

Topic: Geography Locational Knowledge/ Key question	Year group	Term
Earthquakes Why do some earthquakes cause more damage than others?	Year 4	Summer 6 sessions

Context

The enquiry begins with the personal account of two people who experienced first-hand the Christchurch earthquake in New Zealand in 2011, together with a range of additional resources which captured the event. From the first two ancillary questions pupils are able to understand the impact of a single discrete earthquake event in one specific location before broadening their focus and being encouraged to think more conceptually - moving from the known to the unknown. Once the pupils have gained a solid awareness of why New Zealand is so regularly impacted by earthquakes, they are able to identify and explain global patterns of tectonic activity associated with the plates of the Earth's crust. It is at this point that volcanic activity is introduced and the similarity in distribution explored. In order to answer the main enquiry question the pupils recognise that the level of technological development and overall quality of life of people in different countries of the world has an important influence of how well they can prepare for and cope with the occurrence of earthquakes.

Purpose of the enquiry

This enquiry introduces pupils to some key aspects of physical geography, in particular one of the major outcomes of tectonic activity in the world - earthquakes. Some work is also focused on volcanic activity, which is developed at greater depth at Upper Key Stage 2.

As they progress through the ancillary questions pupils come to understand why it is that 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 pupils initially investigate the causes and impact of one specific recent earthquake in one particular location in the world, where earthquakes occur frequently, before looking more widely at global patterns. At all points the people-environment relationship, which is the subject paradigm of geography, is maintained through the enquiries as pupils seek to understand the interaction of people and earthquakes.

The pupils are supported to develop and apply high-order thinking to a consideration of why some earthquakes of the largest magnitudes do not always cause as much death and destruction as earthquakes of lesser magnitude. Here, the centrality of the human condition in terms of quality of life in particular and also technological development is an important area for the pupils to begin to understand.

What should I already know?

Year 3

Geographical enquiry

- Begin to ask/initiate geographical questions.
- Use books, stories, atlases, pictures/photos and internet as sources of information.
- Investigate places and themes at more than one scale
- Begin to collect and record evidence
- Analyse evidence and begin to draw conclusions e.g. make comparisons between two locations using photos/ pictures, temperatures in different locations.

Perspective

Begin to draw a sketch map from a high viewpoint.

Style of Map

- Use large scale OS maps.
- To use map sites on internet.
- To use junior atlases.
- Begin to identify features on aerial/oblique photographs.

National Curriculum Objectives / Key Skills	The Journey
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 • 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.	1: Why won't Paula and Richard forget 22 February 2011? (Collins lesson 1) 2: To find out about earthquakes and what causes them. (Planbee) 3: To know what it is like to experience an earthquake. (iPads) 4: To know how New Zealand has been affected by earthquakes in the past. (Collins lesson 2) 5: To know why New Zealand has so many earthquakes. (Collins lesson 3) 6: To know why the largest earthquakes don't always cause the most death and destruction. (Collins lesson 4) 7: To know why most volcanoes occur in the same places as earthquakes. (Collins lesson 5)

Why do some earthquakes cause more damage than others?

Geographical enquiry

- Ask and respond to questions and offer their own ideas.
- Collect and record evidence with some aid
- Analyse evidence and draw conclusions e.g. make comparisons between locations photos/pictures/maps

Drawing maps

- Make a simple scale drawing.

Using Maps

- Locate places on large scale maps, (e.g. Find UK or India on globe)

Map Knowledge

To identify significant places and environments

Style of Map

- Use junior atlases and identify features on a range of different maps.
- Use map sites on internet.

Identify features on aerial/oblique photographs.

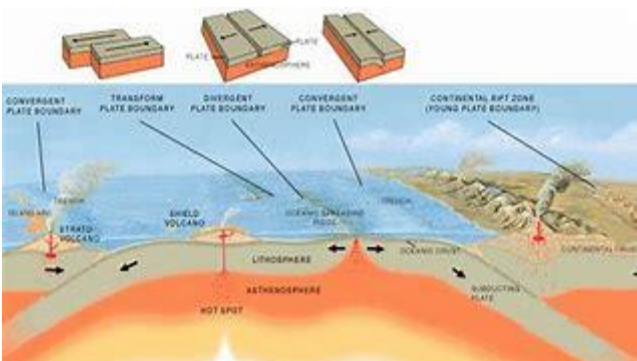
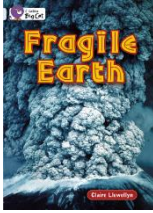
Outcomes

An overview of what children will know / can do

Working towards: Can Locate the effects of the Christchurch earthquake of 2011 from a range of sources, with support. Identify and describe the causes of earthquakes, with support. Describe why New Zealand experiences earthquakes when they don't occur at all in many other areas of the world, with support. Understand that the most powerful earthquakes in the world do not necessarily cause the most deaths and destruction, with support. Identify and describe the causes of volcanoes. Explain why volcanoes often occur at the same location as earthquakes in places such as New Zealand, with support. Locate why so many earthquakes and volcanoes occur around the Pacific Ring of Fire.

Expected: Can Locate the effects of the Christchurch earthquake of 2011 from a range of sources. Observe the distribution of earthquakes in New Zealand over the past two hundred years. Identify and describe the causes of earthquakes. Describe and explain why New Zealand experiences earthquakes when they don't occur at all in many other areas of the world, with support. Understand that the most powerful earthquakes in the world do not necessarily cause the most deaths and destruction. Identify and describe the causes of volcanoes. Explain why volcanoes often occur at the same location as earthquakes in places such as New Zealand, with support. Locate and describe why so many earthquakes and volcanoes occur around the Pacific Ring of Fire.

Exceeding: Can Locate and describe the effects of the Christchurch earthquake of 2011 from a range of sources. Observe and record the distribution of earthquakes in New Zealand over the past two hundred years. Identify, describe and explain the causes of earthquakes. Describe and explain why New Zealand experiences earthquakes when they don't occur at all in many other areas of the world. Understand through explanation and reaching conclusions why the most powerful earthquakes in the world do not necessarily cause the most deaths and destruction. Identify, describe and explain the causes of volcanoes. Explain why volcanoes often occur at the same location as earthquakes in places such as New Zealand. Locate, describe and explain why so many earthquakes and volcanoes occur around the Pacific Ring of Fire.

Key Vocabulary	Timeline / Diagrams
Key vocabulary / spellings. • Tectonic plates • Earth's crust • Magnitude • Epicentre • Richter Scale • Aftershock • Foreshock • Fault Line •	 
Text linked to topic	
<i>Fragile Earth</i>- Claire Llewellyn 	

Key people / places
• New Zealand • Pacific ocean

Assessment questions / outcomes

Question 1: Why won't Paula and Richard forget 22 February 2011?

Question 2: How has New Zealand been affected by earthquakes in the past?

Question 3: Why does New Zealand have so many earthquakes?

Question 4: Why don't the largest earthquakes always cause the most death and destruction?

Question 5: Why do most volcanoes happen in the same places as earthquakes?