

Enquiry Question **Will there always be earthquakes?**

Prior Learning Knowledge	Prior Learning Skills	Prior Knowledge Vocabulary	Reading Links	
<p>Year 1 2- locating continents and oceans Year 3- mountain formation, structure of the Earth, tectonic plates Year 4- The Ring of Fire (focussed on volcanic activity), Tectonic plates, human responses to natural disaster</p>	<ul style="list-style-type: none"> Identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn (Ring of Fire) Use a wider range of maps (including digital), atlases and globes to locate countries and features studied. Use maps at more than one scale. Recognise that larger scale maps cover less area. Recognise that contours show height and slope. Use the index and contents page of atlases. Use the zoom facility on digital maps to locate places at different scales. 	<p>Tectonic plates, Ring of Fire, mountain, contours, volcano</p>	<p>Earth Shattering Events By Sophie Williams Horrible Geography- earth Shattering Earthquakes By Anita Ganeri Subject knowledge- https://www.youtube.com/watch?v=S9ty-ta1wyl</p>	
Year 4 Essential End Point Knowledge (substantive)	Year 4 Disciplinary knowledge (Working, Talking, Writing like a Geographer)	Equality Diversity & Justice	Vocabulary	Writing opportunities
<p>What an earthquake is and why they happen. Some of the impacts of earthquakes. Where earthquakes happen.</p>	<ul style="list-style-type: none"> Identify and describe geographical features, Use geographical language relating to the physical and human processes detailed in the PoS e.g. how tectonic plates move and cause earthquakes Express opinions and personal views about what they like and don't like about specific geographical features and situations (Earthquakes) Ask more searching questions including, 'how?' and, 'why?' as well as, 'where?' and 'what?' when investigating places and processes Use presentation/multimedia software to record and explain geographical features and processes. Use spreadsheets, tables and charts to collect and display geographical data. 		<p>epicentre, tsunami, fault line, magnitude,</p>	<p>Answering key questions on post it notes. Top Trump cards for cases studies. Safety tips poster. Written response to enquiry question.</p>

Enquiry question:

Learning objective	Essential knowledge end point and Disciplinary Knowledge: (Working, Talking, Writing like a Geographer)	Activities
<p>Lesson 1- What is an earthquake?</p>	<p>Essential knowledge end point (substantive): What an earthquake is and why they happen.</p> <p>Disciplinary Knowledge: (Working, Talking, Writing like a Geographer):</p> <ul style="list-style-type: none"> Identify and describe geographical features, Use geographical language relating to the physical and human processes detailed in the PoS e.g. how tectonic plates move and cause earthquakes 	<p>Starter: Recap the structure of the earth and tectonic plates (use specific meta minutes for these- year 5 meta minutes) Place wooden blocks on a tray of sand. Shake gently and ask: "What happened to the blocks? Why?" Discuss: Movement causes things to shift and break. Video: https://www.bbc.co.uk/teach/class-clips-video/articles/zbr2mfr https://www.bbc.co.uk/bitesize/articles/zj89t39 https://www.youtube.com/watch?v=ojhJD7NoTzA</p>

		<p>Discussion Questions:</p> <ul style="list-style-type: none"> ○ “Where do plates meet?” ○ “What happens when they push against each other?” <p>Tectonic plate jigsaws could be used here.</p> <p>Demonstrate pressure and release with hands pushing against each other.</p> <p>Pressure builds → sudden release → earthquake.</p> <p>Children complete worksheet:</p> <ul style="list-style-type: none"> ▪ Label diagram of plates (use ppt slides to mark and discuss) <p>Introduce enquiry question and ask children to think about and discuss: “If plates keep moving, will earthquakes ever stop?”</p> <p>Post it: “Earthquakes happen because...”</p> <p>Adaptive teaching:</p> <p>Support: Provide sentence starters and word bank. Scribe.</p> <p>Challenge: “How does this link to volcanoes?”</p> <p>Primary Geography: Earthquakes - BBC Teach</p>
<p>Lesson 2: Where do earthquakes happen?</p>	<p>Essential knowledge end point (substantive): Where earthquakes are more likely</p> <p>Disciplinary Knowledge: (Working, Talking, Writing like a Geographer):</p> <ul style="list-style-type: none"> ▪ Ask more searching questions including, ‘how?’ and, ‘why?’ as well as, ‘where?’ and ‘what?’ when investigating places and processes ▪ Use spreadsheets, tables and charts to collect and display geographical data. 	<p>Starter: recap of earthquakes vocab.</p> <p>Predict where earthquakes occur on a blank map in groups/pairs.</p> <p>Think about tectonic plates and where volcanoes occur. Use tectonic plate jigsaws again. Why have children predicted they will happen there?</p> <p>Go through the different tectonic plate names and discuss why earthquakes are more likely to happen at plate boundaries.</p> <p>First children to find the countries using an atlas and then write in the missing continent (revisiting prior knowledge) for each earthquake.</p> <p>Use the 2026 data to locate recent earthquake locations. Produce a bar chart to show how many earthquakes have occurred in this period in different continents. Children to answer questions based on the data in their tables and bar charts. Support: smaller amount of data to analyse. template for a bar chart. Colour code the continents for ease of presentation. Challenge: can children come up with some of their own questions for a partner?</p>
<p>Lesson 3: How do earthquakes affect people and places?</p>	<p>Essential knowledge end point (substantive): The impacts on humans and places</p> <p>Disciplinary Knowledge: (Working, Talking, Writing like a Geographer):</p> <ul style="list-style-type: none"> ▪ Use presentation/multimedia software to record and explain geographical features and processes. ▪ Express opinions and personal views about specific geographical features and situations (Earthquakes) 	<p>Look at 2 case studies and discuss. Children could make top trump cards for one or both earthquakes on purple mash?</p> <p>Look at what happens during a typical earthquake and ask children to sort into order. Set a blank factfile as a to do on purplemash.</p> <p>There are some photos uploaded that children can access by clicking on insert pictures, choosing uploaded images then selecting from the shared school folders either Japan 2011 or Nepal 2015.</p> <p>Top trumps card template in case purplemash cannot be accessed.</p> <p>Support: word banks, adult support,</p> <p>Deeper learning:</p> <p>“How would life change after an earthquake?”</p> <p>“What impact do you think is worst and why?”</p>

		<p>Extra activity: Set Earthquake quiz on Purplemash</p> <p>Optional practical activity: Tsunami in a box? Beware this can be messy – you might want to take this into the playground!</p> <p>For your tsunami in a box you will need:</p> <ul style="list-style-type: none"> • Plastic container – clear if possible but not necessary, plastic boxes/plastic trays work well • Sand/pebbles/soil to make an island • Cardboard/Lego to make houses • Water • Food colouring (not necessary but makes water a bit clearer to see) • Chopping board/white board to push water <p>Instructions to make a tsunami in a box</p> <ol style="list-style-type: none"> 1. Get your ocean (plastic container) 2. Build up your island on one side of the container using sand 3. Make some houses to put on your island – using cardboard, Lego or anything else you want 4. Get some water in a bucket or watering can – if you have blue food colouring use this to make the water blue in colour 5. Pour the water into your container carefully so it forms a shallow ‘ocean’. Make sure not to cover your island! 6. Place the board at the opposite end of the container to the island. 7. Use the board to push a tsunami wave onto the island.
--	--	---

Lesson 4: How do people prepare for Earthquakes?

Essential knowledge end point (substantive):
 What people can do to prepare for earthquakes
 How impacts can be lessened

Disciplinary Knowledge: (Working, Talking, Writing like a Geographer):

- Ask more searching questions including, ‘how?’ and, ‘why?’ as well as, ‘where?’ and ‘what?’ when investigating places and processes

Linked with DT.

Starter: “What would you do if the ground started shaking?”

Watch video of earthquake drills in Japan.
 Design a **poster** for earthquake safety tips
 “Why is preparation important?”

Children challenged to build an earthquake proof building.



In teams build an earthquake resistant structure that is at least 30cm tall and has a minimum of three floors. Each floor must support one weight.

Tips to make your structure more earthquake proof:

- Wide base
- Solid foundation
- Symmetrical design
- Think about additional supports
- Think about where you might put additional weight



You will need lots of paper straws or lollipop sticks, card and masking tape.

Give students 10 minutes to create an earthquake resistant structure from their materials.

Place structure on a tray and test how earthquake resistant each groups structure is by shaking the tray back and forwards to see whether the structure survives.

Structures with wide bases, solid foundations, symmetrical designs and cross bracing supports (two diagonal supports in an X shape) are likely to withstand the ‘earthquake’ better.

Lesson 5: Will there always be earthquakes?

Essential knowledge end point (substantive):

That earthquakes will always happen

That there are things we can do to lessen the impact of earthquakes on people and places

Disciplinary Knowledge: (Working, Talking, Writing like a Geographer):

- Identify and describe geographical features, Use geographical language relating to the physical and human processes detailed in the PoS e.g. how tectonic plates move and cause earthquakes
- Express opinions and personal views about what they like and don't like about specific geographical features and situations (Earthquakes)

Starter: recap or quiz of previous lessons

Discuss the enquiry question and children to express personal opinion and back this up with evidence collected across the unit. They should mention: tectonic plates will always move- we can't stop them, volcanic eruptions can cause earthquakes and we know we can't stop these either. Then ask them to think about their response to this sentence starter: Although we will always have earthquakes, we can ... children could explain earthquake proof buildings, earthquake drills, scientific data to predict earthquakes etc.