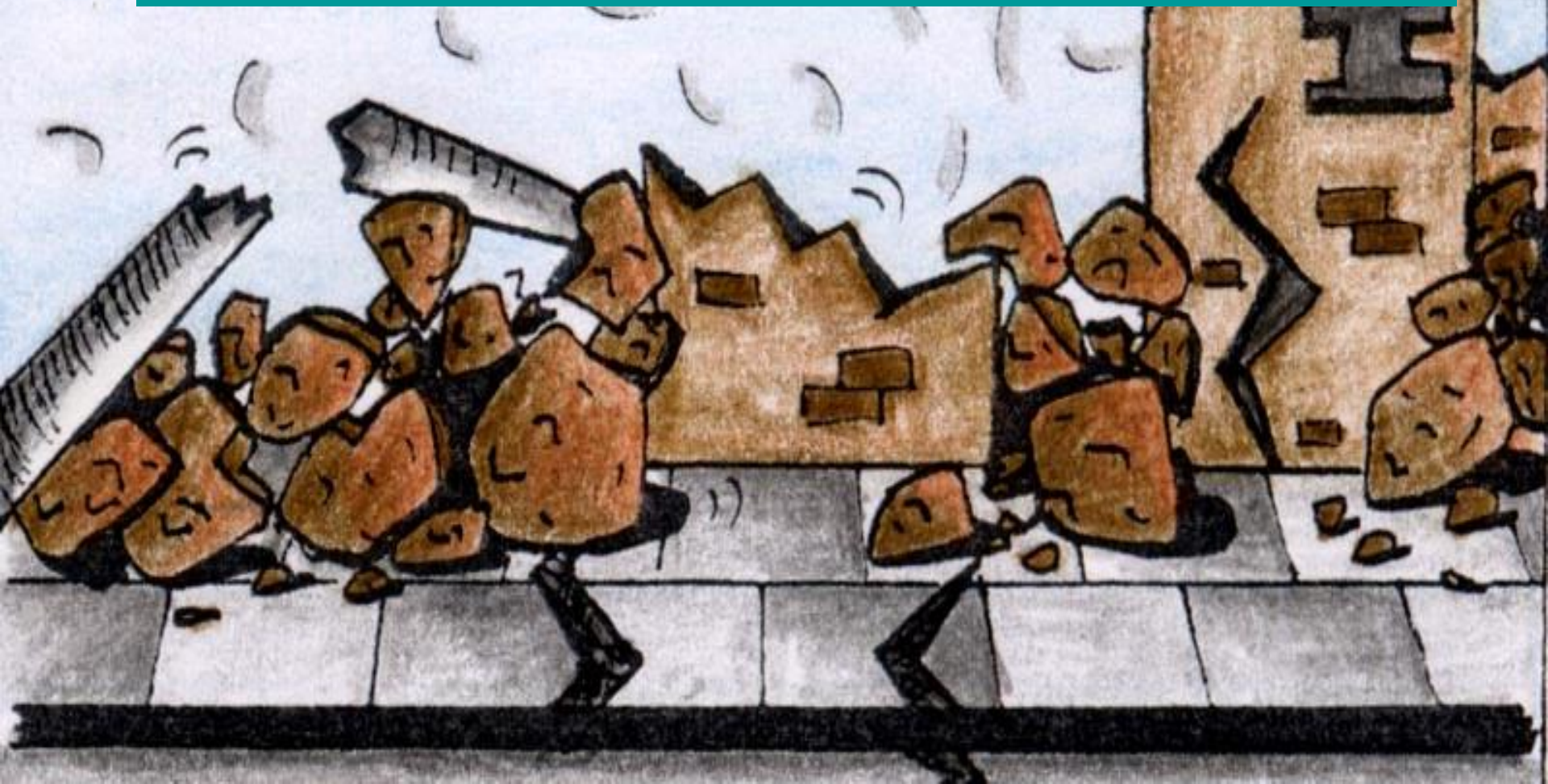



The distribution and causes of Earthquakes

Aims: To develop a knowledge of plate tectonics
To be able to explain the causes and global distribution of earthquakes.



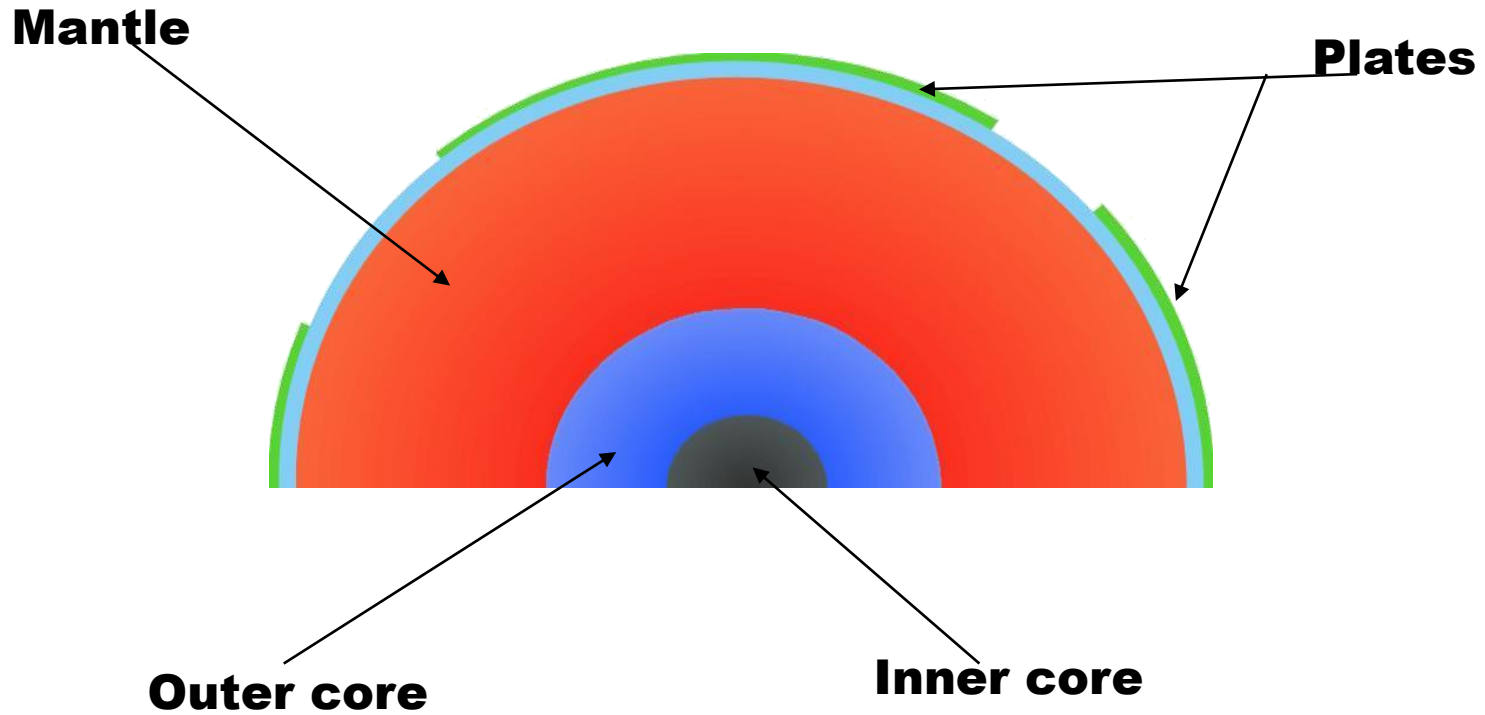


Keywords: Earthquakes, plate margins, conservative margins, destructive margins, seismograph, focus, epicentre.

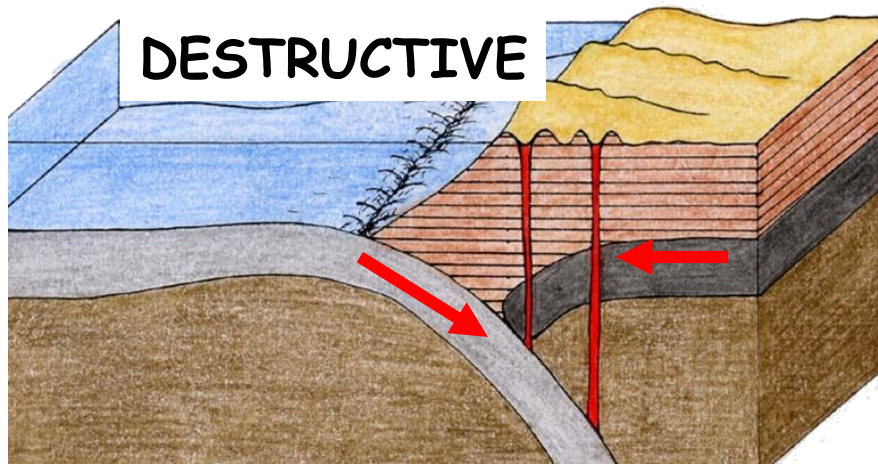
Starter: Answer the following

- **What is an earthquake?**
- **Where do they happen?**

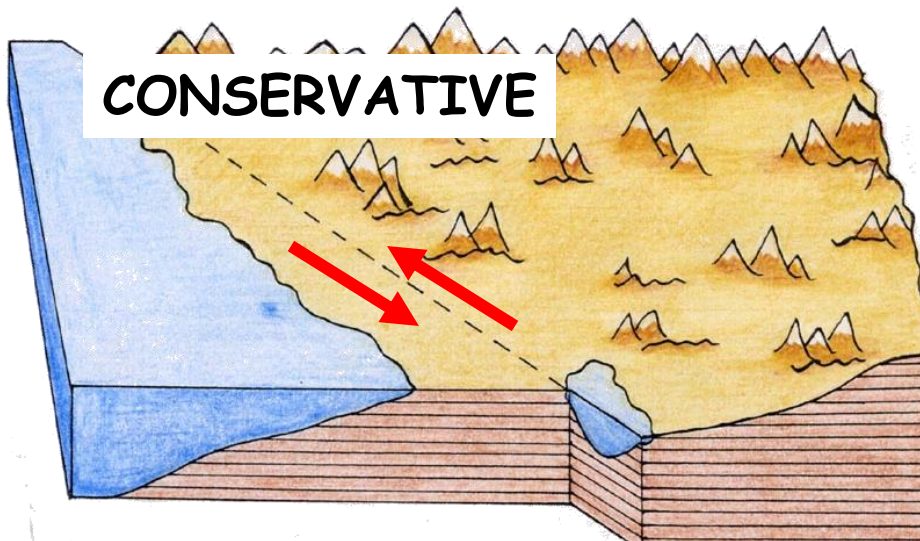
Cross-section of the Earth



What are earthquakes? What are plate margins?

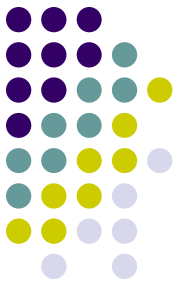


Earthquakes are vibrations caused by earth movements at plate margins and at major fault lines (cracks in the earth's surface).



They can occur at all major plate margins but the most severe earthquakes are normally found at **CONSERVATIVE** and **DESTRUCTIVE** margins.

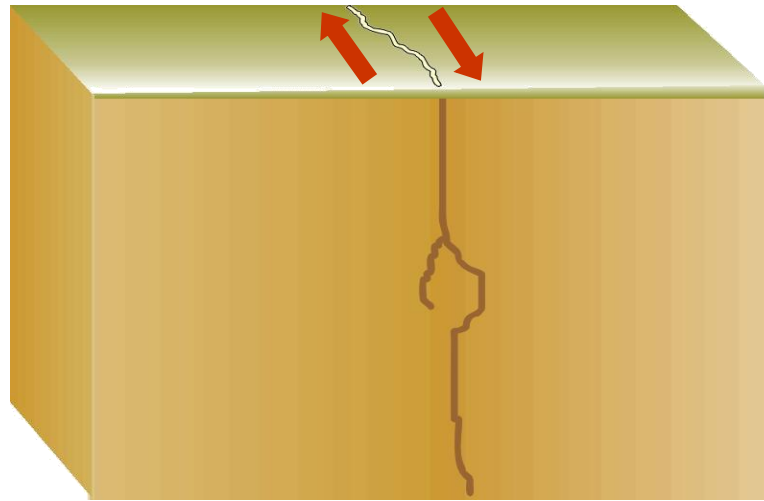
Describe and explain the distribution of earthquakes

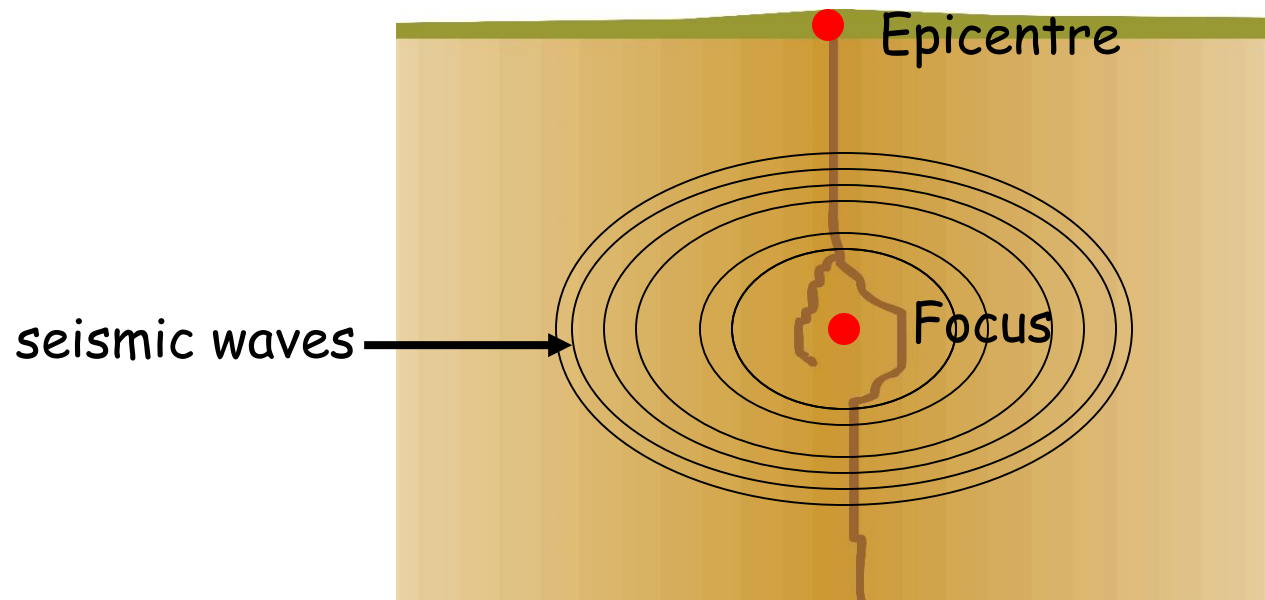


- Look at the map showing the plate margins.
- Look at the map showing the location of earthquakes.
- Describe where earthquakes are found – say what you can see!
- Explain why you think they are found there – give reasons

Why do earthquakes happen?

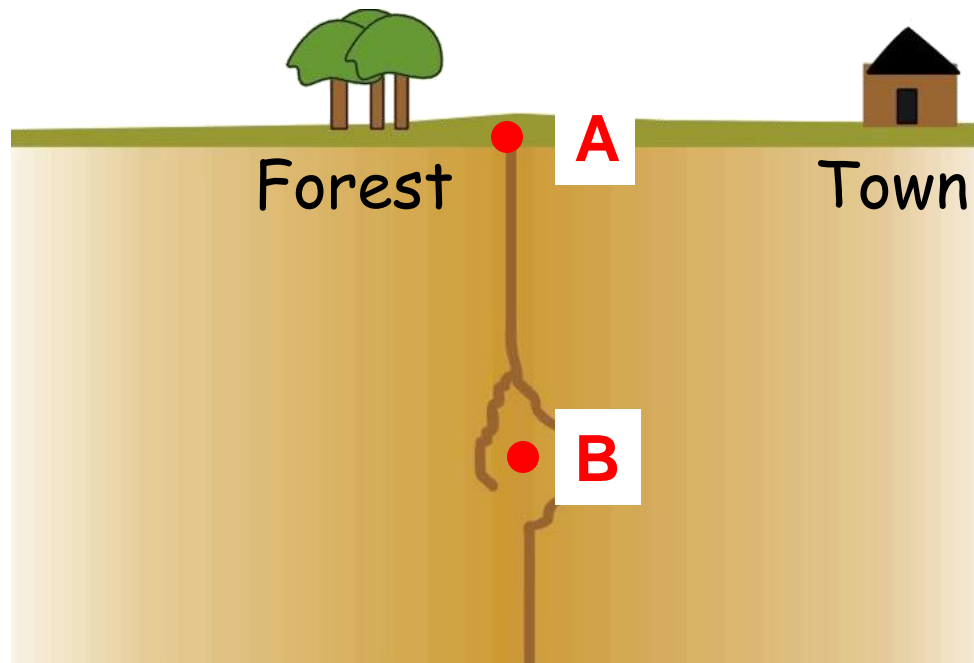
The two plates at a plate margin cannot move past each other easily. The two plates become locked. Friction causes pressure to build up. Suddenly, the pressure is released and the plates jolt into a new position. This causes **seismic waves**. The vibrations they cause are called an **earthquake**.





Focus is the point at which the rock moves. The seismic waves start at the focus.

Epicentre is directly above the focus on the Earth's surface.



Epicentre

Focus

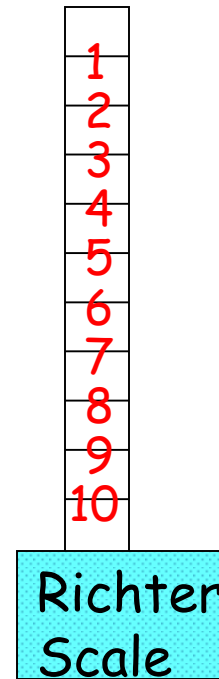
An earthquake has occurred along this fault line.
Match the letter with the correct label.

How are earthquakes measured?

The Richter Scale

This measures the magnitude of a tremor (how powerful it is) using an instrument called a **seismograph**.

The Richter Scale is measured on a scale from 1 to 10. It is a logarithmic scale which means that a size '6' on the Richter Scale is 10 times more powerful than a size '5' and 100 times more powerful than a size '4'.



The largest earthquake ever recorded was in Chile. It measured 8.9 on the Richter Scale.

The Japanese earthquake in Kobe (September 1995) measured 7.2 on the Richter Scale.

The Greek earthquake (June 1995) measured 6.2 on the Richter Scale.



Richter
Scale

How many times greater was the Japanese earthquake?

Plenary :

Match up the correct keyword with its meaning.

- **Earthquakes are...where the earthquake begins in the crust.**
- **Conservative margins are...an instrument to measure earthquakes.**
- **Plate boundaries are...a movement or tremor in the earths crust.**
- **Destructive margins are...where two plates move alongside each other.**
- **A seismograph is ...where two plates are destroyed as they push towards one another.**
- **The focus is....directly above the focus on the earths surface.**
- **Epicentre...a boundary between two plates.**

