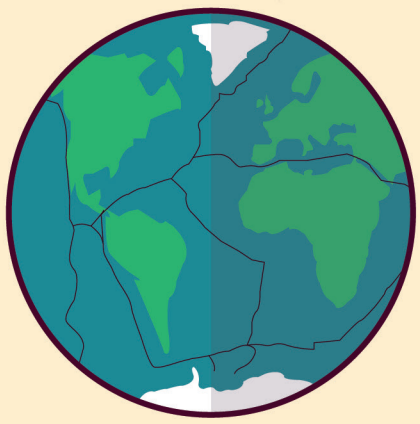
10 THINGS EVERY GEOGRAPHER SHOULD KNOW ABOUT

EARTHQUAKES

WHAT IS THE THEORY OF PLATE TECTONICS?

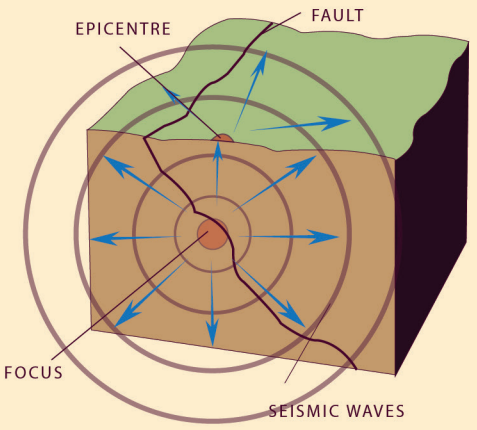
The earth's surface is made up of constantly moving **tectonic plates** which fit together like a jigsaw puzzle.

These sit atop a mantle of **molten rock** which is in constant motion.



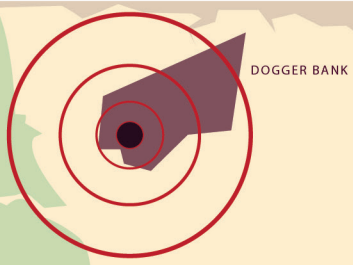
WHAT CAUSES EARTHQUAKES?

As the tectonic plates move slowly on the molten interior they 'grate and tug' against each other at **plate boundaries.** This builds up stress within the rocks. The sudden release of this pressure causes **seismic waves** which make the ground shake. That's how earthquakes begin!



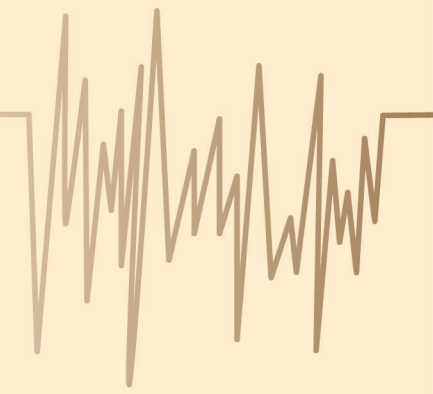
LARGEST UK EARTHQUAKE

The largest known British earthquake was in **1931 near the Dogger Bank**, 60 miles off the east coast of England. While the earthquake's epicentre was offshore, with a **magnitude of 6.1** it was powerful enough to cause minor damage to buildings.



HOW DO WE MEASURE EARTHQUAKES?

The Richter Scale is the most well-known way of measuring an earthquake's strength, but most seismologists prefer the **Moment Magnitude Scale** which is based on the distance the fault has moved and the force required to move it. The scale is logarithmical so for each whole number you go up, the magnitude of the earthquake is amplified by 10 e.g. a magnitude 5 earthquake is 10 times stronger than a magnitude 4 quake.

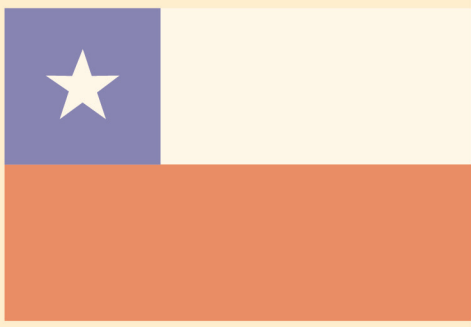


WHERE DO MOST EARTHQUAKES HAPPEN?

The vast majority occur along plate boundaries. Approximately **80%** of earthquakes occur along the edge of the Pacific Ocean, called the **"Ring of Fire"**, the world's most active earthquake belt.

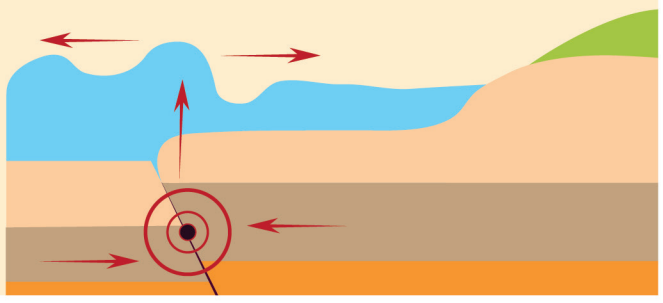
WORLD'S MOST POWERFUL EARTHQUAKE

The most powerful earthquake recorded achieved a **magnitude of 9.5 on 22nd May 1960** in southern Chile. **1,655 people were left dead** and **3,000 injured**, with **2 million homeless**. An ensuing tsunami caused **$550m worth of damage** in Chile and killed a further 231 people as **five-metre waves** struck Hawaii and the Japanese and the Philippine coasts.



UNDERSEA EARTHQUAKE

On 26th December 2004, a **magnitude 9.1** undersea earthquake beneath the Indian Ocean caused a series of destructive tsunamis. The **100-foot waves** hit the coasts of most landmasses bordering the Indian Ocean, **killing more than 225,000 people** in 11 countries.



EARTHQUAKES HAPPEN EVERY DAY

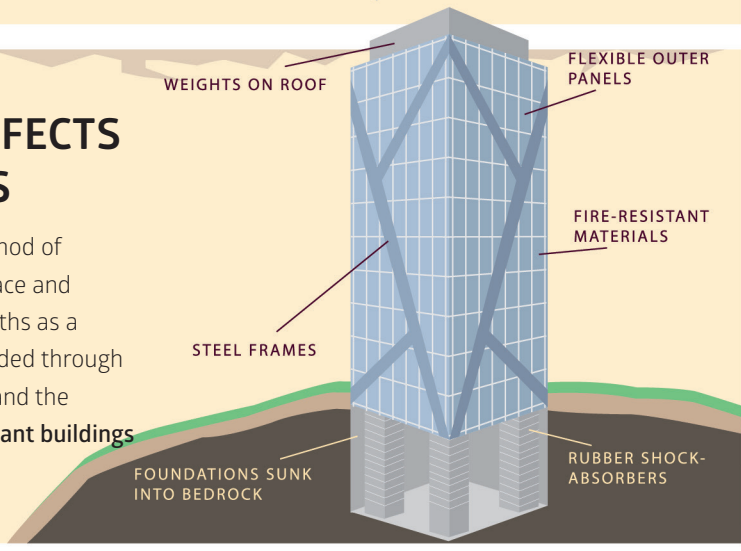
Earthquakes occur every day around the world, normally in the form of small tremors. Across the globe, an average of **20,000 earthquakes every year** are recorded by the National Earthquake Information Center (NEIC) records.

WORLD'S DEADLIEST EARTHQUAKE

The world's deadliest earthquake is thought to have occurred on **23rd January 1556** in **Shaanxi, China**. The earthquake had an estimated **magnitude of 8.0** on the Richter Scale, **killing almost one million people.**

REDUCING THE EFFECTS OF EARTHQUAKES

There is currently no reliable method of accurately predicting the time, place and magnitude of an earthquake. Deaths as a result of earthquakes can be avoided through **emergency planning, education,** and the **construction of earthquake resistant buildings** that sway rather than break.



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