

KSHS Physical Geography Transition Work: Summer 2021 – Miss Chant

In Y12 Physical Geography lessons you will be studying the two topics of:

- Tectonic Processes and hazards
- Coastal landscapes and change

Task 1: GCSE work/revision:

- Read through and revise your notes on tectonic hazards to consolidate your prior learning of the topic in preparation for the A-Level course – see the GCSE specification below:

Key idea	Specification content
Earthquakes and volcanic eruptions are the result of physical processes.	Plate tectonics theory (convection currents, slab pull theory) Global distribution of earthquakes and volcanic eruptions and their relationship to plate margins. Physical processes taking place at different types of plate margin (constructive, destructive and conservative) that lead to earthquakes and volcanic activity.
The effects of, and responses to a tectonic hazard vary between areas of contrasting levels of wealth.	Primary and secondary effects of a tectonic hazard. Immediate and long-term responses to a tectonic hazard. Use named examples (e.g. Nepal/Haiti and Tohoku/New Zealand earthquakes) to show how the effects and responses to a tectonic hazard vary between two areas of contrasting levels of wealth.
Management can reduce the effects of a tectonic hazard	Reasons why people continue to live in areas at risk from a tectonic hazard. How monitoring, prediction, protection and planning can reduce the risks from a tectonic hazard.

Task 2: Glossary: Complete the glossary of key terms on pages 3-5.

Task 3: Tectonic Case Studies

For the A-level course, you need to know a range of case studies from countries at different stages of development. We would like to you independently research the following FOUR examples of tectonic hazards:

Volcanoes: Eyjafjallosjökull, Iceland 2010 (HIC) AND Nyiragongo, Democratic Republic of the Congo 2021 (latest eruption) (LIC)

Earthquake: Sichuan, China 2008 (NEE)

Tsunami: Tohoku, Japan 2011 (HIC)

For each case study you will need to include:

- The physical causes of the event e.g. plate boundary, names and types of plates, tectonic processes.
- The hazards associated with this event e.g. lava, pyroclastic flows, liquefaction, landslides.
- The specific effects of the tectonic event e.g. social, economic, environmental, short and long term.

- Management strategies used to reduce the impacts e.g. earthquake proof structures, education and planning, monitoring.

For each case study you also need to try answering the following questions:

- What physical factors influenced the scale of the disaster? *e.g. magnitude, distance from epicentre, depth of focus, geology, relief, distance from sea etc.)*
- What human factors influenced the scale of the disaster? *e.g. level of development, governance, degree of urbanisation, population density, accessibility, the scale of damage etc.)*

You will need to incorporate maps, photos and diagrams into your work and each case study should be at least a page of typed work (excluding visuals).

PLEASE ENSURE THAT THE GLOSSARY OF KEY TERMS AND CASE STUDIES ARE PRINTED OFF AND SUBMITTED TO YOUR GEOGRAPHY TEACHER IN YOUR FIRST A-LEVEL GEOGRAPHY LESSON IN SEPTEMBER

Task 4: Developing independent geographical awareness

We strongly encourage you to read around the subject to spark your interest of tectonic hazards. Watching documentaries and films, listening to relevant podcasts and keeping up to date with recent events on news channels can greatly support your knowledge and understanding of the tectonic hazards topic. Have a look at the suggestions of documentaries, films and other resources on pages 6/7.

Glossary: Tectonic Processes and hazards

Asthenosphere	
Ash	
Benioff Zone	
Bomb (lava)	
Cone	
Collision Zone	
Conservative margin	
Constructive margin	
Continental drift	
Core	
Crater	
Crust	
Destructive margin	
Epicentre	
Fault	
Focus	

Fold mountain	
Governance	
Hot spot	
Hypocentre	
Island arc	
Intra-plate	
Jokulhlaup	
Lahars	
Lava	
Liquefaction	
Lithosphere	
Love wave	
Magma	
Mantle	
Nuée ardente/ pyroclastic flow	
Oceanic trench	
Palaeomagnetis m	

Primary wave	
Pyroclastic flow	
Rayleigh wave	
Rift valley	
Sea floor spreading	
Secondary wave	
Subduction	
Tsunami	
Alfred Wegener	

Books, movies and documentaries on this topic:

Books:

Island on Fire- The Extraordinary story of Laki by Alexandra Witze & Jeff Kanipe: ISBN: 1781252661
Laki is Iceland's largest volcano. Its eruption in 1783 is one of history's great, untold natural disasters. Spewing out sun-blocking ash and then a poisonous fog for eight long months, the effects of the eruption lingered across the world for years. It caused the deaths of people as far away as the Nile and created catastrophic conditions throughout Europe.

Super Volcano by Greg Breining: ISBN: 0760336547

Explores the shocking answer to this question and others in a scientific yet accessible look at the enormous natural disaster brewing beneath the surface of the United States. Yellowstone is one of the world's five 'super volcanoes.'

Documentaries:

1. **BBC Earth: Power of the Planet 1 (available to watch online)**
This documentary uses breathtaking footage to examine the great tectonic forces that shape the life story of the planet
2. **A Perfect Planet 1: Volcanoes (available for the next few weeks on BBC I-player)**
This documentary looks at how, without volcanoes, there would be no life on earth. Although destructive, magma from the planet's molten core builds land, and mineral-rich ash from eruptions fertilises the surface.
3. **Planet Earth – Episode 2 – Mountains (on BBC iplayer for 11 months)**
Looks at how mountains are formed from tectonic processes. A great David Attenborough programme!

Films:

1. **Pompeii (2014) (12A)**
Inspired by the eruption of Mount Vesuvius in AD79 that buried the city of Pompeii, it looks at the terror caused by a volcanic eruption.
2. **San Andreas (2015) (12A)**
A fictional film that portrays the destructive impact that a strong earthquake along California's notorious San Andreas fault line could have on nearby cities, such as Los Angeles and San Francisco.
3. **The Impossible (2012) (12)**
Based on a survivor's experience of the 2004 Boxing Day tsunami in the Indian Ocean, which was caused by an undersea earthquake measuring over 9 on the Richter Scale.
4. **Dante's Peak (1997) (12)**
Set in the fictional town of Dante's Peak the film looks at what can happen when a dormant volcano wakes up. Great for looking at the warning signs before an eruption and the difficulties of accurate prediction and evacuation orders.

Podcasts: - there are many interesting podcasts available including the following:

1. Geopod Episode #35. Professor Tamsin Mather – ‘Volcanoes – a fundamental fascination’.
<https://www.geography.org.uk/GeogPod-The-GAs-Podcast>
Tamsin is professor of Earth Sciences and her research centres around volcanoes and volcanic activity.
2. Plate Tectonic and Earthquake Prediction with Dr. Rebecca Bell - Royal Geographical Society (with IBG) schools. (22 March 2018 - available on iTunes and Soundcloud)
<https://www.rgs.org/schools/teaching-resources/ask-the-expert-podcasts/>