

Crofton Junior School – Geography Knowledge Organiser – Earthquakes and Volcanoes (Year 3)

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| **Unit of Work** | Geography – Earthquakes, Volcanoes and Tsunamis |
| **Text Driver the Unit of Work Links to** | Escape from Pompeii The Firework Maker’s Daughter |
| **Geographical Location** |  |
| **Overview of the Unit of Work** | Pupils will learn about earthquakes, volcanoes and tsunamis. They will learn about the Earths centre including the crust, mantel, outer core and inner core. Pupils will understand tectonic plates and the different types of plate boundaries: destructive, constructive and conservative. They will build on this knowledge to know how mountains, volcanoes, earthquakes and tsunamis are formed. Pupils will study the features of different types of volcanoes: composite, shield and cinder volcanoes. Pupils will apply their knowledge of physical features when studying the eruption of Mount Vesuvius in 79AD, the 1906 San Francisco Earthquake and the 2004 Boxing Day Tsunami. They will also study why inhabitants choose to live in volcanic areas and how they use the 3P’S (prediction, prevention and preparation). |
| **Prior Learning & Vocabulary** | Pupils will use their knowledge of mountains to help them when understanding different plate boundaries and the formation of volcanoes, earthquakes and tsunamis. Also, pupils will be able to use their knowledge of Europe and map skills to identify where volcanoes are in the world and also countries which have experienced earthquakes.  |
| **Sticky Knowledge** | Children will:1. Understand the **Earth** has an **inner and outer core, a mantle and a crust**. The crust is the rocky surface that makes up the surface of the Earth and floats on top of the mantle. The crust has ‘cracks’ in it and so it is actually in pieces. These pieces are called plates. The plates move very slightly – by no more than a few centimetres a year – and when they do, earthquakes occur and volcanoes form or erupt. Plate tectonics provides an explanation of how earthquakes, mountains, volcanoes and oceans are formed.
2. The boundaries of the plates are called fault lines and movement along these lines causes earthquakes and volcanoes. There are 3 type of plate boundaries (constructive, destructive and conservative). The plates move in three different ways:
* away from each other, which forms ridges
* towards each other, which causes earthquakes and forms volcanoes and mountains
* side by side, which causes earthquakes.
1. Describe the physical features of a volcano**: eruption cloud, crater, secondary vent, main vent, cone and magma chamber**. And apply this when looking at different types of volcanoes **composite, shield and cinder**.
2. Pupils will apply their knowledge of a destructive **plate boundary** and a shield volcano when studying the eruption of Mount Vesuvius in 79AD. They will know Mount Vesuvius in Italy was an explosive eruption. It sent a deadly cloud of gas into the air and ejected ash, rocks and lava which fell on the nearby Roman towns of Pompeii and Herculaneum. Thousands of people were killed by the falling ash and rocks, and some were killed instantly as the deadly gas suffocated them.
3. Pupils will study the Pacific Ring of Fire is an arc around the Pacific Ocean where most of the world’s volcanoes and earthquakes are formed. About three-quarters of the world's dormant and active volcanos are here. The ring is 25,000 miles (40,230 km) long, and there are 452 volcanoes on it. About 90 per cent of the world's earthquakes, including 15 per cent of the world's largest earthquakes occur along the Ring of Fire. The Ring of Fire is a result of plate tectonics – the movement and **collision** of the plates that make up the Earth’s crust. The Pacific Ring of Fire is a result of plate tectonics: plates are colliding with each other which causes a process called **subduction** where one plate is pushed below another. The heat and the pressure forms mountains and volcanoes.
4. When studying the 1906 San Francisco Earthquake pupils will recognise earthquakes and volcanoes differ in their magnitude. Some are more violent than others. The scale for measuring the magnitude of earthquakes is called the Richter scale. They will use their new knowledge to contrast and compare the similarities and differences between the eruption of Mount Vesuvius and the San Francisco earthquake.
5. Further pupils will understand when earthquakes with high magnitude occur and volcanoes with high explosivity erupt they can cause natural disasters such as tsunamis. Children will use their knowledge of earthquakes to understand the formation of a tsunami and study the 2004 Boxing Day Tsunami.
6. They will also study why **inhabitants** choose to live in volcanic areas and how they use the 3P’S (prediction, prevention and preparation).
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| **End of Unit Outcome** | Applying their knowledge of plate boundaries and volcanoes pupils will present their knowledge in a double page spread of the case study Mount Vesuvius. In addition, children will apply their knowledge of different plate boundaries and different natural disasters to compare and contrast the similarities and differences of the eruption of Mount Vesuvius and the San Francisco earthquake and present this information in a Venn diagram. |
| **New Vocabulary** | **Tier 2**inhabitants: people who live in a placeEarth: one of the eight planets that orbit, or travel around, the Sun in the solar system**Tier 3**crust: outer layer of the Earthmantle: thick layer of the Earth made of hot molten rockouter core: layer of liquidinner core: centre of the Earthearthquakes: shaking of the ground caused by movement of the Earth's crustvolcanoes: mountains from which lava, gas, steam and ash from inside the Earth sometimes bursterupt: to start suddenly or violently with great forcedormant: not active, but capable of becoming active in the futurecollision: when one moving object hits anothermagnitude: the size or scale of somethingintensity: magnitudetsunami: a very large wave, caused by an earthquake |
| **Post Learning** | In Year 4, children will learn further about how the ways that people affect and are affected by the natural world by studying rivers and coastal erosion along the Holderness Coastline. |