**Geography A Level Learning Journey**

**Year 12 Tectonics Checklist**

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| **Why are some locations more at risk from tectonic hazards?** |  |  |  |  |
| **1.1** The global distribution of tectonic hazards can be explained by plate boundary and other tectonic processes. |  |  |  |  |
| Describe and explain the global distribution of earthquakes, volcanic eruptions and tsunamis |  |  |  |  |
| Describe the distribution of plate boundaries (divergent, convergent and conservative) |  |  |  |  |
| Explain cause of intra- plate earthquakes and volcanoes |  |  |  |  |
| **1.2** There are theoretical frameworks that attempt to explain plate movements. |  |  |  |  |
| Explain the theory of plate tectonics (internal structure, mantle convection, palaeomagnetism and sea floor spreading, subduction and slab pull) |  |  |  |  |
| Explain how the processes operate at different margins (destructive, constructive, collision and transform). |  |  |  |  |
| Explain how physical processes can impact upon the: 1) magnitude of volcanic eruptions 2) type of eruption 3) magnitude of earthquakes 4)earthquake focal depth |  |  |  |  |
| **1.3** Physical processes explain the causes of tectonic hazards. |  |  |  |  |
| Explain how P, S and L waves cause crustal fracturing, ground shaking and secondary hazards such as liquefaction and landslides. |  |  |  |  |
| Explain how volcanoes cause lava flows, pyroclastic flows, ash falls, gas eruptions, and secondary hazards such as lahars, jökulhlaup. |  |  |  |  |
| Explain how tsunamis can be caused by sub-marine earthquakes at subduction zones as a result of sea-bed and water column displacement |  |  |  |  |
| **Why do some tectonic hazards develop into disasters?** |  |  |  |  |
| **1.4 Disaster occurrence can be explained by the relationship between hazards, vulnerability, resilience and disaster.** |  |  |  |  |
| Define the difference between a hazard and a natural disaster. |  |  |  |  |
| Explain the importance of vulnerability and a community’s threshold for resilience the hazard risk equation |  |  |  |  |
| Explain the Pressure and Release model (PAR) and the complex inter-relationships between the hazard and its wider context. |  |  |  |  |
| Analyse the social and economic impact of tectonic hazards on the people, economy and environment of contrasting locations in the developed, emerging and developing world |  |  |  |  |
| **1.5 Tectonic hazard profiles are important to an understanding of contrasting hazard impacts, vulnerability and resilience.** |  |  |  |  |
| Explain how the magnitude and intensity of tectonic hazards is measured using different scales (Mercalli, Moment Magnitude Scale (MMS) and Volcanic Explosivity Index (VEI)). |  |  |  |  |
| Analyse the characteristics of earthquakes, volcanoes and tsunamis (magnitude, speed of onset and areal extent, duration, frequency, spatial predictability) through hazard profiles. |  |  |  |  |
| Analyse the range of profiles of earthquake, volcano and tsunami events showing the severity of social and economic impact in developed, emerging and developing countries. |  |  |  |  |
| **1.6 Development and governance are important in understanding disaster impact and vulnerability and resilience.** |  |  |  |  |
| Analyse the impact of access to education, housing, healthcare and income opportunities on vulnerability and resilience. |  |  |  |  |
| Analyse the impact of governance and geographical factors (population density, isolation and accessibility, degree of urbanisation) on vulnerability and a community’s resilience. |  |  |  |  |
| Analyse contrasting hazard events in developed, emerging and developing countries to show the interaction of physical factors and the significance of context in influencing the scale of disaster. |  |  |  |  |
| **How successful is the management of tectonic hazards and disasters?** |  |  |  |  |
| **1.7 Understanding the complex trends and patterns for tectonic disasters helps explain differential impacts.** |  |  |  |  |
| Describe tectonic disaster trends since 1960 (number of deaths, numbers affected, level of economic damage) in the context of overall disaster trends. |  |  |  |  |
| Analyse the accuracy and reliability of the hazard data. |  |  |  |  |
| Explain how tectonic mega-disasters can have regional or even global significance in terms of economic and human impacts. |  |  |  |  |
| Explain the concept of a multiple-hazard zone and explain how linked hydrometeorological hazards sometimes contribute to a tectonic disaster |  |  |  |  |
| **1.8 Theoretical frameworks can be used to understand the predication, impact and management of tectonic hazards.** |  |  |  |  |
| Explain how prediction and forecasting accuracy depends on the type of location of the tectonic hazard. |  |  |  |  |
| Analyse the importance of of different stages in the hazard management cycle (response, recovery, mitigation, preparedness). |  |  |  |  |
| Explain the use of Park’s Model to compare the response curve of hazard events, comparing areas at different stages of development |  |  |  |  |
| **1.9 Tectonic hazard impacts can be managed by a variety of mitigation and adaptation strategies, which vary in their effectiveness.** |  |  |  |  |

| Evaluate the use of strategies to modify the event include land-use zoning, hazard – resistant design and engineering defences as well as diversion of lava flows. |  |  |  |  |
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| Evaluated the use of strategies to modify vulnerability and resilience include hi-tech monitoring, prediction, education, community preparedness and adaptation. |  |  |  |  |
| Evaluate the use of strategies to modify loss include emergency, short- and longer-term aid and insurance (P: role of NGOs and insurers) and the actions of affected communities themselves. |  |  |  |  |