

# KESTEVEN AND SLEAFORD HIGH SCHOOL

## Geography Scheme of Learning Year 7 – Term 3/Unit 3/Restless Planet

### Intent – Rationale

The intent of this unit is to introduce Y7 students to physical geography through knowledge and understanding of earthquakes and volcanoes. Students are taught to locate these tectonic hazards using latitude and longitude and to understand the processes taking place at plate boundaries. The landforms of mid-ocean ridges and deep ocean trenches are located and explained. Using Iceland as a named example, students develop an understanding of how Iceland was formed and why it has so many active volcanoes including Eyjafjallajökull which erupted in 2010. We also consider the economic, social and environmental impacts of this eruption at a range of scales.

<b>Sequencing – what prior learning does this topic build upon?</b>	<b>Sequencing – what subsequent learning does this topic feed into?</b>
<ul style="list-style-type: none"> <li>• KS2 - identifying the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian</li> <li>• KS2 - describing and understanding key aspects of physical geography, including volcanoes and earthquakes</li> </ul>	<ul style="list-style-type: none"> <li>• GCSE – tectonic hazards with case studies of earthquakes (Tohoku 2011 and Nepal 2015)</li> <li>• A-Level (Y12) – tectonic processes and hazards</li> </ul>
<b>What are the links with other subjects in the curriculum?</b>	<b>What are the links to SMSC, British Values and Careers?</b>
<ul style="list-style-type: none"> <li>• Science – rock types and the earth’s structure</li> </ul>	SMSC – SP2. Careers – h) IT and computing skills – writing a newspaper report
<b>What are the opportunities for developing literacy skills and developing learner confidence and enjoyment in reading?</b>	<b>What are the opportunities for developing mathematical skills?</b>
From the Library:	<ul style="list-style-type: none"> <li>• Line graph drawing of the Mariana Trench</li> </ul>

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## Geography Scheme of Learning

### Year 7– Term 3 Unit 3

#### Intent – Concepts

##### **What knowledge will students gain and what skills will they develop as a consequence of this topic?**

##### **Know**

How to identify and locate lines of latitude and longitude on a world map  
The difference between different layers of the earth? (inner core, outer core, mantle, crust) that make up the earth's structure  
The distribution of earthquakes and volcanoes on a world map?  
The different types of plate boundary and examples?  
What the Mariana Trench is like and where it is located  
What a volcano is and how it is formed  
What Iceland is like and how it was formed by volcanoes?  
The causes and impacts of the Eyjafjallajokull volcano in Iceland in 2010

##### **Apply**

Understanding of longitude and latitude information to locate volcanoes and earthquakes on a map  
Use knowledge of the earth's structure to describe the depth, temperature and state of matter of the inner core, outer core, mantle and crust  
Knowledge of plate tectonics to explain the location of earthquakes and volcanoes  
Knowledge of processes acting at plate boundaries to explain the formation of volcanoes, earthquakes, ocean trenches and fold mountains?  
Application of skills of plotting a line graph to draw a cross-section of the Mariana Trench and label a range of features  
Knowledge of the impact of volcanic eruptions to explain the advantages and disadvantages of living near them in places including Iceland?

##### **Extend**

Knowledge of the impact of volcanic hazards to rank and justify volcanic hazards (ash shower, pyroclastic flow, dust, volcanic gases, lava flow) in order of danger

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Knowledge of the Eyjafjallajokull volcano in Iceland to categorise the social, economic and environmental impacts and immediate/long-term responses in a newspaper article	
What subject specific language will be used and developed in this topic?	What opportunities are available for assessing the progress of students?
<p>latitude, longitude, relief, Greenwich Meridian, hemisphere, inner core, outer core, mantle, crust, Mid-Atlantic Ridge, rift valley, fault, plate tectonics, crust, constructive plate margin, destructive plate margin, conservative plate margin, volcano, crater, magma, lava, vent, hot spot, crater, pyroclastic flow, plume, subduction zone, ocean trench</p>	<p>Assessment will take 3 main forms:</p> <ul style="list-style-type: none"> <li>• In starters, plenaries and during the lessons – formative assessment to reinforce prior knowledge e.g. word searches, bingo, memory recall, definition matches etc.</li> <li>• For homeworks - tasks that require students to research new knowledge or apply existing knowledge to extended answers. EG. Mariana Trench. What is it? When was it discovered? What marine life lives there? What is Challenger Deep? What happens to the ‘plates’ at this location?</li> <li>• Summative assessments: multiple-choice, one mark answers, extended answers in test or exam conditions as end-of-unit tests</li> </ul> <p>Key word meaning and spelling tests are included as part of the focus on building a knowledge bank of geographical vocabulary.</p>

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## Intent – Concepts

Lesson title	Learning challenge	Higher level challenge	Suggested activities and resources
1) Latitude and longitude	Can I identify lines of latitude including the Equator, the Tropic of Capricorn, the Tropic of Cancer, the Arctic Circle and the Antarctica Circle and lines of longitude including the Prime Meridian?	Can I use longitude and latitude information to locate volcanoes and earthquakes on a map?	<p>Powerpoint 1</p> <p>Geog. 1 4<sup>th</sup> Edition pages 20-21</p> <p>Clips – Michael Palin at the Equator  <a href="https://www.youtube.com/watch?v=xBrIYTQwQBY">https://www.youtube.com/watch?v=xBrIYTQwQBY</a></p> <p>Challenge clip to consolidate understanding  <a href="https://www.youtube.com/watch?v=swKBiGhHHMA">https://www.youtube.com/watch?v=swKBiGhHHMA</a></p> <p>Blank world map to label</p> <p>Atlases</p> <p>Geog. 1 4<sup>th</sup> edition. Pages 42-43. Q2 and Q3</p> <p>Worksheet – volcanoes and earthquakes (see SL)</p> <p>Homework – latitude and longitude sheet (see SL for a copy)</p>
2) Structure of the earth	Can I identify different layers of the earth? (inner core, outer core, mantle, crust)	Can I explain the characteristics of the earth's structure? What are the layers made of, depth, temperature, state of matter?	<p>Powerpoint 2</p> <p>Starter: Volcanoes and earthquake sheet.</p> <p>Brief explanation of plate boundaries and labelling on map (from starter) the Mid-Atlantic Ridge (narrow, steep-sided rift valley), the Ring of Fire and the Mariana Trench.</p> <p>Worksheet to shade showing characteristics of the earth's structure. (ask SL)</p> <p>Geog. 1 4<sup>th</sup> edition. Pages 86-87. Q1,2,3</p> <p>Homework: Research some information about:</p> <ol style="list-style-type: none"> <li>a) Mariana Trench. What is it? When was it discovered? What marine life lives there? What is Challenger Deep? What happens to the 'plates' at this location?</li> <li>b) Mid-Atlantic Ridge. What is it? How long/deep? When was it discovered? What islands are part of it? What happens to the 'plates' at this location?</li> </ol>

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3)Plate tectonics theory	Can I describe the distribution of earthquakes and volcanoes on a world map?	Can I explain the location of earthquakes and volcanoes by referring to plate tectonic theory?	<p>Powerpoint 3</p> <p>Starter – key word jumbling</p> <p>Map labelling identifying linear patterns of earthquakes and volcanoes</p> <p>Clip up to 3:35 plate tectonics explanation  <a href="https://www.youtube.com/watch?v=Kg_UBLFUpYQ">https://www.youtube.com/watch?v=Kg_UBLFUpYQ</a></p> <p>Gap fill task from powerpoint</p> <p>Geog. 3 4<sup>th</sup> edition. Pages 88-89 Answer questions 1,2,5,6</p> <p>Homework: Key word and spelling test</p>
4)Plate boundaries	Can I state the different types of plate boundary and give examples?	Can I explain the processes acting at plate boundaries which create volcanoes, earthquakes, ocean trenches and fold mountains?	<p>Powerpoint 4</p> <p>Clip on types of plate boundaries from 3:35 onwards  <a href="https://www.youtube.com/watch?v=Kg_UBLFUpYQ">https://www.youtube.com/watch?v=Kg_UBLFUpYQ</a></p> <p>Worksheet – what processes take place at plate boundaries?</p> <p>Geog. 3 4<sup>th</sup> edition – read and make notes to complete worksheet.</p> <p>Extension: In pairs:</p> <p><i>One of you is an expert geologist who has studied plate tectonics.</i></p> <p><i>One of you is a 12 year old student</i></p> <p><i>Write a short conversation between the expert and the student explaining what is happening at ONE of the plate margins. Try and explain without words but by drawing diagrams and labels on a mini whiteboard and using relevant geographical words. Be prepared to perform at the end of the lesson!</i></p>
5) Ocean trenches – Mariana Trench	Can I describe the Mariana Trench (location, depth)	Can I draw a cross-section of the Mariana Trench and label a range of features	<p>Powerpoint 5</p> <p>Starter – Plate boundary singalong</p> <p>Check homework – what do we already know about the Mariana Trench?</p> <p>Locate on an atlas</p> <p>Clips – what caused trench to form? Make the link with destructive plate margins from previous lesson and introduce the term ‘subduction.’</p> <p>James Cameron clip – visiting Challenger Deep  <a href="https://www.youtube.com/watch?v=v5DG5Eup9ss">https://www.youtube.com/watch?v=v5DG5Eup9ss</a></p>

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			Task – drawing a cross-section of the Mariana Trench and labelling features
6)Volcanoes	Can I describe what a volcano is and explain its formation?	Can I explain what damage volcanoes do and justify my ranking of volcanic hazards in order of danger (ash shower, pyroclastic flow, dust, volcanic gases, lava flow)?	<p>Powerpoint 6</p> <p>Starter -images of volcanoes and volcanologists – who? What? Where? Why? When?</p> <p>Check prior knowledge - On your mini whiteboard explain to your partner how volcanoes form?</p> <p>On which type of plate margins are volcanoes found?</p> <p>What is a pyroclastic flow? Clip of Mt. Unzen in Japan exploding.  <a href="https://www.youtube.com/watch?v=Cvjwt9nnwXY">https://www.youtube.com/watch?v=Cvjwt9nnwXY</a></p> <p>Brainstorm – what damage do volcanic eruptions cause?  <u>Geog.3 (4<sup>th</sup> edition) Page 98-99</u></p> <p>1) Read carefully. Answer questions 2 - 4          (Question 2 – make your diagram a full page a and include detailed labels)</p> <p>Extension: Q5 – be prepared to read this out!</p> <p>Homework - Why do you think people choose to live near volcanoes?          Can you research this and answer in the form of a paragraph in your exercise book?</p>
7)Welcome to Iceland!	Can I describe what Iceland is like and how it was formed by volcanoes?	Can I explain the advantages and disadvantages of living in a volcanic area such as in parts of Iceland?	<p>Powerpoint 7</p> <p>Starter – images of Iceland. What is the connection?</p> <p>Homework check – what do you find out about the Mid-Atlantic Ridge?          Clip showing Mid-Atlantic Ridge in Iceland  <a href="https://www.bbc.co.uk/programmes/p00fztvj">https://www.bbc.co.uk/programmes/p00fztvj</a></p> <p>Geog.1 4<sup>th</sup> edition, pages 100-101. Answer questions 1,2,4,5,6.</p> <p>Brainstorm from homework – why do people choose to live in volcanic areas? Use page 103 and clip to support ideas  <a href="https://www.youtube.com/watch?v=Hzwwrptvgly">https://www.youtube.com/watch?v=Hzwwrptvgly</a></p> <p>Plenary: What is this and why are there examples of these in Iceland?          Link to Old Faithful geyser in Yellowstone National Park, USA and clip</p>

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<p>8) Iceland Eyjafjallajokull volcano 2010</p>	<p>Can I describe the causes and impacts of the Eyjafjallajokull volcano in Iceland in 2010?</p>	<p>Can I categorise the social, economic and environmental impacts of the Eyjafjallajokull volcano in Iceland in 2010?</p>	<p>Powerpoint 8            Starter – animated image of 2010 ash cloud.            What impact do you think this spread of ash would have on:</p> <ol style="list-style-type: none"> <li>a) People living near the volcano?</li> <li>b) People living in Iceland?</li> <li>c) People living in the UK?</li> <li>d) People living in the USA?</li> <li>e) People living in Kenya?</li> <li>f) Practice pronunciation of Eyjafjallajokull</li> </ol> <p>Clip <a href="https://www.youtube.com/watch?v=OyZHhYDWNk">https://www.youtube.com/watch?v=OyZHhYDWNk</a>            Students to practise pronouncing Eyjafjallajokull and read together a BBC news article from March 2010 highlighting and defining key terms            Students to watch various clips and a geographical documentary about the eruption answering questions on the worksheet and discussing.  <a href="https://www.youtube.com/watch?v=sjVfkooyT6k">https://www.youtube.com/watch?v=sjVfkooyT6k</a>            Question sheet from the video clip            Homework - Next lesson we will be producing newspaper articles about the Eyjafjallajökull volcano in Iceland. You will need to carry out some research to support you in this task.            Go online and find out some information about the following:</p> <ul style="list-style-type: none"> <li>• The cause of the volcano – Ideas about the Mid-Atlantic Ridge and the fact that Iceland is located on a constructive plate margin</li> <li>• The impacts of the volcano</li> <li>• Responses to the volcanic event. What did the government do immediately and in the longer term?</li> </ul> <p>(suggested websites are provided)</p>
<p>9) IT room newspaper article about the volcano</p>	<p>Can I produce using ICT a structured newspaper article explaining the</p>	<p>Can I include in my article evidence of independently researched information</p>	<p>Powerpoint 9            Links to websites for research provided            Task sheet provided with success criteria</p>

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(assessment)	causes, impacts and responses to the Eyjafjallajökull volcano in Iceland?	with reference to long-term/short-term responses as well as primary/secondary impacts?	Students have one lesson and one homework to produce this piece of work
10) Iceland volcano model (extra lesson if time allows)	Can I make a model of the Iceland volcano?	Can I add extra labels to my model based on independent research about the Eyjafjallajökull volcano in Iceland?	Powerpoint 10 The students can create this model which has clear labels showing the type of plate boundary and characteristics of the volcano in Iceland which will support their understanding