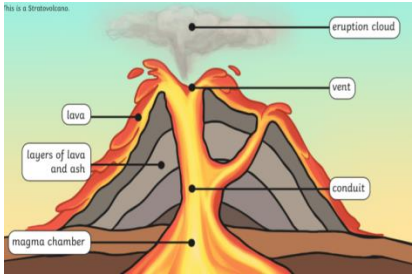
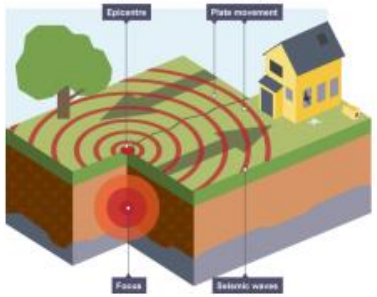
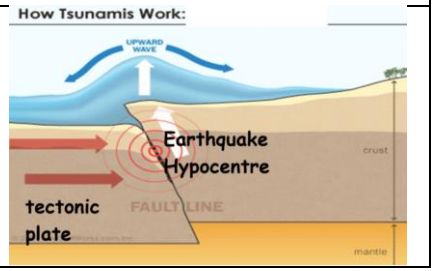
Knowledge Organiser Year 4– Natural Disasters

Key Facts		
How are volcanoes formed?	1. Magma rises through cracks or weaknesses in the Earth's crust. 2. Pressure builds up inside the Earth. 3. When this pressure is released, e.g. as a result of plate movement, magma explodes to the surface causing a volcanic eruption. 4. The lava from the eruption cools to form new crust. 5. Over time, after several eruptions, the rock builds up and a volcano forms.	
What causes an earthquake?	An earthquake is the shaking and vibration of the Earth's crust due to movement of the Earth's plates (plate tectonics). Earthquakes can happen along any type of plate boundary. Earthquakes occur when tension is released from inside the crust. Plates do not always move smoothly alongside each other and sometimes get stuck. When this happens pressure builds up. When this pressure is eventually released, an earthquake tends to occur.	
What is a tsunami?	A tsunami is a giant wave caused by a huge earthquake under the ocean. The earthquake causes a large amount of water to be displaced very quickly. A series of waves travels through the deep water. As the waves travel through shallower water near the land, they get bigger.	

Vocabulary	
crater	A volcanic crater is a roughly circular depression in the ground caused by volcanic activity. It is typically a bowl-shaped feature within which occurs a vent or vents.
Earth's crust	A thin shell on the outside of the Earth.
earthquake	A sudden violent shaking of the ground, typically causing great destruction, as a result of movements within the earth's crust or volcanic action.
epicentre	Part of the Earth's surface directly above the focus of an earthquake. (The strongest point on the surface.)
eruption	When magma is released from a volcano.
lava	Lava is a liquid that cools into rock, which is a solid.
magma	Hot fluid or semi-fluid material below or within the earth's crust from which lava and other igneous rock is formed on cooling.
plate tectonics	Earth's outer layer is made up of large, moving pieces called plates. All of Earth's land and water sit on these plates. The plates are made of solid rock.
seismic waves	Waves that travel through the Earth.
volcano	An opening in the Earth's crust from which lava, ash, and hot gases flow or are ejected during an eruption. Usually a cone shaped mountain.

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What will I know by the end of this unit?

- I will be able to name the layers that make up the Earth
- I will be able to name the key parts of a volcano and show where most volcanoes are found.
- The Ring of Fire is a horseshoe-shaped line on a map which is home to around 75% of the world's volcanoes and 90% of the world's earthquakes.
- I will be able to explain and understand how to keep safe during an earthquake;
- I will be able to describe a tsunami and describe the damage that tsunamis can cause

Why do Earthquakes happen?

Earthquakes usually occur on the edges of large sections of the Earth's crust called tectonic plates. These plates slowly move over a long period of time. Sometimes, the edges, which are called fault lines, can get stuck, but the plates keep moving. Pressure slowly starts to build up where the edges are stuck and, once the pressure gets strong enough, the plates will suddenly move causing an earthquake.

Mount Vesuvius

- Mount Vesuvius is an active volcano in Campania, Italy.
- It has erupted more than 200 times.
- It is famous for the 79AD eruptions which destroyed the Roman cities of Pompeii and Herculaneum.

Measuring Earthquakes

Scientists, known as seismologists, use the Moment Magnitude Scale (MMS) to determine the magnitude (strength) of an earthquake. The MMS measures the total energy of an earthquake, called the seismic moment. The seismic moment of an earthquake is determined based on three factors.

1. The distance that rock slides along a fault surface after it breaks, called the fault slip.

2. The area of the fault surface that is actually broken by the earthquake.

3. The measurement of how rigid the rocks are near the broken fault.

Types of Volcano

Active	A volcano that has erupted since the last ice age (i.e., in the past 10,000 years).
Dormant	A volcano that hasn't erupted in the past 10,000 years, but which is expected to erupt again.
Extinct	A volcano that nobody expects to ever erupt again