the graph shows and write a question that they want to answer during the unit. Keep the questions in a list or on a question wall that can be answered as the unit progresses. <b>(I)</b></p> <p>Learners work in small groups to analyse graphs or a choropleth map to show population growth on different continents. Each group considers a different continent. Present findings back to the class. Learners record main findings during presentations on a note-taking grid to understand differences in population growth in different parts of the world.</p> <p>Once learners have learned about reasons for population growth over a period of time, they should revisit their world population growth graph and think of reasons to explain the population explosion.</p> <p>These links contain ideas, strategies and resources for the whole unit:  <a href="http://www.sln.org.uk/geography/population_and_migration.htm">www.sln.org.uk/geography/population_and_migration.htm</a>, <a href="http://www.bbc.co.uk/education/topics/zbjhf8/resources/1">www.bbc.co.uk/education/topics/zbjhf8/resources/1</a> and <a href="http://handygeography.wordpress.com/tag/population/">http://handygeography.wordpress.com/tag/population/</a></p>
	Understand the causes and consequences of over-population and under-population	<p>Learners define the term 'carrying capacity' and add to their key word glossary. Introduce the concept of 'optimum population' by showing a drawing of scales in balance with population on one side and resources on the other – learners define and add to their glossary.</p> <p>Learners work in pairs to draw what they think the scales would look like for under-population and over-population (see <a href="http://www.overpopulation.org/">www.overpopulation.org/</a>). Show on mini whiteboards if available. Discuss and define key words and emphasise the link between 'population' and 'resources'. Show learners photographs to illustrate the concepts. Learners update the key word glossary.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Whole class discussion of the causes of over-population and under-population in relation to resources and population growth – show as two mind maps and reinforce through case studies later.</p> <p>Learners complete a card sorting activity to classify causes and consequences into under-population and over-population. Record consequences in a table and self-assess as the answers are discussed as a whole class. Sort consequences into those that affect people and those that affect the environment.</p> <p><b>Extension activity:</b> Consider the consequences of under-population and over-population. Learners develop ideas to produce an individual piece of writing.</p>
1.1 Case study	Know a country which is over-populated and a country which is under-populated	<p>Learners should know a case study of:</p> <ul style="list-style-type: none"> <li>• a country which is over-populated</li> <li>• a country which is under-populated.</li> </ul> <p>For each case study, the learners need to know the causes and consequences of under-population and over-population. Learners could use internet and textbook resources to research both of the case studies and present as articles for a geographical journal. The article could also include sketch maps to show location and description, population and other relevant data tables, population pyramids, graphs and annotated photographs to illustrate the key ideas and provide appropriate place-specific detail. <b>(1)</b></p> <p>Link to 3.7 – causes of soil erosion and desertification (e.g. Mali).</p> <p>Suggested examples: a country which is over-populated.</p> <p><b>Bangladesh</b>  <a href="http://www.worldometers.info/world-population/bangladesh-population/">www.worldometers.info/world-population/bangladesh-population/</a>  <a href="http://www.bbc.co.uk/news/world-south-asia-12650940">www.bbc.co.uk/news/world-south-asia-12650940</a></p> <p><b>India</b>  <a href="http://www.worldometers.info/world-population/india-population/">www.worldometers.info/world-population/india-population/</a>  <a href="http://www.pbs.org/newshour/updates/globalhealth-july-dec11-population_10-19/">www.pbs.org/newshour/updates/globalhealth-july-dec11-population_10-19/</a>  <a href="http://www.mapsofindia.com/my-india/india/overpopulation-in-india-causes-effects-and-how-to-control-it">www.mapsofindia.com/my-india/india/overpopulation-in-india-causes-effects-and-how-to-control-it</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Suggested example: a country which is under-populated.</p> <p><b>Iceland</b>  <a href="http://www.telegraph.co.uk/travel/maps-and-graphics/The-worlds-least-densely-populated-countries/">www.telegraph.co.uk/travel/maps-and-graphics/The-worlds-least-densely-populated-countries/</a>  <a href="http://www.bbc.co.uk/news/world-europe-17383525">www.bbc.co.uk/news/world-europe-17383525</a>  <a href="http://www.eea.europa.eu/soer/countries/is/country-introduction-iceland">www.eea.europa.eu/soer/countries/is/country-introduction-iceland</a></p> <p>General suggestions for delivery of case study content across the specification;</p> <ul style="list-style-type: none"> <li>• <b>Decision-making exercise</b> – particularly good for management of natural disasters (see link to Montserrat eruption example), working to a budget to resolve a geographical issue and so forth.</li> <li>• <b>Card sort</b> – provide learners with information about the case study. Challenge them to categorise the information using their own headings initially. Support can be implemented by suggesting some appropriate category headings.</li> <li>• <b>Concept map</b> – distribute a number of key factors, issues, etc., across a page. Learners are then challenged to identify and explain links between the different factors.</li> <li>• <b>Concise summaries of text</b> – limit learners to a specific word count when summarising news reports, sections of text and so forth.</li> <li>• <b>Market-place</b> – learners work in small groups to summarise a key section of case study information. Each group should produce a poster / teaching aid. They must be restricted in the number of words they can use (e.g. maximum 10 words), but can use as many diagrams, pictures, symbols, numbers, etc., as they like. When each group has completed their poster (summarising their specific aspect of the case study), one or two members stay with their group 'stall' to teach others, but the other learners in the group circulate the stalls to gather information. At the end of the activity, the original groups get back together and teach each other everything they have collated.</li> <li>• <b>Diamond 9</b> – ranking issues, management strategies. Leads learners to develop ideas through justification of opinions, consideration of differing viewpoints and so forth.</li> <li>• <b>Story Maps</b> – with access to ArcGIS Online, learners can produce their own 'Story Map'. The ArcGIS Online website has many examples of story maps and guidance for learners to support them in creating their own.</li> </ul>
1.1 Population dynamics	Understand the main causes of a change in population size	<p>Learners define key words 'birth rate', 'death rate', 'natural increase' and 'natural decrease'. Add to key word glossary. <b>(I)</b> Revise key words so far with either a game of 'Taboo' where learners have to describe a key word using key words on a card to a partner (<a href="http://en.wikipedia.org/wiki/Taboo_(game)">http://en.wikipedia.org/wiki/Taboo_(game)</a>) and a 'heads and tails' game where learners match key words and definitions.</p> <p>Use birth and death rates for selected countries to calculate natural increase and decrease and to understand the difference between different parts of the world and record in a table. <b>(I)</b> Use: <a href="http://www.s-cool.co.uk/gcse/geography/populations">www.s-cool.co.uk/gcse/geography/populations</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Learners describe what they notice about rates of natural increase in different parts of the world (see: <a href="http://esa.un.org/unpd/wpp/index.htm">http://esa.un.org/unpd/wpp/index.htm</a>. – world population prospects) – Less Economically Developed Countries (LEDCs) and More Economically Developed Countries (MEDCs).</p> <p>Learners draw and label a Demographic Transition Model diagram (DTM) to understand how population changes over time. Show the clip here: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/population/population_change_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/population/population_change_video.shtml</a></p> <p>Add an example of a country to each stage. Learners complete a card sorting activity to match key characteristics to the appropriate stage of the model. This would work as a kinaesthetic activity also – each learner has a card and has to move to bases in the room appropriate to the stage of the DTM. <b>(I)</b></p> <p>Define ‘migration’, ‘immigration’ and ‘emigration’ and add to key word glossary. Introduce and define the concept of ‘net migration’ balance and illustrate by asking learners to calculate for selected countries.</p> <p>Explain actual increase and decrease and add key words to glossary. Calculate using examples of birth rate, death rate and net migration balance for selected countries. Learners could also describe various graphs such as birth rate, death rate, natural increase, etc., for selected countries. <b>(I)</b></p> <p>Use atlas map to discuss in pairs the differences in total population change in different parts of the world – choropleth maps and emphasise again the key differences between More Economically Developed Countries (MEDCs) and Less Economically Developed Countries (LEDCs).</p> <p>Learners could also have a blank Demographic Transition Model diagram (DTM) outline and place labels in pairs on the appropriate place on the graph to check understanding or work in groups to reproduce an accurate copy of the Demographic Transition Model diagram (DTM) from memory.</p>
	<p>Give reasons for contrasting rates of natural population change</p>	<p>Learners work in groups to list the factors which explain why birth rates may be high in some parts of the world and low in others. Discuss as a group and record ideas into a table.</p> <p>Then classify the ideas into social, economic, political or other factors using colour coding or a key. <b>(I)</b></p> <p>Learners work in groups. They have 10 minutes to discuss the reasons for high deaths rates in certain parts of the world. They record their ideas on a large sheet of paper. Each group then moves round to the next group to add any ideas that they had not thought of and continue until they are back to their original place. Class discussion to confirm.</p> <p>Learners record reasons for high death rates. Repeat activity for low death rates. Classify into social, economic, political and other factors using colour coding or a key. <b>(I)</b></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p><b>Extension activity:</b> explain why birth and death rates vary between countries at different levels of development (see: <a href="http://www.sln.org.uk/geography/Documents/Thinking/Mystery%20%20Xiao%20Ling.pdf">www.sln.org.uk/geography/Documents/Thinking/Mystery%20%20Xiao%20Ling.pdf</a>)</p> <p>Revisit the DTM and add reasons to explain each stage. Group work – learners discuss limitations and relevance of the model and write up ideas. <b>(I)</b></p> <p>Briefly describe distribution of HIV from an atlas choropleth map. Learners write a short report to explain the impact on death rates and life expectancy in selected countries of the world. <b>(I)</b></p>
1.1 Case study	Know a case study of a country with high rate of natural population growth and a country with a low rate of population growth (or decline)	<p>Learners should know a case study of:</p> <ul style="list-style-type: none"> <li>• a country with a high rate of natural population growth</li> <li>• a country with a low rate of population growth (or population decline).</li> </ul> <p>For each case study: Provide learners with location map and population data tables. Learners use data to graph and describe the population growth of the selected country over time. Group work activity – provide resource material about the causes of the growth and the measures taken as part of relevant policies that have been put in place to control population growth. Learners highlight text. Produce a short presentation to the class and use presentation notes as revision tool. Ensure appropriate place-specific reference for each case study. <b>(I)</b></p> <p>Repeat the activities for the case study of population decline and the policies used to promote population growth.</p> <p><b>Extension activity:</b> Learners also evaluate the success of each policy via a class debate – reasons to support the policy/successes, reasons against the policy/problems and an overall judgement about how successful the policy has been – provide data and evidence to support.</p> <p>Suggested example: a country with a high rate of natural population growth.</p> <p><b>Niger</b>  <a href="http://www.worldometers.info/world-population/niger-population/">www.worldometers.info/world-population/niger-population/</a>  <a href="http://www.theguardian.com/global-development/datablog/2016/jun/28/over-populated-or-under-developed-real-story-population-growth">www.theguardian.com/global-development/datablog/2016/jun/28/over-populated-or-under-developed-real-story-population-growth</a>  <a href="http://www.economist.com/news/middle-east-and-africa/21612239-runaway-birth-rates-are-disaster-population-explosion">www.economist.com/news/middle-east-and-africa/21612239-runaway-birth-rates-are-disaster-population-explosion</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Suggested example: a country with a low rate of population growth (or population decline).</p> <p><b>Japan</b>  <a href="http://www.worldometers.info/world-population/japan-population/">www.worldometers.info/world-population/japan-population/</a>  <a href="http://www.telegraph.co.uk/news/2017/04/11/japans-population-shrink-third-2065/">www.telegraph.co.uk/news/2017/04/11/japans-population-shrink-third-2065/</a>  <a href="http://www.washingtonpost.com/news/worldviews/wp/2016/02/26/its-official-japans-population-is-dramatically-shrinking/?utm_term=.0f94a1f2940d">www.washingtonpost.com/news/worldviews/wp/2016/02/26/its-official-japans-population-is-dramatically-shrinking/?utm_term=.0f94a1f2940d</a>  <a href="http://uk.businessinsider.com/japans-population-falling-faster-than-ever-before-2017-7?r=US&amp;IR=T">http://uk.businessinsider.com/japans-population-falling-faster-than-ever-before-2017-7?r=US&amp;IR=T</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
1.1 Population dynamics	Describe and evaluate population policies	<p>Learners have already described and evaluated two population policies as part of the case studies above – one ante-natalist and one pro-natalist. To reinforce and build on this, learners describe and explain the impact of measures on population growth through small group discussion and report writing. <b>(I)</b> Ideas such as:</p> <ul style="list-style-type: none"> <li>• Reducing poverty</li> <li>• Improved healthcare</li> <li>• Improved education</li> <li>• Women’s rights</li> <li>• Family planning, etc.</li> </ul> <p>They could also use the following: <a href="http://www.s-cool.co.uk/gcse/geography/populations/revise-it/population-growth">www.s-cool.co.uk/gcse/geography/populations/revise-it/population-growth</a></p> <p>To reinforce the ideas, learners draw scatter graphs to deduce the relationship between birth rates and key indicators for selected countries such as GNP per capita, access to healthcare, female literacy rate, access to contraception, etc. – describe and explain the relationship shown by the scatter graphs.</p> <p><b>Extension activity:</b> Learners could also use atlas maps of key indicators to reinforce the spatial relationship. <b>(I)</b></p> <p>Link to 3.7 – strategies to reduce desertification – reducing population pressure.</p>
1.2 Migration	<p>Explain and give reasons for population migration</p> <hr/> <p>Demonstrate an understanding of the impacts of migration</p>	<p>Recap key words ‘migration’, ‘emigration’, ‘immigration’ and ‘net migration balance’ (see: <a href="http://www.s-cool.co.uk/gcse/geography/populations/revise-it/migration">www.s-cool.co.uk/gcse/geography/populations/revise-it/migration</a>). Learners describe a key word and the other learner has to define it. Learners define ‘international migration’. Introduce a classification of migration and complete appropriate definitions with examples to illustrate.</p> <p>Learners describe a world flow line map of recent migrations – describe what the map shows and categorise into those that are forced and those that are voluntary. Show a photograph that might prompt a forced migration such as a scene following a natural disaster and discuss. You could watch the video about migration trends: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/migration/migration_trends_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/migration/migration_trends_video.shtml</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Introduce a simple example of an international migration (not a case study) and ask learners to think of reasons for leaving a destination and reasons for wanting to go to a destination. Use this to reinforce voluntary migration and define 'push and pull factors' with some simple examples. Define 'internal migration' and give examples with push and pull factors. Update key word glossary. <b>(I)</b> Link to Case Study for 1.7 to describe the impacts of the migration on the destination and origin of the migrants as well as the migrants themselves.</p>
1.2 Case study	Know a case study of an international migration	<p>Learners should know a case study of an international migration.</p> <p>Further information on migration: <a href="http://www.geography.learnontheinternet.co.uk/topics/migration.html">www.geography.learnontheinternet.co.uk/topics/migration.html</a></p> <p>Learners produce a sketch map and locate the migration. Provide some background information/statistics/photographs to highlight/annotate to identify the push and pull factors – show as a table.</p> <p>Learners work in pairs to research and note-take the positive and negative impacts of the migration on the receiving and losing country and the migrants themselves. Present ideas as a table. Ensure appropriate reference to population structure. <b>(I)</b></p> <p>Learners imagine they are an international migrant and write a letter home to include their reasons for the migration (push and pull) and what conditions are like for them in the host country. Another learner then writes the reply to the letter explaining what benefits/problems migrations such as these are causing back at home – opportunity for peer assessment. <b>(I)</b></p> <p><b>Extension activity:</b> Read letters and replies out and discuss at whole class level. Ensure appropriate place-specific reference for case study.</p> <p>Suggested examples: a case study of international migration.</p> <p><b>Syria to Germany.</b>  <a href="http://www.bbc.co.uk/education/guides/z8g334j/revision/4">www.bbc.co.uk/education/guides/z8g334j/revision/4</a>  <a href="http://www.bbc.co.uk/news/world-europe-34131911">www.bbc.co.uk/news/world-europe-34131911</a>  <a href="http://www.bbc.co.uk/news/world-europe-37647852">www.bbc.co.uk/news/world-europe-37647852</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
1.3 Population structure	Identify, give reasons for and implications of different types of population structure	<p>Learners define 'infant mortality' and 'life expectancy' and add to key word glossary. Learners draw a population pyramid for a typical MEDC – this activity can be differentiated easily by providing templates where necessary. Discuss what the population pyramid shows, before learners annotate their drawn population pyramid. Define 'population structure' and outline the importance of population pyramids in showing population structure.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Compare the pyramids and link to the different stages of the DTM. Learners should sketch the shape of the different population pyramids and annotate to explain the differences. Learners should then be able to recognise examples of population structure from countries at contrasting levels of economic development (see: <a href="http://populationpyramid.net/">http://populationpyramid.net/</a>). Use the link provided to investigate population structure and change for different countries. Challenge learners to consider the implications for each population structure in the future as well as the present. <b>(I)</b></p> <p>Define 'dependent population', 'old dependents', 'young dependents' and 'economically active' and add to key word glossary. Introduce 'dependency ratio' – learners calculate examples based on population data. Learners should be challenged (working independently or collaboratively) to consider the issues of considerable dependent (young or old) populations. Learners should collate their ideas on mini-whiteboards or using whiteboard pens to write directly on their table. Learners can develop this work through research using ICT or textbook resources. Emphasis should be placed on the implications for governments in providing for dependent populations. This developed work can be presented as two mind maps. <b>(I)</b></p> <p>Learners should know a case study of a country with a high dependent population (e.g. Japan or Niger from previous section).</p> <p>This can either be young or old dependents. Learners use resource materials and own research to produce a report article including background about the country, fully annotated population pyramid, recap of reasons for age structure, problems and solutions (including any link back to relevant population policies studied earlier). Could include relevant sketch maps, photos, statistics and so forth. Ensure appropriate place-specific reference. <b>(I)</b></p>
1.4 Population density and distribution	Describe the factors influencing the density and distribution of population	<p>Learners define 'population distribution', 'density', 'dense' and 'sparse' and add to key word glossary. To consolidate and assess understanding of the key terms introduced throughout the topic, a game such as taboo or bingo could be used at this stage.</p> <p>Learners write out a method for calculating population density (see: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/population/population_distribution_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/population/population_distribution_rev1.shtml</a>). <b>(I)</b></p> <p>Learners study a choropleth map presenting population density around the world. Provide learners with a copy of this map, which they annotate using key words introduced in the topic. Exam-style question (describing the pattern of population density) can be used to outline successful exam technique and the key points regarding the location of densely / sparsely populated regions. Learners annotate their choropleth maps to show the factors that have affected the population density in each area.</p> <p>As a class, collate ideas to form a list of factors that affect population density. Before giving learners the classification headings of physical, economic, social and political factors, challenge them to categorise the list using their own groupings. Reinforce ideas by comparing world distribution map with satellite image and/or other global maps such as</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>annual rainfall, vegetation, relief, climate, land use, and so forth. Challenge learners to identify links they observe.</p> <p>Take the opportunity to build on existing knowledge of world map – continents, oceans, lines of latitude and longitude – revisit and revise as appropriate. Could do this as a quiz also – show outlines of continents and learners have to name them.</p> <p>Learners need to know a case study of:</p> <ul style="list-style-type: none"> <li>• a densely populated country or area at any scale from local to regional (e.g. Bangladesh).</li> <li>• a sparsely populated country or area at any scale from local to regional (e.g. Iceland).</li> </ul> <p>Learners produce a written presentation to include: location map, choropleth map of density, reasons to explain the density – both dense and sparse supported with relevant images and statistics. Ensure appropriate place-specific detail. <b>(I)</b> Factors to include physical, economic, social and political factors.</p>
1.1 Population dynamics	Describe and give reasons for the rapid increase in the world's population	<p>Learners should define 'population', 'population growth rate' and 'population explosion'. A method to introduce this could be a 'Key word anagrams' activity – learners solve anagrams and discuss the meaning of key words in pairs. Learners to build up a key word glossary with precise definitions of key words for each unit of work. This should also include command words as learners complete past examination questions. <b>(I)</b></p> <p>Provide learners with key facts and figures about world population growth to illustrate the concept of 'population explosion'. Use the current world population statistics: <a href="http://www.worldometers.info/world-population/">www.worldometers.info/world-population/</a> and <a href="http://www.s-cool.co.uk/gcse/geography/population">www.s-cool.co.uk/gcse/geography/population</a></p> <p><b>Extension activity:</b> Using evidence, learners describe a line graph to show world population growth. Learners could also draw part of the graph themselves. This should include projections for future population growth. <b>(I)</b></p> <p>Learners consider what the graph shows and write a question that they want to answer during the unit. Keep the questions in a list or on a question wall that can be answered as the unit progresses. <b>(I)</b></p> <p>Learners work in small groups to analyse graphs or a choropleth map to show population growth on different continents. Each group considers a different continent. Present findings back to the class. Learners record main findings during presentations on a note-taking grid to understand differences in population growth in different parts of the world.</p> <p>Once learners have learned about reasons for population growth over a period of time, they should revisit their world population growth graph and think of reasons to explain the population explosion.</p> <p>These links contain ideas, strategies and resources for the whole unit:  <a href="http://www.sln.org.uk/geography/population_and_migration.htm">www.sln.org.uk/geography/population_and_migration.htm</a>, <a href="http://www.bbc.co.uk/education/topics/zbjhfq8/resources/1">www.bbc.co.uk/education/topics/zbjhfq8/resources/1</a> and <a href="http://handygeography.wordpress.com/tag/population/">http://handygeography.wordpress.com/tag/population/</a></p>

**Past and specimen papers**

Past / specimen papers and mark schemes are available to download at [www.cambridgeinternational.org/support](http://www.cambridgeinternational.org/support) **(F)**

## 2. Settlement

Syllabus ref.	Learning objectives	Suggested teaching activities
1.5 Settlements and service provision	Explain patterns of settlement	<p>Learners define 'settlement' and 'settlement pattern' and add to a key word glossary (see: <a href="http://www.slideshare.net/xksinz/settlement-patterns">www.slideshare.net/xksinz/settlement-patterns</a>). <b>(I)</b></p> <p>Define 'rural' and 'urban' and use photographs/map extracts to draw two spider diagrams to show the characteristics and uses of each type of area.</p> <p>Show learners photographs of a nucleated, dispersed and linear settlement pattern and ask them to describe what the photograph shows. Learners identify examples of each on suitable map extracts and produce simple sketches from the map to illustrate each with appropriate annotation and key word definitions. Please ensure the scale of the maps used is appropriate. <b>(I)</b></p> <p>Learners use map evidence and photographic evidence to begin a discussion of the factors that might influence the settlement pattern in an area – interpreting map evidence. Consolidate this with a card sorting activity of factors which learners classify into nucleated, dispersed and linear – can record in a table or add detail to previous sketches to explain settlement patterns. <b>(I)</b> Link to case study region for 1.5</p> <p>Whole class discussion to confirm.</p> <p>This link contains resources and ideas for the whole unit: <a href="http://www.sln.org.uk/geography/settlement.htm">www.sln.org.uk/geography/settlement.htm</a></p>
	Describe and explain the factors which may influence the sites, growth and functions of settlements	<p>Learners define 'site' and add to key word glossary (see: <a href="http://www.s-cool.co.uk/gcse/geography/settlements/revise-it/site-and-situation">www.s-cool.co.uk/gcse/geography/settlements/revise-it/site-and-situation</a>). In pairs, discuss the factors that would influence the site of early settlements and produce a list – for example, water, which could be obtained from a stream, river, spring or lake. Learners can show as a mind map or table. List of factors is in syllabus.</p> <p>Provide learners with a simple sketch map of an area with different sites for a settlement marked on – learners have to complete a decision-making activity to decide which site they would choose. They rank each site for each factor and come up with a total score. A scale could be included to practise measuring distance.</p> <p>Learners follow this up with a description of the site and explain any advantages and also problems in a short report. <b>(I)</b> This can be consolidated with photographs and map extracts – learners use the resources to describe and explain the site of settlements. They can locate map evidence using grid references and appropriate symbols from the key to explain the site by interpreting evidence from the map extract.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p><b>Extension activity:</b> Learners can follow this up by drawing a simple annotated sketch map to show the site of a settlement and conduct reasons to find out about the reasons for the site of their own settlement or one nearby. <b>(I)</b> Link to case study 1.5.</p> <p>Define ‘function’ and add to key word glossary (see: <a href="http://www.s-cool.co.uk/gcse/geography/settlements/revise-it/settlement-functions">www.s-cool.co.uk/gcse/geography/settlements/revise-it/settlement-functions</a>). Learners have photographs of settlements and work in pairs to identify the main function. Labels could be provided to match to each photograph to support if required.</p> <p>Learners define and describe each function and link to an explanation of how the settlement would grow over time. Write up ideas. Learner could also design a key to help them to classify settlements into different functions. <b>(I)</b></p> <p>Functions of settlements such as market town, mining town, industrial, port, route centre, commercial, cultural, administrative, residential and tourist resort, etc. Learners research examples of a settlement with each type of function. Learners should be aware that the function of a settlement can also change over time. <b>(I)</b></p> <p>For information on settlement characteristics go here:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/settlement_characteristics_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/settlement_characteristics_rev1.shtml</a></p>
	<p>Give reason for the hierarchy of settlements and services.</p>	<p>Introduce the concept of ‘a hierarchy’ by talking about the structure within a school – to convey the idea of putting things in order of importance. Learners define ‘hierarchy’ and draw a diagram to show a simple settlement hierarchy. <b>(I)</b></p> <p>Explain the three principles of a hierarchy – population size, number of services and number of settlements. Learners describe changes as you move up the hierarchy. <b>(I)</b></p> <p>Introduce and define ‘sphere of influence’. Define ‘range’ and ‘threshold population’ and add to key word glossary – and illustrate with examples of different services from each of the settlement types. Learners match examples of services to the type of settlement using mini whiteboards as whole class assessment for learning or card sort. Learners write short explanation to demonstrate their understanding of the key ideas – how does the nature/type and number of services vary between different types of settlements and why? <b>(I)</b></p> <p>Learners have examples of settlements (names/population size) or types of services, etc. and have to place them in order of importance on a washing line – learners place into order or into a sequence. Learners complete a scatter graph to show the relationship between population size and number of services in selected settlements – describe and explain the relationship. <b>(I)</b></p> <p style="text-align: center;"><b>Fieldwork opportunity:</b> investigating the sphere of influence of a local town or service.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p><b>Map work opportunity:</b> locating settlements on a map which are at different stages in the hierarchy. Using scale to measure the distance between each one and calculating an average for each type of settlement. Using a key to identify the services found in each and compare.</p> <p>Learners draw and label a shopping hierarchy. Introduce 'low, medium and high order goods' and define. Learners explain the differences between them. Discuss terms such as 'specialist, convenience' and 'comparison goods' and update key word glossary. <b>(I)</b></p> <p>Learners complete a card sorting activity of goods into low, medium and high order depending upon frequency of purchase, cost of item, distance that a shopper would be prepared to travel for the good – show results in a table.</p> <p>Recap range, threshold and sphere of influence in relation to different types of shops and illustrate with examples. Consider the different types of shops and their locations and link back to shopping hierarchy diagram. Learners take notes from audio activity. <b>(I)</b></p> <p><b>Fieldwork opportunity:</b> comparing the sphere of influence of different types of shops in the hierarchy and explaining.</p> <p>For information on urban hierarchies follow this link: <a href="http://www.s-cool.co.uk/gcse/geography/settlements/revise-it/urban-hierarchies">www.s-cool.co.uk/gcse/geography/settlements/revise-it/urban-hierarchies</a></p>
1.5 Case study	Know a case study of settlement and service provision in an area	<p>Learners should know a case study of settlement and service provision in an area (please ensure that the scale of the case study is appropriate – the case study area should reflect high, middle and low order settlements).</p> <p>Introduce a map of the area to show the chosen settlements – learners produce annotated sketch map to show the main features of the chosen case study area including named settlements and place-specific information. <b>(I)</b> Describe and explain the settlement pattern and the site of settlements in the case study region.</p> <p>Select an example of a high, medium and low order settlement in the area and for each learner:</p> <ul style="list-style-type: none"> <li>• research population data (and change over time to indicate growth)</li> <li>• identify evidence from the map to suggest the function of each settlement</li> <li>• research how each settlement has grown over time and the reasons why</li> <li>• research and use map evidence to describe the service provision in each settlement (include sphere of influence and threshold populations)</li> <li>• explain the differences using key terminology.</li> </ul>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Use all of the information to place the settlements into a hierarchy and write a report to explain the settlement and service provision of the chosen area. <b>(I)</b></p> <p>The case study could be reinforced using fieldwork to compare the spheres of influence of the three chosen settlements using questionnaires or by land use mapping in each to discover the types of services present – are they mainly high, low or medium order services?</p> <p>Suggested examples: a case study of settlement and service provision in an area.</p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
1.6 Urban settlements	Describe and give reasons for the characteristics of land use in urban areas	<p>Introduce Burgess model (or concentric zone model)  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/urban_models_medcs_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/urban_models_medcs_rev1.shtml</a> – learners label diagram to show different zones. Add definitions of each zone to key word glossary.</p> <p>Introduce Central Business District (CBD) and show photographs and land use maps to learners. Mind map characteristics of the zone and explain each one – for example, high rise buildings due to high cost of land/competition for land.</p> <p>Learners use photographs of each housing zone, selected census data and land use map/OS map extracts of each housing zone to discuss the characteristics (land use and housing characteristics such as type, age, characteristics, quality, etc.) of each zone in groups – whole class discussion to confirm.</p> <p>Learners record ideas in a table and add annotation to previous diagram. Opportunity also for learners to complete labelled field sketch from selected photograph and also annotate photographs of each zone. <b>(I)</b></p> <p>Learners draw a sketch of a land use transect through a typical MEDC – describe the changes with distance from the central business district (CBD). This can be used as a basis to discuss inequalities in a city and housing problems as an introduction to urban problems. <b>(I)</b></p> <p>Introduce the principles to explain the different patterns of land use in a MEDC city such as cost of land, space, age of buildings, accessibility, wealth, changes in demand, etc. – set key questions for learners to respond to as a check of understanding.</p> <p><b>Extension activity:</b> Learners write a description of each zone and reasons to explain the land use found there. <b>(I)</b></p> <p>Also include rural-urban fringe – use a map extract (finding features using a key) to describe land uses – learners make a list and can locate using grid references. Learners explain the advantages of the rural-urban fringe location and resulting competition for land <b>(I)</b> – display ideas as an advert to attract new land uses to this area of the city.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Introduce Hoyt model of urban land use – learners label diagram and explain the key differences between the Hoyt and Burgess model and the reasons for them. <b>(I)</b> Learners use this as a basis to work in pairs to discuss where industrial zones are found in cities and the reasons why.</p> <p>Introduce model of urban land use in a LEDC – learners label diagram and describe and suggest reasons for the key differences between the zones in a MEDC and LEDC. <b>(I)</b> Can be revisited in 1.7. Learners describe the key characteristics of land use zones. <b>(I)</b></p> <p>Urban model MEDC:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/urban_models_medcs_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/urban_models_medcs_rev1.shtml</a></p> <p>Urban model LEDC:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/urban_models_ledcs_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/urban_models_ledcs_rev1.shtml</a></p> <div style="background-color: #f4a460; padding: 10px; border: 1px solid #f4a460;"> <p><b>Fieldwork opportunity</b> – to what extent does a local town or city (transect) match the urban models? Suggestions include: land use transect, housing type transect, age of housing, quality of housing survey, environmental quality survey, cost of houses (secondary research).</p> <p>This could also be investigated using census data to explore the socio-economic characteristics of each zone – graph results/show as choropleth maps/identify and explain trends.</p> <p>How can the central business district (CBD) be delimited – this could be investigated with ideas such as traffic counts, pedestrian counts, environmental quality surveys, building height index and cost of land (secondary data).</p> </div>
	Describe and give reasons for changes in land use in urban areas	<p>Learners use before and after photographs of a central business district (CBD) to start to identify reasons for and the changes that have taken place in CBDs. Changes could include improvements such as pedestrian zones, shopping malls, new leisure activities, improved security, use of brown field sites, etc. For each, learners write a description of the changes, explain why the change took place and explain the advantages and disadvantages they will bring – could be prompted by a card sorting activity (learners have to place cards into categories). <b>(I)</b></p> <p>Learners work in pairs to mind map all of the problems of old inner city areas and share as a class to confirm. Show examples (photographs, video clips, land use maps, text) of comprehensive redevelopment and modern regeneration schemes to include: the changes that took place, why the change happened and the advantages and possible limitations of the schemes. <b>(P)</b>(Basic) Learners complete independent research to complement lesson information and write a newspaper article to describe and explain inner city changes. <b>(I)</b></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Recap the rural–urban fringe (see: <a href="http://www.s-cool.co.uk/gcse/geography/settlements/revise-it/the-rural-urban-fringe">www.s-cool.co.uk/gcse/geography/settlements/revise-it/the-rural-urban-fringe</a>) and the advantages that it offers as a whole class discussion. Learners work in groups to identify the types of new development that might take place in this zone based on the advantages of the zone such as airports, motorways, ring roads, business parks, science parks, industrial estates, out of town shopping centres and examples from previous map work activity. Discuss the costs and benefits of each – both for the rural urban fringe and other parts of the city too.</p> <p>Learners write up as headlines with short notes and photographs found from research for selected developments.</p> <p>Learners complete a decision-making activity to decide the best location for a new out-of-town shopping centre or other rural-urban fringe land use–provide a map with several sites to choose from. Once a site is chosen, learners conduct a role-play activity to investigate the impact of the chosen site. Learners write up viewpoints.</p> <p><b>Fieldwork opportunity:</b> investigating the sphere of influence and impact of an out-of-town shopping centre (questionnaires, land use mapping, and pedestrian counts).</p> <p>Learners define ‘suburbanised village’. Work in pairs to give push and pull factors to explain why people move to a suburbanised village. Analyse land use maps to show change in the village over time and write up viewpoints of different groups of people to show the impact of this change.</p> <p>Define the key word ‘urban sprawl’ and update key word glossary. Learners compare maps of a city over time to describe the extent of urban sprawl. Discuss the problems that urban sprawl creates such as loss of farmland, loss of space for recreation, impact on ecosystems, creation of impermeable surfaces, division, etc. and show as a mind map. <b>(I)</b></p>
	<p>Explain the problems of urban areas, their causes and possible solutions</p>	<p>Learners produce a mind map in pairs to record their initial ideas for the causes of urban problems – pollution (air, noise, water and visual), inequality, housing issues, traffic congestion and conflicts over land use change. For each one, learners should explain the problems that they cause.</p> <p>Link to 3.7 – describe how economic activities may pose threats to the natural environment (water, air, noise and visual pollution)</p> <p>For each one, learners independently research some general solutions and present results in a table. <b>(I)</b> Confirm through whole class discussion and add ideas in. Table – description of problem, causes and solutions.</p> <p>This section will mainly be delivered through the case study for 1.6. It will be appropriate to teach the case study first and then come back to this section to cover causes and solutions of urban problems not addressed through the case study. Links to 3.7 – demonstrate the need for sustainable development and management – sustainable living and sustainable transport.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Learners use web page references (see: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_living_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_living_rev1.shtml</a> or <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_living_rev2.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_living_rev2.shtml</a>) and take notes on each. Use to produce a leaflet to show what sustainable living is like. Think about where they live and make suggestions about how their village/town/city could become more sustainable. Produce a poster to show the features of sustainable living. Write a short letter to their local MP/council to explain the changes that could be made in their village/town/city to make transport more sustainable.</p>
1.6 Case study	Know a case study of an urban area (including changing land use and urban sprawl)	<p>Learners should know a case study of:</p> <ul style="list-style-type: none"> <li>an urban area (including changing land use and urban sprawl)</li> </ul> <p>Ensure appropriate place-specific information – such as names of areas and examples/details of specific schemes. It is appropriate to use more than one case if required.</p> <p>Locate urban area – learners produce fully annotated sketch map and describe location. <b>(I)</b></p> <p>Use map extract and photographs to describe the characteristics of land use and housing in each zone including the rural urban fringe. <b>(I)</b></p> <p>Learners research and identify change in each zone – produce a short presentation for peers. Peer evaluation of presentation.</p> <p>Provide census data for learners – produce choropleth maps to describe patterns of inequality. Use scatter graphs to identify relationships between data and explain. <b>(I)</b></p> <p>Learners analyse photographs to identify traffic problems. Card sorting activity – matching characteristics and benefits to named traffic management schemes.</p> <p>Learners identify recent change in the city that may cause conflict – write up viewpoints of different groups of people about selected developments – for example, a named out-of-town shopping centre, inner city redevelopment, traffic scheme or bypass development, etc. <b>(I)</b> Teacher to provide appropriate stimulus material. Include urban sprawl and the impacts on people and the environment such as loss of farmland, recreation land, air pollution, habitat loss, etc.</p> <p><b>Extension activity:</b> Learners research and write a leaflet for local residents to explain the housing problems they are facing and the proposed solutions (of a named scheme) – learners may work in small groups but each learner should have a copy of the leaflet for revision.</p> <p>Learners research causes of air, noise, water and visual pollution in the city and solutions to each. Write up as a newspaper article.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Suggested examples: an urban area (including changing land use and urban sprawl).</p> <p><b>Atlanta, USA</b>  <a href="http://www.atlantamagazine.com/news-culture-articles/report-atlanta-is-the-most-sprawling-big-metro-in-the-us/">www.atlantamagazine.com/news-culture-articles/report-atlanta-is-the-most-sprawling-big-metro-in-the-us/</a>  <a href="http://www.georgiaencyclopedia.org/articles/arts-culture/urban-sprawl">www.georgiaencyclopedia.org/articles/arts-culture/urban-sprawl</a>  <a href="http://www.youtube.com/watch?v=c2AASa6l0Io">www.youtube.com/watch?v=c2AASa6l0Io</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p> <p><b>Fieldwork opportunity:</b> some of this case study could be investigated by local fieldwork and also by using appropriate secondary data about the case study urban area.</p>
1.7 Urbanisation	Identify and suggest reasons for rapid urban growth	<p>Define the key word ‘urbanisation’ and add to key word glossary (see: <a href="http://www.s-cool.co.uk/gcse/geography/settlements/revise-it/urbanisation">www.s-cool.co.uk/gcse/geography/settlements/revise-it/urbanisation</a>). Learners describe graphs to show urbanisation in selected countries – describe MEDCs and LEDCs trends and explain the differences between the rates of growth in each. Learners are provided with a map (or plot cities onto a map using an atlas) to locate the top ten cities in the world today. Define ‘millionaire city’, describe ‘distribution’ and how the distribution has changed over time (compare with previous map). <b>(I)</b></p> <p>Whole class discussion – reasons for urbanisation in MEDCs and LEDCs – learners take notes and use to introduce rural to urban migration.</p> <p>Recap internal migration and rural to urban migration and check understanding of key words. Introduce case study rural area – learner produces sketch map and describes location. Provide statistics about population change and migration – learners draw graphs and describe. <b>(I)</b></p> <p>Learners complete a mystery to understand why a migrant has left their home in a rural area and moved to a city – use this as part of the case study for this section by naming areas and making information place-specific. Learners solve the mystery and explain the push and pull factors involved. Classify into physical, economic and social factors and write up as a table. Learners can consolidate by writing short diary entries for the migrants explaining their reasons for leaving.</p> <p>Provide photographs or video clips to reinforce. <b>(I)</b></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
	Describe the impacts of urban growth on both rural and urban areas, along with possible solutions to reduce the negative impacts	<p>The following links will be useful here:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/urbanisation_ledcs_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/urban_environments/urbanisation_ledcs_rev1.shtml</a>  <a href="http://www.geography.learnontheinternet.co.uk/topics/urbanprobsledcs.html#rio">www.geography.learnontheinternet.co.uk/topics/urbanprobsledcs.html#rio</a></p>
1.7 Case study	Know a case study of a rapidly growing urban area in a developing country and migration to it	<p>Learners should know a case study of a rapidly growing urban area in a developing country (LEDC) and migration to it. This should have been covered in the previous section by adopting a case study approach to delivering the content of 1.7. Checklist:</p> <ul style="list-style-type: none"> <li>• locate rural area and urban area</li> <li>• discuss reasons for migration (push and pull)</li> <li>• impact of migration on the rural and urban area</li> <li>• urban problems (people and environment focus)</li> <li>• squatter settlements</li> <li>• solutions in urban and rural area</li> </ul> <p>Suggested example: a rapidly growing urban area in a developing country.</p> <p><b>Dhaka, Bangladesh</b>  <a href="http://www.theguardian.com/cities/2014/aug/19/an-urbanists-guide-to-dhaka-an-unplanned-urban-sprawl">www.theguardian.com/cities/2014/aug/19/an-urbanists-guide-to-dhaka-an-unplanned-urban-sprawl</a>  <a href="http://www.theguardian.com/cities/2015/dec/01/dhaka-city-climate-refugees-reality">www.theguardian.com/cities/2015/dec/01/dhaka-city-climate-refugees-reality</a>  <a href="http://www.gsdmagazine.org/climate-changes-drives-rural-urban-migration-to-dhakas-slums/">www.gsdmagazine.org/climate-changes-drives-rural-urban-migration-to-dhakas-slums/</a>  <a href="http://www.nytimes.com/2016/09/23/t-magazine/travel/dhaka-bangladesh-traffic.html?mcubz=3&amp;mcubz=3">www.nytimes.com/2016/09/23/t-magazine/travel/dhaka-bangladesh-traffic.html?mcubz=3&amp;mcubz=3</a>  <a href="http://www.wsup.com/programme/where-we-work/bangladesh/">www.wsup.com/programme/where-we-work/bangladesh/</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
<b>Past and specimen papers</b>		
Past/specimen papers and mark schemes are available to download at <a href="http://www.cambridgeinternational.org/support">www.cambridgeinternational.org/support</a> (F)		

### 3. Earthquakes and volcanoes

Syllabus ref.	Learning objectives	Suggested teaching activities
2.1 Earthquakes and volcanoes	Describe the main types and features of volcanoes and earthquakes	<p>Learners define word 'volcano' (see: <a href="http://www.s-cool.co.uk/gcse/geography/tectonics/revise-it/volcanoes">www.s-cool.co.uk/gcse/geography/tectonics/revise-it/volcanoes</a>). Describe the difference between 'active', 'dormant' and 'extinct' volcanoes – research examples of each using the internet. <b>(I)</b></p> <p>Learners define 'composite volcano' and add to key word glossary. Learners work in small groups to reproduce a fully annotated diagram of a composite volcano – they are shown a diagram to work from for a short period of time and then work as a team to draw the diagram from memory with as much information as they can remember.</p> <p>Follow up by asking learners to annotate a diagram of a composite volcano and write a description of the key features. Learners describe features of a composite volcano from a photograph – produce a sketch and label.</p> <p><b>Extension activity:</b> Learners construct a model of a composite volcano. <b>(I)</b></p> <p>Introduce the key word 'shield volcano' and add to key word glossary. Provide a photograph of a shield volcano – learners produce a labelled sketch and describe how the shield volcano is different from the composite volcano. Explain the key reasons for this. Learners can research examples of shield and composite volcanoes and their locations. <b>(I)</b></p> <p>Introduce the term 'earthquake' and add to key word glossary (see: <a href="http://www.s-cool.co.uk/gcse/geography/tectonics/revise-it/earthquakes">www.s-cool.co.uk/gcse/geography/tectonics/revise-it/earthquakes</a>). Learners produce a simple diagram with labels to show the key features – 'focus' and 'epicentre'. Define 'intensity' and other appropriate key words. Update glossary with new key words. <b>(I)</b></p> <p>Provide a copy of the Richter scale and an earthquake trace from a seismograph – learners work in pairs to place cards describing earthquake events at appropriate points on the earthquake trace according to the Richter scale – learners explain and justify their decisions.</p> <p>Learners independently research the Mercalli Scale and describe the difference between the two scales. Learners can independently research examples of earthquakes at different intensities and their location.</p> <p>Further information on natural hazards can be found here: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/natural_hazards/">www.bbc.co.uk/schools/gcsebitesize/geography/natural_hazards/</a></p> <p>Further information on volcanoes and earthquakes can be found at the following links: <a href="http://www.revisionworld.com/gcse-revision/geography/tectonic-activity/earthquakes">www.revisionworld.com/gcse-revision/geography/tectonic-activity/earthquakes</a> <a href="http://www.revisionworld.com/gcse-revision/geography/tectonic-activity/volcanoes">www.revisionworld.com/gcse-revision/geography/tectonic-activity/volcanoes</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
	<p>Describe and explain the distribution of earthquakes and volcanoes.</p>	<p>Provide learners with a map of volcanoes and earthquakes – they can mark some of the volcanoes and earthquakes that they have previously researched onto the map using an atlas. <b>(I)</b></p> <p>Learners describe the distribution of volcanoes and earthquake zones – what do they notice about the distribution of the two? Learners can use atlases to provide appropriate place references. <b>(I)</b></p> <p>Introduce a structure of the earth diagram – learners label each layer <b>(I)</b> and complete a card sorting activity to match names to descriptions of each layer.</p> <p>Explain the two types of crust, the differences between them and how the crust is broken into plates. Introduce a map of plate boundaries. Define ‘tectonic activity’, ‘plate’ and ‘plate boundary’ and add to key word glossary. Learners label the map to show the names of plates and add arrows to show the direction of movement. <b>(I)</b></p> <p>Discuss rate of movement and how plates move – link to convection currents. Ask learners to discuss and note down what they notice about the plate boundaries and volcano and earthquake zones. Can they suggest any reasons for their observations?</p> <p>Learners identify examples of places where plates are moving together, moving apart and moving side to side. Record in a table. Build on this information to introduce different types of plate boundaries – constructive/divergent, destructive/convergent and conservative plate boundaries. Show animations for each type of plate boundary – learners annotate a diagram of each and write an explanation of what happens at each type of boundary. <b>(I)</b></p> <p>The following links will be useful here:  Tectonic plates: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/natural_hazards/tectonic_plates_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/natural_hazards/tectonic_plates_rev1.shtml</a> and <a href="http://www.s-cool.co.uk/gcse/geography/tectonics/revise-it/tectonic-plates">www.s-cool.co.uk/gcse/geography/tectonics/revise-it/tectonic-plates</a></p> <p>Animated guide to volcanoes: <a href="http://news.bbc.co.uk/1/hi/sci/tech/7533964.stm">http://news.bbc.co.uk/1/hi/sci/tech/7533964.stm</a></p> <p>Earthquakes: <a href="http://www.revisionworld.com/gcse-revision/geography/tectonic-activity/earthquakes">www.revisionworld.com/gcse-revision/geography/tectonic-activity/earthquakes</a></p> <p>Natural hazards: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/video/natural_hazards/">www.bbc.co.uk/schools/gcsebitesize/geography/video/natural_hazards/</a></p> <p>Observation animations of processes that occur along plate boundaries:  <a href="http://www.classzone.com/books/earth_science/terc/content/visualizations/es0804/es0804page01.cfm?chapter_no=visualization">www.classzone.com/books/earth_science/terc/content/visualizations/es0804/es0804page01.cfm?chapter_no=visualization</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
	Describe the causes of earthquakes and volcanic eruptions and their effects on people and the environment	Recap learning from previous section – causes of earthquakes and volcanoes at the different types of plate boundary – learners show as a table to consolidate. Introduce volcanoes at hot spots and give a couple of examples. <b>(I)</b> Provide photographs of volcanic eruptions and show some video clips or newspaper articles as stimulus material (not case study) – learners work in groups to discuss and mind map the general effects that volcanic eruptions can have on people and the environment. Repeat the activity for earthquakes. Learners then work to classify the different effects – short and long term – and explain the difference between the two. This will be consolidated in more detail through the case study later.
	Demonstrate an understanding that volcanoes present hazards and offer opportunities for people	Effects has been covered in the previous section but can be recapped by a ‘Give me five’ activity (plenary activity where learners ask for five things about a topic, for example, ‘give me five short term effects of a volcanic eruption on people or five long term effects of a volcanic eruption on the environment.’ Learners can draw round their hand and record their ideas on the fingers on their hand. <b>(I)</b>  Develop this further by using information from the previous activity to decide the type of volcanic hazard involved – for example, was it as a result of ash, lava, lahars, volcanic bombs, pyroclastic flows, etc. Learners record different volcanic hazards such as lava, ash, pyroclastic flows, mudflows, etc. and a description in a table to include the likely hazards of each for people. <b>(I)</b>  ‘Think, Pair, Share’ activity – learners have one minute to try to think of any benefits of volcanic activity and record on a mind map. Then they work with a partner and are provided with some facts cards as a stimulus to try to add some more ideas to their mind map in a different colour. Finally, share ideas – take feedback from the pairs and discuss. Confirm with a whole class discussion using photographs to illustrate the benefits of volcanic activity in different parts of the world – learners add further detail to their mind maps in a different colour to record ideas and examples. <b>(I)</b>  <b>Extension activity:</b> Explain the benefits of living in volcanic regions. Try to encourage learners to develop their answers and include examples to support their ideas. <b>(I)</b>
	Explain what can be done to reduce the impacts of earthquakes and volcanoes	Volcanoes – learners can act as volcano detectives. Provide information (facts/photos/clips) about a particular volcano (choose one that gave lots of warning signs) – learners have to identify the warning signs that the volcano displayed that it was going to erupt and put them in time order – can show as a story board.  Use this to introduce the value of prediction and how volcanoes can be predicted along with any equipment that is used – learners complete a card sorting matching activity – for example – magma moves up the volcano and can produce a magma bulge – measured by tiltmeters.

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Discuss the importance of evacuation and warning systems. Provide photographs and examples of measures taken to reduce the impact of volcanoes – learners record all ideas on a mind map. Can add further ideas and example from independent research. Learners explain why volcanic eruptions do not often cause a large number of deaths. <b>(I)</b></p> <p>Earthquakes – learners work in pairs to discuss what they would put in an earthquake survival pack – show an example if you have one or research examples from the internet.</p> <p>Learners explain why they have included each item.</p> <p>Learners devise a safety poster or leaflet giving and explaining advice to people about what they should do in the event of an earthquake – can discuss ideas as a whole class first or complete independent research. The class can practise an earthquake drill if this is not a usual routine for your learners. Show photographs of examples of how buildings and structures have been adapted in different parts of the world to withstand earthquakes – learners write up ideas as a short report for a geographical journal – can include labelled sketches and photographs to illustrate.<b>(I)</b></p> <p>Learners draw scatter graphs to show examples of earthquakes at different intensities in different parts of the world and number of deaths. Discuss what the graphs show. Use this as a stimulus to discuss why there may be more deaths from natural hazards in LEDC and discuss the reasons why – learners write up their ideas. Include volcanic eruptions at this point too. Discuss how confidence in prediction and safety measures mean that people continue to live in hazard zones, and other reasons for this (link to volcanic benefits).</p> <p><b>Extension activity:</b> Why do many people live in earthquake zones? And what opportunities are offered by volcanic regions? <b>(I)</b></p> <p>The following links will be useful for this section:</p> <p>Managing tectonic hazards:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/natural_hazards/managing_hazards_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/natural_hazards/managing_hazards_rev1.shtml</a></p> <p>New Zealand earthquake: in pictures – Telegraph: <a href="http://handygeography.wordpress.com/tag/earthquake/">http://handygeography.wordpress.com/tag/earthquake/</a></p>
2.1 Case study	Know a case study of an earthquake and a volcano	<p>Learners should know a case study of:</p> <ul style="list-style-type: none"> <li>• a volcano</li> <li>• an earthquake.</li> </ul>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>For each case study, learners produce a newspaper article to include:</p> <ul style="list-style-type: none"> <li>• a map to show location of the event and description</li> <li>• a fact file – key facts about the event or volcano (e.g. type) – provide place-specific detail</li> <li>• a plate boundary map – ensure plates are identified and named</li> <li>• a plate boundary diagram and explanation</li> <li>• a write-up of the effects on people (short and long term)</li> <li>• a write-up of the effects on the environment (short and long term)</li> <li>• any benefits or opportunities (volcano case study)</li> <li>• the immediate response to the event – include relief from other countries</li> <li>• longer term responses to the event including measures taken to reduce the risk in the future.</li> </ul> <p>Whilst there is no cut-off date for natural disaster case studies, it is helpful to use recent examples where possible.</p> <p>Suggested examples: a case study of a volcanic eruption.</p> <p><b>Chances Peak, Montserrat (1995-1997);</b>  <a href="http://www.juicygeography.co.uk/montserrat.htm">www.juicygeography.co.uk/montserrat.htm</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/natural_hazards/volcanoes_rev6.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/natural_hazards/volcanoes_rev6.shtml</a>  <a href="http://www.bgs.ac.uk/discoveringGeology/hazards/volcanoes/montserrat/home.html">www.bgs.ac.uk/discoveringGeology/hazards/volcanoes/montserrat/home.html</a>  <a href="http://www.mvo.ms/">www.mvo.ms/</a>  <a href="http://www.bbc.co.uk/news/world-latin-america-33865822">www.bbc.co.uk/news/world-latin-america-33865822</a>  <a href="http://www.theguardian.com/world/2016/jan/28/montserrat-volcano-british-territory-geothermal-energy-tourism-sand-mining">www.theguardian.com/world/2016/jan/28/montserrat-volcano-british-territory-geothermal-energy-tourism-sand-mining</a></p> <p><b>Eyjafjallajökull, Iceland (2010);</b>  <a href="http://www.bgs.ac.uk/research/volcanoes/icelandic_ash.html">www.bgs.ac.uk/research/volcanoes/icelandic_ash.html</a>  <a href="http://news.bbc.co.uk/1/hi/world/europe/8634944.stm">http://news.bbc.co.uk/1/hi/world/europe/8634944.stm</a>  <a href="http://www.telegraph.co.uk/finance/newsbysector/transport/8531152/How-the-2010-ash-cloud-caused-chaos-facts-and-figures.html">www.telegraph.co.uk/finance/newsbysector/transport/8531152/How-the-2010-ash-cloud-caused-chaos-facts-and-figures.html</a></p> <p>Suggested examples: a case study of an earthquake.</p> <p><b>Haiti (2010);</b>  <a href="http://www.bbc.co.uk/bitesize/ks3/geography/physical_processes/plate_tectonics/revision/7/">www.bbc.co.uk/bitesize/ks3/geography/physical_processes/plate_tectonics/revision/7/</a>  <a href="http://www.theguardian.com/world/2010/jan/14/haiti-earthquake-survivors">www.theguardian.com/world/2010/jan/14/haiti-earthquake-survivors</a>  <a href="http://www.redcross.org.uk/What-we-do/Emergency-response/Recovering-from-disasters/Haiti-earthquake-2010">www.redcross.org.uk/What-we-do/Emergency-response/Recovering-from-disasters/Haiti-earthquake-2010</a>  <a href="http://news.bbc.co.uk/1/hi/8455629.stm">http://news.bbc.co.uk/1/hi/8455629.stm</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p><b>Nepal (2015);</b>  <a href="http://geography.org.uk/resources/earthquake-and-tsunami-resources/nepal-earthquake-2015/">http://geography.org.uk/resources/earthquake-and-tsunami-resources/nepal-earthquake-2015/</a>  <a href="http://www.bbc.co.uk/news/world-asia-32479909">www.bbc.co.uk/news/world-asia-32479909</a>  <a href="http://www.telegraph.co.uk/news/worldnews/asia/nepal/11563906/Nepal-earthquake-as-it-happened-April-25.html">www.telegraph.co.uk/news/worldnews/asia/nepal/11563906/Nepal-earthquake-as-it-happened-April-25.html</a>  <a href="https://story.maps.arcgis.com/apps/MapSeries/index.html?appid=34934c03445649cd9fcb422a2a7279c7">https://story.maps.arcgis.com/apps/MapSeries/index.html?appid=34934c03445649cd9fcb422a2a7279c7</a>  <a href="https://story.maps.arcgis.com/apps/StorytellingSwipe/index.html?appid=97ab135daee04ee7bac9dac34f65277f">https://story.maps.arcgis.com/apps/StorytellingSwipe/index.html?appid=97ab135daee04ee7bac9dac34f65277f</a>            General ideas for delivery of case study content are outlined previously in the document.</p>
<p><b>Past and specimen papers</b></p>		
<p>Past/specimen papers and mark schemes are available to download at <a href="http://www.cambridgeinternational.org/support">www.cambridgeinternational.org/support</a> (F)</p>		

## 4. Rivers and coasts

Syllabus ref.	Learning objectives	Suggested teaching activities
2.2 Rivers	Explain the main hydrological characteristics and processes which operate within rivers and drainage basins	<p>Learners draw a pie chart to show the sources of water on earth to introduce the hydrological cycle. What do they notice about fresh water? (Link to 3.6.) Provide learners with a diagram on the global hydrological system and discuss. <b>(I)</b></p> <p>Focus on the drainage basin part of this diagram and introduce the concept of ‘a system’ (see: <a href="http://www.bbc.co.uk/scotland/education/int/geog/rivers/drainage/index.shtml">www.bbc.co.uk/scotland/education/int/geog/rivers/drainage/index.shtml</a>). Could exemplify with reference to a simple and familiar system like the human body. Learners define key words ‘input’, ‘output’, ‘store’ and ‘transfer’, and add to key word glossary. <b>(I)</b></p> <p>Learners label a diagram to show the drainage basins system with key characteristics and inputs, stores, transfers and outputs. Colour code the labels to show which are ‘inputs’, ‘flows’, ‘stores’ and ‘outputs’. <b>(I)</b></p> <p>Complete card sorting activity to define each one.</p> <p>Whole class discussion on the factors affecting processes within a drainage basin – can be revisited when discussing the causes of flooding later – learners record factors and description in a table. Learners can use drainage basin diagram to show information in a new format – produce a systems diagram for a drainage basin. <b>(I)</b></p> <p>Illustrate key features of the drainage basin such as watershed, confluence and tributary with photographs and locate examples on a map using grid references. Learners also sketch and label drainage basin features from a photograph. Update key word glossary with new terms.</p> <p>Opportunity for skills activity: describing the relief and drainage of an area. <b>(I)</b> This could also incorporate how height is shown on a map.</p> <p>Learners label diagram to show the long profile of a river and label each section. The following links provide information on rivers:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/background_rivers_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/background_rivers_rev1.shtml</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_profiles_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_profiles_rev1.shtml</a>  <a href="http://www.geography.learnontheinternet.co.uk/topics/river.html">www.geography.learnontheinternet.co.uk/topics/river.html</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_profiles_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_profiles_video.shtml</a></p> <p>Define ‘source’ and ‘mouth’ and add to key word glossary. Provide a diagram of the Bradshaw model – learners work in pairs to describe the main changes that occur with distance downstream – width, depth, and speed of flow/velocity, etc. (see: <a href="http://www.geography-fieldwork.org/riverfieldwork/downstream_changes/stage1.htm">www.geography-fieldwork.org/riverfieldwork/downstream_changes/stage1.htm</a>).</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Explanations for these changes will be studied as part of the next section. Begin to annotate the long profile diagram to show characteristics of each stage. <b>(I)</b></p> <p style="text-align: center;"><b>Map work opportunity:</b> looking at stream patterns, drainage density and gradients or sizes of streams.</p> <p>This link provides ideas for the whole unit: <a href="http://www.sln.org.uk/geography/rivers_and_coasts.htm">www.sln.org.uk/geography/rivers_and_coasts.htm</a></p>
	<p>Demonstrate an understanding of the work of a river in eroding, transporting and depositing</p>	<p>Introduce the key words ‘erosion’, ‘transport’ and ‘deposition’ and add to key word glossary. Learners can illustrate these by drawing a simple cartoon to show the processes in a familiar context. <b>(I)</b></p> <p>Learners complete card sorting activity to define the four processes of erosion – ‘corrosion’, ‘corrasion’, ‘hydraulic action’ and ‘attrition’.</p> <p>Discuss the difference between ‘vertical’ and ‘lateral erosion’ and define key words.</p> <p>Draw and fully annotate a diagram to show the four types of transportation and the link to the size of the material – ‘traction’, ‘saltation’, ‘suspension’ and ‘solution’. <b>(I)</b> Define ‘load’ and show photographs to show how the size and shape of load will change downstream – learners describe changes and work in pairs to suggest reasons for this.</p> <p>In pairs, discuss why and under what conditions a river might deposit material and note down ideas – discuss and confirm in whole class discussion. Learners annotate previous long profile diagram to show where erosion, transport and deposition take place in a river. <b>(I)</b></p> <p>Revisit Bradshaw model diagram and whole class discussion as to why width, depth and speed change with distance downstream – learners answer questions to explain the changes. <b>(I)</b></p> <p>Learners could also be provided with data to show changes downstream – draw graphs, river and valley cross sections, describe and explain changes, produce scatter graphs to show the relationship between data sets – write up as a mini investigation. Alternatively, this information could be collected through fieldwork – see note below.</p> <p>Use the following links: <a href="http://www.geography.learnontheinternet.co.uk/topics/river.html">www.geography.learnontheinternet.co.uk/topics/river.html</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_processes_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_processes_rev1.shtml</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_processes_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_processes_video.shtml</a></p> <p style="text-align: center;"><b>Fieldwork opportunity:</b> investigating changes in a river downstream to include measurements of channel width, depth, velocity, size and shape of bed load.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
	<p>Describe and explain the formation of the landforms associated with these processes</p>	<p>Recap long profile diagram and the three stages of a river. Learners analyse photographs to show the shape of the river valley in cross section at each of these stages – annotate to show main characteristics or produce appropriately labelled sketches. <b>(I)</b></p> <p>Learners identify and describe river valleys from a map extract using key terminology as suggested in the syllabus. <b>(I)</b></p> <p>Provide learners with diagrams to show the formation of a river valley – they work in pairs to sequence the diagrams and then match explanations to each diagram to explain the formation of a river valley. Learners repeat these activities to describe the features of and explain the formation of a waterfall.</p> <p>Learners independently research the formation of potholes, write up and feedback to the whole class. <b>(I)</b></p> <p><b>Fieldwork opportunity:</b> measuring valley profiles with varying distance downstream.</p> <p><b>Map work opportunity:</b> identifying and describing valleys on a map extract.</p> <p>Provide some data to show the varying depths across a meander. Learners draw a cross section. Label key characteristics – fastest flow, outside, erosion, river cliff, inside, slow flow, river beach, shallow, etc. In pairs, discuss the reasons for the variation in river depth across a meander. Learners draw fully annotated sketches to show a river cliff and a river beach – describe and explain their formation.</p> <p>Learners produce a presentation to describe and explain the formation of an oxbow lake, delta, levees and flood plain – for each there should be a fully labelled photograph, named example, annotated diagrams and an explanation of how the feature is formed. <b>(I)</b></p> <p>All diagrams should be well annotated and appropriate reference made to examples (not case studies) for river landforms.</p> <p><b>Map work opportunity:</b> identifying and locating features on a map extract(s). Learners could also measure river gradients at different stages. Learners describe the form of a river at different stages and how it changes with distance downstream. <b>(I)</b></p> <p><b>Fieldwork opportunity:</b> measuring a cross section through a meander, field sketches and photographs of river features.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>The following links will be useful here:  Rivers: <a href="http://www.geography.learnontheinternet.co.uk/topics/river.html">www.geography.learnontheinternet.co.uk/topics/river.html</a></p> <p>River landforms: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_landforms_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_landforms_rev1.shtml</a></p> <p>River landforms (video): <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_landforms_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_landforms_video.shtml</a></p> <p>Rivers and water: <a href="http://www.bbc.co.uk/education/topics/zncqxn">www.bbc.co.uk/education/topics/zncqxn</a></p>
	<p>Demonstrate an understanding that rivers present hazards and offer opportunities for people</p>	<p>Learners define 'flood' and add to key word glossary. Learners draw a flood hydrograph, add labels, define key words and answer questions to interpret what it shows. <b>(I)</b></p> <p>Link back to previous work – contrasting drainage basins – discuss the characteristics of a drainage basin that is more likely to flood – show contrasts between the two as a table. Learners plot and describe a flood hydrograph (see: <a href="http://www.bbc.co.uk/scotland/education/int/geog/rivers/hydrographs/">www.bbc.co.uk/scotland/education/int/geog/rivers/hydrographs/</a>) for a river that has flooded – use this to introduce causes. <b>(I)</b></p> <p>Learners mind map the causes of flooding and show as a mind map – colour code into physical and human factors.</p> <p>Choose two physical and two human factors and explain how they cause flooding in more detail – focus on development of ideas. Whole class discussion of the causes of flooding and river erosion. <b>(I)</b> (See river flooding and management: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_flooding_management_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_flooding_management_rev1.shtml</a>).</p> <p>Show photographs of the effects of various river floods – discuss in pairs the hazards that this presents for people.</p> <p><b>Extension activity:</b> Learners write headlines and short newspaper articles to show the range of effects. Repeat for river erosion. <b>(I)</b></p> <p>Provide cards showing the advantages offered by a river, delta and floodplain – learners sort them into categories – some may go into more than one category. Reinforce with photographs. Write up as a short report – advantages of each ensuring that ideas are fully developed. <b>(I)</b></p>
	<p>Explain what can be done to manage the impacts of river flooding</p>	<p>Select a type of river management and show a photograph – learners ask questions that they want to be answered – what, where, when, why, who is affected, etc. Whole class discussion (see: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_flooding_management_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_flooding_management_rev1.shtml</a>).</p> <p>Introduce ways in which rivers can be managed – could be a card sorting activity – categorise into soft and hard engineering. For each, learners write a short description of how each reduces the flooding hazard with possible advantages and disadvantages. Learners could be provided with a scenario – a river that has flooded and a budget -</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>they have to decide how the river hazard is going to be managed.</p> <p>Decision-making activity in groups followed up by a justification of their choice of scheme. This could also be followed up by a role-play – different viewpoints on the chosen scheme.</p> <p><b>Extension activity:</b> Should rivers be allowed to flood? Learners present and explain their ideas. <b>(I)</b></p>
2.2 Case study	Know a case study of the opportunities presented by a river, the hazards associated with it and their management	<p>Learners should know a case study of the opportunities presented by a river, the hazards associated with it and their management. (Named river – can be LEDCs or MEDCs context).</p> <p>Name and locate river – learners draw labelled sketch map with appropriate named places.</p> <p>Provide stimulus information about the benefits provided by the river (and floodplain/delta if appropriate) – learners write up as an advertisement – reasons to live in this location.</p> <p>Photos and video clips of flood events and erosion – learners write up as newspaper article with appropriate development of ideas and place-specific information. Can use more than one case to illustrate hazards.</p> <p>Named examples of how the flood is managed (short term aid and longer term responses) with a description of the scheme and an explanation of how it has managed the hazard – short presentation to the class.</p> <p>The following links will be useful here:  Rivers: <a href="http://www.geography.learnontheinternet.co.uk/topics/river.html">www.geography.learnontheinternet.co.uk/topics/river.html</a>  River flooding and management issues:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_flooding_management_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_flooding_management_rev1.shtml</a></p> <p>Suggested examples: the opportunities presented by a river, the hazards associated with it and their management.</p> <p><b>Yangtze River</b>  <a href="http://wwf.panda.org/about_our_earth/about_freshwater/rivers/irbm/cases/yangtze_river_case_study_cfm/">http://wwf.panda.org/about_our_earth/about_freshwater/rivers/irbm/cases/yangtze_river_case_study_cfm/</a>  <a href="http://www.scmp.com/infographics/article/1992128/chinas-struggle-yangtze-river-flooding">www.scmp.com/infographics/article/1992128/chinas-struggle-yangtze-river-flooding</a>  <a href="http://www.scmp.com/news/china/policies-politics/article/1932867/chinas-yangtze-river-face-massive-flooding-water-levels">www.scmp.com/news/china/policies-politics/article/1932867/chinas-yangtze-river-face-massive-flooding-water-levels</a></p> <p><b>Ganges River</b>  <a href="http://wwf.panda.org/about_our_earth/about_freshwater/rivers/irbm/cases/ganges_river_case_study/">wwf.panda.org/about_our_earth/about_freshwater/rivers/irbm/cases/ganges_river_case_study/</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_flooding_management_rev6.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/river_flooding_management_rev6.shtml</a>  <a href="http://www.sln.org.uk/geography/schools/blythebridge/GCSEBangladesh.htm">www.sln.org.uk/geography/schools/blythebridge/GCSEBangladesh.htm</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
2.3 Coasts	Demonstrate an understanding of the work of the sea and wind in eroding, transporting and depositing	<p>Show learners photographs of different coastlines to set the scene – define the term ‘coast’ and add to key word glossary. Introduce the concept of ‘waves’ – explain how waves are formed and the factors that affect the strength of a wave – learners note take from whole class presentation. <b>(I)</b></p> <p>Learners work in pairs to complete a card sorting activity to understand the difference between constructive and destructive waves and use this information to complete annotated diagrams of each. They should link these to beach profiles and answer questions to explain the impact of the type of wave on the profile of the beach – describe and explain.</p> <p>Recap erosion and the four types of wave erosion – link back to work from rivers and place in the context of the coast.</p> <p>Introduce transport and define the term ‘longshore drift’ – learners sequence diagrams to show how the process operates. Add descriptions to each stage and write their own short explanation of the process. <b>(I)</b></p> <p>Discuss deposition on the coast. Introduce the role of wind erosion on the coast, transport and deposition and link to the formation of sand dunes.</p> <p style="text-align: center;"><b>Fieldwork opportunity:</b> measuring beach profiles, measuring the size and shape of pebbles and tracking movement of pebbles along a coastline (longshore drift investigation).</p> <p>The following links will be useful here:            Coastal processes: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/coasts/coastal_processes_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/coasts/coastal_processes_rev1.shtml</a></p> <p>Coastal processes (video): <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/coasts/coastal_processes_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/coasts/coastal_processes_video.shtml</a></p> <p>Coasts: <a href="http://www.s-cool.co.uk/gcse/geography/coasts">www.s-cool.co.uk/gcse/geography/coasts</a></p> <p>Coastal landscapes: <a href="http://www.revisionworld.com/gcse-revision/geography/coastal-landscapes">www.revisionworld.com/gcse-revision/geography/coastal-landscapes</a></p>
	Describe and explain the formation of the landforms identified with these processes	<p>Shows photographs of examples of features of erosion – cliffs, wave-cut platforms, caves, arches, stacks, bay and headland coastline. For each, share appropriate named examples. Learners should complete fully annotated diagrams and explanations to show the formation of each type of landform. <b>(I)</b></p> <p>Introduce the features of deposition (beaches, spits and sand dunes) again using photographs and named examples – learners produce fully annotated diagrams and explanations to show the formation of each type of landform. Link beach profiles to earlier work on types of waves. <b>(I)</b> Learners can also use sequence diagrams to show formation – include a transect through a sand dune system.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p><b>Map work opportunity:</b> identifying coastal features from a map. Learners describe a stretch of coastline from a map. Could make a link to later unit on tourism – the human and physical attractions of a stretch of coastline and tourist facilities.</p> <p>The following links will be useful here:  Erosional landforms: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/coasts/erosional_landforms_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/coasts/erosional_landforms_rev1.shtml</a></p> <p>Erosional landforms (video): <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/coasts/erosional_landforms_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/coasts/erosional_landforms_video.shtml</a></p> <p>Depositional landforms (video):  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/coasts/depositional_landforms_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/coasts/depositional_landforms_video.shtml</a></p> <p>Coasts: <a href="http://www.s-cool.co.uk/gcse/geography/coasts">www.s-cool.co.uk/gcse/geography/coasts</a></p> <p>Coastal landscapes: <a href="http://www.revisionworld.com/gcse-revision/geography/coastal-landscapes">www.revisionworld.com/gcse-revision/geography/coastal-landscapes</a></p>
	Describe coral reefs and mangrove swamps and the conditions required for their development	<p>Learners analyse maps to describe the distribution of coral reefs and mangrove swamps. <b>(I)</b></p> <p>Use this to introduce the conditions needed for each through whole class presentation or provide data tables and statistics for learners to analyse and draw conclusions from. Learners annotate a photograph of each to describe a coral reef and mangrove swamp and also the conditions that are required for their development. For coral reefs, learners should sketch the different types of reef and describe – atoll, fringing and barrier. Make use of appropriate examples throughout. <b>(I)</b></p> <p>Illustrate with reference to a named example for each.</p>
	Demonstrate an understanding that coasts present hazards and offer opportunities	<p>Revisit the photographs that were shown to learners at the start of the unit and also the map extract. Learners work in groups to list all of the different opportunities that the coast might offer and then develop these to explain the benefits of each – for example, sandy beaches encourage tourism such as water sports, sunbathing and this encourages tourism which provides jobs, income, etc.</p> <p><b>Extension activity:</b> Explain what opportunities are offered by the coast. Develop each idea and use evidence from photographs and maps. <b>(I)</b></p> <p>Using photographs or visual clips or headlines from newspaper articles, learners work in small groups again to identify the hazards found on the coast. Present as a mind map. Focus on coastal erosion and tropical storms but discussion may also generate other valid ideas. Extend each branch of the mind map with suggested impacts of each. <b>(I)</b></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
	<p>Explain what can be done to manage the impacts of coastal erosion</p>	<p>Provide learners with information about different types of coastal protection (including photographs or diagrams). Learners discuss the information in pairs and complete a table to show how each works and the advantages and disadvantages of each.</p> <p>Provide a scenario about a stretch of coastline and a budget to work with and learners work in small groups to complete a decision-making activity – which stretch of coastline should be protected and why? How shall we protect that stretch of coastline and why? Present their ideas to the class – other learners take notes of ideas about different schemes and peer-assess the presentations. Follow up with role-play – overall class vote for a scheme and then how different groups of people would feel about this scheme and why.</p> <p>Set up a whole class debate – should we protect the coastline? Write up as an extended piece of writing presenting both viewpoints. <b>(I)</b></p> <p>The following links will be useful here:            Coastal management: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/coasts/coastal_management_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/coasts/coastal_management_rev1.shtml</a>            Coasts: <a href="http://www.s-cool.co.uk/gcse/geography/coasts">www.s-cool.co.uk/gcse/geography/coasts</a>            Coastal landscapes: <a href="http://www.revisionworld.com/gcse-revision/geography/coastal-landscapes">www.revisionworld.com/gcse-revision/geography/coastal-landscapes</a></p>
2.3 Case study	<p>Know a case study of the opportunities presented by an area of coastline, the hazards associated with it and their management</p>	<p>Learners should know a case study of the opportunities presented by an area of coastline, the hazards associated with it and their management</p> <p>Name and locate a stretch of coastline – identify on a map extract and use satellite images/Google earth too. Learners produce an annotated sketch map to name places and identify key features – place-specific reference.</p> <p>Provide background information about the coastline – for example on geology – learners complete a fact file. Analyse information to show how the coastline is used – show as a mind map with photographs, sketches, examples and annotation. Discuss the opportunities created by each.</p> <p>Learners research hazards along the coast – write up as TV broadcasts or newspaper reports (causes and effects). Need to include erosion and tropical storms. More than case study can be used to illustrate hazards.</p> <p>Learners produce a presentation about how this stretch of coastline is managed – to include named examples of coastal management schemes. The scale of case study is important. The area needs to be of a sufficient size to demonstrate an awareness of opportunities, hazards and management. It should be less than the size of a country unless it is a very small country or the whole country is affected by one of the hazards.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Suggested examples: a case study of the opportunities presented by an area of coastline, the hazards associated with it and their management.</p> <p><b>Dubai, United Arab Emirates</b>  <a href="http://www.telegraph.co.uk/news/worldnews/middleeast/dubai/8271643/The-World-is-sinking-Dubai-islands-falling-into-the-sea.html">www.telegraph.co.uk/news/worldnews/middleeast/dubai/8271643/The-World-is-sinking-Dubai-islands-falling-into-the-sea.html</a>  <a href="http://www.thenational.ae/uae/developments-like-jumeirah-are-speeding-up-erosion-1.520188">www.thenational.ae/uae/developments-like-jumeirah-are-speeding-up-erosion-1.520188</a>  <a href="http://www.attraction-tickets-direct.co.uk/dubai/latest-news/dubais-coastline-eighth-wonder-world">www.attraction-tickets-direct.co.uk/dubai/latest-news/dubais-coastline-eighth-wonder-world</a>  <a href="http://www.rgs.org/NR/rdonlyres/E61E9FE3-DCD6-4702-8293-7E7DB7A26F70/0/KS3_coasts_LandreclamationinUAEresearchsheet4.pdf">www.rgs.org/NR/rdonlyres/E61E9FE3-DCD6-4702-8293-7E7DB7A26F70/0/KS3_coasts_LandreclamationinUAEresearchsheet4.pdf</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
<b>Past and specimen papers</b>		
Past/specimen papers and mark schemes are available to download at <a href="http://www.cambridgeinternational.org/support">www.cambridgeinternational.org/support</a> (F)		

## 5. Weather and climate

Syllabus ref.	Learning objectives	Suggested teaching activities
2.4 Weather	Describe how weather data is collected	<p>Learners define the term ‘weather’ and draw a mind map of weather elements from observation and using clips of weather forecasts or photographs (see: <a href="http://www.bbc.co.uk/weather/">www.bbc.co.uk/weather/</a>).</p> <p>Learners to understand how the weather is measured – draw a fully labelled diagram and description of the weather instruments shown in the syllabus and how they are used to measure each aspect of the weather. Include siting factors as appropriate and the optimum site for each instrument – learners should be able to explain the site for each instrument. Illustrate a method for identifying cloud types and the amount of cloud – use practical observation skills to practise the method and identify cloud type. Learners conduct independent research to draw sketches or print photographs of different cloud types and write a description for each one. Learners could also keep a daily record of cloud type and cover from observations. <b>(I)</b></p> <p>Show examples of instruments if available and provide opportunities for learners to record elements of the weather using them – for example, keeping a daily weather diary. <b>(I)</b></p> <div style="background-color: #f4a460; padding: 10px; margin: 10px 0;"> <p><b>Fieldwork opportunity:</b> observing the weather, using simple instruments to measure and record weather over a period of time.</p> </div> <p>Introduce the idea of a Stevenson Screen (<a href="http://en.wikipedia.org/wiki/Stevenson_screen">http://en.wikipedia.org/wiki/Stevenson_screen</a>) – show if you have one in school – or show photographs/sketches. Learners annotate a diagram to show a Stevenson Screen, its characteristics and their purpose and how it is used. Learners describe and explain the siting of a Stevenson Screen and how this helps to ensure accurate readings. <b>(I)</b></p> <p>Follow up with a decision-making exercise – provide a sketch map of various sites around school. Learners work in pairs to decide where to site the Stevenson Screen – mark location on the map and write up notes to explain their choice.</p> <p>Could be done as a practical activity with learners observing characteristics of each site in the field.</p> <p>Provide examples of simple digital instruments that can be also used to measure the weather – learners complete a card sorting activity to show the advantages and disadvantages of using digital instruments for weather observations. Record ideas in a table.</p> <p>The following links will be useful here:  Climate: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/weather_climate/climate_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/weather_climate/climate_rev1.shtml</a>  Weather and climate: <a href="http://www.geography.learnontheinternet.co.uk/topics/weather.html">www.geography.learnontheinternet.co.uk/topics/weather.html</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
	<p>Make calculations using information from weather instruments</p> <p>Use and interpret graphs and other diagrams showing weather and climate data</p>	<p>Learners either use data that they have collected themselves or secondary data provided by the teacher about elements of the weather. Work in pairs to analyse the data (describe trends) and make calculations such as annual total, daily total, mean, median, mode, range, maximum, minimum, etc.</p> <p>Learners use either their own data or secondary data to draw graphs and diagrams of weather data. Describe what each graph shows – looking for trends, giving evidence, identifying anomalies. Include graphs/diagrams such as bar graphs, line graphs, scattergraphs, wind rose, dispersion graph, isolines maps, radial graphs, etc. <b>(I)</b></p> <p>Scattergraphs can be used to show relationships between different types of weather – for example, precipitation and air pressure – learners describe the relationship.</p> <p>Introduce the term ‘climate’ and update key word glossary – ensure learners can state the difference between weather and climate. Introduce the skill of constructing a climate graph – learners produce an accurate climate graph using climate data for the place where they live. <b>(I)</b></p> <p>Follow up with questions to analyse – for example, minimum and maximum, annual total, range, annual distribution of rainfall and temperature, etc. <b>(I)</b> – this could be done as a true/false activity for assessment for learning. Living graph activity – learners place labels at points on the climate graph to test their understanding.</p>
2.5 Climate and natural vegetation	<p>Describe and explain the characteristics of two climates: equatorial and hot desert.</p> <p>Describe and explain the characteristics of tropical rainforest and hot desert ecosystems.</p>	<p>Learners name hot deserts on a map using an atlas. <b>(I)</b></p> <p>Describe the distribution of hot deserts from the map.</p> <p>Provide climate data – learners use this to draw and analyse a climate graph for a case study area of hot desert. <b>(I)</b></p> <p>Whole class presentation to explain the factors affecting the hot desert climate (i) in general (ii) highlight those specific to case study region – learners write up as a report with appropriate labelled diagrams.</p> <p>Introduce the term ‘ecosystem’ and associated key words (see: <a href="http://www.geography.learnontheinternet.co.uk/topics/ecosystem.html">www.geography.learnontheinternet.co.uk/topics/ecosystem.html</a> and <a href="http://www.s-cool.co.uk/gcse/geography/ecosystems">www.s-cool.co.uk/gcse/geography/ecosystems</a>). Learners label a food web for a hot desert – answer questions to explain the links between different parts of the food web. <b>(I)</b> Link to case study region.</p> <p>Provide a simple soil profile – learners explain the link between the soil type and the ecosystem. Learners work in pairs to analyse photographs to identify how vegetation and animals have adapted to the hot desert climate and produce annotated sketches to explain how the adaptation helps them to survive. Explain the limitations of desert soil for plant growth as part of this. Link to case study region.</p> <p><b>Extension activity:</b> learners design their own plant or animal and explain how it is adapted to desert conditions.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>The following links will be useful here:</p> <p>Ecosystems – the living world: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/ecosystems/">www.bbc.co.uk/schools/gcsebitesize/geography/ecosystems/</a></p> <p>Ecosystems – the living world (video): <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/video/ecosystems/">www.bbc.co.uk/schools/gcsebitesize/geography/video/ecosystems/</a></p>
2.5 Case study	Know a case study of an area of hot desert and a tropical rainforest	<p>Learners should know a case study of an area of hot desert. This can be covered through this section by naming and locating (sketch map) a specific area, ensuring that the climate data matches this area and that learners can identify the specific factors that have influenced the hot desert climate for their case study area. Food web – named species of plants and animals, soils and adaptations. Ensure place-specific reference.</p> <p>Learners mark areas of tropical rainforest onto a world map using an atlas and describe the distribution.</p> <p>Learners produce and analyse a climate graph and research the factors that have affected the climate. Show as a short presentation to their peers – include labelled diagrams to support. <b>(I)</b> Climate graph for named area to match case study.</p> <p>Learners match cards to layers of the rainforest to name each layer and describe – annotate a diagram to show the layers of the rainforest – name and describe each layer. Learners can include photographs to illustrate.</p> <p>Learners answer questions to explain the structure of the rainforest.</p> <p>Annotate a diagram in pairs to show nutrient cycling in the rainforest to explain the relationships between vegetation and the soil. Introduce a simple soil profile for learners to label and make the link to the ecosystem. Learners use photographs to identify how the vegetation has adapted to the climate. Link to case study region.</p> <p>Write up as a short report with labelled sketches as appropriate to describe and explain each adaptation. <b>(I)</b></p> <p>Learners independently find an example of a typical food chain or food web in the rainforest and answer questions to explain the links between each level. Introduce the concept of ‘biodiversity’ and update key word glossary. <b>(I)</b> Link to case study.</p> <p>Learners should know a case study of an area of tropical rainforest. Use the climate data appropriate to the area being studied for the case study. Locate case study area – sketch map and description. Food web example – named species of plants and animals, soils and adaptations. Ensure place-specific reference.</p> <p>For each case study: analysis of both climates to include: mean temperature of hottest month, mean temperature of coolest month, annual range and the amount and seasonal distribution of rainfall. Ensure the link is made between vegetation and the type of climate and soil in each ecosystem.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
2.5 Climate and natural vegetation	Describe the causes and effects of deforestation of the tropical rainforest.	<p>Learners analyse headlines and other resources such as photographs, statistics, clips and other sources to mind map the causes of rainforest destruction in case study area.</p> <p>Write a short newspaper report which includes maps, clearance rates, photographs and reasons for clearance in the case study area. Provide place-specific reference. Discuss the reasons why the deforestation continues. <b>(I)</b></p> <p>Whole class discussion on any other reasons for clearance not covered by the case study.</p> <p>Learners revisit the nutrient cycling diagram that they produced in the previous section and work in pairs to redraw the diagram after rainforest clearance. Learners work in small groups to analyse each other's diagrams and add details/ideas.</p> <p>Provide a card sorting activity on the effects of clearance which learners' first need to sort into local and global effects and then into those that affect people and those that affect the environment.</p> <p>Follow up: learners write a letter to explain why rainforest clearance should stop in their case study area. <b>(I)</b></p> <p>Rainforest role-play: viewpoints of how the clearance will affect different groups of people. Could also follow up with a whole class debate.</p> <p>Link to 3.7 – how deforestation causes soil erosion. Deforestation as a cause of enhanced global warming (see: <a href="http://kids.mongabay.com/lesson_plans/lisa_algee/deforestation.html">http://kids.mongabay.com/lesson_plans/lisa_algee/deforestation.html</a>).</p> <p>Link to 3.7 – solutions to enhance global warming – reducing deforestation and afforestation.</p> <p>It is helpful to select a case study that includes the full range of local and global effects as this section is predominantly taught through the case study. Please ensure stimulus material provides appropriate place-specific reference.</p> <p>Links to 3.7 – demonstrate the need for sustainable development and management. Learners' research and mind map ways to manage rainforests and write up as a report for a geographical journal. Include examples and photographs to illustrate.</p> <p>The following links will be useful here:  Using tropical rural areas:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/rural_environments/using_tropical_rural_areas_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/rural_environments/using_tropical_rural_areas_rev1.shtml</a>  Sustainable uses of environments:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_uses_environments_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_uses_environments_rev1.shtml</a>  Forests: <a href="http://www.wwf.org.uk/what_we_do/forests/">www.wwf.org.uk/what_we_do/forests/</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
2.5 Case study	Know a case study of an area of tropical rainforest and an area of hot desert	<p>Learners should know a case study of:</p> <ul style="list-style-type: none"> <li>• an area of tropical rainforest</li> <li>• an area of hot desert.</li> </ul> <p>This has been covered in the previous section. Please ensure case study area is named and located and at an appropriate scale. Specific information needs to be available to learners to provide place-specific reference.</p> <p>Amazon rainforest: <a href="http://handygeography.wordpress.com/tag/rainforest/">http://handygeography.wordpress.com/tag/rainforest/</a></p> <p>Suggested example: a case study of an area of hot desert.</p> <p><b>Thar Desert</b>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/ecosystems/desert_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/ecosystems/desert_rev1.shtml</a>  <a href="http://www.bbc.co.uk/education/guides/z2tq4j6/revision">www.bbc.co.uk/education/guides/z2tq4j6/revision</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/ecosystems/human_uses_desert_rev2.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/ecosystems/human_uses_desert_rev2.shtml</a>  <a href="http://www.coolgeography.co.uk/gcsen/GCSE_LW_Hot_Desert_Opportunities_Challenges.php">www.coolgeography.co.uk/gcsen/GCSE_LW_Hot_Desert_Opportunities_Challenges.php</a></p> <p>Suggested example: a case study of an area of tropical rainforest.</p> <p><b>Malaysia</b>  <a href="http://www.wwf.org.my/about_wwf/what_we_do/forests_main/the_malaysian_rainforest/">www.wwf.org.my/about_wwf/what_we_do/forests_main/the_malaysian_rainforest/</a>  <a href="http://www.nre.gov.my/ms-my/PustakaMedia/Penerbitan/Biodiversity%20in%20Malaysia.pdf">www.nre.gov.my/ms-my/PustakaMedia/Penerbitan/Biodiversity%20in%20Malaysia.pdf</a>  <a href="http://www.wwf.org.my/about_wwf/what_we_do/forests_main/manage/">www.wwf.org.my/about_wwf/what_we_do/forests_main/manage/</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
<b>Past and specimen papers</b>		
Past/specimen papers and mark schemes are available to download at <a href="http://www.cambridgeinternational.org/support">www.cambridgeinternational.org/support</a> (F)		

## 6. Development

Syllabus ref.	Learning objectives	Suggested teaching activities
3.1 Development	Use a variety of indicators to assess the level of development of a country	<p>Introduce the term 'development' and add to key word glossary (see: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/development/contrasts_development_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/development/contrasts_development_rev1.shtml</a>). Define 'More Economically Developing Country' (MEDC) and 'Less Economically Developing Country' (LEDC) followed by a whole class discussion and mind map for each to show the characteristics – learners can add to and update these diagrams as the unit progresses. Provide learners with a map showing the North-South divide – learners work in pairs to</p> <ul style="list-style-type: none"> <li>describe the distribution of MEDCs and LEDCs and</li> <li>use an atlas to name and locate examples of each on the map. <b>(I)</b></li> </ul> <p>Introduce and define 'indicators' and how each is measured – card sorting activity, e.g. wealth – measured by GNP per capita – US dollars. Include 'literacy', 'life expectancy' and 'composite measures' such as the 'Human Development Index'. Learners write up as a table. <b>(I)</b></p> <p>The following links will be useful here: Oxfam Education: <a href="http://www.oxfam.org.uk/education">www.oxfam.org.uk/education</a></p> <p>Practical action: <a href="http://practicalaction.org/">http://practicalaction.org/</a></p>
	Identify and explain inequalities within and between countries	<p>Introduce learners to how Gross National Product (GNP) can be used to rank countries using a simple game of 'Play Your Cards Right' – provide GNP for a starting country and then learners have to decide whether the next country shown is higher or lower than the first. Follow this up by placing a list of countries in rank order for GNP. <b>(I)</b></p> <p>Repeat the activity for 'literacy' and 'life expectancy' – learners discuss in pairs what they notice about the rank order each time and use this to explain why it is important to use more than one indicator to measure development. This is a good route into the Human Development Index (HDI) – explain what this is and how it can be used to measure development – define key words and learners order examples of countries based on the data provided. Use an atlas and choropleth maps to support this activity. <b>(I)</b></p> <p><b>Extension activity:</b> Explain why HDI might be a fairer way to measure development.</p> <p>Learners produce scatter graphs to show the relationships between different indicators of development – for example, literacy and GNP. Describe and explain the relationship shown. <b>(I)</b> Use this as a basis for a whole class discussion of the factors that affect each measure of development – for example, how variations in trade and employment structure will influence GNP or how the level of GNP in a country affects literacy rates. Revisit population at this point to explain life expectancy. Include explanations for the measures within the HDI.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p><b>Extension activity:</b> Why does development vary between countries? Discuss as a whole class – such as climate, resources, natural hazards, location, historical factors, etc. Learners then independently research development indicators for two contrasting countries to produce country fact files – data tables, graphs of results, describe and offer explanations for the differences. <b>(I)</b></p> <p>Introduce the concept of ‘core-periphery’ and learners show as a simple annotated diagram to include the characteristics of each. Exemplify with reference to an example country – graph or map indicators to illustrate and offer reasons for the differences noted.</p> <p>The following links will be useful here:  Contrasts in development:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/development/contrasts_development_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/development/contrasts_development_rev1.shtml</a></p> <p>Factors influencing development:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/development/factors_influencing_development_rev2.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/development/factors_influencing_development_rev2.shtml</a></p> <p>Uneven development: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/development/uneven_development_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/development/uneven_development_rev1.shtml</a></p>
	Classify production into different sectors and give illustrations of each	<p>Learners complete a ‘heads and tails’ game (matching key words and definitions) activity to define the ‘primary’, ‘secondary’, ‘tertiary’ and ‘quaternary sectors’. Sort and classify example jobs into each and show as a table.</p> <p><b>Extension activity:</b> by taking a product – for example, a piece of furniture – and drawing labelled cartoons/diagrams to illustrate each stage of production. <b>(I)</b> Or collect examples of advertisements and classify into the different sectors.</p> <p>Characteristics of industry:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/characteristics_industry_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/characteristics_industry_rev1.shtml</a></p>
	Describe and explain how the proportions employed in each sector vary according to the level of development	<p>Introduce the term ‘employment structure’ and update key word glossary (see: <a href="http://www.geography.learnontheinternet.co.uk/topics/empstruct.html">www.geography.learnontheinternet.co.uk/topics/empstruct.html</a>). <b>(I)</b> Select an example MEDC and provide the current employment structure – display as a triangular graph. <b>(I)</b></p> <p>Provide learners with data tables and pie charts or divided bar charts for this same country over time – learners have to describe the changes and explain the changes. <b>(I)</b> Also use indicators of development to illustrate.</p> <p>Select a LEDC example and provide the current employment structure – learners can choose how to display this from the skills modelled earlier. Provide information over time – learners describe and explain the changes. <b>(I)</b> Make the link to globalisation – will be covered later in the unit. Could do a couple of examples to include a Newly Industrialised Country (NIC). Also use indicators of development to illustrate.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Learners work in pairs to compare the current employment structure for the MEDC and LEDC that they have been given and independently research other examples – describe the differences and explain based on knowledge of development gained so far. Write up as a short presentation for their peers.</p> <p><b>Extension activity:</b> learners produce a scattergraph of countries at different levels of development – employment vs GNP – describe the relationship and explain. <b>(I)</b></p>
	Describe and explain the process of globalisation and consider its impacts	<p>Learners define the key word ‘globalisation’ (see: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/globalisation/globalisation_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/globalisation/globalisation_rev1.shtml</a>). <b>(I)</b> Provide information that learners understand the reasons for globalisation such as improved technology, improved transport links, freedom of trade, labour availability and skills, growth of transnational corporations (TNC), etc.</p> <p>Globalisation (video): <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/globalisation/globalisation_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/globalisation/globalisation_video.shtml</a></p> <p>Learners write up as an explanation. Learners draw the positive multiplier effect to show the impact of new industry in a local area and explain – make the link to a new factory opening up in an area within LEDC. <b>(I)</b></p> <p>Learners complete a mystery activity to find out why a person working in a MEDC factory has been made redundant.</p> <p>Use the results of this for a whole class discussion of the growth of transnational corporations and the impacts on both MEDCs and LEDCs.</p> <p>Learners follow this up with a definition of a TNC, a list of their characteristics and a table to show the advantages and disadvantages for both the host countries and elsewhere. <b>(I)</b></p> <p>Include deindustrialisation as part of this and the impact upon industrial regions in MEDCs – negative multiplier effect. Learners produce their own version of the negative multiplier effect diagram in pairs based on previous knowledge and explain. <b>(I)</b></p> <p>Ensure that discussions include a consideration of the impact of globalisation at a local, national and global level.</p> <p>Provide a location map of a selected TNC – could be the case study you plan to use later – learners try to work out the reasons in pairs why TNCs locate in LEDCs – whole class discussion to confirm and write up as a mind map – the factor on each branch with development of the reason. Factors such as reduced transport costs, wider market, avoidance of quotas and tariffs, cheaper labour, work ethic, health and safety, lack of unions, less environmental control, etc.</p> <p>Follow up with a decision-making activity – provide information about possible locations for a new TNC branch plant – work in groups to choose the best location, justify decision and then discuss impact at different levels. Economic activity and development: <a href="http://www.sln.org.uk/geography/Economic%20activity.htm">www.sln.org.uk/geography/Economic%20activity.htm</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
3.1 Case study	Know a case study of a transnational corporation (TNC) and its global links	<p>Learners should know a case study of a transnational corporation and its global links.</p> <p>Sketch map to show the worldwide location of the transnational corporation (TNC) – describe the distribution of HQ and branch plants with named examples for place-specific reference.</p> <p>Show the global links that the TNC has on a world map.</p> <p>Create a fact file on the transnational corporation (TNC) – growth over time and key facts.</p> <p>Write a newspaper article to include reasons for location of the TNC and the impacts it has had locally, nationally and globally. Include statistics for place-specific reference and examples – illustrate with photographs. Focus on a specific country included.</p> <p>In groups or whole class, learners have a debate to consider the different viewpoints – Are the transnational corporations (TNC) good or bad for the economies of LEDCs?</p> <p>Globalisation: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/globalisation/globalisation_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/globalisation/globalisation_rev1.shtml</a></p> <p>Suggested examples: a case study of a TNC and its global links.</p> <p><b>Shell</b> <a href="http://www.coolgeography.co.uk/A-level/AQA/Year%2013/Development%20&amp;%20Globalisation/TNCs/TNCs_Shell.htm">www.coolgeography.co.uk/A-level/AQA/Year%2013/Development%20&amp;%20Globalisation/TNCs/TNCs_Shell.htm</a></p> <p>There are also many resources available for TNCs such as Nike and Coca-Cola.</p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
<b>Past and specimen papers</b>		
Past/specimen papers and mark schemes are available to download at <a href="http://www.cambridgeinternational.org/support">www.cambridgeinternational.org/support</a> (F)		

## 7. Food production and industry

Syllabus ref.	Learning objectives	Suggested teaching activities
3.2 Food production	Describe and explain the main features of an agricultural system: inputs, processes and outputs	<p>Define 'agriculture' and 'farming' and add to the key word glossary. Recap agriculture as a type of primary industry. Introduce how we classify agriculture and define the different farming types – 'commercial', 'subsistence', 'arable', 'pastoral', 'intensive' and 'extensive'. <b>(I)</b></p> <p>Agriculture:  <a href="http://www.s-cool.co.uk/gcse/geography/agriculture">www.s-cool.co.uk/gcse/geography/agriculture</a></p> <p>Farming in rural areas:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/rural_environments/farming_rural_areas_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/rural_environments/farming_rural_areas_rev1.shtml</a></p> <p>Characteristics of farming (video):  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/video/agriculture/characteristics_farming_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/video/agriculture/characteristics_farming_video.shtml</a></p> <p>Types of farming (video): <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/video/agriculture/types_farming_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/video/agriculture/types_farming_video.shtml</a></p> <p>Learners update glossary with appropriate key words. Provide headlines or photographs about different farming systems for learners to analyse and classify into the different farming types. Learners add an example of each farming type to their definitions. Complete an 'odd one out' activity to consolidate understanding of the key characteristics of each type of farming.</p> <p>Discuss the factors affecting farming and show as a mind map. Sort into natural and human. Learners can then further divide the human factors into economic and social. Learners show results in a table and then explain in detail how each one will influence farming – including the scale of production, methods and products of agricultural systems. Illustrate with reference of examples. <b>(I)</b></p> <p>Introduce farming as a system and define key words 'system'; 'inputs', 'processes' and 'outputs'. Provide a systems diagram for the type of farming that you plan to use for your case study later in the unit – learners colour code and annotate to understand the concept of 'a system'. <b>(I)</b></p> <p>In pairs learners answer questions to analyse and understand the diagram. Learners sort cards to produce another systems diagram for a contrasting type of farming and compare the inputs and how this has influenced the scale of production, methods and products of the agricultural systems. Write up ideas. <b>(I)</b> (Alternatively two case studies can be done later in the unit.)</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p><b>Map work opportunity:</b> describing the agricultural patterns in an area shown on a map extract and using map evidence to identify the factors that have influenced its location.</p> <p><b>Fieldwork opportunity:</b> examining the land use/agricultural patterns in an area and giving explanations for the patterns.</p> <p>Link to 3.7 – describe how economic activities may pose threats to the natural environment locally and globally – discussion of how agriculture can cause noise, air, water and visual pollution – learners mind map ideas for each and then write up to develop/explain. Suggest solutions for each.</p> <p>The following link provides ideas for the whole unit: <a href="http://www.sln.org.uk/geography/Economic%20activity.htm">www.sln.org.uk/geography/Economic%20activity.htm</a></p>
3.2 Case study	Know a case study of a farm or agricultural system	<p>Learners should know a case study of a farm or agricultural system.</p> <p>Learners produce sketch map to show the location of the farm or system and describe it.</p> <p>Classify the farming type.</p> <p>Produce a systems diagram for the farm or system.</p> <p>Write a short report to explain all of the factors that have influenced the location of the farm or system. Include place-specific information and diagrams as appropriate – for example, climate data and a climate graph.</p> <p>Describe the methods used in production and the scale of the operation. Present as a case study booklet.</p> <p>Please ensure appropriate place-specific information through the case study.</p> <p>Suggested examples: a case study of a farm or agricultural system.</p> <p><b>Sundrop Farms (Port Augusta, Australia)</b>  <a href="http://www.sundropfarms.com/">www.sundropfarms.com/</a>  <a href="http://www.wired.co.uk/article/sundrop-farms-australian-desert">www.wired.co.uk/article/sundrop-farms-australian-desert</a>  <a href="http://www.ecowatch.com/sundrop-farms-solar-desalination-2033987160.html">www.ecowatch.com/sundrop-farms-solar-desalination-2033987160.html</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
3.7 Environmental risks of economic development	Describe how economic activities may pose threats to the natural environment, locally and globally	Suggested opportunity to deliver the content for soil erosion and desertification from 3.7 here. See later scheme for content.
3.2 Food production	Recognise causes of food shortages and describe possible solutions to this problem	<p>Learners define the key word 'food shortage' and add to key word glossary. World map of countries that suffer from food shortage (choropleth map of kcal/per person per day or % population suffering from malnutrition or alternative) – learners describe the distribution. Research key facts about food shortages using websites. <b>(I)</b></p> <p>Investigation – what is the cause of food shortages? Provide appropriate resources to each pair of learners such as climate data, photographs, extracts from newspaper reports, visual clips for them to analyse. Learners also conduct independent internet research. <b>(I)</b> Write a report to explain why food shortages occur around the world – make the link to natural factors as well as economic and political factors as shown in the syllabus.</p> <p>Discuss the impacts of food shortages – both positive and negative. Learners complete card sorting activity to classify effects in these two categories and record in a table.</p> <p>Show how food shortages can cause a cycle of poverty and learners display in an annotated diagram. Learners also research the impact of food shortages upon health (including malnutrition and diseases as a result of under-nutrition) and the knock on effects such as migration/refugees, loss of productivity etc. – write up their ideas as a letter to a president of a country expressing concern. <b>(I)</b></p> <p>Introduce aid and different types of aid. Learners complete heads and tails activity to understand the different types of aid. Learners are split into two – half the class researches the benefits of giving aid whilst the others research the problems of giving aid. Present their views and conduct short whole class debate about the benefits and problems of giving aid – write up as two viewpoints and then give their own, justifying their decision. <b>(I)</b> Discuss ways in which food aid can address the problem of food shortages but also how other approaches may be more sustainable in the long term.</p> <p>Aid (video): <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/development/aid_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/development/aid_video.shtml</a></p> <p>Aid: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/development/aid_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/development/aid_rev1.shtml</a></p> <p>Discuss how food shortages can lead to measures to increase output – learners write a description of measures such as irrigation, fertilisers, mechanisation, pesticides, GM crops, education farmers, etc. and explain how each increases output. Can illustrate with photographs and diagrams. <b>(I)</b></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
3.2 Case study	Know a case study of a country or region suffering from food shortages	<p>Learners should know a case study of a country or region suffering from food shortages.</p> <p>Learners produce annotated sketch map to locate the country or region and describe the distribution of areas suffering from a food shortage.</p> <p>Research background of the food shortage – dates/extent, etc. Discuss causes and categorise. Describe and explain the effects.</p> <p>Positive response to the problem including aid and measures to increase output.</p> <p>Learners research using internet and teacher resources and write up as a webpage or article for a geographical journal. Please ensure appropriate place-specific information through the case study.</p> <p>Suggested example: a case study of a country or region suffering from food shortages.</p> <p><b>Ethiopia</b>  <a href="http://www.oxfam.org/en/emergencies/ethiopia-food-crisis">www.oxfam.org/en/emergencies/ethiopia-food-crisis</a>  <a href="http://www.bbc.co.uk/news/world-africa-35038878">www.bbc.co.uk/news/world-africa-35038878</a>  <a href="http://www.savethechildren.org.uk/about-us/emergencies/east-africa-food-crisis-appeal/ethiopia">www.savethechildren.org.uk/about-us/emergencies/east-africa-food-crisis-appeal/ethiopia</a>  <a href="http://www.worldbank.org/en/news/press-release/2010/09/30/improving-food-security-and-livelihood-in-ethiopia-through-agricultural-growth">www.worldbank.org/en/news/press-release/2010/09/30/improving-food-security-and-livelihood-in-ethiopia-through-agricultural-growth</a>  <a href="http://www.usaid.gov/ethiopia/agriculture-and-food-security">www.usaid.gov/ethiopia/agriculture-and-food-security</a>  <a href="http://et.one.un.org/content/unct/ethiopia/en/home/assistance-framework/millennium-development-goals.html">http://et.one.un.org/content/unct/ethiopia/en/home/assistance-framework/millennium-development-goals.html</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
3.3 Industry	Demonstrate an understanding of an industrial system: inputs, processes and outputs (products and waste)	<p>Define ‘industry’ and reinforce as a type of secondary activity. Revisit the key words of a ‘system’ – recap using a quick ‘heads and tails’ activity.</p> <p>An introduction to industry: <a href="http://www.s-cool.co.uk/gcse/geography/industry/revise-it/an-introduction-to-industry">www.s-cool.co.uk/gcse/geography/industry/revise-it/an-introduction-to-industry</a></p> <p>Characteristics of industry: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/characteristics_industry_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/characteristics_industry_video.shtml</a></p> <p>Industry: <a href="http://www.revisionworld.com/gcse-revision/geography/industry">www.revisionworld.com/gcse-revision/geography/industry</a></p> <p>Learners understand that outputs can include both products and waste.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Learners define the key industry types as shown in the syllabus and briefly write up to describe the characteristics of each following whole class discussion with an example to illustrate. <b>(I)</b></p> <p>Learners to produce a systems diagram for a chosen industry – link to later case study – and answer questions to interpret the diagram. Could be drawn from information provided as text or a card sorting activity. <b>(I)</b></p>
	<p>Describe and explain the factors influencing the distribution and location of factories and industrial zones</p>	<p>Show learners photographs of different types of factories and industrial zones and ask them to identify the factors that they think might have influenced the location of each. Build up a mind map of key factors following paired discussion as a whole class. These can then be further classified. For each one, learners explain how the factor might influence industrial location. For each, link to not only the location but also scale of production, methods of organisation and products of the system. Link to previous work on transnational companies (3.1) and advantages of rural/urban fringe locations (1.2). <b>(I)</b></p> <p>Decision-making exercise: provide learners with a sketch map and factors marked on. Learners have to decide which is the best location for a particular type of industry, and then justify and explain their choice. Present ideas in a table – advantages and disadvantages of each site. <b>(I)</b></p> <div data-bbox="712 735 1986 826" style="background-color: #f4a460; padding: 10px; border: 1px solid #f4a460;"> <p><b>Map work opportunity:</b> providing map extract with either a factory or industrial zone marked on – learners identify the factors that may have led to its location and support with map evidence.</p> </div> <p>Learners work in pairs to complete a card sorting activity – raw material oriented industry and market oriented industry – includes some examples. Write up the card sorting activity to explain the factors that encourage industries to locate near to their raw materials and those which locate near to their market. <b>(I)</b> Follow up with individual research of some appropriate examples. Could follow up with an ‘odd one out’ activity based on systems diagrams and industrial location factors. Define the term ‘footloose’ add to key word glossary and give an example.</p> <p>Link to 3.7 – describe how economic activities may pose threats to the natural environment locally and globally – discussion of how industry can cause noise, air, water and visual pollution – learners mind map ideas for each and then write up to develop/explain. Suggest solutions for each.</p> <p>The following links will be useful here:            Characteristics of industry:  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/characteristics_industry_rev4.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/characteristics_industry_rev4.shtml</a>            Factors affecting industrial location: <a href="http://www.s-cool.co.uk/gcse/geography/industry/revise-it/the-location-of-industry">www.s-cool.co.uk/gcse/geography/industry/revise-it/the-location-of-industry</a>            Industry: <a href="http://www.revisionworld.com/gcse-revision/geography/industry">www.revisionworld.com/gcse-revision/geography/industry</a>            Industry in MEDCs (video):  <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/industry_medcs_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/industry_medcs_video.shtml</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
3.3 Case study	Know a case study of an industrial zone or factory	<p>Learners should know a case study of an industrial zone or factory.</p> <p>Annotated sketch map and description to locate industrial zone or factory. Systems diagram for the factory or industry (within a zone).</p> <p>Write-up of the factors that have influenced the location of the industry. Include influence on location, scale of production, methods of organisation and the products of the system.</p> <p>The case study could be a factory, a region with a particular type of industry or a zone where there are a variety of industries. Please ensure appropriate place-specific information through the case study.</p> <p>Manufacturing industry – South Wales: <a href="http://www.s-cool.co.uk/gcse/geography/industry/revise-it/case-studies">www.s-cool.co.uk/gcse/geography/industry/revise-it/case-studies</a></p> <p>Suggested examples: a case study of an industrial zone or factory.</p> <p><b>The Ruhr, Germany</b> <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/industry_medcs_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/economic_change/industry_medcs_rev1.shtml</a></p> <p>Mining Industry in Western Australia <a href="http://www.abc.net.au/news/2017-06-13/boom-in-jobs-for-wa-engineers-with-mining-sector-surge/8611286">www.abc.net.au/news/2017-06-13/boom-in-jobs-for-wa-engineers-with-mining-sector-surge/8611286</a> <a href="http://www.abc.net.au/news/rural/2017-04-10/wa-mining-sector-increases-after-three-years-in-decline/8431940">www.abc.net.au/news/rural/2017-04-10/wa-mining-sector-increases-after-three-years-in-decline/8431940</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
<b>Past and specimen papers</b>		
Past/specimen papers and mark schemes are available to download at <a href="http://www.cambridgeinternational.org/support">www.cambridgeinternational.org/support</a> (F)		

## 8. Tourism

Syllabus ref.	Learning objectives	Suggested teaching activities
3.4 Tourism	Describe and explain the growth of tourism in relation to the main attractions of the physical and human landscape	<p>Define 'tourist' and 'tourism' and link to tertiary activities. Update key word glossary. Provide statistics to show the growth of world tourism over time – learners produce a line graph to show the trend. <b>(I)</b></p> <p>Learners describe the growth in tourism from the graph using years and figures to support. <b>(I)</b></p> <p>Learners have diagram to show how tourism grows – describe each stage and work in pairs to try to suggest reasons for the changes. Whole class discussion and model – learners complete annotations on their own model. <b>(I)</b></p> <p>Provide cards to explain the growth of tourism – learners discuss in pairs how these relate to the graph and annotate accordingly. Discuss the reasons in pairs, then share ideas in a small group then discuss as a whole class.</p> <p><b>Extension activity:</b> Write up ideas as an extended piece of writing. Include long haul tourism, how it is different and its recent growth. <b>(I)</b></p> <p>Show the learners photographs of key tourist destinations – include a range. For each, learners should write the physical and human attractions of the areas shown in the photograph and explain what sort of tourist activities will take place there. For example, alpine scenery and winter sports or savanna ecosystem and safari holidays. Learners should write up each example. Card sorting activity – learners sort attractions and examples into physical and human and independently research some examples of their own. Use an atlas map to investigate tourist locations around the world and their different attractions – write up some examples.</p> <p>The following links will be useful here:            Tourism trends: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/tourism/tourism_trends_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/tourism/tourism_trends_rev1.shtml</a></p> <p>Attractions for tourists: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/tourism/attractions_tourists_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/tourism/attractions_tourists_rev1.shtml</a></p> <p>Attractions for tourists (video): <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/tourism/attractions_tourists_video.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/tourism/attractions_tourists_video.shtml</a></p> <p>Growth in tourism: <a href="http://www.s-cool.co.uk/a-level/geography/tourism/revise-it/growth-in-tourism">www.s-cool.co.uk/a-level/geography/tourism/revise-it/growth-in-tourism</a></p> <p>The following link has ideas for the whole unit: <a href="http://www.sln.org.uk/geography/Economic%20activity.htm">www.sln.org.uk/geography/Economic%20activity.htm</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
	Evaluate the benefits and disadvantages of tourism to receiving areas	<p>Learners mind map all the benefits of tourism and mind map. Classify into those that benefit people (social) and those that benefit the economy (economic). <b>(I)</b> Repeat the activity for disadvantages and include environmental as a category for classification. <b>(I)</b></p> <p>Learners develop idea to explain how it impacts on people or the environment. Learners conduct a role-play where they discuss the views of different groups of people in a newly developed tourist resort – for example, tourist, local farmers, local craftsmen, hotel worker, environmental group, etc. Write up the viewpoints of each one.</p> <p><b>Extension activity:</b> Is tourism a good or bad thing? Learners explain and justify their own viewpoint.<b>(I)</b> (Link to 2.3 – how tourism can impact upon coral reefs.)</p> <p>Link to 3.7 – how tourism can cause soil erosion (deforestation/ increasing use of fuelwood for energy, etc.)</p> <p>Link to 3.7 – describe how economic activities may pose threats to the natural environment locally and globally – discussion of how tourism can cause noise, air, water and visual pollution – learners mind map ideas for each and then write up to develop/explain. Suggest solutions for each.</p> <p>The following links will be useful here:  Tourism in the UK: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/tourism/tourism_uk_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/tourism/tourism_uk_rev1.shtml</a></p> <p>Tourism in an LEDC: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/tourism/tourism_ledc_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/tourism/tourism_ledc_rev1.shtml</a></p>
	Demonstrate an understanding that careful management of tourism is required in order for it to be sustainable	<p>Define the key words ‘management’, ‘conservation’ and ‘sustainable development’. Update key word glossary. Learners recap and write up the characteristics of sustainable development. <b>(I)</b></p> <p>Revisit the problems of tourism and work in groups to suggest ways in which the problem can be managed to make tourism sustainable. Discuss the strategies that can be used to manage tourism in different environments (e.g. beaches, alpine environments, coral reefs, etc.) taking ideas from each group. For each environment, learners should describe the strategies and explain how they manage tourism to make it more sustainable. <b>(I)</b> Include National Parks and Game reserves including what they are and what measures they put in place to manage tourism, using named examples. Learners conduct independent internet research to add ideas.</p> <p>Introduce and define ‘ecotourism’. Learners research ecotourism and produce a short newspaper article about the features of ecotourism and how it works to protect the environment using a named example. Learners also produce a set of guidelines for Ecotourists and explain how these help tourism to become more sustainable. <b>(I)</b></p> <p>Ecotourism: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/tourism/ecotourism_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/tourism/ecotourism_rev1.shtml</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
3.4 Case study	Know a case study of an area where tourism is important	<p>Learners should know a case study of an area where tourism is important.</p> <p>The scale of this case study should be a resort or region. Please ensure place-specific detail – for example, the number of tourists each year or climate data or named attractions.</p> <p>Learners produce sketch map of the area and describe its location. Graph the growth of tourism over time and write a description.</p> <p>Annotate photographs to show the physical and human attractions of the destination to explain the growth of tourism. Learners may include climate graphs or maps of information such as tourist resorts or communication networks of the named attractions.</p> <p>The learners can present the information as an entry for a holiday brochure or webpage advertising a resort or region.</p> <p>Learners describe and list the problems and benefits of tourism and write up as a newspaper article.</p> <p>For each problem, learners produce a short presentation to their peers on the solutions and how tourism has been managed in the case study region.</p> <p><b>Extension activity:</b> Tourism – good or bad? For your chosen case study region. Justify. <b>(I)</b></p> <p>Suggested example: a case study of an area where tourism is important.</p> <p><b>Cornwall, UK</b>  <a href="http://www.visitcornwall.com/">www.visitcornwall.com/</a>  <a href="http://www.visitcornwall.com/industry/research">www.visitcornwall.com/industry/research</a>  <a href="http://www.cornwall.gov.uk/leisure-and-culture/tourism-and-travel/">www.cornwall.gov.uk/leisure-and-culture/tourism-and-travel/</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
<b>Past and specimen papers</b>		
Past/specimen papers and mark schemes are available to download at <a href="http://www.cambridgeinternational.org/support">www.cambridgeinternational.org/support</a> <b>(F)</b>		

## 9. Energy and water

Syllabus ref.	Learning objectives	Suggested teaching activities
3.5 Energy	Describe the importance of non-renewable fossil fuels, renewable energy supplies, nuclear power and fuel wood, globally and in different countries at different levels of development	<p>Learners define key words 'non-renewable', 'renewable' and 'fossil fuels' and update key word glossary. Learners complete a card sorting activity to include characteristics of each and examples – show as a table.</p> <p>Provide learners with figures about each energy source and how it contributes to the world energy supply. Learners represent this information as a pie chart or divided bar graph and describe what it shows. <b>(I)</b></p> <p><b>Extension activity:</b> How are the figures likely to change in the future and why? Repeat this activity but for LEDCs and MEDCs – compare and contrast the two graphs. Learners can independently research and graph an example of a MEDC and LEDC to reinforce – can be used to introduce a case study later on. <b>(I)</b></p> <p>Learners write up the similarities and differences between the graphs.</p> <p>Link to 3.7 – use of fuel wood as a cause of desertification and soil erosion.</p> <p>Learners research and take notes on how coal, oil and natural gas are obtained and write about the advantages and disadvantages of each as an energy source. <b>(I)</b></p> <p>Learners discuss how fossil fuels are used to produce energy in a thermal power station and produce a fully annotated diagram. A card sorting activity with the good and bad points of thermal power stations.</p> <p>Introduce fuelwood as an energy source for LEDCs. Learners use data to produce a graph to show where fuelwood is used and how its use is increasing over time. <b>(I)</b> Link to deforestation and desertification – learners draw a traditional system in balance and out of balance – fully annotate to show the impact of the trees being removed for firewood. <b>(I)</b> Describe and explain the differences between the two. (Link to Unit 10 – causes of desertification.)</p> <p>The following link will be useful here: Energy: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/energy_resources/energy_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/energy_resources/energy_rev1.shtml</a></p>
	Evaluate the benefits and disadvantages of nuclear power and renewable energy sources	<p>Define 'nuclear power' and update key word glossary. Reinforce as a non-renewable resource. Learners produce a simple flow diagram to illustrate how nuclear power works. <b>(I)</b></p> <p>Renewable energy sources: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/energy_resources/energy_rev2.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/energy_resources/energy_rev2.shtml</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Sustainable resources: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_resources_rev3.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_resources_rev3.shtml</a></p> <p>Learners work in small groups to read viewpoints of different groups of people about nuclear power. Extract benefits and problems of each from the view points and discuss.</p> <p>Conduct whole class debate – ‘The future of nuclear power’. Write up both activities as a newspaper article – presenting the arguments for and against with relevant examples as well as justifying their own viewpoint. <b>(I)</b></p> <p>Use photographs to introduce the different types of renewable energy. For each, briefly describe how it works – learners research background information about each energy source and include labelled diagrams/annotated photographs for each. <b>(I)</b></p> <p>Place learners into small groups – each group researches the benefits and disadvantages of one type of renewable energy (from the list specified in the syllabus). They produce a presentation and revision/factsheet and present to their peers.</p> <p>Go through all presentations so all learners have a complete set of revision notes for the different types of renewable energy.</p> <p>Consolidate learning with a card sorting activity (learners have to place cards into categories). Peer evaluation – learners provide an evaluation of each presentation – what went well and anything else that needs to be added in.</p> <p><b>Extension activity:</b> To what extent is renewable energy a solution to the world energy problems? Suggest why countries are looking to develop renewable sources. <b>(I)</b></p> <p>Select one type of energy – a hydroelectric power station, for example, and present the facts about the proposal. Learners working in small groups decide whether the scheme should go ahead. Learners present the points in favour, points against, viewpoints of different groups of people and their final decision.</p> <p>Link to 3.7 – demonstrate the need for sustainable development – renewable energy and nuclear power as a solution to enhanced global warming.</p> <p>Link to 3.7 – understand the importance of resource conservation – learners mind map all of the ideas that they can think of to save energy. Design a poster to encourage energy efficiency at school or at home.</p> <p>Link to 3.7 – describe how economic activities may pose threats to the natural environment locally and globally – discussion of how tourism can cause noise, air, water and visual pollution – learners mind map ideas for each and then write up to develop/explain. Suggest solutions for each.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
3.5 Case study	Know a case study of energy supply in a country or area	<p>Learners should know a case study of energy supply in a country or area.</p> <p>Learners locate a country or area with annotated sketch map and describe the location.</p> <p>Produce data tables and graph to show the percentage of energy from each source – describe and explain (link to level of development to recap).</p> <p>Provide named examples and details of schemes – one for each energy source to show how energy is produced in case study country or area – to provide place-specific reference. Could add to sketch map or show in a table.</p> <p>Recap benefits and disadvantages of each specific to the scheme and the country as appropriate – learners highlight the information and show in a table. Focus on each individual scheme to develop viewpoints.</p> <p>Learners write up as a case study.</p> <p>Suggested example: a case study of energy supply in a country or area.</p> <p><b>Iceland</b>  <a href="https://unchronicle.un.org/article/iceland-s-sustainable-energy-story-model-world">https://unchronicle.un.org/article/iceland-s-sustainable-energy-story-model-world</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/science/aqa_pre_2011/energy/mainselectricityrev5.shtml">www.bbc.co.uk/schools/gcsebitesize/science/aqa_pre_2011/energy/mainselectricityrev5.shtml</a>  <a href="http://www.bbc.co.uk/schools/gcsebitesize/science/aqa_pre_2011/energy/mainselectricityrev4.shtml">www.bbc.co.uk/schools/gcsebitesize/science/aqa_pre_2011/energy/mainselectricityrev4.shtml</a>  <a href="http://reneweconomy.com.au/iceland-a-100-renewables-example-in-the-modern-era-56428/">http://reneweconomy.com.au/iceland-a-100-renewables-example-in-the-modern-era-56428/</a>  <a href="http://www.nea.is/geothermal/">www.nea.is/geothermal/</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
3.6 Water	Describe methods of water supply and the proportions of water used for agriculture, domestic and industrial purposes in countries at different levels of development	<p>Learners recap 'global water supply' and show as a pie chart or divided bar. <b>(I)</b> Reinforce the small amount of available fresh water. Discuss the difference between 'surface water' and 'ground water'. Mind map all the different uses of water.</p> <p>Learners graph data to show how water is used globally for different uses and describe the results. <b>(I)</b></p> <p>Discuss the key users of water – for example, domestic, industrial, agricultural, tourism – learners work in pairs to give examples of how water is used in each and confirm in whole class discussion.</p> <p>Water usage: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/water_usage_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/water_usage_rev1.shtml</a></p> <p>Provide data for water use in LEDCs and MEDCs (include how it is used in different sectors) or compare two countries to illustrate – one of these countries could be developed as a case study. Graph the results and compare/contrast the two sets of data/graphs. Learners could keep a diary of water usage and research another country to compare. <b>(I)</b></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Show learners photographs of different water supply schemes, e.g. dams/reservoirs, wells, boreholes and desalination. Whole class discussion of how each works and a brief description.</p> <p>Discuss the appropriateness of each scheme for different geographical areas/levels of development – for example, in relation to siting factors, climate and level of technological development. Learners present ideas as a table. <b>(I)</b> Discuss the results as a whole class – learners add additional ideas in a new colour to show additional learning.</p>
	<p>Explain why there are water shortages in some areas and demonstrate that careful management is required to ensure future supplies</p>	<p>Learners analyse world map to show areas where there are water shortages and water surplus. Define the key word 'drought'. Describe the distribution and identify areas of shortage, surplus and what they have in common – are there any anomalies? Look for trends and name areas – use world point of reference such as continent names and lines of latitude/longitude.</p> <p><a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/water_usage_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/water_rivers/water_usage_rev1.shtml</a></p> <p><a href="http://www.wateraid.org/uk">www.wateraid.org/uk</a></p> <p><a href="http://www.dropinthebucket.org/?_k=water%20saving%20facts%20for%20kids&amp;_kt=2f6a2ff7-dc40-483d-8f70-1c3dd6dd7c51">www.dropinthebucket.org/?_k=water%20saving%20facts%20for%20kids&amp;_kt=2f6a2ff7-dc40-483d-8f70-1c3dd6dd7c51</a></p> <p>Learners independently research some examples of drought and their impact. <b>(I)</b></p> <p>Whole class discussion of the factors that affect water shortages: supply (e.g. precipitation, temperature, evaporation rates, rivers, pollution and infrastructure, etc.) and demand (e.g. economic activities, population distribution and country's level of development, etc.) and illustrate with examples. Show as a mind map.</p> <p><b>Extension activity:</b> Why do water shortages occur in some parts of the world and not others? or Explain why access to safe water is better in some countries than others. <b>(I)</b></p> <p>Learners then extend this discussion to why some areas may have water but it is not clean, and how water can become contaminated in both urban and rural areas (link to 3.7). Learners can research key facts about water shortages and water-related diseases in different parts of the world using websites – add to notes on drought to build up some revision ideas. <b>(I)</b></p> <p>Show learners photographs of areas suffering from a water shortage – work in pairs to discuss the impacts this is having and show ideas as a mind map.</p> <p>Learners discuss and create their own flow diagrams to show the impacts – add annotations and extra notes as required. <b>(I)</b> Link the impacts on people to ideas such as health, disease, hygiene/sanitation, travelling to collect water, conflicts and the inability to work, etc. Link impact of water shortages on economic development to agriculture, industry and the</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>development of tourism.</p> <p>Role-play activity: Learners use their diagram to teach the concept to a peer or small group of learners.</p> <p><b>Extension activity:</b> Explain the impact of water shortages on people and economic development.</p> <p>Learners use website research to write diary entries for different people around the world (in countries at different stages of development) to show how water shortages have impacted upon their lives and/or how a supply of clean water has been provided and how this has changed their lives. <b>(I)</b> Share entries with whole class. Discuss some solutions and use this to introduce the next section.</p> <p>Review methods of water supply in a MEDC and discuss how each of these can be used to provide clean water supply with named examples. Show photographs of each scheme. Discuss the advantages of each and also limitations. Include water transfer schemes from area of surplus to shortage – learners write up as a table. <b>(I)</b></p> <p>Introduce the term ‘appropriate technology’ and add to key word glossary. Learners make notes about different water supply schemes and also ways in which the demand for water can be reduced using website reference. <b>(I)</b></p> <p>Whole class discussion on the advice that can be given to make water safer to drink and also other methods of ensuring a clean water supply – write up ideas. <b>(I)</b></p> <p>Whole class discussion of how water can be managed – learners recap the term ‘conservation’ and update their key word glossary. The class may take the opportunity to talk about the importance of using water in a sustainable way and recap concepts.</p> <p>Learners research the ways in which people living in a MEDC can conserve water and produce a leaflet to provide advice to people about how to save water. Discuss steps that water companies, industry and agriculture can also take to reduce water use, e.g. repairing leaks, methods of irrigation, recycling, etc. <b>(I)</b></p> <p>Link to 3.7 – understand the importance of resource conservation – water conservation.</p>
3.6 Case study	Know a case study of water supply in a country or area	<p>Learners should know a case study of water supply in a country or area.</p> <p>Introduce the country or area – learners produce an annotated sketch map and describe the location. Produce a choropleth map to show the distribution of water shortages (and surplus if appropriate) within the country or area – describe the distribution including named places.</p> <p>Learners graph data to show sources of water and how water is used within the country/area. Learners produce a newspaper article to show the impact of the water shortages on people and economic development.</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>Provide examples of schemes that provide water within the country – named and located – and a description of how they work – photographs may also be used.</p> <p>Discuss issues of water management in the future, e.g. conservation of supplies, sustainable development and future projects. Learners write up as a water management plan and present ideas to the class.</p> <p>Suggested example: a case study of water supply in a country or area.</p> <p><b>Colorado River Basin, USA</b>  <a href="http://www.bbc.co.uk/education/topics/znkmhyc">www.bbc.co.uk/education/topics/znkmhyc</a>  <a href="http://www.allianceforwaterefficiency.org/colorado-basin-study-released-2012.aspx">www.allianceforwaterefficiency.org/colorado-basin-study-released-2012.aspx</a>  <a href="http://www.bbc.co.uk/education/guides/zcrrr82/revision">www.bbc.co.uk/education/guides/zcrrr82/revision</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
<p><b>Past and specimen papers</b></p>		
<p>Past/specimen papers and mark schemes are available to download at <a href="http://www.cambridgeinternational.org/support">www.cambridgeinternational.org/support</a> <b>(F)</b></p>		

## 10. Environmental risks of economic development

Syllabus ref.	Learning objectives	Suggested teaching activities
3.7 Environmental risks of economic development	Describe how economic activities may pose threats to the natural environment both locally and globally.	<p><b>Soil erosion:</b> This topic could be studied as a standalone unit or delivered as part of the unit of work on food production.</p> <p>Learners define 'soil erosion' and update key word glossary. <b>(I)</b></p> <p>Soil erosion and salinisation: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/ecosystems/human_uses_desert_rev3.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/ecosystems/human_uses_desert_rev3.shtml</a></p> <p>Learners explain how soil erosion is caused by both wind and water. Show photographs of landscapes where soil erosion has taken place and use these as a basis for an initial discussion of the causes – show as a mind map. <b>(I)</b></p> <p>Learners work in small groups. Each group has a cause of soil erosion provided, e.g. deforestation. Provide articles or texts for learners to work from to text highlight and provide opportunities for learners to conduct individual research. Each group produces a short factsheet to explain their cause of erosion and gives feedback to the whole class. Whole class discussion of the causes of soil erosion.</p> <p>Use photographs of areas suffering from soil erosion to discuss the environmental impacts. Learners research and write up local and global impacts. <b>(I)</b> Could present as a newspaper article.</p>
	Demonstrate the need for sustainable development and management	<p>Recap sustainable development and draw a revision mind map to show the features of sustainable development. Learners role-play as a teacher – explain the concept to a peer.</p> <p>Sustainable resources: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_resources_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_resources_rev1.shtml</a></p> <p>Learners look at photographs to show some of the different methods of soil conservation. 'Think, Pair, Share' activity – what are the photographs showing – followed by a whole class discussion.</p> <p>Complete a card sorting activity that matches:</p> <ul style="list-style-type: none"> <li>• name of strategy</li> <li>• description of the strategy</li> <li>• explanation of how the strategy prevents/reduces soil erosion.</li> </ul> <p>Learners use the information to write an information leaflet for farmers to explain the strategies that can be used to reduce/prevent soil erosion with photographs and annotated sketches/diagrams if appropriate. <b>(I)</b></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
	Describe how economic activities may pose threats to the natural environment, locally and globally	<p><b>Desertification:</b> This unit could be delivered as a standalone unit or as part of the work on food production or linked to work on energy.</p> <p>As an introduction show learners a photograph of desertification – learners ask/answer questions to try to work out what has happened in the photograph.</p> <p>Learners use an atlas map to describe the distribution of areas that are at risk of desertification. <b>(I)</b> Define ‘desertification’ and update key word glossary.</p> <p>Learners describe a graph of annual rainfall over time for a region suffering from desertification to understand the physical causes. <b>(I)</b></p> <p>Learners use resources to research how ‘overgrazing’, ‘population growth’, ‘deforestation for fuelwood’ and ‘over-cultivation’ can cause desertification and show as a series of flow diagrams. <b>(I)</b> Could also graph population growth for the same region over time and use to illustrate a human cause. <b>(I)</b></p> <p>Whole class discussion of the local and global impacts on the environment of desertification – show as two mind maps.</p> <p><b>Extension activity:</b> Explain the causes of ‘desertification’. <b>(I)</b></p>
	Describe how economic activities may pose threats to the natural environment both locally and globally	<p>Learners read short headlines about the strategies used to combat desertification. Make the link back to population growth control in the first unit of work. For each, learners explain how the strategy could be used to control desertification. <b>(I)</b></p> <p>Show photographs of strategies as appropriate to illustrate. Discuss how the environment can be used in a sustainable way to prevent desertification as well as the solutions that can be put in place to reduce it.</p> <p>Sustainable management of the savannah: <a href="http://www.bbc.co.uk/schools/gcsebite/size/geography/sustainability/sustainable_uses_environments_rev2.shtml">www.bbc.co.uk/schools/gcsebite/size/geography/sustainability/sustainable_uses_environments_rev2.shtml</a></p>
	Describe how economic activities may pose threats to the natural environment locally and globally	<p><b>Enhanced global warming:</b> This could be taught as a standalone topic or as part of the scheme of work for energy.</p> <p>Learners describe a graph showing change in global temperatures. <b>(I)</b> Mind map what they already know about enhanced global warming – causes and effects.</p> <p>Climate change: <a href="http://www.wwf.org.uk/what_we_do/tackling_climate_change/">www.wwf.org.uk/what_we_do/tackling_climate_change/</a></p> <p>Provide a diagram to show how enhanced global warming occurs – learners annotate the diagram and write a short</p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		<p>explanation to explain the process. <b>(I)</b></p> <p>Learners produce a pie chart or divided bar graph to show the greenhouse gases and their percentage contribution to enhanced global warming. <b>(I)</b> Match gases to their sources and learners present as a table – causes of enhanced global warming.</p> <p>Greenhouse effect: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/climate_change/greenhouse_effect_rev3.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/climate_change/greenhouse_effect_rev3.shtml</a></p> <p><b>Extension activity:</b> Explain the causes of enhanced global warming. Make the link back to previous work on deforestation. <b>(I)</b></p> <p>Provide learners with a world map and some labels to place in appropriate places – use this to introduce some of the effects of global warming.</p> <p>Learners use resource materials and independent research to produce a newspaper article about the impact of enhanced global warming – both locally and globally. <b>(I)</b></p> <p>The following links will be useful here: Describing climatic trends: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/climate_change/describing_climatic_trends_rev3.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/climate_change/describing_climatic_trends_rev3.shtml</a></p> <p>Carbon footprints: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/climate_change/carbon_footprints_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/climate_change/carbon_footprints_rev1.shtml</a></p>
	<p>Demonstrate the need for sustainable development and management</p>	<p>Build upon previous learning and ask learners to work in small groups. Provide examples of ways to reduce enhanced global warming and learners mind map ideas for each one. Use as a revision opportunity. Ideas could include:</p> <ul style="list-style-type: none"> <li>• use of renewable energy and nuclear power</li> <li>• reducing deforestation/afforestation</li> <li>• energy efficiency</li> <li>• reduced emissions from industry</li> <li>• sustainable living</li> <li>• soft engineering schemes for rivers and coasts</li> <li>• sustainable transport, etc.</li> </ul> <p>Learners research summits/protocols and write a short report to show the suggested measures put in place and any impact they have had. <b>(I)</b></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
	Describe how economic activities may pose threats to the natural environment, locally and globally	<p>Introduce the term ‘pollution’ and recap how it can be divided up into ‘water’, ‘air’, ‘noise’ and ‘visual’. Show photographs of different types of economic activity – for example, agriculture, a factory, and ask learners to add annotations to copies of each photograph to show how the activity can cause the different types of pollution. <b>(I)</b></p> <p>This section should be used as a recap for learners. For example, in the study of industry, include ideas such as:</p> <ul style="list-style-type: none"> <li>• water pollution from waste into rivers</li> <li>• air pollution from emissions and acid rain and link to enhanced global warming</li> <li>• visual impact of factories</li> <li>• noise from factories and from delivery vehicles.</li> </ul> <p>Discuss the local and global effects of each type of pollution. Learners recap solutions and strategies for sustainable management for each and write up as a revision report <b>(I)</b></p>
	Demonstrate the need for sustainable development and management	<p>The following opportunities to address this topic are just examples and others can also be focused on. Ideas include:</p> <ul style="list-style-type: none"> <li>• soil conservation</li> <li>• reducing desertification</li> <li>• managing pollution</li> <li>• population policies</li> <li>• sustainable living</li> <li>• sustainable cities</li> <li>• sustainable tourism</li> <li>• renewable energy</li> <li>• sustainable management of the rainforests, etc.</li> </ul>
	Understand the importance of resource conservation	<p>Learners define ‘resource’ and update key word glossary. <b>(I)</b></p> <p>Sort examples of resources into those that are renewable and non-renewable and recap definitions of each – show as a table of examples.</p> <p>Class discussion on the importance of ‘sustainable development’ and ‘resource conservation’ – provide a definition and update key word glossary. Use examples of water and energy to revise how they can be used more efficiently.</p> <p>Introduce waste as another example. Sort into examples and characteristics of ‘reduce’, ‘reuse’ and ‘recycle’. Learners show how conservation can help to manage the problem of waste as well as preserve resources.</p> <p>Reduce, Reuse, Recycle: <a href="http://kids.niehs.nih.gov/explore/reduce/">http://kids.niehs.nih.gov/explore/reduce/</a> – Reduce, Reuse, Recycle</p> <p>Waste and pollution: <a href="http://www.bbc.co.uk/schools/gcsebitesize/geography/wasting_resources/waste_pollution_rev1.shtml">www.bbc.co.uk/schools/gcsebitesize/geography/wasting_resources/waste_pollution_rev1.shtml</a></p>

Syllabus ref.	Learning objectives	Suggested teaching activities
		Learners discuss reasons why sustainable development and resource conservation are sometimes difficult and write up ideas.
3.7 Case study	Know a case study of an area where economic development is taking place causing the environment to be at risk	<p>Learners should know a case study of an area where economic development is taking place causing the environment to be at risk.</p> <p>This can be incorporated into any of the examples of economic development already studied, such as a farm, factory or tourism, or a separate example, such as, a mine or quarry could be studied. Suggested activities include:</p> <ul style="list-style-type: none"> <li>• sketch map to locate the economic activity</li> <li>• description of the activity</li> <li>• ways in which the environment is at risk – shown as a leaflet or newspaper report (local and global)</li> <li>• strategies / solutions to manage the risk.</li> </ul> <p>Suggested example: a case study of an area where economic development is taking place causing the environment to be at risk.</p> <p><b>India</b>  <a href="http://www.worldbank.org/en/news/feature/2014/03/06/green-growth-overcoming-india-environment-challenges-promote-development">www.worldbank.org/en/news/feature/2014/03/06/green-growth-overcoming-india-environment-challenges-promote-development</a>  <a href="http://timesofindia.indiatimes.com/home/environment/developmental-issues/Indias-remarkable-growth-story-clouded-by-a-degrading-environment/articleshow/21780246.cms">http://timesofindia.indiatimes.com/home/environment/developmental-issues/Indias-remarkable-growth-story-clouded-by-a-degrading-environment/articleshow/21780246.cms</a>  <a href="http://www.coolgeography.co.uk/GCSE/AQA/Changing%20Urban/Urbanisation&amp;environment/Urbanisation&amp;environment.htm">www.coolgeography.co.uk/GCSE/AQA/Changing%20Urban/Urbanisation&amp;environment/Urbanisation&amp;environment.htm</a>  <a href="http://www.righttwater.info/rights-in-practice/legal-approach-case-studies/case-against-coca-cola-kerala-state-india/">www.righttwater.info/rights-in-practice/legal-approach-case-studies/case-against-coca-cola-kerala-state-india/</a></p> <p>General ideas for delivery of case study content are outlined previously in the document.</p>
<b>Past and specimen papers</b>		
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