



<b>Geography</b>	<b>Working towards expected outcomes</b>	<b>Working at expected outcomes</b>	<b>Working beyond expected outcomes</b>
<p>Year 13 Autumn</p> <p>Resource Security</p>	<p>Your child is not yet making the expected progress within this course.</p> <p>Students working <b>towards</b> expected outcomes in Year 13 can:</p> <p><b>Resource development</b></p> <p>Give a basic definition of the term ‘resource’.</p> <p>Describe the different resource classifications to include stock and flow resources. Stock resource evaluation: measured reserves, indicated reserves, inferred resources, possible resources.</p> <p>Describe some of the stages in natural resource development over time: exploration, exploitation, development.</p> <p>Give a basic definition of the concept of the term ‘resource frontier’ and use an example to illustrate the term.</p> <p>Give a basic explanation of the phrase ‘Sustainable resource development’ and describe ways in which this can take place</p> <p>Describe what an Environmental Impact Assessment (EIA) is in relation to resource development projects.</p>	<p>Your child is achieving the expected progress for this point within the course.</p> <p>Students working at expected in Year 13 can:</p> <p><b>Resource development</b></p> <p>Give a clear definition of the term ‘resource’.</p> <p>Explain the different resource classifications to include stock and flow resources. Stock resource evaluation: measured reserves, indicated reserves, inferred resources, possible resources.</p> <p>Explain the stages in natural resource development over time: exploration, exploitation, development. Explain what happens at each stage.</p> <p>Give a clear definition of the concept of the term ‘resource frontier’ and use a range a range of examples at different spatial scales to illustrate the term.</p> <p>Give a clear explanation of the phrase ‘Sustainable resource development’ and explain ways in which this can take place</p> <p>Clearly explain what an Environmental Impact Assessment (EIA) is in relation to resource development projects and describe ways the EI can be mitigated.</p>	<p>Your child is exceeding the expected progress.</p> <p>Students working <b>beyond</b> expected in Year 13 demonstrate working at the expected level and can consistently apply this. They also can...</p> <p><b>Resource development</b></p> <p>Evaluate the factors that influence the availability and economic viability of resources.</p> <p>Analyse how the value of a resource changes over time and how technology influences the need for resources.</p> <p>Assess the viability of Environmental Impact Assessments in countries at different stages of economic developed i.e. LIC vs HIC</p>



<b>Water security</b>	<b>Water security</b>	<b>Water security</b>
<p>Simply describe global patterns of water availability and demand.</p> <p>Define different sources of water such as reservoirs, rivers and aquifers.</p> <p>Describe the different components of water demand including domestic, agriculture &amp; industry.</p> <p>Define the term 'water stress' and describe some physical &amp; human factors that lead to water stress.</p> <p>Describe the relationship of water supply (volume and quality) to key aspects of physical geography – climate, geology and drainage.</p> <p>Describe some strategies to increase water supply to include catchment, diversion, storage and water transfers and desalination.</p> <p>Describe the environmental impacts of a major water supply scheme incorporating a major dam and/or barrage and associated distribution networks – the Three Gorges Dam.</p> <p>Describe some strategies to manage water consumption (including reducing demand).</p> <p>Describe some of the sustainability issues associated with water management: virtual water trade, conservation, recycling, 'greywater' and groundwater management.</p>	<p>Clearly describe global patterns of water availability and demand.</p> <p>Clearly define and explain different sources of water such as reservoirs, rivers and aquifers.</p> <p>Explain the different components of water demand including domestic, agriculture &amp; industry. Explain how these differ between LICs, NEEs and HICs both in terms of volume and % of total use.</p> <p>Clearly define the term 'water stress' and explain physical &amp; human factors that lead to water stress.</p> <p>Describe and explain the relationship of water supply (volume and quality) to key aspects of physical geography – climate, geology and drainage. Successfully use a range of data from figures to evaluate this relationship.</p> <p>Clearly describe and explain strategies to increase water supply to include catchment, diversion, storage and water transfers and desalination. Begin to evaluate the effectiveness of these methods at a range of temporal and spatial scales.</p> <p>Explain the environmental impacts of a major water supply scheme incorporating a major dam and/or barrage and associated distribution networks – the Three Gorges Dam.</p> <p>Describe and explain a range of strategies to manage water consumption (including reducing demand). Begin to evaluate the effectiveness of the methods.</p>	<p>Evaluate how areas experiencing water stress are changing over a range of spatial and temporal scales, considering the external factors influencing this i.e. climate change, population growth</p> <p>Evaluate the social, economic &amp; environmental impacts of the strategies used to increase water supply.</p> <p>Clearly evaluate the effectiveness of the strategies used to sustainably manage water supply.</p> <p>Evaluate the inevitability of water conflict at a range of scales in a changing global climate</p>



	<p>Clearly explain the geopolitics of water resource distributions, trade and management using examples from water conflicts at a variety of scales – local, national, international.</p> <p>Case study of the Lesotho Highlands Water Project – describe how the scheme provides water security for South Africa and the impact this has had on human welfare in Lesotho.</p>	<p>Explain the sustainability issues associated with water management: virtual water trade, conservation, recycling, ‘greywater’ and groundwater management. For each method explain how these make water management more sustainable.</p> <p>Clearly explain the geopolitics of water resource distributions, trade and management using examples from water conflicts at a variety of scales – local, national, international.</p> <p>Case study of the Lesotho Highlands Water Project – explain how the scheme provides water security for South Africa and the impact this has had on human welfare in Lesotho.</p>	
<p>Year 13 Autumn</p> <p>Water &amp; Carbon</p>	<p>Students working <b>towards</b> expected outcomes in Year 12 can:</p> <ul style="list-style-type: none"> <li>• Give a basic understanding of the systems concept in physical geography. They are beginning to apply this concept to both the water and carbon cycles. For example, identifying; inputs – outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium.</li> <li>• Identify and name the global distribution and size of major stores of water – lithosphere, hydrosphere, cryosphere and atmosphere.</li> <li>• Explain some of the processes driving change in the magnitude of these stores (above) over time and space (scale), including a basic understanding of these flows and</li> </ul>	<p>Students working <b>at</b> expected in Year 12 can:</p> <ul style="list-style-type: none"> <li>• Explain the systems concept in physical geography and apply this concept to both the water and carbon cycles. For example, explaining; inputs – outputs, energy, stores/components, flows/transfers.</li> <li>• Explain the concept of positive/negative feedback and dynamic equilibrium in both the Water and Carbon cycle.</li> <li>• Describe the global distribution and size of major stores of water – lithosphere, hydrosphere, cryosphere and atmosphere.</li> <li>• Explain the processes driving change in the magnitude of these stores (above) over time and space (scale), including flows and transfers:</li> </ul>	<p>Students working <b>beyond</b> expected in Year 12 demonstrate working at the expected level and can consistently apply this. They also can:</p> <ul style="list-style-type: none"> <li>• Explain the systems concept in physical geography and apply this concept accurately with a variety of examples to both the water and carbon cycles. For example, explaining; inputs – outputs, energy, stores/components, flows/transfers.</li> <li>• Explain the concept of positive/negative feedback and dynamic equilibrium in both the Water and Carbon cycle. They can apply these concepts to other physical geography systems and make links between feedback in one cycle and its impact on the other.</li> <li>• Describe the global distribution and size of major stores of water – lithosphere,</li> </ul>



	<p>transfers: evaporation, condensation, cloud formation, causes of precipitation and cryospheric processes.</p> <ul style="list-style-type: none"><li>• Identify that drainage basins are open systems and name their inputs and outputs, this includes: precipitation, evapo-transpiration and runoff; stores and flows, to include interception, surface, soil water, groundwater and channel storage; stemflow, infiltration overland flow, and channel flow.</li><li>• Describe the concept of water balance. This includes identifying factors affecting the water balance.</li><li>• Describe runoff variation and the reiver regime. Some knowledge of the factors affecting this.</li><li>• Show an understanding of information from a flood hydrograph, with some characteristics such as peak discharge and lag time.</li><li>• Briefly explain changes in the water cycle over time to include natural variation and human impact.</li><li>• Identify and name the global distribution and size of major stores of carbon – lithosphere, hydrosphere, cryosphere biosphere, atmosphere.</li><li>• Explain some of the factors driving change in the magnitude of these stores over time and space, including flows and transfers at plant,</li></ul>	<p>evaporation, condensation, cloud formation, causes of precipitation and cryospheric processes.</p> <ul style="list-style-type: none"><li>• Explain how drainage basins are open systems by describing their inputs and outputs, this includes: precipitation, evapo-transpiration and runoff; stores and flows, to include interception, surface, soil water, groundwater and channel storage; stemflow, infiltration overland flow, and channel flow.</li><li>• Describe the concept of water balance and know the water balance formula. This includes explaining factors affecting the water balance.</li><li>• Explain runoff variation and the reiver regime. Including how to calculate discharge and the factors affecting this.</li><li>• Draw and infer information from a flood hydrograph, such as flashy and subdued characteristics.</li><li>• Explain changes in the water cycle over time to include natural variation including storm events, seasonal changes and human impact including farming practices, land use change and water abstraction.</li><li>• Describe the global distribution and size of major stores of carbon – lithosphere, hydrosphere, cryosphere biosphere, atmosphere.</li></ul>	<p>hydrosphere, cryosphere and atmosphere. This includes specific details such as statistics and static/dynamic flows.</p> <ul style="list-style-type: none"><li>• Explain in detail the processes driving change in the magnitude of these stores (above) over time and space (scale), including flows and transfers: evaporation, condensation, cloud formation, causes of precipitation and cryospheric processes. This includes considering how humans have impacted these flows and transfers and thus the stores.</li><li>• Explain in detail how drainage basins are open systems by describing their inputs and outputs, this includes: precipitation, evapo-transpiration and runoff; stores and flows, to include interception, surface, soil water, groundwater and channel storage; stemflow, infiltration overland flow, and channel flow. This is done in depth using sophisticated geographical terminology.</li><li>• Explain the concept of water balance and know the water balance formula. This includes explaining factors affecting the water balance, as well as considering how seasonal change and climatic conditions affects this.</li><li>• Explain Runoff variation and the reiver regime. Including how to calculate discharge and the factors affecting this. These factors are evaluated temporally and spatially.</li></ul>
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	<p>sere and continental scales. Photosynthesis, respiration, decomposition, combustion, carbon sequestration in oceans and sediments, weathering.</p> <ul style="list-style-type: none"><li>• Explain the changes in the carbon cycle. Show some understanding of natural variation (e.g. wildfires or volcanic activity) and human impact (e.g. farming practices, deforestation or land use changes).</li><li>• Describe the carbon budget and identify the impact of the carbon cycle upon the atmosphere.</li><li>• Describe the key role of the carbon and water stores and cycles in supporting life on Earth. Some understanding of climate change/global climate</li><li>• Identify the relationship between the water cycle and carbon cycle in the atmosphere. This includes the role of feedbacks within and between cycles. Describe how this affects life on Earth.</li><li>• Identify human interventions in the carbon cycle and explain how they work.</li><li>• Identify and name strategies to mitigate the impacts of climate change. Explain how some of these work. Identify benefits of some of these strategies</li><li>• Identify a tropical rainforest setting and use this to show key themes in water and carbon</li></ul>	<ul style="list-style-type: none"><li>• Explain the factors driving change in the magnitude of these stores over time and space, including flows and transfers at plant, sere and continental scales. Photosynthesis, respiration, decomposition, combustion, carbon sequestration in oceans and sediments, weathering.</li><li>• Explain the changes in the carbon cycle over time, to include natural variation (including wildfires, volcanic activity) and human impact (including hydrocarbon fuel extraction and burning, farming practices, deforestation, land use changes).</li><li>• Describe the carbon budget and explain the impact of the carbon cycle upon land, ocean and atmosphere, including global climate.</li><li>• Explain the key role of the carbon and water stores and cycles in supporting life on Earth with particular reference to climate.</li><li>• Explain the relationship between the water cycle and carbon cycle in the atmosphere. This includes the role of feedbacks within and between cycles. This can then be linked to climate change and consider the implications for life on Earth.</li><li>• Describe human interventions in the carbon cycle and explain how they are designed to influence carbon transfers.</li><li>• Know and understand how to mitigate the impacts of climate change. They explain</li></ul>	<ul style="list-style-type: none"><li>• Draw and infer information from a flood hydrograph, such as flashy and subdued characteristics, and applying these to OS maps.</li><li>• Explain in detail, with specific named examples, the changes in the water cycle over time to include natural variation including storm events, seasonal changes and human impact including farming practices, land use change and water abstraction. This can then be linked/applied back to systems terminology (stores, flows etc).</li><li>• Describe the global distribution and size of major stores of carbon – lithosphere, hydrosphere, cryosphere biosphere, atmosphere. This includes specific details such as statistics and static/dynamic flows.</li><li>• Explain the factors driving change in the magnitude of these stores over time and space, including flows and transfers at plant, sere and continental scales. Photosynthesis, respiration, decomposition, combustion, carbon sequestration in oceans and sediments, weathering. This includes considering how humans have impacted these flows and transfers and thus the stores.</li><li>• Explain, in detail using named examples, the changes in the carbon cycle over time, to include natural variation (including wildfires, volcanic activity) and human impact (including hydrocarbon fuel extraction and</li></ul>
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cycles. Explain the Amazon rainforest's relationship to environmental change. Explain how human activity affects the rainforest.

- Identify a local scale river catchment to show the key themes of the water cycle. Use field data and consider the impact of precipitation upon drainage basin stores and transfers. Describes flood risk of the River Exe and explains how the drainage basin's flood risk changes.

different mitigation strategies and consider positives and drawbacks of each.

- Describe a tropical rainforest setting and use this to illustrate key themes in water and carbon cycles. Explain the Amazon rainforest's relationship to environmental change at local, regional and global scale. Explain how the changing rainforest affects human activity and how human activity affects the rainforest.
- Describe a local scale river catchment to illustrate and analyse the key themes of the water cycle, using specific facts and place names. Use field data and consider the impact of precipitation upon drainage basin stores and transfers and implications for sustainable water supply and/or flooding. Evaluate how the drainage basin's flood risk changes.

burning, farming practices, deforestation, land use changes).

- Describe the carbon budget and explain the impact of the carbon cycle upon land, ocean and atmosphere, including global climate. Consider how the budget changes at different scales and over time,
- Explain in detail the key role of the carbon and water stores and cycles in supporting life on Earth with particular reference to climate.
- Explain the relationship between the water cycle and carbon cycle in the atmosphere, with specific named examples. This includes the role of feedbacks within and between cycles. This can then be linked to climate change and consider the implications for life on Earth.
- Describe human interventions in the carbon cycle and explain how they are designed to influence carbon transfers, with specific geographical terminology. Evaluate how impactful each intervention is.
- Know and understand how mitigate the impacts of climate change. Evaluate different mitigation strategies and consider positives and drawbacks of each, reaching conclusions on most effective and appropriate in different contexts.
- Explain a tropical rainforest setting and use this to analyse key themes in water and



			<p>carbon cycles. Explain the Amazon rainforest's relationship to environmental change at local, regional and global scale. Evaluate how the changing rainforest affects human activity and how human activity affects the rainforest. Analyse how the rainforests cycles have changed temporally and the reasons for this, including predictions for the future.</p> <p>Explain a local scale river catchment to illustrate and analyse the key themes of the water cycle, using specific facts and place names. Apply field data and analyse the impact of precipitation upon drainage basin stores and transfers and implications for sustainable water supply and/or flooding. Link between the water cycle and the carbon cycle for River Exe. Evaluate how the drainage basin's flood risk changes spatially and temporally.</p>
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