Geography	Why do some earthquakes cause more damage than others? (Connected Geography)	Year 3 Unit 1

Intent:

Children will build on their knoweldge and understanding of physical geography, in particular one of the major outcomes of tectonic activity – earthquakes. Children will begin to understand why earthquakes only tend to occur in particular areas of the world as a consequence of the pattern and movement of the tectonic plates of the Earth's crust. The relationship between people and environment remains central to the unit as the children wil investigate the causes and impact of earthquakes.

Pupils should be taught to:

Locational knowledge: locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on their environmental regions, key physical and human characteristics, countries, and major cities;

identify 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 and time zones (including day and night).

Human and physical geography: describe and understand key aspects of:

physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle;

human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water.

Geographical skills and fieldwork: use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied;

use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom and the wider world.

Prior learning:

ELG	Year 1	Year 2			
People, culture and communities	Why do we love living by the seaside?	How does the geography of Kampong Ayer compare with where I live?			

Key Vocabulary:			
Tier 2 - Multiple meanings or high frequency			
Continent	Fault	Crust	Volcano
Location	Plate	Eruption	Lava / Magma
Tier 3 - Subject specific			
Earthquake		Magnitude	
Epicentre		Richter Scale	

Etymology and morphology		
Prefix / Suffix / Root	Meaning	Examples

geography	the study of the physical features of the earth and its atmosphere, and of human activity as it affects and is affected by these, including the distribution of populations and resources and political and economic activities.	From geographia (Greek) - geographie (French) - geography (English 15th Century).
earthquake	a sudden violent shaking of the ground, typically causing great destruction, as a result of movements within the earth's crust or volcanic action.	*In 1906 an earthquake destroyed much of San Francisco.*
volcano	A volcano is an opening in the earth's crust through which lava, volcanic ash, and gases escape.	**ORIGIN OF VOLCANO** 1605–15; <Italian <Latin *Volcānus,* variant of *Vulcānus*Vulcan

Idioms and colloquialisms	
	Meaning

Misconceptions	
Not true	Teach this
All volcanoes erupt and cause devastation.	Some are active and do erupt. Some eruptions are more violent than others. Some volcanoes are continuously active but not causing devastation. Other volcanoes do not erupt and are known as dormant.

Lesson number	Key enquiry question & learning objective	Suggested learning activities	Cumulative questions
1	**Why won't Paula and Richard forget 22nd February 2011?** L.O. Tbat use a range of sources to locate and describe the effects of the Christchurch earthquake of 2011.	• Read the letter to the children which recounts the events of the Christchurch earthquake – the letter doesn't state what caused the devastation. Discuss what was witnessed and how they felt about what they saw. • Locate New Zealand and the city of Christchurch on a map – opportunity to revisit continents and oceans and you could mention lines of latitude and longitude. • Use photographs to identify the kinds of damage caused by the earthquake.	1-3
2	**How has New Zealand been affected by earthquakes in the past?** L.O. Tbat observe and record the distribution of earthquakes in New Zealand over the past 200 years.	• Explain that the earthquake that hit Christchurch in 2011 was not an unusual occurrence – they happen regularly. • Analyse and discuss the data represented about earthquakes – discuss the meaning of key terms such as epicentre and magnitude. Using the data, children work out the average number of years between serious earthquakes (over 6.0 on the Richter Scale. When do they think the next one will occur? • Compile a map of the distribution of earthquakes in New Zealand. Label the epicentres of each earthquake. Create a key for their map. • Where are the earthquakes occurring? • Children sum up three things that they have observed about the earthquake pattern.	1-6
3	**Why does New Zealand have so many earthquakes?** L.O. Tbat describe and explain why New Zealand experiences earthquakes when many other places don't experience any.	• Look at maps and diagrams which show the location of major earthquakes in the world since 1900. Locate New Zealand on the images. What do the diagrams show about where earthquakes occur within the world? What about the UK? What are the children's ideas about what causes earthquakes? • Introduce the children to plates and the structure of the Earth. • Compare the locations of earthquakes with plate boundaries. • Use video clips to demonstrate what causes earthquakes. https://video.link/w/x4B2c https://video.link/w/W4B2c	6-8

		• Children could produce a poster or PowerPoint presentation to explain how earthquakes are caused.	
4	**Why don't the largest earthquakes always cause the most death and destruction?** L.O. Tbat draw conclusions and explain why the largest earthquakes don't always cause the most damage.	• In pairs or groups, children discuss what might affect the amount of damage that an earthquake can do. • Discuss the importance of where an earthquake happens (location) i.e. below a city or in the middle of an ocean, the population of nearby areas to the earthquake and the time of day at which it happens. • Compare the effects of the Haiti earthquake in 2010 with the earthquake near Concepcion in Chile in 2010. • Children can design and produce a poster called: Why the Haiti earthquake caused so much more destruction than the earthquake in Chile?	7-10
5	**Why do most volcanoes happen in the same places as earthquakes?** L.O. Tbat identify, describe and explain the causes of volcanoes.	• Look at maps or images showing the volcanoes in New Zealand. • Watch videos which explain how a volcano is formed https://www.youtube.com/watch?v=Fq8NtkPOzfA • Compare a map of volcanoes with a map of earthquakes. What do the children notice? • Draw a storyboard / flow diagram / comic strip to explain the 6 stages in the formation of a volcano.	9-12