**Geography A Level Learning Journey**

| **Year 12 Coastal landscapes Checklist** | setoN | ☺  | ☹ | ?noisiveR |
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| **Why are coastal landscapes different and what processes cause these differences?** |  |  |  |  |
| *2B.1 The coast, and wider littoral zone, has distinctive features and landscapes.* |  |  |  |  |
| Describe the features of the littoral zone in a wide variety of coastal types including backshore, nearshore and offshore zones |  |  |  |  |
| Explain why the coastal zone is a dynamic zone which can undergo rapid change.  |  |  |  |  |
| Explain how coasts can be classified by using longer term criteria such as geology and changes of sea level or shorter term processes such as inputs from rivers, waves and tides. |  |  |  |  |
| Analyse the differences between rocky coasts and coastal plains consider: 1) energy levels and sources 2) geology 3) sediment supply  |  |  |  |  |
| 2B.2 Geological structure influences the development of coastal landscapes at a variety of scales. |  |  |  |  |
| Explain how geological structure is responsible for the formation of concordant and discordant coasts. |  |  |  |  |
| Explain how geological structure influences coastal morphology: Dalmatian and Haff type concordant coasts and headlands and bays on discordant coasts. |  |  |  |  |
| Explain how geological structure (jointing, dip, faulting, folding) is an important influence on coastal morphology and erosion rates, and also on the formation of cliff profiles and the occurrence of micro-features, e.g. caves |  |  |  |  |
| 2B.3 Rates of coastal recession and stability depend on lithology and other factors. |  |  |  |  |
| Explain how bedrock lithology (igneous, sedimentary, metamorphic) and unconsolidated material geology are important in understanding rates of coastal recession. |  |  |  |  |
| Explain how differential erosion of alternating strata in cliffs (permeable/impermeable, resistant/less resistant) produces complex cliff profiles and influences recession rates |  |  |  |  |
| Explain why vegetation is important in 1)stabilising sandy coastlines through dune successional development on sandy coastlines and 2)salt marsh successional development in estuarine areas |  |  |  |  |
| *How do characteristic coastal landforms contribute to coastal landscapes?* |  |  |  |  |
| 2B.4 Marine erosion Creates distinctive coastal landforms and contributes to coastal landscapes. |  |  |  |  |
| Explain how different wave types (constructive/destructive) influence beach morphology and beach sediment profiles.  |  |  |  |  |
| Explain how waves can beach morphology and sediment profiles can vary at a variety of temporal scales from short term (daily) through to longer periods. |  |  |  |  |
| Explain the importance of erosion processes (hydraulic action, corrosion, abrasion, attrition)  |  |  |  |  |
| Explain how erosional processes are influenced by wave type, size and lithology. |  |  |  |  |
| Explain how erosion creates distinctive coastal landforms (wave cut notches, wave cut platforms, cliffs, the cave arch-stack stump sequence). |  |  |  |  |
| *2B.5 Sediment transport and Deposition create distinctive landforms and contribute to coastal landscapes.* |  |  |  |  |
| Explain how sediment transportation is influenced by the angle of wave attack, tides and currents and the process of longshore drift. |  |  |  |  |
| Explain how transportation and deposition processes produce distinctive coastal landforms (beaches, recurved and double spits, offshore bars, barrier beaches and bars, tombolos and cuspate forelands), |  |  |  |  |
| Explain how depositional landforms can be stabilised by plant succession.  |  |  |  |  |
| Explain why the Sediment Cell concept (sources, transfers and sinks) is important in understanding the coast as a system with both negative and positive feedback, it is an example of dynamic equilibrium. |  |  |  |  |
| *2B.6 Subaerial processes of mass movement and weathering influence coastal landforms and contribute to coastal landscapes.* |  |  |  |  |
| Explain how weathering (mechanical, chemical, biological) is important in sediment production and influences rates of recession. |  |  |  |  |
| Explain why mass movement (blockfall, rotational slumping, landslides) is important on some coasts with weak and/or complex geology. |  |  |  |  |
| Explain how mass movement creates distinctive landforms (rotational scars, talus scree slopes, terraced cliff profiles). |  |  |  |  |
| *How do coastal erosion and sea-level change alter the physical characteristics of coastlines and increase risks?* |  |  |  |  |
| 2B.7 Sea level change influences coasts on different timescales. |  |  |  |  |
| Explain how longer-term sea level changes result from a complex interplay of factors both eustatic (ice formation/melting, thermal changes) and isostatic (post glacial adjustment, subsidence, accretion) and tectonics. |  |  |  |  |
| Explain how sea level change has produced emergent coastlines (raised beaches with fossil cliffs) and submergent coastlines (rias, fjords and Dalmatian) |  |  |  |  |
| Explain why contemporary sea level change from global warming or tectonic activity is a risk to some coastlines. |  |  |  |  |
| 2B.8 Rapid coastal retreat causes threats to people at the coast. |  |  |  |  |
| Explain how rapid coastal recession is caused by physical factors (geological and marine) but can also be influenced by human actions (dredging or coastal management, the Nile Delta, Guinea and Californian coastlines) |  |  |  |  |
| Explain how sub aerial processes (weather and mass movement) work together to influence rates of coastal recession. |  |  |  |  |

| Explain how rates of recession are not constant and are influenced by different factors both short- and longer term (wind direction/fetch, tides, seasons, weather systems and occurrence of storms). |  |  |  |  |
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| **2B.9 Coastal flooding is a significant and increasing risk for some coastlines.** |  |  |  |  |
| Explain how local factors increase flood risk on some low-lying and estuarine coasts (height, degree of subsidence, vegetation removal); global sea level rise further increases risk. |  |  |  |  |
| Explain why storm surge events can cause severe coastal flooding with dramatic short-term impacts (depressions, tropical cyclones) can cause severe coastal flooding |  |  |  |  |
| Explain how climate change may increase coastal flood risk (frequency and magnitude of storms, sea level rise) but why the pace and magnitude of this threat is uncertain. |  |  |  |  |
| Explain why the pace and magnitude of coastal flooding, caused by climate change is uncertain. |  |  |  |  |
| **How can coastlines be managed to meet the needs of all players?** |  |  |  |  |
| 2B.10 Increasing risks of coastal recession and coastal flooding have serious consequences for affected communities. |  |  |  |  |
| Explain why the impact of coastal recession can be significant, especially in areas of dense coastal developments consider both economic losses (housing, businesses, agricultural land, infrastructure) and social losses (relocation, loss of livelihood, amenity value) .  |  |  |  |  |
| Explain how coastal flooding and storm surge events can have serious economic and social consequences for coastal communities in both developing and developed countries |  |  |  |  |
| Explain how climate change may create environmental refugees in coastal areas |  |  |  |  |
| 2B.11 There are different approaches to managing the risks associated with coastal recession and flooding. |  |  |  |  |
| Explain how hard engineering approaches (groynes, sea walls, rip rap, revetments, offshore breakwaters) are economically costly and directly alter physical processes and systems. |  |  |  |  |
| Explain how soft engineering approaches (beach nourishment, cliff regarding and drainage, dune stabilisation) attempt to work with physical systems and processes to protect coasts and manage changes in sea level. |  |  |  |  |
| Evaluate the success of sustainable management in its ability to cope with future threats (increased storm events, rising sea levels)  |  |  |  |  |
| Explain how implementation of sustainable management can lead to local conflicts in many countries |  |  |  |  |
| 2B.12 Coastlines are now increasingly managed by holistic integrated coastal zone management (ICZM). |  |  |  |  |
| Explain how coastal management increasingly uses the concept of littoral cells to manage extended areas of coastline. Use examples from around the world to aid in this explanation |  |  |  |  |
| Explain how policy decisions (No Active Intervention, Strategic Realignment and Hold The Line Advance The Line) are based on complex judgements (engineering feasibility, environmental sensitivity, land value, political and social reasons); Cost Benefit Analysis (CBA) and Environmental Impact Assessment (EIA) are used as part of the decision making process. |  |  |  |  |
| Explain how policy decisions can lead to conflicts between different players (homeowners, local authorities, environmental pressure groups) with perceived winners and losers in countries at different levels of development (developed and developing or emerging countries) |  |  |  |  |