




Topic	Fragile Earth	Year 5	Autumn Term
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Key Knowledge – Natural Disasters	Key Knowledge – Flood Gates
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What is an earthquake?



Earthquakes happen when two tectonic plates move past each other in the earth's crust. As the plates move, the rock gets stretched or squeezed until it splits. This squeezing and stretching are what causes the ground to tremble and move. When the rock gets jammed, the energy builds up until it suddenly becomes free and this causes a huge release in energy and a big movement in the earth. The area underground where the rock moves is the start of the earthquake. We call the point on the surface directly above that the epicentre. Sometimes not all of the energy is released in one go and the remaining energy is released a little while later. These bursts of energy are called aftershocks.

What is a tsunami?



A tsunami is a giant wave or series of waves caused by a huge earthquake or volcanic eruption under the ocean. These occur from movement in the Earth's crust. The earthquake causes a large amount of water to be displaced very quickly. When this happens far out at sea, tsunami waves don't really increase in height. As they travel inland, the speed and height of the waves increases. This can cause a huge amount of damage when the wave of water reaches the shoreline. You might have heard about some tsunamis in the news.


What is a flood gate?
A flood gate or barrier is a flood defence mechanism to protect people from the danger of floods.

What is the Thames Barrier?
The Thames Barrier can shut off the river within 30 minutes of a dangerous tidal surge. The barrier was built to prevent a repeat of the devastation caused in 1953, when high tides and a storm combined to create a surge of 3.2 meters that killed 307 people and left parts of the U.K. under water. The barrier is built across a 520 metre (1716 feet) wide stretch of the river and divides the river into six navigable and four smaller non-navigable channels between nine large concrete piers. The piers are founded on solid chalk, over 50 feet below the level of the river. The four largest steel gates are 200 feet wide and weigh 1500 tonnes each.



Key Knowledge – Katsushika Hokusai (1760-1849)

Who was Katsushika Hokusai?




Hokusai was a Japanese artist and print maker, whose works have become well known outside Japan. He began painting at the age of 6. Between the ages of 14 and 18, he worked as an apprentice wood carver. Hokusai reached the height of his career around 1820. He created woodblocks of many different subjects at this time, including waterfalls, bridges, birds and flowers. Despite his success, he lived simply and was poor. Like many other famous artists, he was only truly recognized and appreciated after his death.




Key Knowledge – Volcanoes

What is a volcano?




A volcano is an opening in the Earth's crust that allows magma, hot ash and gases to escape. Volcanoes can look like mountains or small hills, depending on what type they are.

Why do volcanoes erupt?



Most volcanic eruptions are caused by tectonic plates moving towards each other, which usually produces violent eruptions. Other volcanoes, such as Mauna Loa in Hawaii are caused by hot spots in the Earth's crust. These do not erupt violently and lava usually flows slowly out of them.

Are volcanic eruptions dangerous?



Eruptions from volcanoes can be very dangerous. They can produce:

- pyroclastic flows - fast moving clouds of hot ash, gas and rock
- ash clouds - small pieces of rock and glass that can be carried in the air for many kilometres
- volcanic bombs - large bits of very hot rock blown out of a volcano

What are the different types of volcano?

Shield volcanoes: These are the largest type of volcano and have large, gentle slopes.
Stratovolcanoes (or **composite** volcanoes): large and have very steep slopes.
Caldera volcanoes: Big, round and shaped like a cauldron.
Cinder cone volcanoes: These form a straight, steep mound.

Key Vocabulary

Spelling	Definition
flood	a rise of water with no place to go
lava	hot, liquefied rock that flows from a volcano or other opening in the surface of Earth
magma	molten rock material within the earth
tectonic plates	large pieces of rock that make up the surface of the earth

