Geography

Volcanoes and earthquakes Year 4

Remember when
Climates in hot and cold places
- Recall the 7 continents and surrounding oceans
- How mountains are formed
- Rocks and soils year 3 - igneous rocks, metamorphic rocks and sedimentary rocks.
- Andes Mountain range
- Knowledge of Pompeii (History)

Children must be able to recall the countries and capital cities of the UK.
Children must know the location of Hull on the UK map and England on a world map.

Sticky knowledge
-I know where the ring of fire is and know this is an area prone to earthquakes and volcanoes.
-I know an earthquake occurs when the earth's crust moves.
-Nepal was hit with 2 earthquakes in less than a month. Nearly 9000 people died and many historic sites were destroyed.
-A volcano is formed when molten rock escapes through a weakness in the earth's crust.
-Pompeii was destroyed by the eruption of Mount Vesuvius.
-Humans adapt how they live when living in areas prone to volcanic eruptions and earthquakes.

Key vocabulary

Ring of fire	Crater
Volcano	Pompeii
Eruption	Mount
Earthquake	Vesuvius
Magma	Damage
Lava	Effects
Tectonics	Safety
Ash cloud	measures
Vent	Nepal

National Curriculum:
Locational knowledge
-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

	Title/ focus	Lesson outline
Lesson 1	LO: To locate volcanic and earthquake-prone areas of the world SK: I know where the ring of fire is and know this is an area prone to earthquakes and volcanoes.	Remember when? Build on learning from Year 2 and 3 about the location of the equator, the northern, southern hemispheres. Teach pupils how to locate features in an atlas using 2-fig grid references. Use maps to identify volcanoes and earthquakes, describing their location in terms of hemispheres and the equator - Do they notice a pattern? Find the specific grid references of volcanoes. Show pupils the ring of fire and explain what it is, how it is made up and why volcanoes and earthquakes happen here. The Ring of Fire | Nat Geo Kids Volcano Playlist - YouTube Activity – Differentiated with use of maps and atlases. WTS - To describe the locations of volcanoes and earthquakes. EXS - Describe the locations of volcanoes and earthquakes and explain why they are found there. GDS – What similarities and differences can they find between volcanoes E.g both on the edge of 3 plate boundaries.
Lesson 2	LO: Describe and understand key	Recap on ring of fire from previous lesson. What is it? Why do most earthquakes and volcanic eruptions happen here?

	aspects of earthquakes SK: I know an earthquake occurs when the earth's crust moves.	Children to learn about the layers that make up the earth's crust and how this enables tectonic plates on the earth's crust to move around. Discuss the movement of the plates (rubbing, pushing and pulling). Discuss how the movement of the tectonic plates causes earthquakes to happen. Discuss specific vocabulary linked to earthquakes including epicenter, hypocenter and fault line. Children to discuss how these help us to understand more about an earthquake when they happen. https://www.bbc.co.uk/bitesize/topics/z849q6f/articles/zj89t39 Activity – Children will label a cross section of an earthquake and define each label (earth's crust epicenter hypocenter fault line and tectonic plate.) /WTS - First letter on cross section to support labelling. Adult support to define each word. Key vocabulary given EXS – Label cross section as above and write sentences describing each part of the cross section. GDS – Label cross section as above and write a paragraph explaining what causes an earthquake to happen and why. Children to use each word from the cross section in their explanation.
Lesson 3	LO: To understand the impact of earthquakes on the human and physical features of a place SK: Nepal was hit with 2 earthquakes in less than a month. Nearly 9000 people died and many historic sites were destroyed.	Activity 1 – Investigation: Earthquake Experiments - Earthquake Science for Kids (science-sparks.com) Record on twitter. Class to discuss results. Which houses fell? Why do we think that happened? Which houses survived? How are these houses different to the ones who fell? What do you do during earthquakes? Drop. Cover, hold and stay put. Children to practice following the procedure. Activity 2 - Nepal case study – Research the impact of the earthquakes in Nepal 2015. Feedback to class. Information taken from Case study: Nepal 2015 (LIC) - Earthquakes and tsunami – WJEC - GCSE Geography Revision - WJEC - BBC Bitesize Look at impact on people, buildings and how Nepal was supported in the after math. Using jigsaw template. WTS - Simple jigsaw template. Questions as a guide. How many earthquakes happened in Nepal in 2015? What were the effects of the earthquake? How many people were injured/killed? How did the people of Nepal rebuild? EXS/GDS - More detailed jigsaw template. Differentiated fact sheets. Research facts about the Nepal earthquakes using photos, artefacts, books, fact sheets, internet, purple mash. Mixed ability groups recorded on twitter. Feedback to class in groups.
Lesson 4	LO: Describe and understand key aspects of volcanoes SK: A volcano is formed when molten rock escapes through a weakness in the earths crust	Recap the layers of the earth. Structure of the Earth - The Earth and atmosphere - KS3 Chemistry - BBC Bitesize Discuss what a volcanic eruption is and how it is caused by the pressure building up beneath the earth's crust. https://www.youtube.com/watch?v=lAmqsMQG3RM Explore each part of a volcano and its function/role in more detail. Activity - WTS – Children to label a cross section of a volcano. First letter on the cross section to support labelling. Define each word with adult support.

		EXS – Children to label a cross section of a volcano and write a simple sentence defining each part. GDS - Write a paragraph in detail explaining what a volcano is and explaining what each part is.
Lesson 5	LO: To understand the impact of volcanoes on the human and physical features of a place SK: Pompeii was destroyed by the eruption of Mount Vesuvius.	Recap parts of a volcano from the previous lesson, what is each part called and what is its function/role? Watch video of volcano erupting - BBC bitesize volcanoes and https://www.youtube.com/watch?v=NGcbNn4Vk1w Explore how a volcano is created over millions of years. What happens during each part of the process? Discuss what happens to the lava after the eruption looking at the type of rocks that are created. (Remember when? Rocks and soils year 3) Look at how different rocks from a volcanic eruption are created including pumice from cooling in water. Activity 1 – Children to sequence pictures and write a sentence explaining each part of the process. WTS - Sequence pictures to show creation of a volcano. EXS - sequence pictures and describe stages. Key words given GDS - Use key words provided and explain the stages (written and by diagram) of the creation of a volcano. Activity 2 - Watch video of Pompeii eruption. https://www.youtube.com/watch?v=dY_3ggKg0Bc A Day in Pompeii - Full-length animation - YouTube What does Pompeii look like before the eruption, use video and pictures to support understanding. What was Pompeii like after the eruption? Class to discuss how a volcanic eruption effects people and land. Remember when? - Pompeii taught during Y4 The Romans. Compare what Pompeii looked like before and after Mount Vesuvius eruption. Class discussion
Lesson 6	LO: To know how humans adapt to living near volcanoes and earthquakes SK: Humans adapt how they live when living in areas prone to volcanic eruptions and earthquakes, including…	Recap prior learning throughout the topic. What have we learnt about volcanoes and earthquakes. What are the human and physical effects of an earthquake and a volcanic eruption. Children to explore the positives and negatives of living in a volcano zone. The positive and negative effects of volcano eruptions - Volcanoes - AQA - GCSE Geography Revision - AQA - BBC Bitesize Children to then look at the positives and negatives of living in an earthquake zone. What Are Some Positives and Negatives When Earthquakes Happen? (sciencing.com) Use recap from the beginning to support positives and negatives. Children to the look at how humans have adapted to living areas with volcanoes and earthquakes. E.g. farmers- changing what they grow to crops which can grow in ashy soil. Alarm warning systems. Earthquake drills, choice of building materials etc. Activity - Research positives and negatives in mixed ability groups. WTS - Bullet point list of positives and negatives of living in an earthquake or volcano zone and examples of adapted living EXS - Children to write simple sentences discussing the positives and negatives of living in an earthquake or a volcano zone and give examples of adapted living. GDS - Children to write positives and negatives of living in an earthquake and a volcano zone. Explain which one they would rather live near and why and give examples of adapted living.