

# Geography

## Year 10: Living with Natural Hazards -Earthquakes and Volcanoes

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 volcanology and geology made throughout topic – what happens when volcanoes erupt?</p> <p>Environment and agriculture Science/volcanologist/geologist Engineering</p>

### Curriculum vision:

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



**UNIT TITLE: Living with Natural Hazards –**

**Earthquake and Volcanoes**

<p><b>Estimated Lesson Breakdown</b></p> <ol style="list-style-type: none"> <li>1) Natural hazards</li> <li>2) Distribution of plate boundaries</li> <li>3) Plate tectonics theory</li> <li>4) What happens at destructive plate boundaries?</li> <li>5) What happens at constructive and conservative plate boundaries?</li> <li>6) How do different types of volcano form?</li> <li>7) Diagnostic/therapies</li> <li>8) How do earthquakes happen?</li> <li>9) What happens during earthquakes?</li> <li>10) Examples of earthquakes</li> <li>11) Living with tectonic hazards</li> <li>12) Tectonics assessment snapshot</li> </ol>	<p><b>Assessment</b> Lesson 7 – Diagnostic/therapies (KB1, KB2) Lesson 11 – Tectonics assessment snapshot (KB1, KB2, KB3, KB4).</p> <p><b>Practice Exam Questions</b> Lesson 6 – Explain how volcanic features form at destructive plate boundaries (4 marks) Lesson 10 – Using examples of tectonic hazards from areas of contrasting wealth, suggest why the impacts of hazards can vary (9 marks).</p> <p><b>Skills Coverage</b> AM2 – Recognise and describe distributions and patterns of physical features AM4 – Analyse inter-relationships between physical and human factors on maps P4 – describe physical landscapes from photographs N1 – demonstrate an understanding of numbers, area and scales N3 – Understand and correctly use proportion and ratio, magnitude and frequency.</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>Geomorphic change:</b></p> <ul style="list-style-type: none"> <li>• 7.2 Are volcanoes more dangerous in E. Russia or Iceland? – introduction to tectonic processes/theory.</li> </ul> <p><b>Global economic development:</b></p> <ul style="list-style-type: none"> <li>• 8.3 Why are all countries not equally rich? – development indicators, impact of hazards on development</li> <li>• 9.4 Why are some tropical storms worse than others? – differences in impacts and responses to hazards based on wealth.</li> <li>• Factors affecting hazard risk worldwide</li> </ul>
<p><b>Specification Content</b></p>	<p><b>Teaching List – Key words in bold</b> <b><i>Tier 2 words in Bold/italics</i></b></p>
<p>Definition of a natural hazard</p> <p>Types of natural hazard</p> <p>Factors influencing hazard risk</p>	<p><b>KB1</b></p> <ul style="list-style-type: none"> <li>○ The definitions of <b>hazard risk, natural hazard and natural disasters.</b></li> <li>○ The different types and examples of natural hazards: <b>geomorphological, tectonic, atmospheric.</b></li> <li>○ The different factors influencing <b>hazard risk</b> around the world: wealth, location, size of hazard, <b>population density.</b></li> </ul>
<p>Plate tectonic theory</p> <p>Global distribution of earthquakes and volcanic eruptions and their relationship to plate margins</p>	<p><b>KB 2</b></p> <ul style="list-style-type: none"> <li>○ The structure of the earth (<b>inner core, outer core, mantle, crust</b>)</li> <li>○ The theory of sea-floor spreading and <b>continental drift</b> in informing modern plate tectonic theory.</li> </ul>

<p>Physical processes taking place at different types of plate margin (constructive, destructive and conservative) that lead to earthquakes and volcanic activity.</p>	<ul style="list-style-type: none"> <li>○ How <b>convection currents</b> and <b>slap pull</b> lead to plate movement.</li> <li>○ The different types of crust and their <b>characteristics (oceanic and continental)</b>.</li> <li>○ The different types of <b>plate boundary</b> and their location.</li> <li>○ The <b>distribution</b> of <b>volcanoes</b> and <b>earthquakes</b> around the world</li> <li>○ Features and processes taking place at <b>destructive plate margins (subduction, deep ocean trenches, fold mountain, composite cone volcanoes, earthquakes, tsunamis)</b>.</li> <li>○ Features and processes taking place at <b>constructive margins (mid-ocean ridge, shield volcanoes, earthquakes, rift valleys)</b>.</li> <li>○ Features and processes taking place at <b>conservative margins (earthquakes)</b>.</li> <li>○ The processes leading to earthquakes to occur.</li> <li>○ The processes leading to the formation of composite cone and shield volcanoes</li> <li>○ How earthquakes are measured (<b>frequency and magnitude, seismographs</b>).</li> </ul>
<p>Primary and secondary effects of a tectonic hazard</p> <p>Immediate and long-term responses to a tectonic hazard.</p> <p>Use named examples to show how the effects and responses to a tectonic hazard vary between two areas of contrasting wealth.</p>	<p><b>KB3</b></p> <ul style="list-style-type: none"> <li>○ The definitions of <b>primary</b> and <b>secondary effects, immediate and long-term responses</b>.</li> <li>○ The effects and responses to earthquakes in Haiti 2010 and L'Aquila 2009.</li> <li>○ Reasons for differing effects and responses in areas of varying wealth.</li> </ul>
<p>Reasons why people continue to live in areas at risk from a tectonic hazard.</p> <p>How monitoring, prediction, protection and planning can reduce the risks from a tectonic hazard.</p>	<p><b>KB4</b></p> <ul style="list-style-type: none"> <li>○ Reasons people live near tectonic hazards: <b>geothermal energy, farming, mining, tourism</b> and <b>poverty</b>.</li> <li>○ The different methods for reducing the risk of earthquakes and volcanoes: <ul style="list-style-type: none"> <li>○ <b>Monitoring:</b> GPS, seismometers, heat sensors, gas measurements, water temperature</li> <li>○ <b>Protection:</b> earthquakes proof buildings, limited design changes to withstand volcanic effects</li> <li>○ <b>Planning:</b> evacuation plans, emergency shelters, preparation of emergency help and aid supplies.</li> <li>○ <b>Prediction:</b> how monitoring can be used to predict volcanic activity and use of historical records in predicting earthquakes.</li> </ul> </li> </ul>