



Medium-Term Planning Our Curriculum



Term and Year:	Spring 1 - 2023
Class:	Year 5/6
Subject:	Geography
Key Unit Question:	Why is our Earth so extreme?
Key Themes:	Space
Memorable Experience:	One Day Creative: Earthquakes and Volcanoes

Vocabulary that will be taught:
Emergency: a serious, unexpected, and often dangerous situation
Extreme: very severe or serious
Volcano: a mountain or hill with a crater through which lava, rock fragments, hot vapour and gas escape through the earth's crust
Earthquake: a sudden violent shaking of the ground, typically causing great destruction
Tsunami: a long, high sea wave cause by an earthquake or other disturbance
Tornado: a mobile and destructive vortex of violently rotating winds
Tectonic Plates: gigantic pieces of the Earth's crust and uppermost mantle
Eruption: becoming active and ejecting lava, ash and gases
Epicentre: the point on the earth's surface vertically above the focus of an earthquake
Vortex: a whirling mass of fluid or air, especially a whirlpool or whirlwind

National Curriculum Objectives: <ul style="list-style-type: none">describe and understand key aspects of: physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle	Skills that will be taught and assessed: Year 5 <ul style="list-style-type: none">Find/recognise places on maps of different scalesIdentify significant places and environmentsCompare maps with aerial photographsBegin to suggest questions for investigating Year 6 <ul style="list-style-type: none">Suggest questions for investigatingLocate places on a world mapUse atlases to find out about other features of placesConfidently identify significant places and environments
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Rationale:

In this unit, children learn about the areas of the Earth that are more prone to natural disasters and why. They use atlases and maps to locate these countries and study their physical features. Children should understand that weather events are much more extreme in equatorial regions. This will help support children's learning in KS3 when they begin to study climate change. This will help to provide them with the knowledge and skills they need to be able to consider how these events may change both at a national and global level.

Prior Knowledge:

Children have explored seasonal and daily weather patterns in the UK and have explored hot and cold areas of the world in Key Stage One.

This has been further developed in Key Stage Two when they have explored environmental regions and climate zones and biomes.

What do we intend pupils to know and be able to do at the end of this unit?

Substantive Geographical knowledge:

- Name the layers that make up the Earth
- To describe the extreme weathers (using examples if necessary)
- Locate where extreme weathers happen in the world and explain why

Disciplinary knowledge:

- To use an infant atlas to locate the four countries of the UK
- To sort landmarks into physical and human features
- To use information books, pictures and the internet to find information about the four countries

Key lesson questions		Activities/Key points
Lesson 1	<p>What is under the Earth's surface?</p> <ul style="list-style-type: none"> • I can recognise that there is rock under all surfaces. • I can list the layers that make up the Earth. • I can create and label a cross-section of the Earth. 	<ul style="list-style-type: none"> • Children use modelling clay in a range of colours to create a model of the inside of the Earth. • Children draw and label a cross-section diagram through the Earth, then write a short definition of each layer • Compare the Earth's structure to a peach. In what ways is the comparison accurate? Listen for children talking about the different textures of each layer, using the vocabulary associated with each layer. In what ways is the structure of the Earth different to that of a peach? Listen for children talking about the layers and what each is made of, how many layers the peach has and the temperature difference.

Lesson 2	<p>What are volcanoes?</p> <ul style="list-style-type: none"> • I can show you how tectonic plates move. • I can tell you how a volcano is formed. • I can tell you what happens when a volcano erupts. 	<ul style="list-style-type: none"> • Watch a video of a volcano erupting • Demonstration of tectonic plates – using play-doh, oreos, orange peel, chocolate bars. Look at the photograph of the Thingvellir Valley in Iceland. This is where the North American and Eurasian plates are separating. • Talk through the volcano’s life cycle – point out the layers on the diagram. A new layer is made each time the volcano erupts. • Model how a volcano might erupt (experiment) Why does it happen? What do the bubbles tell you about what has happened? (A gas has been made; a chemical reaction or change has taken place). Explain if necessary that eruptions don’t occur because of a reaction in a volcano, but because of an increase in pressure – demonstrate this by shaking a bottle of sparkling water and then opening it to clarify the difference – the gases were already in the water, opening the bottle didn’t create them. • Show children a map of the “Ring of Fire” and explain that over 450 of the 1500 volcanoes in the world are found on the red line. Point out Iceland and Hawaii as places where many of the volcanoes looked at in class are located. Are all volcanoes likely to erupt? Discuss children’s ideas. • Discuss reasons for and against living near volcanoes. What is the most important reason against? Which is the most important reason for? Are the risks worth taking? Would you want to live near a volcano? Children explain their group’s opinions to the rest of the class. • Are There Any Volcanoes in the UK? Share images of Arthur’s Seat in Edinburgh, Bardon Hill Quarry in Leicestershire, Giant’s Causeway in Northern Ireland and Snowdon in Wales. Reveal the information about each place and discuss.
Lesson 3	<p>What are earthquakes?</p> <ul style="list-style-type: none"> • I can tell you where earthquakes happen. I can explain why earthquakes happen. • I can tell you how to keep safe in an earthquake. • I can compare the strength of earthquakes. 	<ul style="list-style-type: none"> • Discuss what an earthquake is and some possible effects of an earthquake (furniture shaking, things falling from shelves, buildings and roads damaged/destroyed). You may wish to show a video of an earthquake occurring and the damage that can happen. Demonstrate how the effect of an earthquake lessens as you move further away from the epicentre by dropping a pebble into a bowl to create ripples. Eventually, the ripples disappear as they don’t have enough energy to travel any further – the same is true of the shock waves that create an earthquake. • Where Do Earthquakes Occur? Show children the map of the world’s earthquake hotspots and tectonic plate boundaries in the Lesson Presentation. Discuss the main areas affected (Pacific Ocean, mid-Atlantic Ocean, West coast of North & South Americas, Indonesia) and that many occur in seas and oceans. • Explain that there are different ways to measure how strong an earthquake is. Machines called seismographs measure the power of an earthquake at its epicentre on a scale called the Richter scale. Another measure is the Mercalli scale, and this is based on people’s observations during an earthquake. Children sort the Mercalli scale statements into the correct order and illustrate. • Visit the British Geological Society website and go to the Earth Hazards section within Discovering Geology to find out about recently occurring earthquakes. Use the data sheets to see how real life data reports of earthquakes are used to map out affected areas.

Lesson 4	<p>What are Tsunamis?</p> <ul style="list-style-type: none"> • I can tell you where tsunamis happen. • I can explain what causes a tsunami. • I can describe the damage caused by a tsunami. 	<ul style="list-style-type: none"> • Ask children to come up with some ideas of what a tsunami might be. Explain that tsunami is a Japanese word meaning “harbour wave” and that a tsunami is a giant wave. • Explain to children that a tsunami is caused by an earthquake under the ocean. The energy from the vibrations and plate movement cause a large amount of water to be displaced very quickly. A series of waves travel through the deep water. As the waves travel through shallower water near the land, they get bigger. You may wish to show a video of the causes of a tsunami here. • Set up a model of a tsunami using the How to Make a Tsunami Craft Instructions for the children to see how the wave increases in size as it approaches land. • Children look at a picture of an area after a tsunami has hit. What can you see that looks out of place? What kinds of damage have occurred in the area? If you were a rescue team who have just arrived at the scene, what kinds of help might you need to give? • There have only been two confirmed tsunamis to hit the UK – on in 6100 BC and one in 1755. • Use the tsunami model equipment to investigate the effect of different sized earthquakes. Drop the wooden block from different heights above the water and observe the difference in height and speed of the resulting wave.
Lesson 5	<p>What are Tornadoes?</p> <ul style="list-style-type: none"> • I can tell you how tornadoes form. • I can explain how scientists collect data about storms. • I can explain how scientists compare tornadoes. • I can tell you where tornadoes happen. 	<ul style="list-style-type: none"> • Share the summary of the process with children, and then if possible share an animation or video to show how tornadoes are formed. Using the How to Make a Tornado Craft Instructions, create a model tornado to show the class how a tornado is formed. First, hold the bottles still - watch what happens inside the bottle. What did you notice? Now rotate the bottles horizontally - If the bottles are rotated slightly, does the same thing happen? What did you see? (A vortex forming). What does the glitter represent? (Dust and debris collected by a storm). How could we make the vortex spin more quickly? (Rotate the bottles more quickly). • Watch the Storm Chasers video again and use the What Scientists Use Activity Sheet to identify key pieces of equipment used to track storms. • Ask children to work in pairs to sort out the different levels of the EF scale using Comparing Tornadoes Matching Cards. Encourage them to look at the language in each descriptive text to work out the greatest impact. Share the correct scale. Discuss with children at which point on the scale they think the damage would mean that the government might declare a “state of emergency”? What kinds of help would people living in the area need? • Share the two maps of tornado locations. Are you surprised that tornadoes happen in the UK? How does the location of tornadoes differ to the other disasters we have looked at during this topic? (Not around the Pacific Ring). Why do you think this is? (Created by weather currents not by tectonic plates).
Lesson 6	<p>Why is our Earth so extreme?</p> <ul style="list-style-type: none"> • I can answer the key question “Why is our Earth so extreme?” • I can present my findings in a confident way 	<ul style="list-style-type: none"> • Children to use the information they’ve learned over the last half term to answer the question “Why is our Earth so extreme?” <p>*answer to key question can be dictated by class teacher – this could include; pictures, video, posters, written answers etc.</p>