

BILSTON CHURCH OF ENGLAND PRIMARY



MEDIUM TERM PLANNING

Subject	Topic/Key Question	Year Group	Term	Time Allocation
Geography	Why do some Earthquakes cause more damage than others?	3	Autumn 2	9 hours

What knowledge and skills will children have gained by the end of this unit?

- To know what an earthquake is.
- To know what causes an earthquake.
- To know how an earthquake is formed.
- To know how an earthquake affects a town, village, or city.
- To know how an earthquake is measured.
- To know how to locate where an earthquake has taken place on a map.
- To know where earthquakes happen most frequently and why,
- To compare earthquake damage in two different countries.
- To locate cities and countries that have been impacted by earthquakes.
- To understand why some earthquakes cause more damage than others.
- To name all parts of a volcano.
- To understand how a volcano is formed.
- To locate volcanoes on a map.

Lesson Sequence	Time Allocation	Key Question/WALT	Teaching Activities <i>Computing opportunities</i>	Resources	Vocabulary

Lesson 1	1 hour	<p>Ancillary Question 1: Why won't Paula and Richard forget 22nd February 2011?</p> <p>By the end of this lesson children will be able to:</p> <ul style="list-style-type: none"> • Make predictions about a natural disaster. • Locate New Zealand on a map using an atlas. 	<p>Do not tell the children that they are going to be investigating Earthquakes.</p> <p>Read the letter – Resource 1</p> <p>Discuss – What did Paula and Richard witness? How did they feel about what happened? What do you think happened? What makes you think that is what happened?</p> <p>Read the final paragraph again – Resources 2</p> <p>Discuss what is Paula describing when she writes 'the ground beneath our feet shakes.' Discuss and explain that she is referring to an earthquake.</p> <p>Explain that the earthquake happened in Christchurch, New Zealand. Locate New Zealand and the city of Christchurch by revisiting the world map of continents and oceans showing lines of latitude and longitude in Resource 3.</p> <p>Look at the more detailed political map of Oceania – Resource 4</p> <p>Watch video - www.youtube.com/watch?v=T32YvIEYS7I – shows CCTV footage of actual earthquake.</p>	<p>Collins Teacher Notes Resources 1 to 5</p> <p>Map of New Zealand</p> <p>YouTube videos</p> <p>www.youtube.com/watch?v=T32YvIEYS7I</p> <p>www.youtube.com/watch?v=aIC7JpUuDMI</p>	<ul style="list-style-type: none"> - Earthquake -New Zealand -Locate -Location -continent -ocean -latitude -longitude -political
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			<p>Watch video - www.youtube.com/watch?v=aLC7JpUuDMI – shows aftermath.</p> <p>MAY WANT TO TURN SOUND OFF!</p> <p>Look at images of the damage caused – Resource 5.</p> <p>Children to locate Christchurch and New Zealand on a map then write about the earthquake. Include detail about the damage it caused.</p>		
Lesson 2	1 hour	<p>Ancillary Question 2: How has New Zealand been affected by earthquakes in the past?</p> <p>By the end of this lesson children will be able to:</p> <ul style="list-style-type: none"> • Understand geographical vocabulary relating to Earthquakes. • 	<p>What did we look at last lesson? Locate New Zealand and Christchurch on maps on the board.</p> <p>Give copies of the table – Resource 6. TTYP - What do you think epicentre means?</p> <p>Introduce and explain vocabulary – epicentre, magnitude, Richter scale etc.</p> <p>Epicentre - The location or place on the Earth's surface directly above where an earthquake happens as the rocks move below.</p> <p>Magnitude – The size or power of an earthquake</p>	<p>Collins Teacher Notes Resources 6 to 8</p> <p>Maps and atlas</p> <p>Key</p> <p>Table</p>	<p>-epicentre</p> <p>-magnitude</p> <p>-richter scale</p> <p>-earthquake</p> <p>-major</p> <p>-moderate</p> <p>-key</p>

Richter scale – what is used to measure an earthquake (0-10)

Explain that the higher the earthquake is on the Richter scale, the greater the amount of energy it releases when it occurs.

Use Resource 6 and 7 to help outline New Zealand Resource 8.

Identify where all the earthquakes happened.

Look at official categories for earthquakes – great, major, strong, moderate, light and minor. (Include numbers from Richter Scale)

Which would be the strongest? Which would cause the least amount of damage? Can you see any of these on the table? – Resource 6

Give children this key

Magnitude	Colour
6.3 - 6.7	Blue
6.8 - 7.2	Purple
7.3 - 7.7	Yellow
7.8 - 8.2	Orange
8.2 and above	Red

Children to use this key to help them colour code

the map and show where the earthquakes occurred.

			Differentiate activity		
Lesson 3	1 hour	<p>Ancillary Question 3: Why does New Zealand have so many Earthquakes?</p> <p>By the end of this lesson children will be able to: Understand how earthquakes are caused.</p> <ul style="list-style-type: none"> • identify earthquakes on a map. • Understand what cause Earthquakes. • Use geographical vocabulary to explain how an earthquake begins. 	<p>Recap last lesson.</p> <p>Give copies of maps – Resources 9 and 10. Resource 10 show the location of major earthquakes to hit the world since 1900 as green circles of different size and colour.</p> <p>The map projection will be different from what the pupils are familiar with as it is centered on the Pacific Ocean. Ask the pupils to locate New Zealand on both maps.</p> <p>Look at how it is impossible to see the outline of New Zealand as it's completely covered with earthquake location symbols.</p> <p>What do the pupils observe about where earthquakes occur in the world? Do they occur everywhere? What about the United Kingdom? Clearly they happen in some places and not others – mostly within the earthquake zones shown in light green on the map. Do the pupils have any ideas about what causes earthquakes?</p> <p>Look at the map and plate boundaries – Resource 11. What is a plate?</p> <p>Look at the diagram – Resource 12 – Explain that the very thin (on average only 40 km thick) outer layer of the Earth called the <i>crust</i> is broken up into huge</p>	<p>Collins Teacher Notes Resources 9 to 13.</p> <p>YouTube Video</p>	<ul style="list-style-type: none"> - Earthquakes -pacific -projection -United Kingdom -map -plate boundaries -crust -fault lines

		<p>blocks called plates – rather like the shell of a hard-boiled egg when it is tapped with a spoon (this can be demonstrated to the pupils!)</p> <p>What do the pupils notice about New Zealand in the map of plate boundaries in Resource 11? They should be able to see clearly that the country sits right on top of the crack between one plate and another – which two plates? Earthquakes tend to occur mostly along the cracks or boundaries all around the world where one plate meets another. Geographers call these cracks <i>faults</i>. The fault between the Indo-Australian Plate and Pacific Plate runs through New Zealand and is known as the <i>Alpine Fault</i>.</p> <p>Explain that the plates of the Earth are not stationary but move very slowly in different directions.</p> <p>Show the Indo-Australian Plate and Pacific Plate crashing into each other head – Resource 13. Explain that when one plate plunges below another in this was the rocks are forced to bend and grind against each other. When the rocks 'stick' together, huge stresses build up until they slip apart causing massive amounts of energy to be</p>		
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			<p>released. This causes the Earth above to shake, causing an earthquake.</p> <p>Watch video - www.youtube.com/watch?v=aQTjFCMYE14</p> <p>Children to put together the map joining it together by the plates and describe what causes an earthquake.</p>		
Lesson 4	1 hour	<p>Ancillary Question 4: Why don't the largest earthquakes always cause the most death and destruction?</p> <p>By the end of this lesson children will be able to:</p> <ul style="list-style-type: none"> • Understand the richter scale and recall how it identifies the significance of earthquakes. • Show an understanding of the 	<p>Recap last lesson – What causes an earthquake? How are earthquakes measured?</p> <p>Go through facts about earthquakes explaining each step up on the Richter scale means the earthquake is 10x greater.</p> <p>TTYP – Does this mean that the most powerful earthquakes will always cause the most destruction?</p> <p>Do you think that the damage depends on where an earthquake happens? E.g below a city, in the middle of the ocean or somewhere remote where few people are living.</p> <p>Do you think the time of day or night will have an impact on how much damage is caused?</p>	<p>Collins Teacher Notes Resources 14 to 18.</p> <p>Facts about the earthquakes.</p> <p>Word banks</p> <p>IPads/laptops for research</p>	<p>-Richter scale</p> <p>-city</p> <p>-ocean</p> <p>-remote</p> <p>-earthquake</p> <p>-Chile</p> <p>-Haiti</p> <p>-compare</p> <p>-contrast</p>

		<p>impacts of earthquakes on different countries.</p>	<p>Do you think the amount of damage can be different depending on how rich or poor a country is?</p> <p>Feedback responses.</p> <p>Explain if an earthquake occurs in a busy city it will cause more death and damage, but in the middle of an ocean or where very few people live there will be less deaths and less damage.</p> <p>Earthquakes that happen at night will cause more deaths as everyone will be asleep and cannot evacuate.</p> <p>Richer countries can afford to build stronger houses which will not get damaged as much as those weaker buildings in poorer countries.</p> <p>Richer countries also have more money which means they can have emergency drills in place and well-trained search and rescue services.</p> <p>Show Haiti on a map. Look at images of the damage caused by the earthquake in Haiti.</p> <p>Compare to the earthquake that happened in Chile. Explain how Chile is a wealthier country with stronger buildings. Look at images of the damage.</p>	
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			Children to compare both earthquakes, explaining how the Chile earthquake resulted in less deaths and damage due to being wealthier than Haiti.		
Lesson 5	1 hour	<p>WALT: describe the effects of an earthquake.</p> <p>By the end of this lesson children will be able to:</p> <ul style="list-style-type: none"> Write a diary entry in first person in response to how they would feel in the event of an Earthquake. 	<p>What did we look at last lesson? TTYP – What causes an earthquake? How are earthquakes measured?</p> <p>Get children to think about what it would be like if they experienced an earthquake.</p> <p>Look at the letter from the first lesson – Resource 1</p> <p>Highlight how Paula and Richard felt and how they described the earthquake. Highlight what they saw.</p> <p>Children to write a diary pretending that they were on holiday in Haiti in 2010. Describe how you felt, what did the earthquake feel like, what you saw, where you were staying, who you were with, did you evacuate or not, what did you do to keep safe?</p> <p>Look at pictures of the damage in Haiti and write a WAGGOL as a class.</p>	<p>Collins Teacher Notes Resource – 1</p> <p>Pictures from Haiti earthquake.</p>	<p>- Earthquake</p> <p>-Richter scale</p> <p>-escape</p>
Lesson 6	1 hour	<p>WALT: describe the effects of an earthquake.</p>	<p>What did we look at last lesson? TTYP – What causes an earthquake? How are earthquakes measured?</p> <p>Get children to think about the media coverage for the Haiti earthquake.</p>	<p>Collins Teacher Notes Resources – pictures of damage in Haiti</p> <p>Newspaper template – The Haiti Express</p>	<p>- Earthquake</p> <p>-Haiti</p> <p>-Richter scale</p>

		<p>By the end of this lesson children will be able to:</p> <ul style="list-style-type: none"> • Explain the destruction on a town due to an Earthquake. 	<p>TTYP – What would they be reporting?</p> <p>Children to write a newspaper report on the Haiti earthquake. Discuss – What features do we need to include?</p> <p>Facts to include:</p> <ul style="list-style-type: none"> • 7.0 on the Richter scale • 220,000 people died • 188,000 houses destroyed • 1.5 million people made homeless • Include a quote from someone you have spoken to (someone who has lost their home) <p>Write a WAGGOL as a class using the same template the children will have. Explain the layout and language that would be used.</p>	<p>2Publish software – newspaper template</p>	
Lesson 7	1 hour	<p>Ancillary Question 5: Why do most volcanoes happen in the same places as earthquakes?</p> <p>By the end of this lesson children will be able to:</p> <ul style="list-style-type: none"> • Label parts of a volcano. 	<p>What did we look at last lesson?</p> <p>Show map – Resource 19 (Shows volcanoes in New Zealand)</p> <p>Explain that New Zealand is not only known for having earthquakes, but also has lots of volcanoes – Resource 20.</p> <p>How does a volcano form?</p> <p>Watch Videos - www.youtube.com/watch?v=Be7o6BYVOzA and www.youtube.com/watch?v=WgktM2lul_0k</p>	<p>Collins Teacher Notes Resources 10, 19, 20, 21 and 22</p> <p>Word banks</p> <p>YouTube Video</p>	<p>-Volcano</p> <p>-lava</p> <p>-magma</p> <p>-ash</p> <p>-vent</p> <p>-conduit</p> <p>-eruption cloud</p> <p>-pattern</p> <p>-compare</p>

		<ul style="list-style-type: none"> Explain the stages of a volcano formation. 	<p>Give out copies of the maps – Resources 10 and 21. Compare the maps. What do you notice about the pattern of volcanoes compared with earthquakes?</p> <p>Children to describe and explain six stages in the formation of a volcano using the storyboard template in Resource 22.</p>		
Lesson 8	1 hour	<p>WALT: identify famous volcanoes.</p> <p>By the end of this lesson children will be able to:</p> <ul style="list-style-type: none"> Name famous volcanoes. Locate volcanoes on a map. 	<p>Recap – What did we look at last lesson?</p> <p>TTYP – Do you know the names of any famous volcanoes?</p> <p>Introduce 3 famous volcanoes</p> <ul style="list-style-type: none"> Mount Vesuvius, Pompeii, Italy Mount Etna, Sicily, Italy Mount St. Helen, United States <p>Go through facts about each volcano.</p> <p>Children to write about each volcano.</p>	<p>Pictures of the famous volcanoes.</p> <p>Word banks</p> <p>IPads/laptops for research</p>	<ul style="list-style-type: none"> -locate -location -volcanoes -Pompeii, Italy -Sicily, Italy -United States -Mount Vesuvius -Mount Etna -Mount St.Helen -map
Lesson 9	1 hour	<p>WALT: locate, describe and explain why so many earthquakes and volcanoes occur</p>	<p>What did we look at last lesson?</p> <p>TTYP – Where do earthquakes happen? What do we know about earthquakes and volcanoes?</p>	<p>Image of Pacific Ring of Fire</p>	<ul style="list-style-type: none"> - Earthquake -Volcano

		<p>around the Pacific Ring of Fire.</p> <p>By the end of this lesson children will be able to:</p> <ul style="list-style-type: none"> describe why earthquakes happen mostly around the Pacific ring of fire. Use geographical language to explain why earthquakes happen in specific places. 	<p>Has anyone heard of the Pacific Ring of Fire?</p> <p>Look at Pacific Ring of Fire – What do you notice about it?</p> <p>Explain that the Pacific Ring of Fire is on tectonic plates.</p> <p>Facts about the Pacific Ring of Fire – home to 75% of the world’s dormant volcanoes – explain what dormant means.</p> <p>The Pacific Ring of Fire was caused by tectonic plates</p> <p>It is where 80%-90% of earthquakes happen.</p> <p>Most earthquakes happen here because the tectonic plates move so much.</p> <p>Children to colour in the outline of the Pacific Ring of Fire and write facts about it.</p>		<p>-Pacific ring of Fire</p> <p>- map</p> <p>-tectonic plate</p> <p>-dormant</p> <p>-co-ordinates</p>
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<p><u>Links to the National Curriculum</u></p> <p><u>Locational knowledge</u></p> <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> 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 name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics, key topographical features (including hills, mountains, coasts and rivers), and land-use patterns; and understand how some of these aspects have changed over time. 	
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Place Knowledge

Pupils should be taught to:

- understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America

Human and Physical geography

Pupils should be taught to:

- describe and understand key aspects of physical geography, including climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle.

Geographical skills and fieldwork

Pupils should be taught to:

- use maps, atlases, globes, and digital/computer mapping to locate countries and describe features studied.