

# Geography

## Year 10: The Living World – Ecosystems and Tropical Rainforests

Assessment Opportunities	Literacy/Reading opportunities	CEIAG Links
<p>During each topic students complete a mid-unit knowledge test based on the unit knowledge covered. Students also complete an end-of unit assessment which includes key vocabulary, knowledge questions, geographical and extend writing.</p> <p>During the year, students complete a mid-year and end-of year assessment which assesses students on all content covered.</p>	<p>Tier 2 vocabulary is identified on page 2/3 of this SOL in the key knowledge list and is shown in <i>italics</i>.</p> <p>Tier 3 vocabulary is identified on page 2/3 of this SOL in the key knowledge list and is shown in <b>bold</b>.</p> <p>Reading opportunities take place regularly throughout all Geography schemes of learning.</p> <p>Extended writing opportunities take place regularly throughout all Geography schemes of learning. This is identified within this SOL (highlighted in yellow).</p>	<p>Use of satellite images.</p> <p>Use of different forms of maps and mapping tools.</p> <p>Links to environmental management made throughout topic – how do we conserve tropical rainforests?</p> <p>Environment and agriculture Science/ conservation/ Engineering/ global governance</p>

### Curriculum vision:

“Our aim is to deliver a curriculum that is inclusive, relevant and progressive for all learners.”



## UNIT TITLE: The Living World - Ecosystems and tropical rainforests

<p><b>Estimated Lesson Breakdown</b></p> <ol style="list-style-type: none"> <li>1) Pond ecosystems</li> <li>2) Interdependence in pond ecosystems</li> <li>3) Change within ecosystems</li> <li>4) Location of ecosystems</li> <li>5) Diagnostic/therapies</li> <li>6) Characteristics of tropical rainforests</li> <li>7) Adaptations in tropical rainforests</li> <li>8) Adaptations in tropical rainforests</li> <li>9) Deforestation around the world</li> <li>10) Deforestation in the Amazon</li> <li>11) Impacts of deforestation</li> <li>12) Why are tropical rainforests important?</li> <li>13) Ways of reducing rate of deforestation?</li> <li>14) Assessment Snapshot</li> </ol>	<p><b>Assessment</b></p> <p>Lesson 5 – Diagnostic/therapies (KB1) Lesson 14 – Assessment snapshot (KB1, KB2, KB3, KB4)</p> <p><b>Practice Exam Questions</b></p> <p>Lesson 10 – Using a case study, outline the causes of deforestation (6 marks). Lesson 13 – Evaluate the use of strategies used to manage tropical rainforests sustainably (9 marks).</p> <p><b>Skills Coverage</b></p> <p>P3 – use and interpret ground, aerial and satellite photographs P4 – describe physical landscapes from photographs P6 – label and annotate diagrams, maps, graphs, sketches and photographs N3 – Understand and correctly use proportion, ratio, magnitude and frequency. N4 – Draw informed conclusions from numerical data S2 – calculate percentage increase or decrease and understand the use of percentiles.</p>
<p><b>Notes</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>	<p><b>Knowledge Stands/Links to Previous Learning</b></p> <p><b>Changing weather and climate:</b></p> <ul style="list-style-type: none"> <li>• 7.5 The Arctic – Factors affecting the distribution of ecosystems (latitude and latitude).</li> <li>• 8.4 Is the world becoming drier? – How Hadley cells, rain shadow and prevailing winds influence climate</li> </ul> <p><b>Global ecosystems:</b></p> <ul style="list-style-type: none"> <li>• 7.5 The Arctic – the components of ecosystems and the distribution of major world ecosystems</li> <li>• 8.2 How has the shape of Snowdonia changed over time? – Distribution of cold environments worldwide</li> <li>• 8.4 Is the world becoming drier? – Distribution and characteristics of hot deserts.</li> </ul>
<p><b>Specification Content</b></p>	<p><b>Teaching List – Key words in bold</b> <b>Tier 2 words in Bold/italics</b></p>
<p>An example of a small scale UK ecosystem to illustrate the concept of interrelationships within a natural system, an understanding of producers, consumers, decomposers, food chain, food web and nutrient cycling.</p> <p>The balance between components. The impact on the ecosystem of changing one component.</p> <p>An overview of the distribution and characteristics of large scale natural global ecosystems.</p>	<p><b>KB1</b></p> <ul style="list-style-type: none"> <li>○ The characteristics of pond ecosystems in the UK</li> <li>○ The role of interdependence within pond ecosystems including definitions and examples of <b>biotic</b> and <b>abiotic components</b>.</li> <li>○ Examples of different components within pond ecosystems and their place in <b>food webs/chains</b></li> <li>○ Definitions of <b>biomass</b>, <b>salinity</b>, <b>nutrient cycling</b></li> <li>○ How the <b>nitrogen cycle</b> works within pond ecosystems and the role of <b>Nitrosomonas</b> and <b>Nitrobacter</b>.</li> <li>○ The <b>location</b> and <b>characteristics</b> of major world ecosystems including: Brown earth woodlands, polar, mountain, tundra, Mediterranean, Savannah Grasslands</li> </ul>

<p>The physical characteristics of a tropical rainforest.</p> <p>The interdependence of climate, water, soils, plants, animals and people.</p> <p>How plants and animals adapt to the physical conditions.</p> <p>Issues related to biodiversity.</p>	<p><b>KB2</b></p> <ul style="list-style-type: none"> <li>○ The <b>distribution</b> of tropical rainforests around the world</li> <li>○ The <b>characteristics</b> of tropical rainforest climates (temperature and rainfall annually).</li> <li>○ The characteristics of <b>latosols</b></li> <li>○ How <b>components</b> of ecosystems and <b>interdependent</b> and the role of <b>nutrient cycling</b></li> <li>○ The challenges for survival in tropical rainforests: soil, heat, humidity, competition for sunlight, food, predators)</li> <li>○ The adaptations of plants and t animals within tropical rainforests. <ul style="list-style-type: none"> <li>○ Animals: Spider monkey, Toucan</li> <li>○ Plants: drip-tip leaves, buttress roots, Epiphytes.</li> </ul> </li> </ul>
<p>Changing rates of deforestation.</p> <p>A case study of a tropical rainforest to illustrate:</p> <p>causes of deforestation – subsistence and commercial farming, logging, road building, mineral extraction, energy development, settlement, population growth</p> <p>impacts of deforestation – economic development, soil erosion, contribution to climate change.</p>	<p><b>KB3</b></p> <ul style="list-style-type: none"> <li>○ Change to the <b>rates of deforestation</b> in The Amazon and the reasons for differences in rate.</li> <li>○ The causes of deforestation in The Amazon including examples of Trans-Amazonian highway, Carjias mine, damming along the Tapajos river, population growth in Manaus.</li> <li>○ Impacts of deforestation within The Amazon including Local: <b>soil erosion</b>/fertility, river pollution, decline in <b>indigenous tribes</b> and conflict and Global: climate change, loss of <b>biodiversity</b>.</li> </ul>
<p>Value of tropical rainforests to people and the environment.</p> <p>Strategies used to manage the rainforest sustainably – selective logging and replanting, conservation and education, ecotourism and international agreements about the use of tropical hardwoods, debt reduction.</p>	<p><b>KB4</b></p> <ul style="list-style-type: none"> <li>○ The value of tropical rainforests including new medicines, <b>carbon capture</b> and international trade/development.</li> <li>○ Strategies to manage rainforests sustainably including: International Tropical Trade Agreement 2006, 2010 <b>conservation swaps</b>, work of WWF in The Amazon, role of governments, <b>ecotourism</b>, <b>selective logging</b>.</li> </ul>