

10: Environmental risks of economic development

Syllabus ref.	Learning objectives	Suggested teaching activities
3.7 Environment al risks of economic development	Describe how economic activities may pose threats to the natural environment both locally and globally.	<p>Soil erosion: 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. (I)</p> <p>Soil erosion and salinisation: www.bbc.co.uk/schools/gcsebitesize/geography/ecosystems/human_uses_desert_rev3.shtml</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. (I)</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 (see Appendix) 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. (I) 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: www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_resources_rev1.shtml</p> <p>Learners look at photographs to show some of the different methods of soil conservation. 'Think, Pair, Share' activity (see Appendix: Think, Pair, Share) – 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"> • name of strategy • description of the strategy • explanation of how the strategy prevents/reduces soil erosion. <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. (I)</p>

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	Describe how economic activities may pose threats to the natural environment, locally and globally	<p>Desertification: 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. (I) 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. (I)</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. (I) Could also graph population growth for the same region over time and use to illustrate a human cause. (I)</p> <p>Whole class discussion of the local and global impacts on the environment of desertification – show as two mind maps.</p> <p>Extension activity: Explain the causes of ‘desertification’. (I)</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. (I)</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: www.bbc.co.uk/schools/gcsebitesize/geography/sustainability/sustainable_uses_environments_rev2.shtml</p>
	Describe how economic activities may pose threats to the natural environment locally and globally	<p>Enhanced global warming: 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. (I) Mind map what they already know about enhanced global warming – causes and effects.</p> <p>Climate change: www.wwf.org.uk/what_we_do/tackling_climate_change/</p>

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		<p>Provide a diagram to show how enhanced global warming occurs – learners annotate the diagram and write a short explanation to explain the process. (I)</p> <p>Learners produce a pie chart or divided bar graph to show the greenhouse gases and their percentage contribution to enhanced global warming. (I) Match gases to their sources and learners present as a table – causes of enhanced global warming.</p> <p>Greenhouse effect: www.bbc.co.uk/schools/gcsebitesize/geography/climate_change/greenhouse_effect_rev3.shtml</p> <p>Extension activity: Explain the causes of enhanced global warming. Make the link back to previous work on deforestation. (I)</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. (I)</p> <p>The following links will be useful here: Describing climatic trends: www.bbc.co.uk/schools/gcsebitesize/geography/climate_change/describing_climatic_trends_rev3.shtml</p> <p>Carbon footprints: www.bbc.co.uk/schools/gcsebitesize/geography/climate_change/carbon_footprints_rev1.shtml</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"> • use of renewable energy and nuclear power • reducing deforestation/afforestation • energy efficiency • reduced emissions from industry • sustainable living • soft engineering schemes for rivers and coasts • sustainable transport, etc. <p>Learners research summits/protocols and write a short report to show the suggested measures put in place and any impact they have had. (I)</p>

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	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. (I)</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"> • water pollution from waste into rivers • air pollution from emissions and acid rain and link to enhanced global warming • visual impact of factories • noise from factories and from delivery vehicles. <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 (I)</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"> • soil conservation • reducing desertification • managing pollution • population policies • sustainable living • sustainable cities • sustainable tourism • renewable energy • sustainable management of the rainforests, etc.
	Understand the importance of resource conservation	<p>Learners define 'resource' and update key word glossary. (I)</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: http://kids.niehs.nih.gov/explore/reduce/ – Reduce, Reuse, Recycle</p>

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		<p>Waste and pollution: www.bbc.co.uk/schools/gcsebitesize/geography/wasting_resources/waste_pollution_rev1.shtml</p> <p>Learners discuss reasons why sustainable development and resource conservation are sometimes difficult and write up ideas.</p>
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"> • sketch map to locate the economic activity • description of the activity • ways in which the environment is at risk – shown as a leaflet or newspaper report (local and global) • strategies/solutions to manage the risk.
Past and specimen papers		
<p>Past/specimen papers and mark schemes are available to download at https://teachers.cie.org.uk (F)</p> <p>3.7 Environmental risks of economic development Nov 2013 Paper 13 Q5c 5a and b Jun 2013 Paper 12 Q6a and 6b Nov 2012 Paper 11 Q6a</p>		